

HS Algebra 2

Maine Virtual Academy

UNITS (12/12 SELECTED)	SUGGESTED DURATION
<div></div> Unit 1: Equations and Inequalities	19 teaching days
<div></div> Unit 2: Properties of Functions	9 teaching days
<div></div> Unit 3: Function Transformations & Composition	12 teaching days
<div></div> Unit 4: Complex Numbers & Radical Expressions	10 teaching days
<div></div> Unit 5: Quadratic Functions	12 teaching days
<div></div> Unit 6: Polynomial Functions	19 teaching days
<div></div> Unit 7: Exponential Functions	10 teaching days
<div></div> Unit 8: Logarithmic Functions	15 teaching days
<div></div> Unit 9: Rational Functions	10 teaching days
<div></div> Unit 10: Trigonometric Identities	13 teaching days
<div></div> Unit 11: Trigonometric Functions	4 teaching days
<div></div> Unit 12: Statistics	26 teaching days

Unit 1: Equations and Inequalities

HS Algebra 2

UNIT SUMMARY

Students review and extend their skills in solving equations and inequalities. The unit begins with solving two-step linear equations and inequalities, then moves into rearranging formulas with multiple variables. Students learn to solve compound inequalities and graph their solutions. Systems of equations are introduced, starting with systems in two variables and progressing to systems in three variables, using a variety of solving methods.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

HSA.CED.A.1

Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.

HSA.CED.A.3

Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods such as lobsters, blueberries, and potatoes.

AR.A.7

Create equations and/or inequalities that describe numbers or relationships.

HSA.CED.A.2

Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.

HSA.CED.A.4

Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance R .

AR.A.8

Understand solving equations as a process of reasoning and explain the reasoning.

AR.A.9

Solve equations and inequalities in one variable.

AR.A.10

Solve systems of equations.

Unit 1: Equations and Inequalities

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HSA.REI.C.5

Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.

HSA.REI.C.6

Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.

HSA.REI.B.3

Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.

Unit 1: Equations and Inequalities

HS Algebra 2

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Lesson 1.01 - Solve Two-Step Linear Equations & Inequalities

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK2

Description: Students practice solving linear equations and inequalities involving two operations. Both types of problems are worked through using addition, subtraction, multiplication, and division. Students learn to check and test their solutions.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.9
Solve equations and inequalities in one variable.
AR.A.7
Create equations and/or inequalities that describe numbers or relationships.
AR.A.8
Understand solving equations as a process of reasoning and explain the reasoning.
HSA.CED.A.1
Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.

Lesson 1.02 - Multivariable Equations

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK2

Description: Students learn to solve for a specific variable in equations with multiple variables. Rearranging formulas and isolating variables is practiced with real-world examples and algebraic problems.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.7
Create equations and/or inequalities that describe numbers or relationships.
HSA.CED.A.2

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Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.

HSA.CED.A.3

Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods such as lobsters, blueberries, and potatoes.

HSA.CED.A.4

Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance R .

AR.A.8

Understand solving equations as a process of reasoning and explain the reasoning.

HSA.REI.B.3

Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.

Lesson 1.03 - Compound Inequalities

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK2

Description: Students solve compound inequalities involving “and” and “or” statements. Solutions are represented both as inequalities and on a number line. Students interpret overlapping and separate solution sets.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

AR.A.7

Create equations and/or inequalities that describe numbers or relationships.

HSA.CED.A.2

Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.

HSA.CED.A.3

Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods such as lobsters, blueberries, and potatoes.

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AR.A.8
Understand solving equations as a process of reasoning and explain the reasoning.
AR.A.9
Solve equations and inequalities in one variable.
HSA.CED.A.1
Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.

Lesson 1.04 - Mid-Unit Assessment

Assessment Type: Summative / Diagnostic

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK3

Description: Students complete an assessment covering two-step equations, inequalities, rearranging formulas, and compound inequalities. The assessment checks both procedural fluency and problem-solving skills.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.7
Create equations and/or inequalities that describe numbers or relationships.
HSA.CED.A.1
Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.
HSA.CED.A.2
Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.
HSA.CED.A.3
Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods such as lobsters, blueberries, and potatoes.
HSA.CED.A.4
Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For

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example, rearrange Ohm's law $V = IR$ to highlight resistance R .

AR.A.8

Understand solving equations as a process of reasoning and explain the reasoning.

HSA.REI.B.3

Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.

AR.A.9

Solve equations and inequalities in one variable.

Lesson 1.05 - Solving Systems of Equations - 2 Equations

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK3

Description: Students solve systems of two linear equations using substitution, elimination, and graphing methods. Word problems involving systems of equations are introduced and worked through in context.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

AR.A.10

Solve systems of equations.

HSA.REI.C.5

Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.

HSA.REI.C.6

Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.

HSA.CED.A.3

Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods such as lobsters, blueberries, and potatoes.

AR.A.8

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Understand solving equations as a process of reasoning and explain the reasoning.

HSA.CED.A.2

Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.

AR.A.7

Create equations and/or inequalities that describe numbers or relationships.

Lesson 1.06 - Solving Systems of Equations - 3 Equations

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK3

Description: Students extend system-solving techniques to three-variable systems. Both substitution and elimination methods are practiced. Problems increase in complexity, and students check their solutions by substituting back into the original equations.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

AR.A.7

Create equations and/or inequalities that describe numbers or relationships.

HSA.CED.A.2

Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.

HSA.CED.A.3

Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods such as lobsters, blueberries, and potatoes.

HSA.REI.C.6

Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.

HSA.REI.C.5

Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation

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and a multiple of the other produces a system with the same solutions.

AR.A.10

Solve systems of equations.

AR.A.8

Understand solving equations as a process of reasoning and explain the reasoning.

Lesson 1.07 - Unit 1 Review

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK2

Description: A full class session is dedicated to reviewing the skills and concepts from this unit. Students complete practice problems, review vocabulary and definitions, and revisit challenging problems from earlier lessons.

Lesson 1.08 - Unit 1 Exam

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK3

Description: A full class session is used for a summative exam, assessing students on all covered material in the unit.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

AR.A.7

Create equations and/or inequalities that describe numbers or relationships.

HSA.CED.A.1

Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.

HSA.CED.A.2

Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.

HSA.CED.A.3

Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret

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solutions as viable or nonviable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods such as lobsters, blueberries, and potatoes.

HSA.CED.A.4

Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance R .

AR.A.8

Understand solving equations as a process of reasoning and explain the reasoning.

AR.A.9

Solve equations and inequalities in one variable.

HSA.REI.B.3

Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.

AR.A.10

Solve systems of equations.

HSA.REI.C.5

Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.

HSA.REI.C.6

Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.

Unit 2: Properties of Functions

HS Algebra 2

UNIT SUMMARY

Students are introduced to foundational concepts of functions and their properties. Students begin by identifying and evaluating functions, then explore average rates of change and linear equations in both algebraic and graphical forms. The unit continues with identifying parent functions and examining how functions behave through domain, range, and piecewise definitions. Students' develop fundamental skills with interpreting, writing, and graphing functions.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)	
HSA.REI.D.10	
Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). Show that any point on the graph of an equation in two variables is a solution to the equation.	
AR.A.12	
Understand the concept of a function and use function notation.	
HSF.IF.A.1	
Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x . The graph of f is the graph of the equation $y = f(x)$.	
HSF.IF.A.2	
Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.	
AR.A.13	
Interpret functions that arise in applications in terms of the context.	
HSF.IF.B.6	
Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.	
AR.A.14	
Analyze functions using different representations.	
HSF.IF.C.7a	

Unit 2: Properties of Functions

HS Algebra 2

Graph linear and quadratic functions and show intercepts, maxima, and minima.
AR.A.16
Build new functions from existing functions.
HSF.LE.A.1
Distinguish between situations that can be modeled with linear functions and with exponential functions.
HSF.LE.A.1a
Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.
HSF.LE.A.1b
Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.
AR.A.18
Interpret expressions for function in terms of the situation they model.
HSF.IF.C.7
Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in simple cases and using technology for more complicated cases.
HSF.IF.C.7b.i
Graph square root and piecewise-defined functions, (including step functions and absolute value functions), as well as show and describe key features of the graph.

Unit 2: Properties of Functions

HS Algebra 2

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Lesson 2.01 - Definition & Evaluate Functions

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students learn to identify functions from equations, tables, and graphs, and practice evaluating functions for given inputs.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

HSA.REI.D.10

Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). Show that any point on the graph of an equation in two variables is a solution to the equation.

AR.A.12

Understand the concept of a function and use function notation.

HSF.IF.A.1

Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x . The graph of f is the graph of the equation $y = f(x)$.

HSF.IF.A.2

Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.

AR.A.14

Analyze functions using different representations.

HSF.IF.C.7

Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in simple cases and using technology for more complicated cases.

AR.A.13

Interpret functions that arise in applications in terms of the context.

Unit 2: Properties of Functions

HS Algebra 2

Lesson 2.02 - Average Rate of Change

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students calculate the slope of a linear function and determine the average rate of change over a specified interval for a variety of functions.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.12
Understand the concept of a function and use function notation.
HSF.IF.A.2
Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.
HSF.IF.B.6
Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.
AR.A.14
Analyze functions using different representations.
HSF.LE.A.1
Distinguish between situations that can be modeled with linear functions and with exponential functions.
HSF.LE.A.1a
Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.
HSF.LE.A.1b
Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.
HSF.IF.C.7
Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in simple cases and using technology for more complicated cases.

Unit 2: Properties of Functions

HS Algebra 2

AR.A.18

Interpret expressions for function in terms of the situation they model.

Lesson 2.03 - Graph and Write Linear Functions

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 3

Description: Students graph linear functions from different forms, and write linear equations given points, graphs, or context.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

HSA.REI.D.10

Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). Show that any point on the graph of an equation in two variables is a solution to the equation.

AR.A.14

Analyze functions using different representations.

HSF.IF.C.7a

Graph linear and quadratic functions and show intercepts, maxima, and minima.

HSF.IF.C.7

Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in simple cases and using technology for more complicated cases.

HSF.LE.A.1b

Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.

HSF.LE.A.1a

Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.

AR.A.18

Interpret expressions for function in terms of the situation they model.

Unit 2: Properties of Functions

HS Algebra 2

HSF.LE.A.1

Distinguish between situations that can be modeled with linear functions and with exponential functions.

Lesson 2.04 - Mid-Unit Assessment

Assessment Type: Summative / Diagnostic

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 3

Description: Students complete a mid-unit assessment covering identifying and evaluating functions, average rate of change, and graphing/writing linear functions.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

HSA.REI.D.10

Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). Show that any point on the graph of an equation in two variables is a solution to the equation.

AR.A.12

Understand the concept of a function and use function notation.

HSF.IF.A.1

Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x . The graph of f is the graph of the equation $y = f(x)$.

HSF.IF.A.2

Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.

AR.A.13

Interpret functions that arise in applications in terms of the context.

HSF.IF.B.6

Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.

AR.A.14

Unit 2: Properties of Functions

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Analyze functions using different representations.
HSF.IF.C.7
Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in simple cases and using technology for more complicated cases.
HSF.IF.C.7a
Graph linear and quadratic functions and show intercepts, maxima, and minima.
HSF.LE.A.1b
Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.
AR.A.18
Interpret expressions for function in terms of the situation they model.

Lesson 2.05 - Identify Parent Functions

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students review the basic parent functions (linear, quadratic, absolute value, cubic, square root, and others) and identify them from graphs and equations.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
HSA.REI.D.10
Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). Show that any point on the graph of an equation in two variables is a solution to the equation.
AR.A.12
Understand the concept of a function and use function notation.
HSF.IF.A.1
Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x . The graph of f is the graph of the equation $y = f(x)$.
AR.A.14

Unit 2: Properties of Functions

HS Algebra 2

Analyze functions using different representations.

HSF.IF.C.7

Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in simple cases and using technology for more complicated cases.

AR.A.16

Build new functions from existing functions.

AR.A.18

Interpret expressions for function in terms of the situation they model.

Lesson 2.06 - Graphing Functions - Domain & Range

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students determine the domain and range of functions from graphs, tables, and function definitions.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

HSA.REI.D.10

Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). Show that any point on the graph of an equation in two variables is a solution to the equation.

AR.A.12

Understand the concept of a function and use function notation.

HSF.IF.A.1

Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x . The graph of f is the graph of the equation $y = f(x)$.

AR.A.14

Analyze functions using different representations.

AR.A.18

Unit 2: Properties of Functions

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Interpret expressions for function in terms of the situation they model.

HSF.IF.C.7

Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in simple cases and using technology for more complicated cases.

Lesson 2.07 - Piecewise Functions

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 3

Description: Students evaluate piecewise-defined functions for given inputs, and graph piecewise functions from their equation definitions.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

AR.A.12

Understand the concept of a function and use function notation.

HSF.IF.A.1

Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x . The graph of f is the graph of the equation $y = f(x)$.

HSF.IF.A.2

Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.

AR.A.13

Interpret functions that arise in applications in terms of the context.

AR.A.14

Analyze functions using different representations.

HSF.IF.C.7

Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in simple cases and using technology for more complicated cases.

HSF.IF.C.7a

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Graph linear and quadratic functions and show intercepts, maxima, and minima.
AR.A.16
Build new functions from existing functions.
HSF.IF.C.7b.i
Graph square root and piecewise-defined functions, (including step functions and absolute value functions), as well as show and describe key features of the graph.
AR.A.18
Interpret expressions for function in terms of the situation they model.

Lesson 2.08 - Unit Review

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 2

Description: A full class session is dedicated to reviewing the skills and concepts from this unit. Students complete practice problems, review vocabulary and definitions, and revisit challenging problems from earlier lessons.

Lesson 2.09 - Unit Assessment

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 3

Description: A full class session is used for a summative exam, assessing students on all covered material in the unit.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
HSA.REI.D.10
Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). Show that any point on the graph of an equation in two variables is a solution to the equation.
AR.A.12
Understand the concept of a function and use function notation.
HSF.IF.A.1

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Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x . The graph of f is the graph of the equation $y = f(x)$.

HSF.IF.A.2

Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.

AR.A.13

Interpret functions that arise in applications in terms of the context.

HSF.IF.B.6

Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.

AR.A.14

Analyze functions using different representations.

HSF.IF.C.7

Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in simple cases and using technology for more complicated cases.

HSF.IF.C.7a

Graph linear and quadratic functions and show intercepts, maxima, and minima.

HSF.IF.C.7b.i

Graph square root and piecewise-defined functions, (including step functions and absolute value functions), as well as show and describe key features of the graph.

AR.A.16

Build new functions from existing functions.

HSF.LE.A.1

Distinguish between situations that can be modeled with linear functions and with exponential functions.

HSF.LE.A.1a

Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by

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equal factors over equal intervals.
HSF.LE.A.1b
Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.
AR.A.18
Interpret expressions for function in terms of the situation they model.

Unit 3: Function Transformations & Composition

HS Algebra 2

UNIT SUMMARY

Students explore how functions can be transformed and combined. They learn the rules for translating, reflecting, and stretching functions, and practice applying these transformations. Students also investigate the operations of addition, subtraction, multiplication, and composition for functions. Lastly, students apply their knowledge to find and interpret inverse functions.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

HSF.IF.B.4

For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.

HSF.BF.B.3

Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.

HSF.BF.A.1c

Compose functions. For example, if $T(y)$ is the temperature in the atmosphere as a function of height, and $h(t)$ is the height of a weather balloon as a function of time, then $T(h(t))$ is the temperature at the location of the weather balloon as a function of time.

HSF.BF.A.1b

Combine standard function types using arithmetic operations. For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.

HSF.BF.B.4a

Solve an equation of the form $f(x) = c$ (where c represents the output value of the function) for a simple function f that has an inverse and write an expression for the inverse. For example, if $f(x) = 2x^3$, then solving $f(x) = c$ leads to $x = (c/2)^{1/3}$, which is the general formula for finding an input from a specific output, c , for this function.

HSA.APR.A.1a

Perform operations on polynomial expressions (addition, subtraction, multiplication, and division), and compare the system of polynomials to the system of integers.

Unit 3: Function Transformations & Composition

HS Algebra 2

HSA.APR.A.1b
Factor and/or expand polynomial expressions, identify and combine like terms, and apply the Distributive Property.
HSA.CED.A.4
Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance R .
AR.A.12
Understand the concept of a function and use function notation.
HSF.IF.A.2
Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.
AR.A.13
Interpret functions that arise in applications in terms of the context.
AR.A.14
Analyze functions using different representations.
HSF.IF.C.7
Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in simple cases and using technology for more complicated cases.
HSF.IF.C.7a
Graph linear and quadratic functions and show intercepts, maxima, and minima.
AR.A.16
Build new functions from existing functions.
HSF.BF.B.4
Find inverse functions.
HSF.BF.B.4b
Verify by composition that one function is the inverse of another.
HSF.BF.B.4c

Unit 3: Function Transformations & Composition

HS Algebra 2

Read values of an inverse function from a graph or a table, given that the function has an inverse.
AR.A.18
Interpret expressions for function in terms of the situation they model.

Unit 3: Function Transformations & Composition

HS Algebra 2

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Lesson 3.01 - Function Transformation Rules

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students learn the algebraic rules for function transformations, including translations, stretches, compressions, and reflections of graphs of functions.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.12
Understand the concept of a function and use function notation.
AR.A.14
Analyze functions using different representations.
AR.A.16
Build new functions from existing functions.
HSF.BF.B.3
Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.

Lesson 3.02 - Describe Transformations

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students determine and write the transformations applied to functions based on equations and graphs.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.12
Understand the concept of a function and use function notation.

Unit 3: Function Transformations & Composition

HS Algebra 2

HSF.IF.B.4

For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.

AR.A.14

Analyze functions using different representations.

AR.A.16

Build new functions from existing functions.

HSF.BF.B.3

Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.

AR.A.18

Interpret expressions for function in terms of the situation they model.

Lesson 3.03 - Mid-Unit Assessment

Assessment Type: Summative / Diagnostic

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 3

Description: Students complete a mid-unit assessment covering function transformations in various contexts and representations.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

AR.A.12

Understand the concept of a function and use function notation.

AR.A.13

Interpret functions that arise in applications in terms of the context.

HSF.IF.B.4

Unit 3: Function Transformations & Composition

HS Algebra 2

For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.

AR.A.14

Analyze functions using different representations.

HSF.IF.C.7

Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in simple cases and using technology for more complicated cases.

AR.A.16

Build new functions from existing functions.

HSF.BF.B.3

Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.

AR.A.18

Interpret expressions for function in terms of the situation they model.

Lesson 3.04 - Function Operations

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students perform operations on functions, including addition, subtraction, and multiplication of functions.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

HSA.APR.A.1a

Perform operations on polynomial expressions (addition, subtraction, multiplication, and division), and compare the system of polynomials to the system of integers.

HSA.APR.A.1b

Unit 3: Function Transformations & Composition

HS Algebra 2

Factor and/or expand polynomial expressions, identify and combine like terms, and apply the Distributive Property.

AR.A.12

Understand the concept of a function and use function notation.

AR.A.14

Analyze functions using different representations.

HSF.BF.A.1b

Combine standard function types using arithmetic operations. For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.

AR.A.16

Build new functions from existing functions.

AR.A.18

Interpret expressions for function in terms of the situation they model.

Lesson 3.05 - Composition of Functions

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students learn to compose functions by finding the value of composite functions and writing composite function equations. Transformations are recontextualized as compositions with linear functions.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

HSA.APR.A.1b

Factor and/or expand polynomial expressions, identify and combine like terms, and apply the Distributive Property.

AR.A.12

Understand the concept of a function and use function notation.

HSF.IF.A.2

Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.

Unit 3: Function Transformations & Composition

HS Algebra 2

AR.A.14

Analyze functions using different representations.

HSF.BF.A.1c

Compose functions. For example, if $T(y)$ is the temperature in the atmosphere as a function of height, and $h(t)$ is the height of a weather balloon as a function of time, then $T(h(t))$ is the temperature at the location of the weather balloon as a function of time.

AR.A.16

Build new functions from existing functions.

Lesson 3.06 - Inverse Functions

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Inverse functions are introduced, and tested with function composition. Students find the values of inverse functions from graphs, and determine the inverse of functions algebraically.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

HSA.CED.A.4

Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance R .

AR.A.12

Understand the concept of a function and use function notation.

HSF.IF.A.2

Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.

AR.A.14

Analyze functions using different representations.

HSF.BF.B.4

Find inverse functions.

Unit 3: Function Transformations & Composition

HS Algebra 2

HSF.BF.B.4a

Solve an equation of the form $f(x) = c$ (where c represents the output value of the function) for a simple function f that has an inverse and write an expression for the inverse. For example, if $f(x) = 2x^3$, then solving $f(x) = c$ leads to $x = (c/2)^{1/3}$, which is the general formula for finding an input from a specific output, c , for this function.

HSF.BF.B.4b

Verify by composition that one function is the inverse of another.

HSF.BF.B.4c

Read values of an inverse function from a graph or a table, given that the function has an inverse.

Lesson 3.07 - Unit Review

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 2

Description: A full class session is dedicated to reviewing the skills and concepts from this unit. Students complete practice problems, review vocabulary and definitions, and revisit challenging problems from earlier lessons.

Lesson 3.08 - Unit Assessment

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 3

Description: A full class session is used for a summative exam, assessing students on all covered material in the unit.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

HSA.APR.A.1a

Perform operations on polynomial expressions (addition, subtraction, multiplication, and division), and compare the system of polynomials to the system of integers.

HSA.APR.A.1b

Factor and/or expand polynomial expressions, identify and combine like terms, and apply the Distributive Property.

HSA.CED.A.4

Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance R .

Unit 3: Function Transformations & Composition

HS Algebra 2

AR.A.12
Understand the concept of a function and use function notation.
HSF.IF.A.2
Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.
AR.A.13
Interpret functions that arise in applications in terms of the context.
HSF.IF.B.4
For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.
AR.A.14
Analyze functions using different representations.
HSF.IF.C.7
Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in simple cases and using technology for more complicated cases.
HSF.IF.C.7a
Graph linear and quadratic functions and show intercepts, maxima, and minima.
HSF.BF.A.1b
Combine standard function types using arithmetic operations. For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.
HSF.BF.A.1c
Compose functions. For example, if $T(y)$ is the temperature in the atmosphere as a function of height, and $h(t)$ is the height of a weather balloon as a function of time, then $T(h(t))$ is the temperature at the location of the weather balloon as a function of time.
AR.A.16

Unit 3: Function Transformations & Composition

HS Algebra 2

Build new functions from existing functions.

HSF.BF.B.3

Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.

HSF.BF.B.4

Find inverse functions.

HSF.BF.B.4a

Solve an equation of the form $f(x) = c$ (where c represents the output value of the function) for a simple function f that has an inverse and write an expression for the inverse. For example, if $f(x) = 2x^3$, then solving $f(x) = c$ leads to $x = (c/2)^{1/3}$, which is the general formula for finding an input from a specific output, c , for this function.

HSF.BF.B.4b

Verify by composition that one function is the inverse of another.

HSF.BF.B.4c

Read values of an inverse function from a graph or a table, given that the function has an inverse.

AR.A.18

Interpret expressions for function in terms of the situation they model.

Unit 4: Complex Numbers & Radical Expressions

HS Algebra 2

UNIT SUMMARY

Students are introduced to complex numbers and their operations, along with an exploration of radical expressions. Students begin by learning to simplify radical expressions and perform basic operations with imaginary and complex numbers. They then explore how to multiply and divide complex numbers, including understanding complex conjugates and absolute values. The unit also covers graphing square root functions and solving radical equations, rounding out students' knowledge of both algebraic and graphical applications of radicals and complex numbers.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

HSF.BF.B.4a

Solve an equation of the form $f(x) = c$ (where c represents the output value of the function) for a simple function f that has an inverse and write an expression for the inverse. For example, if $f(x) = 2x^3$, then solving $f(x) = c$ leads to $x = (c/2)^{1/3}$, which is the general formula for finding an input from a specific output, c , for this function.

HSF.IF.C.7b.i

Graph square root and piecewise-defined functions, (including step functions and absolute value functions), as well as show and describe key features of the graph.

HSF.IF.B.4

For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.

HSF.BF.B.3

Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.

HSA.REI.A.2

Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.

AR.A.1

Interpret the structure of expressions.

Unit 4: Complex Numbers & Radical Expressions

HS Algebra 2

HSA.SSE.A.1
Interpret expressions that represent a quantity in terms of its context.
HSA.SSE.A.1a
Interpret parts of an expression, such as terms, factors, and coefficients.
AR.A.2
Write expressions in equivalent forms to reveal information and to solve problems.
HSA.SSE.B.3
Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.
AR.A.13
Interpret functions that arise in applications in terms of the context.
HSF.IF.B.5
Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.
AR.A.16
Build new functions from existing functions.
AR.A.9
Solve equations and inequalities in one variable.
HSA.REI.D.11
Explain why the x -coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.
Maine - High School - Mathematics - Quantitative Reasoning (2020)
HSN.CN.A.1
Know there is a complex number i (which is a non-real number) such that $i^2 = -1$, and every complex number has

Unit 4: Complex Numbers & Radical Expressions

HS Algebra 2

the form $a + bi$ with a and b real.
HSN.CN.A.2
Use the relation $i^2 = -1$ and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers.
HSN.CN.A.3
Find the conjugate of a complex number; use conjugates to find moduli and quotients of complex numbers.
QR.A.4
Perform arithmetic operations with complex numbers.

Unit 4: Complex Numbers & Radical Expressions

HS Algebra 2

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Lesson 4.01 - Introduction to Imaginary Numbers

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students simplify radical expressions and learn about the introduction of complex numbers, including their basic properties and notation.

STANDARDS

Maine - High School - Mathematics - Quantitative Reasoning (2020)
HSN.CN.A.1
Know there is a complex number i (which is a non-real number) such that $i^2 = -1$, and every complex number has the form $a + bi$ with a and b real.
Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1a
Interpret parts of an expression, such as terms, factors, and coefficients.
HSA.SSE.B.3
Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.
HSA.SSE.A.1
Interpret expressions that represent a quantity in terms of its context.

Lesson 4.02 - Basic Operations with Complex Numbers

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students perform basic operations on complex numbers, including addition, subtraction, and working with complex conjugates and absolute values.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

Unit 4: Complex Numbers & Radical Expressions

HS Algebra 2

AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1
Interpret expressions that represent a quantity in terms of its context.
HSA.SSE.A.1a
Interpret parts of an expression, such as terms, factors, and coefficients.
AR.A.2
Write expressions in equivalent forms to reveal information and to solve problems.
HSA.SSE.B.3
Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.
Maine - High School - Mathematics - Quantitative Reasoning (2020)
QR.A.4
Perform arithmetic operations with complex numbers.
HSN.CN.A.1
Know there is a complex number i (which is a non-real number) such that $i^2 = -1$, and every complex number has the form $a + bi$ with a and b real.
HSN.CN.A.2
Use the relation $i^2 = -1$ and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers.

Lesson 4.03 - Multiply Complex Numbers

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students learn to multiply complex numbers and simplify expressions, including using powers of the imaginary unit i .

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

Unit 4: Complex Numbers & Radical Expressions

HS Algebra 2

AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1
Interpret expressions that represent a quantity in terms of its context.
HSA.SSE.A.1a
Interpret parts of an expression, such as terms, factors, and coefficients.
AR.A.2
Write expressions in equivalent forms to reveal information and to solve problems.
HSA.SSE.B.3
Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.
Maine - High School - Mathematics - Quantitative Reasoning (2020)
QR.A.4
Perform arithmetic operations with complex numbers.
HSN.CN.A.1
Know there is a complex number i (which is a non-real number) such that $i^2 = -1$, and every complex number has the form $a + bi$ with a and b real.
HSN.CN.A.2
Use the relation $i^2 = -1$ and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers.

Lesson 4.04 - Divide Complex Numbers

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 3

Description: Students divide complex numbers and simplify expressions by multiplying by complex conjugates.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

Unit 4: Complex Numbers & Radical Expressions

HS Algebra 2

AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1
Interpret expressions that represent a quantity in terms of its context.
HSA.SSE.A.1a
Interpret parts of an expression, such as terms, factors, and coefficients.
AR.A.2
Write expressions in equivalent forms to reveal information and to solve problems.
HSA.SSE.B.3
Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.
Maine - High School - Mathematics - Quantitative Reasoning (2020)
QR.A.4
Perform arithmetic operations with complex numbers.
HSN.CN.A.1
Know there is a complex number i (which is a non-real number) such that $i^2 = -1$, and every complex number has the form $a + bi$ with a and b real.
HSN.CN.A.2
Use the relation $i^2 = -1$ and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers.
HSN.CN.A.3
Find the conjugate of a complex number; use conjugates to find moduli and quotients of complex numbers.

Lesson 4.05 - Mid-Unit Assessment

Assessment Type: Summative / Diagnostic

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 3

Unit 4: Complex Numbers & Radical Expressions

HS Algebra 2

Description: Students complete a mid-unit assessment covering the concepts of complex numbers, including operations such as addition, subtraction, multiplication, and division.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1
Interpret expressions that represent a quantity in terms of its context.
HSA.SSE.A.1a
Interpret parts of an expression, such as terms, factors, and coefficients.
AR.A.2
Write expressions in equivalent forms to reveal information and to solve problems.
HSA.SSE.B.3
Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.
Maine - High School - Mathematics - Quantitative Reasoning (2020)
QR.A.4
Perform arithmetic operations with complex numbers.
HSN.CN.A.1
Know there is a complex number i (which is a non-real number) such that $i^2 = -1$, and every complex number has the form $a + bi$ with a and b real.
HSN.CN.A.2
Use the relation $i^2 = -1$ and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers.
HSN.CN.A.3
Find the conjugate of a complex number; use conjugates to find moduli and quotients of complex numbers.

Unit 4: Complex Numbers & Radical Expressions

HS Algebra 2

Lesson 4.06 - Graph Radical Functions

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students learn to graph square root functions, and explore domain and range considerations.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.13
Interpret functions that arise in applications in terms of the context.
HSF.IF.B.4
For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.
HSF.IF.B.5
Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.
HSF.IF.C.7b.i
Graph square root and piecewise-defined functions, (including step functions and absolute value functions), as well as show and describe key features of the graph.
HSF.BF.B.3
Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.
AR.A.16
Build new functions from existing functions.

Lesson 4.07 - Solve Radical Equations

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Unit 4: Complex Numbers & Radical Expressions

HS Algebra 2

Assessment Level (DOK): 2

Description: Students solve radical equations, using algebraic techniques to isolate the radical and find solutions.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
HSA.REI.A.2
Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.
HSF.BF.B.4a
Solve an equation of the form $f(x) = c$ (where c represents the output value of the function) for a simple function f that has an inverse and write an expression for the inverse. For example, if $f(x) = 2x^3$, then solving $f(x) = c$ leads to $x = (c/2)^{1/3}$, which is the general formula for finding an input from a specific output, c , for this function.
HSA.REI.D.11
Explain why the x -coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.
AR.A.9
Solve equations and inequalities in one variable.

Lesson 4.08 - Unit Review

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 2

Description: A full class session is dedicated to reviewing the skills and concepts from this unit. Students complete practice problems, review vocabulary and definitions, and revisit challenging problems from earlier lessons.

Lesson 4.09 - Unit Assessment

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 3

Description: A full class session is used for a summative exam, assessing students on all covered material in the unit.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

Unit 4: Complex Numbers & Radical Expressions

HS Algebra 2

AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1
Interpret expressions that represent a quantity in terms of its context.
HSA.SSE.A.1a
Interpret parts of an expression, such as terms, factors, and coefficients.
AR.A.2
Write expressions in equivalent forms to reveal information and to solve problems.
HSA.SSE.B.3
Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.
HSA.REI.A.2
Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.
AR.A.9
Solve equations and inequalities in one variable.
HSA.REI.D.11
Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.
AR.A.13
Interpret functions that arise in applications in terms of the context.
HSF.IF.B.4
For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.

Unit 4: Complex Numbers & Radical Expressions

HS Algebra 2

HSF.IF.B.5

Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.

HSF.IF.C.7b.i

Graph square root and piecewise-defined functions, (including step functions and absolute value functions), as well as show and describe key features of the graph.

AR.A.16

Build new functions from existing functions.

HSF.BF.B.3

Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.

HSF.BF.B.4a

Solve an equation of the form $f(x) = c$ (where c represents the output value of the function) for a simple function f that has an inverse and write an expression for the inverse. For example, if $f(x) = 2x^3$, then solving $f(x) = c$ leads to $x = (c/2)^{1/3}$, which is the general formula for finding an input from a specific output, c , for this function.

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QR.A.4

Perform arithmetic operations with complex numbers.

HSN.CN.A.1

Know there is a complex number i (which is a non-real number) such that $i^2 = -1$, and every complex number has the form $a + bi$ with a and b real.

HSN.CN.A.2

Use the relation $i^2 = -1$ and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers.

HSN.CN.A.3

Find the conjugate of a complex number; use conjugates to find moduli and quotients of complex numbers.

Unit 5: Quadratic Functions

HS Algebra 2

UNIT SUMMARY

This unit focuses on quadratic functions and equations, and considering their various forms, properties, and methods of solving. Students begin by exploring the characteristics of quadratic functions and graphing them. They then learn to convert between standard, vertex, and factored forms, and apply factoring techniques to solve equations. The unit concludes with generalized solving techniques, those being completing the square and the quadratic formula.

STANDARDS

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HSF.IF.C.8a
Use the process of factoring and completing the square in a quadratic function to show zeros, maximum and minimum values, and symmetry of the graph, and interpret these in terms of a context.
HSA.REI.D.10
Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). Show that any point on the graph of an equation in two variables is a solution to the equation.
HSA.REI.B.4
Solve quadratic equations in one variable.
HSA.REI.B.4a
Use the method of completing the square to transform any quadratic equation in x into an equation of the form $(x - p)^2 = q$ that has the same solutions. Derive the quadratic formula from this form.
HSA.REI.B.4b.i
Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation.
HSA.REI.B.4b.ii
Recognize when the quadratic formula gives complex solutions and write them as $a \pm bi$ for real numbers a and b .
HSF.BF.A.1
Write a function that describes a relationship between two quantities.
HSF.IF.B.4
For a function that models a relationship between two quantities, interpret key features of graphs and tables in

Unit 5: Quadratic Functions

HS Algebra 2

terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.

HSF.IF.C.7

Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in simple cases and using technology for more complicated cases.

HSF.IF.C.7a

Graph linear and quadratic functions and show intercepts, maxima, and minima.

HSA.SSE.B.3a

Rewrite a quadratic expression (such as by factoring) to reveal the zeros of the function it defines.

HSA.SSE.B.3b

Rewrite a quadratic expression (such as by completing the square) to reveal the maximum or minimum value of the function it defines.

HSA.CED.A.1

Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.

HSF.IF.C.9

Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.

HSA.SSE.A.1a

Interpret parts of an expression, such as terms, factors, and coefficients.

AR.A.1

Interpret the structure of expressions.

HSA.SSE.A.1

Interpret expressions that represent a quantity in terms of its context.

AR.A.2

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Write expressions in equivalent forms to reveal information and to solve problems.

HSA.SSE.B.3

Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.

AR.A.7

Create equations and/or inequalities that describe numbers or relationships.

AR.A.9

Solve equations and inequalities in one variable.

AR.A.11

Represent and solve equations and inequalities graphically.

AR.A.14

Analyze functions using different representations.

HSF.IF.C.8

Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.

AR.A.15

Build a function that models a relationship between two quantities.

HSF.BF.B.3

Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.

AR.A.16

Build new functions from existing functions.

HSF.BF.B.4a

Solve an equation of the form $f(x) = c$ (where c represents the output value of the function) for a simple function f that has an inverse and write an expression for the inverse. For example, if $f(x) = 2x^3$, then solving $f(x) = c$ leads to

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$x = (c/2)^{1/3}$, which is the general formula for finding an input from a specific output, c , for this function.

HSA.REI.D.11

Explain why the x -coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.

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HSN.CN.C.7

Solve quadratic equations with real coefficients that have complex solutions.

HSN.CN.C.9

Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials.

Unit 5: Quadratic Functions

HS Algebra 2

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Lesson 5.01 - Graphing Quadratic Functions

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students examine the characteristics of quadratic functions from their equations and practice graphing them, identifying key features such as axis of symmetry, intercepts, and the vertex.

STANDARDS

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AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1a
Interpret parts of an expression, such as terms, factors, and coefficients.
AR.A.7
Create equations and/or inequalities that describe numbers or relationships.
HSA.REI.D.10
Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). Show that any point on the graph of an equation in two variables is a solution to the equation.
HSF.IF.B.4
For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.
AR.A.14
Analyze functions using different representations.
HSF.IF.C.7a
Graph linear and quadratic functions and show intercepts, maxima, and minima.
HSF.IF.C.7

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Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in simple cases and using technology for more complicated cases.

HSF.IF.C.9

Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

AR.A.15

Build a function that models a relationship between two quantities.

HSA.REI.D.11

Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.

Lesson 5.02 - Forms of a Quadratic Function

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 3

Description: Students learn to rewrite quadratic functions in vertex form and match functions to their graphs, strengthening their understanding of how different forms reveal different function properties.

STANDARDS

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AR.A.1

Interpret the structure of expressions.

HSA.SSE.A.1

Interpret expressions that represent a quantity in terms of its context.

HSA.SSE.A.1a

Interpret parts of an expression, such as terms, factors, and coefficients.

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AR.A.2
Write expressions in equivalent forms to reveal information and to solve problems.
HSA.SSE.B.3
Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.
HSA.SSE.B.3b
Rewrite a quadratic expression (such as by completing the square) to reveal the maximum or minimum value of the function it defines.
AR.A.7
Create equations and/or inequalities that describe numbers or relationships.
HSF.IF.B.4
For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.
HSA.REI.D.10
Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). Show that any point on the graph of an equation in two variables is a solution to the equation.
AR.A.14
Analyze functions using different representations.
HSF.IF.C.7
Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in simple cases and using technology for more complicated cases.
HSF.IF.C.7a
Graph linear and quadratic functions and show intercepts, maxima, and minima.
HSF.IF.C.8
Write a function defined by an expression in different but equivalent forms to reveal and explain different

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properties of the function.

HSF.IF.C.8a

Use the process of factoring and completing the square in a quadratic function to show zeros, maximum and minimum values, and symmetry of the graph, and interpret these in terms of a context.

HSF.IF.C.9

Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.

HSF.BF.B.3

Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

AR.A.15

Build a function that models a relationship between two quantities.

HSA.REI.D.11

Explain why the x -coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.

Lesson 5.03 - Factoring Quadratics

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 3

Description: Students solve quadratic equations by factoring and applying factoring patterns. Solutions are understood graphically and tested with substitution.

STANDARDS

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AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1
Interpret expressions that represent a quantity in terms of its context.
HSA.SSE.A.1a
Interpret parts of an expression, such as terms, factors, and coefficients.
AR.A.2
Write expressions in equivalent forms to reveal information and to solve problems.
HSA.SSE.B.3
Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.
HSA.SSE.B.3a
Rewrite a quadratic expression (such as by factoring) to reveal the zeros of the function it defines.
HSA.REI.B.4
Solve quadratic equations in one variable.
AR.A.9
Solve equations and inequalities in one variable.
HSA.REI.B.4b.i
Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation.
HSF.IF.C.8a
Use the process of factoring and completing the square in a quadratic function to show zeros, maximum and minimum values, and symmetry of the graph, and interpret these in terms of a context.
HSF.IF.C.8
Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.

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HSA.REI.D.11

Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.

Lesson 5.04 - Mid-Unit Assessment

Assessment Type: Summative / Diagnostic

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 3

Description: Students complete a mid-unit assessment covering graphing quadratic functions, converting forms, and solving quadratic equations by factoring.

STANDARDS

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AR.A.1

Interpret the structure of expressions.

HSA.SSE.A.1

Interpret expressions that represent a quantity in terms of its context.

HSA.SSE.A.1a

Interpret parts of an expression, such as terms, factors, and coefficients.

AR.A.2

Write expressions in equivalent forms to reveal information and to solve problems.

HSA.SSE.B.3

Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.

HSA.SSE.B.3a

Rewrite a quadratic expression (such as by factoring) to reveal the zeros of the function it defines.

HSA.SSE.B.3b

Rewrite a quadratic expression (such as by completing the square) to reveal the maximum or minimum value of the function it defines.

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AR.A.7
Create equations and/or inequalities that describe numbers or relationships.
HSA.REI.B.4
Solve quadratic equations in one variable.
AR.A.9
Solve equations and inequalities in one variable.
HSA.REI.B.4b.i
Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation.
HSA.REI.D.10
Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). Show that any point on the graph of an equation in two variables is a solution to the equation.
HSA.REI.D.11
Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.
AR.A.14
Analyze functions using different representations.
HSF.IF.C.7
Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in simple cases and using technology for more complicated cases.
HSF.IF.C.7a
Graph linear and quadratic functions and show intercepts, maxima, and minima.
HSF.IF.B.4
For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key

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features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.

AR.A.11

Represent and solve equations and inequalities graphically.

HSF.IF.C.8a

Use the process of factoring and completing the square in a quadratic function to show zeros, maximum and minimum values, and symmetry of the graph, and interpret these in terms of a context.

HSF.IF.C.9

Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.

Lesson 5.05 - Completing the Square

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 3

Description: Students learn to complete the square to rewrite quadratic functions and solve quadratic equations, further reinforcing connections between algebraic manipulation and graphing.

STANDARDS

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AR.A.1

Interpret the structure of expressions.

HSA.SSE.A.1a

Interpret parts of an expression, such as terms, factors, and coefficients.

AR.A.2

Write expressions in equivalent forms to reveal information and to solve problems.

HSA.SSE.B.3

Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.

HSA.SSE.B.3b

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Rewrite a quadratic expression (such as by completing the square) to reveal the maximum or minimum value of the function it defines.

AR.A.9

Solve equations and inequalities in one variable.

HSA.REI.B.4

Solve quadratic equations in one variable.

HSA.REI.B.4a

Use the method of completing the square to transform any quadratic equation in x into an equation of the form $(x - p)^2 = q$ that has the same solutions. Derive the quadratic formula from this form.

AR.A.14

Analyze functions using different representations.

HSF.IF.C.8

Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.

HSF.BF.B.4a

Solve an equation of the form $f(x) = c$ (where c represents the output value of the function) for a simple function f that has an inverse and write an expression for the inverse. For example, if $f(x) = 2x^3$, then solving $f(x) = c$ leads to $x = (c/2)^{1/3}$, which is the general formula for finding an input from a specific output, c , for this function.

HSA.REI.B.4b.i

Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation.

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HSN.CN.C.7

Solve quadratic equations with real coefficients that have complex solutions.

HSN.CN.C.9

Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials.

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Lesson 5.06 - Quadratic Formula

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students apply the quadratic formula to solve quadratic equations, and use the discriminant to determine the number and type of solutions.

STANDARDS

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AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1
Interpret expressions that represent a quantity in terms of its context.
HSA.SSE.A.1a
Interpret parts of an expression, such as terms, factors, and coefficients.
AR.A.2
Write expressions in equivalent forms to reveal information and to solve problems.
HSA.SSE.B.3
Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.
AR.A.7
Create equations and/or inequalities that describe numbers or relationships.
HSA.CED.A.1
Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.
AR.A.9
Solve equations and inequalities in one variable.
HSA.REI.B.4

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Solve quadratic equations in one variable.
HSA.REI.B.4b.i
Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation.
HSA.REI.B.4b.ii
Recognize when the quadratic formula gives complex solutions and write them as $a \pm bi$ for real numbers a and b .
AR.A.11
Represent and solve equations and inequalities graphically.
HSA.REI.D.11
Explain why the x -coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.
HSF.IF.C.7
Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in simple cases and using technology for more complicated cases.
HSF.IF.C.7a
Graph linear and quadratic functions and show intercepts, maxima, and minima.
HSF.BF.B.4a
Solve an equation of the form $f(x) = c$ (where c represents the output value of the function) for a simple function f that has an inverse and write an expression for the inverse. For example, if $f(x) = 2x^3$, then solving $f(x) = c$ leads to $x = (c/2)^{1/3}$, which is the general formula for finding an input from a specific output, c , for this function.
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HSN.CN.C.7
Solve quadratic equations with real coefficients that have complex solutions.
HSN.CN.C.9
Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials.

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Lesson 5.07 - Unit Review

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 2

Description: A full class session is dedicated to reviewing the skills and concepts from this unit. Students complete practice problems, review vocabulary and definitions, and revisit challenging problems from earlier lessons.

Lesson 5.08 - Unit Assessment

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 3

Description: A full class session is used for a summative exam, assessing students on all covered material in the unit.

STANDARDS

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AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1
Interpret expressions that represent a quantity in terms of its context.
HSA.SSE.A.1a
Interpret parts of an expression, such as terms, factors, and coefficients.
AR.A.2
Write expressions in equivalent forms to reveal information and to solve problems.
HSA.SSE.B.3
Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.
HSA.SSE.B.3a
Rewrite a quadratic expression (such as by factoring) to reveal the zeros of the function it defines.
HSA.SSE.B.3b
Rewrite a quadratic expression (such as by completing the square) to reveal the maximum or minimum value of

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the function it defines.

AR.A.7

Create equations and/or inequalities that describe numbers or relationships.

HSA.CED.A.1

Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.

AR.A.9

Solve equations and inequalities in one variable.

HSA.REI.B.4

Solve quadratic equations in one variable.

HSA.REI.B.4a

Use the method of completing the square to transform any quadratic equation in x into an equation of the form $(x - p)^2 = q$ that has the same solutions. Derive the quadratic formula from this form.

HSA.REI.B.4b.i

Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation.

HSA.REI.B.4b.ii

Recognize when the quadratic formula gives complex solutions and write them as $a \pm bi$ for real numbers a and b .

AR.A.11

Represent and solve equations and inequalities graphically.

HSA.REI.D.10

Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). Show that any point on the graph of an equation in two variables is a solution to the equation.

HSA.REI.D.11

Explain why the x -coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the

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functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.

HSF.IF.B.4

For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.

AR.A.14

Analyze functions using different representations.

HSF.IF.C.7

Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in simple cases and using technology for more complicated cases.

HSF.IF.C.7a

Graph linear and quadratic functions and show intercepts, maxima, and minima.

HSF.IF.C.8

Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.

HSF.IF.C.8a

Use the process of factoring and completing the square in a quadratic function to show zeros, maximum and minimum values, and symmetry of the graph, and interpret these in terms of a context.

HSF.IF.C.9

Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.

AR.A.15

Build a function that models a relationship between two quantities.

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

Unit 5: Quadratic Functions

HS Algebra 2

AR.A.16

Build new functions from existing functions.

HSF.BF.B.3

Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.

HSF.BF.B.4a

Solve an equation of the form $f(x) = c$ (where c represents the output value of the function) for a simple function f that has an inverse and write an expression for the inverse. For example, if $f(x) = 2x^3$, then solving $f(x) = c$ leads to $x = (c/2)^{1/3}$, which is the general formula for finding an input from a specific output, c , for this function.

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HSN.CN.C.7

Solve quadratic equations with real coefficients that have complex solutions.

HSN.CN.C.9

Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials.

Unit 6: Polynomial Functions

HS Algebra 2

UNIT SUMMARY

Students are introduced to polynomial functions and their key characteristics, operations, and applications. Students begin by reviewing exponent rules and performing operations with polynomials. They learn to graph polynomial functions using end behavior and zeros, identify and write polynomials from their roots, and apply factoring techniques. Additional factoring techniques are learned and practiced, including factoring by grouping, u-substitution, and polynomial long division.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
HSA.SSE.A.1b
Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.
AR.A.14
Analyze functions using different representations.
AR.A.3
Perform arithmetic operations on polynomials.
HSF.IF.B.4
For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.
HSF.IF.C.7c
Graph polynomial functions of degree three or higher, identifying zeros when suitable factorizations (in factored form or easily factorable) are available, and showing end behavior.
HSA.CED.A.1
Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.
HSA.APR.B.3
Identify zeros of polynomials of degree three or higher when suitable factorizations (in factored form or easily factorable) are available, and use the zeros to construct a rough graph of the function defined by the polynomial.
HSA.APR.B.2

Unit 6: Polynomial Functions

HS Algebra 2

Know and apply the Remainder Theorem: For a polynomial $p(x)$ and a number a , the remainder on division by $x - a$ is $p(a)$, so $p(a) = 0$ if and only if $(x - a)$ is a factor of $p(x)$. For example, consider the polynomial function $P(x) = x^4 - 2x^3 + ax^2 + 8x + 12$, where a is an unknown real number. If $(x - 3)$ is a factor of this polynomial, what is the value of a ?

HSA.APR.D.6

Rewrite simple rational expressions in different forms; write $a(x)/b(x)$ in the form $q(x) + r(x)/b(x)$, where $a(x)$, $b(x)$, $q(x)$, and $r(x)$ are polynomials with the degree of $r(x)$ less than the degree of $b(x)$, using inspection, long division, or, for the more complicated examples, a computer algebra system.

HSA.APR.A.1

Understand that polynomials form a system analogous to the integers, namely, they are closed under certain operations.

HSA.APR.A.1a

Perform operations on polynomial expressions (addition, subtraction, multiplication, and division), and compare the system of polynomials to the system of integers.

HSA.APR.A.1b

Factor and/or expand polynomial expressions, identify and combine like terms, and apply the Distributive Property.

AR.A.4

Understand the relationship between zeros and factors of polynomials.

AR.A.5

Use polynomial identities to solve problems.

HSA.SSE.A.1a

Interpret parts of an expression, such as terms, factors, and coefficients.

HSA.SSE.A.2

Use the structure of an expression to identify ways to rewrite it. For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, allowing for it to be recognized as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$.

AR.A.1

Interpret the structure of expressions.

AR.A.2

Unit 6: Polynomial Functions

HS Algebra 2

Write expressions in equivalent forms to reveal information and to solve problems.

HSA.SSE.B.3

Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.

AR.A.6

Rewrite rational expressions.

HSF.IF.C.7

Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in simple cases and using technology for more complicated cases.

HSA.REI.D.11

Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.

AR.A.15

Build a function that models a relationship between two quantities.

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

HSF.IF.C.9

Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.

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QR.A.6

Use complex numbers in polynomial identities and equations.

HSN.CN.C.8

Extend polynomial identities to the complex numbers. For example, rewrite $x^2 + 4$ as $(x + 2i)(x - 2i)$.

Unit 6: Polynomial Functions

HS Algebra 2

QR.A.2

Use properties of rational and irrational numbers.

HSN.CN.C.9

Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials.

QR.A.1

Extend the properties of exponents to rational exponents.

HSN.RN.A.1

Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. For example, we define $5^{1/3}$ to be the cube root of 5 because we want $(5^{1/3})^3 = 5(1/3)^3$ to hold, so $(5^{1/3})^3$ must equal 5.

HSN.RN.A.2

Rewrite expressions involving radicals and rational exponents using the properties of exponents.

Unit 6: Polynomial Functions

HS Algebra 2

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Lesson 6.01 - Properties of Exponents

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students review the power rule and simplify expressions involving rational exponents, preparing foundational skills for polynomial operations.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1a
Interpret parts of an expression, such as terms, factors, and coefficients.
Maine - High School - Mathematics - Quantitative Reasoning (2020)
QR.A.1
Extend the properties of exponents to rational exponents.

Lesson 6.02 - Operations with Polynomials

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students practice adding, subtracting, and multiplying polynomials, identifying like terms and applying distributive and exponent rules.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1a
Interpret parts of an expression, such as terms, factors, and coefficients.
AR.A.3

Unit 6: Polynomial Functions

HS Algebra 2

Perform arithmetic operations on polynomials.

HSA.APR.A.1

Understand that polynomials form a system analogous to the integers, namely, they are closed under certain operations.

HSA.APR.A.1a

Perform operations on polynomial expressions (addition, subtraction, multiplication, and division), and compare the system of polynomials to the system of integers.

HSA.APR.A.1b

Factor and/or expand polynomial expressions, identify and combine like terms, and apply the Distributive Property.

Lesson 6.03 - Graphing Polynomial Functions

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students learn to match polynomial functions to their graphs by analyzing end behavior and zeros, connecting function forms to graphical features.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

AR.A.4

Understand the relationship between zeros and factors of polynomials.

HSA.APR.B.3

Identify zeros of polynomials of degree three or higher when suitable factorizations (in factored form or easily factorable) are available, and use the zeros to construct a rough graph of the function defined by the polynomial.

HSA.REI.D.11

Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.

HSF.IF.B.4

For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key

Unit 6: Polynomial Functions

HS Algebra 2

features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.

AR.A.14

Analyze functions using different representations.

HSF.IF.C.7

Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in simple cases and using technology for more complicated cases.

HSF.IF.C.7c

Graph polynomial functions of degree three or higher, identifying zeros when suitable factorizations (in factored form or easily factorable) are available, and showing end behavior.

HSF.IF.C.9

Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.

Lesson 6.04 - Roots & Zeros of Polynomial Functions

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students find the roots of factored polynomials and practice writing polynomials given their roots, reinforcing the connection between factors and zeros.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

AR.A.1

Interpret the structure of expressions.

HSA.SSE.A.1a

Interpret parts of an expression, such as terms, factors, and coefficients.

HSA.SSE.A.1b

Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.

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HS Algebra 2

HSA.APR.A.1b
Factor and/or expand polynomial expressions, identify and combine like terms, and apply the Distributive Property.
AR.A.4
Understand the relationship between zeros and factors of polynomials.
HSA.APR.B.3
Identify zeros of polynomials of degree three or higher when suitable factorizations (in factored form or easily factorable) are available, and use the zeros to construct a rough graph of the function defined by the polynomial.
HSF.IF.B.4
For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.
AR.A.14
Analyze functions using different representations.
HSA.CED.A.1
Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.
AR.A.15
Build a function that models a relationship between two quantities.
HSF.BF.A.1
Write a function that describes a relationship between two quantities.

Lesson 6.05 - Mid-Unit Assessment

Assessment Type: Summative / Diagnostic

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 3

Description: Students complete a mid-unit assessment covering exponent rules, polynomial operations, graphing, and finding roots.

STANDARDS

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Unit 6: Polynomial Functions

HS Algebra 2

AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1a
Interpret parts of an expression, such as terms, factors, and coefficients.
HSA.SSE.A.1b
Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.
AR.A.3
Perform arithmetic operations on polynomials.
HSA.SSE.B.3
Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.
HSA.APR.A.1
Understand that polynomials form a system analogous to the integers, namely, they are closed under certain operations.
HSA.APR.A.1a
Perform operations on polynomial expressions (addition, subtraction, multiplication, and division), and compare the system of polynomials to the system of integers.
HSA.APR.A.1b
Factor and/or expand polynomial expressions, identify and combine like terms, and apply the Distributive Property.
AR.A.4
Understand the relationship between zeros and factors of polynomials.
HSA.APR.B.3
Identify zeros of polynomials of degree three or higher when suitable factorizations (in factored form or easily factorable) are available, and use the zeros to construct a rough graph of the function defined by the polynomial.
HSA.CED.A.1
Create equations and inequalities in one variable and use them to solve problems. Include equations arising from

Unit 6: Polynomial Functions

HS Algebra 2

linear and quadratic functions, and simple rational and exponential functions.

HSA.REI.D.11

Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.

HSF.IF.B.4

For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.

AR.A.14

Analyze functions using different representations.

HSF.IF.C.7

Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in simple cases and using technology for more complicated cases.

HSF.IF.C.7c

Graph polynomial functions of degree three or higher, identifying zeros when suitable factorizations (in factored form or easily factorable) are available, and showing end behavior.

HSF.IF.C.9

Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.

AR.A.15

Build a function that models a relationship between two quantities.

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

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QR.A.1

Unit 6: Polynomial Functions

HS Algebra 2

Extend the properties of exponents to rational exponents.

HSN.RN.A.1

Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. For example, we define $5^{1/3}$ to be the cube root of 5 because we want $(5^{1/3})^3 = 5(1/3)^3$ to hold, so $(5^{1/3})^3$ must equal 5.

HSN.RN.A.2

Rewrite expressions involving radicals and rational exponents using the properties of exponents.

Lesson 6.06 - Factoring Polynomials

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 3

Description: Students factor polynomials using quadratic patterns and grouping techniques, applying multiple factoring strategies to simplify expressions.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

AR.A.1

Interpret the structure of expressions.

HSA.SSE.A.1a

Interpret parts of an expression, such as terms, factors, and coefficients.

HSA.SSE.A.1b

Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.

HSA.SSE.A.2

Use the structure of an expression to identify ways to rewrite it. For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, allowing for it to be recognized as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$.

AR.A.2

Write expressions in equivalent forms to reveal information and to solve problems.

HSA.SSE.B.3

Unit 6: Polynomial Functions

HS Algebra 2

Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.

HSA.APR.A.1b

Factor and/or expand polynomial expressions, identify and combine like terms, and apply the Distributive Property.

AR.A.5

Use polynomial identities to solve problems.

Lesson 6.07 - Polynomial Long Division

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 3

Description: Students divide polynomials using both long division and synthetic division, interpreting remainders and verifying results graphically.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

AR.A.1

Interpret the structure of expressions.

HSA.SSE.A.1a

Interpret parts of an expression, such as terms, factors, and coefficients.

AR.A.2

Write expressions in equivalent forms to reveal information and to solve problems.

HSA.SSE.B.3

Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.

AR.A.3

Perform arithmetic operations on polynomials.

HSA.APR.A.1

Understand that polynomials form a system analogous to the integers, namely, they are closed under certain operations.

Unit 6: Polynomial Functions

HS Algebra 2

HSA.APR.A.1a

Perform operations on polynomial expressions (addition, subtraction, multiplication, and division), and compare the system of polynomials to the system of integers.

HSA.APR.B.2

Know and apply the Remainder Theorem: For a polynomial $p(x)$ and a number a , the remainder on division by $x - a$ is $p(a)$, so $p(a) = 0$ if and only if $(x - a)$ is a factor of $p(x)$. For example, consider the polynomial function $P(x) = x^4 - 2x^3 + ax^2 + 8x + 12$, where a is an unknown real number. If $(x - 3)$ is a factor of this polynomial, what is the value of a ?

AR.A.6

Rewrite rational expressions.

HSA.APR.D.6

Rewrite simple rational expressions in different forms; write $a(x)/b(x)$ in the form $q(x) + r(x)/b(x)$, where $a(x)$, $b(x)$, $q(x)$, and $r(x)$ are polynomials with the degree of $r(x)$ less than the degree of $b(x)$, using inspection, long division, or, for the more complicated examples, a computer algebra system.

Lesson 6.08 - Solve Polynomial Equations

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 3

Description: Students solve polynomial equations using a mix of factoring techniques and testing roots. When no common factoring pattern works, roots are found using graphing or theorems, and a factoring step is done with long division.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

HSA.SSE.A.2

Use the structure of an expression to identify ways to rewrite it. For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, allowing for it to be recognized as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$.

AR.A.2

Write expressions in equivalent forms to reveal information and to solve problems.

HSA.SSE.B.3

Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity

Unit 6: Polynomial Functions

HS Algebra 2

represented by the expression.

HSA.APR.A.1b

Factor and/or expand polynomial expressions, identify and combine like terms, and apply the Distributive Property.

AR.A.4

Understand the relationship between zeros and factors of polynomials.

AR.A.5

Use polynomial identities to solve problems.

HSA.CED.A.1

Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.

AR.A.1

Interpret the structure of expressions.

HSA.SSE.A.1a

Interpret parts of an expression, such as terms, factors, and coefficients.

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QR.A.2

Use properties of rational and irrational numbers.

QR.A.6

Use complex numbers in polynomial identities and equations.

HSN.CN.C.8

Extend polynomial identities to the complex numbers. For example, rewrite $x^2 + 4$ as $(x + 2i)(x - 2i)$.

HSN.CN.C.9

Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials.

Unit 6: Polynomial Functions

HS Algebra 2

Lesson 6.09 - Unit Review

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 2

Description: A full class session is dedicated to reviewing the skills and concepts from this unit. Students complete practice problems, review vocabulary and definitions, and revisit challenging problems from earlier lessons.

Lesson 6.10 - Unit Assessment

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 3

Description: A full class session is used for a summative exam, assessing students on all covered material in the unit.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1a
Interpret parts of an expression, such as terms, factors, and coefficients.
HSA.SSE.A.1b
Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.
HSA.SSE.A.2
Use the structure of an expression to identify ways to rewrite it. For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, allowing for it to be recognized as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$.
AR.A.2
Write expressions in equivalent forms to reveal information and to solve problems.
HSA.SSE.B.3
Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.

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HS Algebra 2

AR.A.3
Perform arithmetic operations on polynomials.
HSA.APR.A.1
Understand that polynomials form a system analogous to the integers, namely, they are closed under certain operations.
HSA.APR.A.1a
Perform operations on polynomial expressions (addition, subtraction, multiplication, and division), and compare the system of polynomials to the system of integers.
HSA.APR.A.1b
Factor and/or expand polynomial expressions, identify and combine like terms, and apply the Distributive Property.
AR.A.4
Understand the relationship between zeros and factors of polynomials.
HSA.APR.B.2
Know and apply the Remainder Theorem: For a polynomial $p(x)$ and a number a , the remainder on division by $x - a$ is $p(a)$, so $p(a) = 0$ if and only if $(x - a)$ is a factor of $p(x)$. For example, consider the polynomial function $P(x) = x^4 - 2x^3 + ax^2 + 8x + 12$, where a is an unknown real number. If $(x-3)$ is a factor of this polynomial, what is the value of a ?
HSA.APR.B.3
Identify zeros of polynomials of degree three or higher when suitable factorizations (in factored form or easily factorable) are available, and use the zeros to construct a rough graph of the function defined by the polynomial.
AR.A.5
Use polynomial identities to solve problems.
AR.A.6
Rewrite rational expressions.
HSA.APR.D.6
Rewrite simple rational expressions in different forms; write $a(x)/b(x)$ in the form $q(x) + r(x)/b(x)$, where $a(x)$, $b(x)$, $q(x)$, and $r(x)$ are polynomials with the degree of $r(x)$ less than the degree of $b(x)$, using inspection, long division, or, for the more complicated examples, a computer algebra system.

Unit 6: Polynomial Functions

HS Algebra 2

HSA.CED.A.1

Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.

HSA.REI.D.11

Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.

HSF.IF.B.4

For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.

AR.A.14

Analyze functions using different representations.

HSF.IF.C.7

Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in simple cases and using technology for more complicated cases.

HSF.IF.C.7c

Graph polynomial functions of degree three or higher, identifying zeros when suitable factorizations (in factored form or easily factorable) are available, and showing end behavior.

HSF.IF.C.9

Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.

AR.A.15

Build a function that models a relationship between two quantities.

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

Unit 6: Polynomial Functions

HS Algebra 2

Maine - High School - Mathematics - Quantitative Reasoning (2020)
QR.A.1
Extend the properties of exponents to rational exponents.
HSN.RN.A.1
Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. For example, we define $5^{1/3}$ to be the cube root of 5 because we want $(5^{1/3})^3 = 5(1/3)^3$ to hold, so $(5^{1/3})^3$ must equal 5.
HSN.RN.A.2
Rewrite expressions involving radicals and rational exponents using the properties of exponents.
QR.A.2
Use properties of rational and irrational numbers.
QR.A.6
Use complex numbers in polynomial identities and equations.
HSN.CN.C.8
Extend polynomial identities to the complex numbers. For example, rewrite $x^2 + 4$ as $(x + 2i)(x - 2i)$.
HSN.CN.C.9
Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials.

Unit 7: Exponential Functions

HS Algebra 2

UNIT SUMMARY

This unit focuses on exponential functions, their properties, and real-world applications. Students begin with a continued exploration of exponential properties with evaluating radicals and rational exponents. Students learn about exponential growth and decay as equations and graphs, apply these concepts to financial problems like compound interest, and practice solving exponential equations by rewriting bases.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

HSF.IF.B.4

For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.

HSA.CED.A.1

Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.

HSF.IF.C.7e.i

Graph exponential functions, showing intercepts and end behavior, and

HSA.SSE.B.3c

Use the properties of exponents to transform expressions for exponential functions. For example, the expression $1.15t$ can be rewritten as $(1.151/12)12t \approx 1.01212t$ to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.

HSA.REI.D.11

Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.

HSF.IF.C.8b

Use the properties of exponents to interpret expressions for exponential functions. For example, apply the properties to financial situations such as identifying appreciation and depreciation rate for the value of a house or car sometime after its initial purchase: $V_n = P(1 + r)^n$.

HSF.BF.A.1b

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Combine standard function types using arithmetic operations. For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.

AR.A.17

Construct and compare linear, quadratic, and exponential models and solve problems.

HSF.LE.A.1

Distinguish between situations that can be modeled with linear functions and with exponential functions.

HSF.LE.A.1a

Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.

HSF.LE.A.2

Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).

HSF.LE.A.3

Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.

HSF.LE.B.5

Interpret the parameters in a linear or exponential function in terms of a context.

AR.A.1

Interpret the structure of expressions.

HSA.SSE.A.1

Interpret expressions that represent a quantity in terms of its context.

AR.A.7

Create equations and/or inequalities that describe numbers or relationships.

AR.A.9

Solve equations and inequalities in one variable.

AR.A.8

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Understand solving equations as a process of reasoning and explain the reasoning.

HSA.REI.D.10

Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). Show that any point on the graph of an equation in two variables is a solution to the equation.

AR.A.12

Understand the concept of a function and use function notation.

HSF.IF.A.1

Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x . The graph of f is the graph of the equation $y = f(x)$.

HSF.IF.A.2

Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.

AR.A.13

Interpret functions that arise in applications in terms of the context.

HSF.IF.B.5

Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.

AR.A.14

Analyze functions using different representations.

HSF.IF.C.8

Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.

HSF.IF.C.9

Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.

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AR.A.15
Build a function that models a relationship between two quantities.
HSF.BF.A.1
Write a function that describes a relationship between two quantities.
HSF.LE.A.1c
Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.
AR.A.18
Interpret expressions for function in terms of the situation they model.
HSA.SSE.A.1b
Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.
HSF.BF.A.1a
Determine an explicit expression, a recursive process, or steps for calculation from a context.
Maine - High School - Mathematics - Quantitative Reasoning (2020)
HSN.RN.A.1
Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. For example, we define $5^{1/3}$ to be the cube root of 5 because we want $(5^{1/3})^3 = 5(1/3)^3$ to hold, so $(5^{1/3})^3$ must equal 5.
QR.A.1
Extend the properties of exponents to rational exponents.
HSN.RN.A.2
Rewrite expressions involving radicals and rational exponents using the properties of exponents.

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ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Lesson 7.01 - Evaluating Exponents & Radicals

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students practice simplifying radical expressions and evaluating expressions with rational exponents, reinforcing foundational skills for exponential functions.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1
Interpret expressions that represent a quantity in terms of its context.
Maine - High School - Mathematics - Quantitative Reasoning (2020)
QR.A.1
Extend the properties of exponents to rational exponents.
HSN.RN.A.1
Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. For example, we define $5^{1/3}$ to be the cube root of 5 because we want $(5^{1/3})^3 = 5(1/3)^3$ to hold, so $(5^{1/3})^3$ must equal 5.
HSN.RN.A.2
Rewrite expressions involving radicals and rational exponents using the properties of exponents.

Lesson 7.02 - Graphing Exponential Functions

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students learn to graph exponential functions and match equations to graphs by identifying key features, such as growth or decay behavior and asymptotes.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

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AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1
Interpret expressions that represent a quantity in terms of its context.
HSA.SSE.A.1b
Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.
HSA.REI.D.10
Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). Show that any point on the graph of an equation in two variables is a solution to the equation.
AR.A.12
Understand the concept of a function and use function notation.
HSF.IF.A.1
Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x . The graph of f is the graph of the equation $y = f(x)$.
AR.A.13
Interpret functions that arise in applications in terms of the context.
HSF.IF.B.4
For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.
HSF.IF.C.7e.i
Graph exponential functions, showing intercepts and end behavior, and
HSF.IF.C.8
Write a function defined by an expression in different but equivalent forms to reveal and explain different

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properties of the function.

AR.A.14

Analyze functions using different representations.

HSF.IF.C.9

Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.

AR.A.15

Build a function that models a relationship between two quantities.

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

HSF.BF.A.1b

Combine standard function types using arithmetic operations. For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.

HSF.LE.A.1a

Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.

HSF.LE.A.1c

Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.

HSF.LE.A.2

Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).

HSF.LE.A.3

Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.

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Lesson 7.03 - Exponential Growth & Decay

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students apply exponential functions to solve real-world growth and decay word problems, interpreting results in appropriate contexts.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
HSA.SSE.A.1b
Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.
AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1
Interpret expressions that represent a quantity in terms of its context.
HSF.IF.A.2
Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.
AR.A.12
Understand the concept of a function and use function notation.
AR.A.13
Interpret functions that arise in applications in terms of the context.
HSF.IF.B.4
For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.
HSF.IF.B.5
Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For

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example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.

HSF.IF.C.8b

Use the properties of exponents to interpret expressions for exponential functions. For example, apply the properties to financial situations such as identifying appreciation and depreciation rate for the value of a house or car sometime after its initial purchase: $V_n = P(1 + r)^n$.

AR.A.15

Build a function that models a relationship between two quantities.

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

HSF.BF.A.1a

Determine an explicit expression, a recursive process, or steps for calculation from a context.

AR.A.17

Construct and compare linear, quadratic, and exponential models and solve problems.

HSF.LE.A.1

Distinguish between situations that can be modeled with linear functions and with exponential functions.

HSF.LE.A.1a

Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.

HSF.LE.A.1c

Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.

HSF.LE.A.2

Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).

AR.A.18

Interpret expressions for function in terms of the situation they model.

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HSF.LE.B.5

Interpret the parameters in a linear or exponential function in terms of a context.

Lesson 7.04 - Mid-Unit Assessment

Assessment Type: Summative / Diagnostic

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 3

Description: Students complete a mid-unit assessment covering exponents, graphing exponential functions, and growth/decay problems.

STANDARDS

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AR.A.1

Interpret the structure of expressions.

HSA.SSE.A.1

Interpret expressions that represent a quantity in terms of its context.

HSA.SSE.A.1b

Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.

HSA.REI.D.10

Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). Show that any point on the graph of an equation in two variables is a solution to the equation.

HSA.REI.D.11

Explain why the x -coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.

AR.A.12

Understand the concept of a function and use function notation.

HSF.IF.A.1

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Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x . The graph of f is the graph of the equation $y = f(x)$.

HSF.IF.A.2

Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.

AR.A.13

Interpret functions that arise in applications in terms of the context.

HSF.IF.B.4

For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.

HSF.IF.B.5

Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.

AR.A.14

Analyze functions using different representations.

HSF.IF.C.7e.i

Graph exponential functions, showing intercepts and end behavior, and

HSF.IF.C.8

Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.

HSF.IF.C.8b

Use the properties of exponents to interpret expressions for exponential functions. For example, apply the properties to financial situations such as identifying appreciation and depreciation rate for the value of a house or car sometime after its initial purchase: $V_n = P(1 + r)^n$.

HSF.IF.C.9

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Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.

AR.A.15

Build a function that models a relationship between two quantities.

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

HSF.BF.A.1a

Determine an explicit expression, a recursive process, or steps for calculation from a context.

AR.A.17

Construct and compare linear, quadratic, and exponential models and solve problems.

HSF.BF.A.1b

Combine standard function types using arithmetic operations. For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.

HSF.LE.A.1

Distinguish between situations that can be modeled with linear functions and with exponential functions.

HSF.LE.A.1a

Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.

HSF.LE.A.1c

Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.

HSF.LE.A.2

Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).

HSF.LE.A.3

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Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.

AR.A.18

Interpret expressions for function in terms of the situation they model.

HSF.LE.B.5

Interpret the parameters in a linear or exponential function in terms of a context.

Maine - High School - Mathematics - Quantitative Reasoning (2020)

QR.A.1

Extend the properties of exponents to rational exponents.

HSN.RN.A.1

Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. For example, we define $5^{1/3}$ to be the cube root of 5 because we want $(5^{1/3})^3 = 5(1/3)^3$ to hold, so $(5^{1/3})^3$ must equal 5.

HSN.RN.A.2

Rewrite expressions involving radicals and rational exponents using the properties of exponents.

Lesson 7.05 - Compound Interest

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 3

Description: Students apply exponential functions to compound interest problems, analyzing growth rates and comparing different investment scenarios.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

AR.A.1

Interpret the structure of expressions.

HSA.SSE.A.1

Interpret expressions that represent a quantity in terms of its context.

HSA.SSE.A.1b

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Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.

HSA.SSE.B.3c

Use the properties of exponents to transform expressions for exponential functions. For example, the expression 1.15^t can be rewritten as $(1.151/12)^{12t} \approx 1.012^{12t}$ to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.

AR.A.12

Understand the concept of a function and use function notation.

AR.A.13

Interpret functions that arise in applications in terms of the context.

HSF.IF.B.4

For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.

HSF.IF.B.5

Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.

HSF.IF.C.8b

Use the properties of exponents to interpret expressions for exponential functions. For example, apply the properties to financial situations such as identifying appreciation and depreciation rate for the value of a house or car sometime after its initial purchase: $V_n = P(1 + r)^n$.

HSF.IF.C.8

Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.

HSF.IF.C.9

Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.

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AR.A.15
Build a function that models a relationship between two quantities.
HSF.BF.A.1
Write a function that describes a relationship between two quantities.
HSF.BF.A.1a
Determine an explicit expression, a recursive process, or steps for calculation from a context.
HSF.BF.A.1b
Combine standard function types using arithmetic operations. For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.
AR.A.17
Construct and compare linear, quadratic, and exponential models and solve problems.
HSF.LE.A.1c
Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.
HSF.LE.A.2
Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).
HSF.LE.A.3
Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.
AR.A.18
Interpret expressions for function in terms of the situation they model.
HSF.LE.B.5
Interpret the parameters in a linear or exponential function in terms of a context.

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Lesson 7.06 - Solve Exponential Equations

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 3

Description: Students solve exponential equations by rewriting expressions to have the same base and applying exponent rules to find solutions.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1
Interpret expressions that represent a quantity in terms of its context.
AR.A.8
Understand solving equations as a process of reasoning and explain the reasoning.
AR.A.9
Solve equations and inequalities in one variable.
Maine - High School - Mathematics - Quantitative Reasoning (2020)
QR.A.1
Extend the properties of exponents to rational exponents.
HSN.RN.A.1
Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. For example, we define $5^{1/3}$ to be the cube root of 5 because we want $(5^{1/3})^3 = 5(1/3)^3$ to hold, so $(5^{1/3})^3$ must equal 5.
HSN.RN.A.2
Rewrite expressions involving radicals and rational exponents using the properties of exponents.

Lesson 7.07 - Unit Review

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

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Assessment Level (DOK): 2

Description: A full class session is dedicated to reviewing the skills and concepts from this unit. Students complete practice problems, review vocabulary and definitions, and revisit challenging problems from earlier lessons.

Lesson 7.08 - Unit Assessment

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 3

Description: A full class session is used for a summative exam, assessing students on all covered material in the unit.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1
Interpret expressions that represent a quantity in terms of its context.
HSA.SSE.A.1b
Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.
HSA.SSE.B.3c
Use the properties of exponents to transform expressions for exponential functions. For example, the expression $1.15t$ can be rewritten as $(1.151/12)^{12t} \approx 1.012^{12t}$ to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.
AR.A.7
Create equations and/or inequalities that describe numbers or relationships.
HSA.CED.A.1
Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.
AR.A.8
Understand solving equations as a process of reasoning and explain the reasoning.

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AR.A.9

Solve equations and inequalities in one variable.

HSA.REI.D.10

Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). Show that any point on the graph of an equation in two variables is a solution to the equation.

HSA.REI.D.11

Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.

AR.A.12

Understand the concept of a function and use function notation.

HSF.IF.A.1

Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x . The graph of f is the graph of the equation $y = f(x)$.

HSF.IF.A.2

Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.

AR.A.13

Interpret functions that arise in applications in terms of the context.

HSF.IF.B.4

For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.

HSF.IF.B.5

Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the

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positive integers would be an appropriate domain for the function.

AR.A.14

Analyze functions using different representations.

HSF.IF.C.7e.i

Graph exponential functions, showing intercepts and end behavior, and

HSF.IF.C.8

Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.

HSF.IF.C.8b

Use the properties of exponents to interpret expressions for exponential functions. For example, apply the properties to financial situations such as identifying appreciation and depreciation rate for the value of a house or car sometime after its initial purchase: $V_n = P(1 + r)^n$.

HSF.IF.C.9

Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.

AR.A.15

Build a function that models a relationship between two quantities.

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

HSF.BF.A.1a

Determine an explicit expression, a recursive process, or steps for calculation from a context.

HSF.BF.A.1b

Combine standard function types using arithmetic operations. For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.

AR.A.17

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Construct and compare linear, quadratic, and exponential models and solve problems.
HSF.LE.A.1
Distinguish between situations that can be modeled with linear functions and with exponential functions.
HSF.LE.A.1a
Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.
HSF.LE.A.1c
Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.
HSF.LE.A.2
Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).
HSF.LE.A.3
Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.
AR.A.18
Interpret expressions for function in terms of the situation they model.
HSF.LE.B.5
Interpret the parameters in a linear or exponential function in terms of a context.
Maine - High School - Mathematics - Quantitative Reasoning (2020)
QR.A.1
Extend the properties of exponents to rational exponents.
HSN.RN.A.1
Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. For example, we define $5^{1/3}$ to be the cube root of 5 because we want $(5^{1/3})^3 = 5(1/3)^3$ to hold, so $(5^{1/3})^3$ must equal 5.
HSN.RN.A.2

Unit 7: Exponential Functions

HS Algebra 2

Rewrite expressions involving radicals and rational exponents using the properties of exponents.

Unit 8: Logarithmic Functions

HS Algebra 2

UNIT SUMMARY

This unit introduces logarithmic functions and their relationship to exponential functions. Students learn to convert between logarithmic and exponential equation forms, graph logarithmic functions, and apply logarithm properties. They practice evaluating logarithms, solving exponential and logarithmic equations, and understanding graphs of logarithms. Exponential functions are revisited with new techniques enabled by logarithms, including writing and solving continuously compounding interest equations.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)	
AR.A.1	
Interpret the structure of expressions.	
HSA.SSE.A.1b	
Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.	
AR.A.2	
Write expressions in equivalent forms to reveal information and to solve problems.	
HSA.SSE.B.3	
Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.	
HSA.CED.A.1	
Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.	
HSA.CED.A.4	
Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance R .	
AR.A.8	
Understand solving equations as a process of reasoning and explain the reasoning.	
HSA.REI.A.1	
Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify	

Unit 8: Logarithmic Functions

HS Algebra 2

or refute a solution method.

AR.A.9

Solve equations and inequalities in one variable.

HSA.REI.D.10

Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). Show that any point on the graph of an equation in two variables is a solution to the equation.

HSA.REI.D.11

Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.

AR.A.12

Understand the concept of a function and use function notation.

HSF.IF.A.2

Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.

HSF.IF.B.4

For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.

HSF.IF.B.5

Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.

AR.A.14

Analyze functions using different representations.

HSF.IF.C.7e.ii

Unit 8: Logarithmic Functions

HS Algebra 2

Graph logarithmic functions, showing intercepts and end behavior and trigonometric functions, showing period, midline, and amplitude.

HSF.IF.C.8b

Use the properties of exponents to interpret expressions for exponential functions. For example, apply the properties to financial situations such as identifying appreciation and depreciation rate for the value of a house or car sometime after its initial purchase: $V_n = P(1 + r)^n$.

AR.A.15

Build a function that models a relationship between two quantities.

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

HSF.BF.B.4a

Solve an equation of the form $f(x) = c$ (where c represents the output value of the function) for a simple function f that has an inverse and write an expression for the inverse. For example, if $f(x) = 2x^3$, then solving $f(x) = c$ leads to $x = (c/2)^{1/3}$, which is the general formula for finding an input from a specific output, c , for this function.

HSF.BF.B.5

Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents.

HSF.LE.A.4

For exponential models, express as a logarithm the solution to $ab^ct = d$ where a , c , and d are numbers and the base b is 2, 10, or e ; evaluate the logarithm using technology.

Maine - High School - Mathematics - Quantitative Reasoning (2020)

QR.A.1

Extend the properties of exponents to rational exponents.

Unit 8: Logarithmic Functions

HS Algebra 2

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Lesson 8.01 - Intro to Logarithms

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students are introduced to logarithmic functions as the inverse function of exponential functions. Students build their understanding by converting between exponential and logarithmic equation forms, and creating tables and graphs for logarithmic functions.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.1
Interpret the structure of expressions.
AR.A.2
Write expressions in equivalent forms to reveal information and to solve problems.
HSA.SSE.B.3
Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.
HSF.BF.B.5
Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents.
AR.A.12
Understand the concept of a function and use function notation.
HSF.IF.A.2
Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.
HSF.IF.B.4
For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.

Unit 8: Logarithmic Functions

HS Algebra 2

HSF.IF.B.5

Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.

AR.A.14

Analyze functions using different representations.

HSF.IF.C.7e.ii

Graph logarithmic functions, showing intercepts and end behavior and trigonometric functions, showing period, midline, and amplitude.

Maine - High School - Mathematics - Quantitative Reasoning (2020)

QR.A.1

Extend the properties of exponents to rational exponents.

Lesson 8.02 - Properties of Logarithms

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students learn and apply properties of logarithms, including product, quotient, and power rules, and use the change of base formula to rewrite logarithmic expressions.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

AR.A.1

Interpret the structure of expressions.

AR.A.2

Write expressions in equivalent forms to reveal information and to solve problems.

HSF.BF.B.5

Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents.

Maine - High School - Mathematics - Quantitative Reasoning (2020)

Unit 8: Logarithmic Functions

HS Algebra 2

QR.A.1

Extend the properties of exponents to rational exponents.

Lesson 8.03 - Evaluate Logarithms

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students practice evaluating logarithmic expressions using properties, change of base formula, and calculators, reinforcing computational fluency.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

AR.A.2

Write expressions in equivalent forms to reveal information and to solve problems.

AR.A.1

Interpret the structure of expressions.

HSA.SSE.B.3

Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.

HSF.BF.B.5

Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents.

HSF.IF.A.2

Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.

Maine - High School - Mathematics - Quantitative Reasoning (2020)

QR.A.1

Extend the properties of exponents to rational exponents.

Unit 8: Logarithmic Functions

HS Algebra 2

Lesson 8.04 - Mid-Unit Assessment

Assessment Type: Summative / Diagnostic

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 3

Description: Students complete a mid-unit assessment covering introductory logarithm concepts, properties, graphing, and evaluation skills.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.1
Interpret the structure of expressions.
AR.A.2
Write expressions in equivalent forms to reveal information and to solve problems.
HSA.SSE.B.3
Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.
HSF.BF.B.5
Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents.
HSF.IF.A.2
Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.
Maine - High School - Mathematics - Quantitative Reasoning (2020)
QR.A.1
Extend the properties of exponents to rational exponents.

Lesson 8.05 - Solve Exponential Equations

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Unit 8: Logarithmic Functions

HS Algebra 2

Description: Students solve exponential equations using common and natural logarithms, and applying logarithmic properties to isolate variables.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1b
Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.
AR.A.2
Write expressions in equivalent forms to reveal information and to solve problems.
HSA.SSE.B.3
Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.
AR.A.8
Understand solving equations as a process of reasoning and explain the reasoning.
AR.A.9
Solve equations and inequalities in one variable.
HSA.REI.A.1
Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify or refute a solution method.
HSF.BF.B.4a
Solve an equation of the form $f(x) = c$ (where c represents the output value of the function) for a simple function f that has an inverse and write an expression for the inverse. For example, if $f(x) = 2x^3$, then solving $f(x) = c$ leads to $x = (c/2)^{1/3}$, which is the general formula for finding an input from a specific output, c , for this function.
HSF.BF.B.5
Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents.

Unit 8: Logarithmic Functions

HS Algebra 2

HSF.LE.A.4

For exponential models, express as a logarithm the solution to $abct = d$ where a , c , and d are numbers and the base b is 2, 10, or e ; evaluate the logarithm using technology.

Maine - High School - Mathematics - Quantitative Reasoning (2020)

QR.A.1

Extend the properties of exponents to rational exponents.

Lesson 8.06 - Continuously Compounding Interest

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 3

Description: Students apply exponential and logarithmic functions to solve continuously compounding interest problems, and further develop an understanding of real-world financial contexts.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

HSA.SSE.A.1b

Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.

AR.A.1

Interpret the structure of expressions.

HSA.CED.A.4

Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance R .

HSA.CED.A.1

Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.

AR.A.8

Understand solving equations as a process of reasoning and explain the reasoning.

HSA.REI.A.1

Unit 8: Logarithmic Functions

HS Algebra 2

Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify or refute a solution method.

AR.A.9

Solve equations and inequalities in one variable.

HSF.IF.C.8b

Use the properties of exponents to interpret expressions for exponential functions. For example, apply the properties to financial situations such as identifying appreciation and depreciation rate for the value of a house or car sometime after its initial purchase: $V_n = P(1 + r)^n$.

AR.A.15

Build a function that models a relationship between two quantities.

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

HSF.BF.B.4a

Solve an equation of the form $f(x) = c$ (where c represents the output value of the function) for a simple function f that has an inverse and write an expression for the inverse. For example, if $f(x) = 2x^3$, then solving $f(x) = c$ leads to $x = (c/2)^{1/3}$, which is the general formula for finding an input from a specific output, c , for this function.

HSF.BF.B.5

Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents.

HSF.LE.A.4

For exponential models, express as a logarithm the solution to $ab^{ct} = d$ where a , c , and d are numbers and the base b is 2, 10, or e ; evaluate the logarithm using technology.

Lesson 8.07 - Solve Log Equations

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students practice solving equations involving logarithms using properties of logarithms and algebraic reasoning. Solutions are tested, and confirmed to be in the domains of the logarithm expressions.

STANDARDS

Unit 8: Logarithmic Functions

HS Algebra 2

Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.1
Interpret the structure of expressions.
AR.A.2
Write expressions in equivalent forms to reveal information and to solve problems.
HSA.SSE.B.3
Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.
HSA.CED.A.1
Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.
AR.A.8
Understand solving equations as a process of reasoning and explain the reasoning.
HSA.REI.A.1
Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify or refute a solution method.
AR.A.9
Solve equations and inequalities in one variable.
HSA.REI.D.11
Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.
HSA.REI.D.10
Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). Show that any point on the graph of an equation in two variables is a solution to the equation.

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HS Algebra 2

HSF.BF.B.4a

Solve an equation of the form $f(x) = c$ (where c represents the output value of the function) for a simple function f that has an inverse and write an expression for the inverse. For example, if $f(x) = 2x^3$, then solving $f(x) = c$ leads to $x = (c/2)^{1/3}$, which is the general formula for finding an input from a specific output, c , for this function.

HSF.BF.B.5

Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents.

HSF.IF.B.5

Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.

Maine - High School - Mathematics - Quantitative Reasoning (2020)

QR.A.1

Extend the properties of exponents to rational exponents.

Lesson 8.08 - Logarithmic Inequalities

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 3

Description: Students solve inequalities involving logarithmic expressions, including restricting their solutions to within defined domains.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

AR.A.1

Interpret the structure of expressions.

AR.A.2

Write expressions in equivalent forms to reveal information and to solve problems.

HSA.CED.A.1

Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.

Unit 8: Logarithmic Functions

HS Algebra 2

AR.A.8

Understand solving equations as a process of reasoning and explain the reasoning.

HSA.REI.A.1

Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify or refute a solution method.

AR.A.9

Solve equations and inequalities in one variable.

HSA.REI.D.10

Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). Show that any point on the graph of an equation in two variables is a solution to the equation.

HSA.REI.D.11

Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.

HSF.IF.B.5

Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.

HSF.BF.B.5

Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents.

HSF.BF.B.4a

Solve an equation of the form $f(x) = c$ (where c represents the output value of the function) for a simple function f that has an inverse and write an expression for the inverse. For example, if $f(x) = 2x^3$, then solving $f(x) = c$ leads to $x = (c/2)^{1/3}$, which is the general formula for finding an input from a specific output, c , for this function.

HSA.SSE.B.3

Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity

Unit 8: Logarithmic Functions

HS Algebra 2

represented by the expression.

Maine - High School - Mathematics - Quantitative Reasoning (2020)

QR.A.1

Extend the properties of exponents to rational exponents.

Lesson 8.09 - Unit Review

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 2

Description: A full class session is dedicated to reviewing the skills and concepts from this unit. Students complete practice problems, review vocabulary and definitions, and revisit challenging problems from earlier lessons.

Lesson 8.10 - Unit Assessment

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 3

Description: A full class session is used for a summative exam, assessing students on all covered material in the unit.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

AR.A.1

Interpret the structure of expressions.

HSA.SSE.A.1b

Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.

AR.A.2

Write expressions in equivalent forms to reveal information and to solve problems.

HSA.SSE.B.3

Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.

HSA.CED.A.1

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HS Algebra 2

Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.

HSA.CED.A.4

Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance R .

AR.A.8

Understand solving equations as a process of reasoning and explain the reasoning.

HSA.REI.A.1

Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify or refute a solution method.

AR.A.9

Solve equations and inequalities in one variable.

HSA.REI.D.10

Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). Show that any point on the graph of an equation in two variables is a solution to the equation.

HSA.REI.D.11

Explain why the x -coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.

AR.A.12

Understand the concept of a function and use function notation.

HSF.IF.A.2

Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.

HSF.IF.B.4

For a function that models a relationship between two quantities, interpret key features of graphs and tables in

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HS Algebra 2

terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.

HSF.IF.B.5

Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.

AR.A.14

Analyze functions using different representations.

HSF.IF.C.7e.ii

Graph logarithmic functions, showing intercepts and end behavior and trigonometric functions, showing period, midline, and amplitude.

HSF.IF.C.8b

Use the properties of exponents to interpret expressions for exponential functions. For example, apply the properties to financial situations such as identifying appreciation and depreciation rate for the value of a house or car sometime after its initial purchase: $V_n = P(1 + r)^n$.

AR.A.15

Build a function that models a relationship between two quantities.

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

HSF.BF.B.4a

Solve an equation of the form $f(x) = c$ (where c represents the output value of the function) for a simple function f that has an inverse and write an expression for the inverse. For example, if $f(x) = 2x^3$, then solving $f(x) = c$ leads to $x = (c/2)^{1/3}$, which is the general formula for finding an input from a specific output, c , for this function.

HSF.BF.B.5

Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents.

HSF.LE.A.4

For exponential models, express as a logarithm the solution to $ab^{ct} = d$ where a , c , and d are numbers and the

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HS Algebra 2

base b is 2, 10, or e ; evaluate the logarithm using technology.

Maine - High School - Mathematics - Quantitative Reasoning (2020)

QR.A.1

Extend the properties of exponents to rational exponents.

Unit 9: Rational Functions

HS Algebra 2

UNIT SUMMARY

Students explore rational functions, focusing on simplifying rational expressions to help identify properties. Rational expressions are combined with operations, and simplified with factoring and removing common factors. Students graph rational functions and solve rational equations, identifying key features like zeros, asymptotes, and excluded values.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)	
AR.A.1	
Interpret the structure of expressions.	
HSA.SSE.A.1a	
Interpret parts of an expression, such as terms, factors, and coefficients.	
HSA.SSE.A.1b	
Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.	
AR.A.2	
Write expressions in equivalent forms to reveal information and to solve problems.	
HSA.SSE.B.3	
Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.	
AR.A.3	
Perform arithmetic operations on polynomials.	
HSA.APR.A.1b	
Factor and/or expand polynomial expressions, identify and combine like terms, and apply the Distributive Property.	
AR.A.4	
Understand the relationship between zeros and factors of polynomials.	
AR.A.6	
Rewrite rational expressions.	

Unit 9: Rational Functions

HS Algebra 2

HSA.APR.D.7

Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions.

AR.A.7

Create equations and/or inequalities that describe numbers or relationships.

HSA.CED.A.1

Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.

AR.A.8

Understand solving equations as a process of reasoning and explain the reasoning.

HSA.REI.A.1

Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify or refute a solution method.

HSA.REI.A.2

Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.

AR.A.9

Solve equations and inequalities in one variable.

AR.A.11

Represent and solve equations and inequalities graphically.

HSA.REI.D.11

Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.

AR.A.12

Unit 9: Rational Functions

HS Algebra 2

Understand the concept of a function and use function notation.

HSF.IF.A.2

Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.

HSF.IF.B.4

For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.

HSF.IF.B.5

Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.

AR.A.14

Analyze functions using different representations.

HSF.IF.C.7

Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in simple cases and using technology for more complicated cases.

HSF.IF.C.7d

Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior.

HSF.IF.C.8

Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.

Unit 9: Rational Functions

HS Algebra 2

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Lesson 9.01 - Simplify Rational Expressions

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 3

Description: Students practice simplifying rational expressions, factoring both numerators and denominators to simplify the expressions and find equivalent forms.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
HSA.SSE.A.1a
Interpret parts of an expression, such as terms, factors, and coefficients.
AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1b
Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.
AR.A.2
Write expressions in equivalent forms to reveal information and to solve problems.
HSA.SSE.B.3
Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.
HSA.APR.A.1b
Factor and/or expand polynomial expressions, identify and combine like terms, and apply the Distributive Property.
AR.A.6
Rewrite rational expressions.

Lesson 9.02 - Multiply & Divide Rational Expressions

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Unit 9: Rational Functions

HS Algebra 2

Description: Students learn to multiply and divide rational expressions, applying their understanding of factorization and simplifying expressions by canceling common factors.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1a
Interpret parts of an expression, such as terms, factors, and coefficients.
HSA.SSE.A.1b
Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.
AR.A.2
Write expressions in equivalent forms to reveal information and to solve problems.
HSA.SSE.B.3
Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.
AR.A.3
Perform arithmetic operations on polynomials.
HSA.APR.A.1b
Factor and/or expand polynomial expressions, identify and combine like terms, and apply the Distributive Property.
AR.A.6
Rewrite rational expressions.
HSA.APR.D.7
Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions.

Unit 9: Rational Functions

HS Algebra 2

Lesson 9.03 - Add & Subtract Rational Expressions

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 3

Description: Students practice adding and subtracting rational expressions, finding common denominators, and simplifying results.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1a
Interpret parts of an expression, such as terms, factors, and coefficients.
HSA.SSE.A.1b
Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.
AR.A.2
Write expressions in equivalent forms to reveal information and to solve problems.
HSA.SSE.B.3
Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.
AR.A.3
Perform arithmetic operations on polynomials.
HSA.APR.A.1b
Factor and/or expand polynomial expressions, identify and combine like terms, and apply the Distributive Property.
AR.A.6
Rewrite rational expressions.
HSA.APR.D.7

Unit 9: Rational Functions

HS Algebra 2

Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions.

Lesson 9.04 - Mid-Unit Assessment

Assessment Type: Summative / Diagnostic

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 3

Description: Students complete a mid-unit assessment covering simplifying, multiplying, dividing, adding, and subtracting rational expressions.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1a
Interpret parts of an expression, such as terms, factors, and coefficients.
HSA.SSE.A.1b
Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.
AR.A.2
Write expressions in equivalent forms to reveal information and to solve problems.
HSA.SSE.B.3
Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.
AR.A.3
Perform arithmetic operations on polynomials.
HSA.APR.A.1b
Factor and/or expand polynomial expressions, identify and combine like terms, and apply the Distributive Property.
AR.A.6

Unit 9: Rational Functions

HS Algebra 2

Rewrite rational expressions.

HSA.APR.D.7

Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions.

Lesson 9.05 - Graphing Rational Functions

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students graph rational functions, identifying zeros, asymptotes, and excluded values, and analyzing key characteristics of the function's graph.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

AR.A.4

Understand the relationship between zeros and factors of polynomials.

AR.A.12

Understand the concept of a function and use function notation.

HSF.IF.A.2

Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.

HSF.IF.B.4

For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.

HSF.IF.B.5

Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.

AR.A.14

Unit 9: Rational Functions

HS Algebra 2

Analyze functions using different representations.
HSF.IF.C.7
Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in simple cases and using technology for more complicated cases.
HSF.IF.C.7d
Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior.
HSF.IF.C.8
Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.
AR.A.2
Write expressions in equivalent forms to reveal information and to solve problems.
HSA.SSE.B.3
Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.
AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1a
Interpret parts of an expression, such as terms, factors, and coefficients.

Lesson 9.06 - Solve Rational Equations

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 3

Description: Students learn how to solve rational equations, taking the approach of clearing denominators and solving the resulting polynomial equation. Solutions are tested in the original equation, testing for extraneous solutions (excluded values) that should not be included.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.3

Unit 9: Rational Functions

HS Algebra 2

Perform arithmetic operations on polynomials.
HSA.APR.A.1b
Factor and/or expand polynomial expressions, identify and combine like terms, and apply the Distributive Property.
AR.A.4
Understand the relationship between zeros and factors of polynomials.
AR.A.6
Rewrite rational expressions.
HSA.APR.D.7
Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions.
AR.A.7
Create equations and/or inequalities that describe numbers or relationships.
HSA.CED.A.1
Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.
AR.A.8
Understand solving equations as a process of reasoning and explain the reasoning.
HSA.REI.A.1
Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify or refute a solution method.
HSA.REI.A.2
Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.
AR.A.9
Solve equations and inequalities in one variable.

Unit 9: Rational Functions

HS Algebra 2

AR.A.11

Represent and solve equations and inequalities graphically.

HSA.REI.D.11

Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.

Lesson 9.07 - Unit Review

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 2

Description: A full class session is dedicated to reviewing the skills and concepts from this unit. Students complete practice problems, review vocabulary and definitions, and revisit challenging problems from earlier lessons.

Lesson 9.08 - Unit Assessment

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 3

Description: A full class session is used for a summative exam, assessing students on all covered material in the unit.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

AR.A.1

Interpret the structure of expressions.

HSA.SSE.A.1a

Interpret parts of an expression, such as terms, factors, and coefficients.

HSA.SSE.A.1b

Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.

AR.A.2

Write expressions in equivalent forms to reveal information and to solve problems.

Unit 9: Rational Functions

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HSA.SSE.B.3
Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.
AR.A.3
Perform arithmetic operations on polynomials.
HSA.APR.A.1b
Factor and/or expand polynomial expressions, identify and combine like terms, and apply the Distributive Property.
AR.A.4
Understand the relationship between zeros and factors of polynomials.
AR.A.6
Rewrite rational expressions.
HSA.APR.D.7
Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions.
AR.A.7
Create equations and/or inequalities that describe numbers or relationships.
HSA.CED.A.1
Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.
AR.A.8
Understand solving equations as a process of reasoning and explain the reasoning.
HSA.REI.A.1
Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify or refute a solution method.
HSA.REI.A.2

Unit 9: Rational Functions

HS Algebra 2

Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.

AR.A.9

Solve equations and inequalities in one variable.

AR.A.11

Represent and solve equations and inequalities graphically.

HSA.REI.D.11

Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.

AR.A.12

Understand the concept of a function and use function notation.

HSF.IF.A.2

Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.

HSF.IF.B.4

For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.

HSF.IF.B.5

Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.

AR.A.14

Analyze functions using different representations.

HSF.IF.C.7

Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in

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simple cases and using technology for more complicated cases.
HSF.IF.C.7d
Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior.
HSF.IF.C.8
Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.

Unit 10: Trigonometric Identities

HS Algebra 2

UNIT SUMMARY

This unit focuses on right triangle trigonometry, unit circle trigonometry, and the various trigonometric identities used in solving problems. Students begin by exploring the basic trigonometric ratios and solving right triangles. The unit then progresses to understanding representations of angles in the unit circle, and deriving trigonometric values and properties using the unit circle. Exact algebraic calculations of trigonometric ratios are performed, using special angles, sum/difference identities, and Pythagorean identities.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.19
Extend the domain of trigonometric functions using the unit circle.
HSF.TF.A.2
Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle.
HSF.TF.B.6
Understand that restricting a trigonometric function to a domain on which it is always increasing or always decreasing allows its inverse to be constructed.
HSF.TF.B.7
Use inverse functions to solve trigonometric equations that arise in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context.
AR.A.21
Prove and apply trigonometric identities.
AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1b
Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.
AR.A.2
Write expressions in equivalent forms to reveal information and to solve problems.

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HSA.SSE.B.3
Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.
AR.A.7
Create equations and/or inequalities that describe numbers or relationships.
HSA.CED.A.4
Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance R .
HSF.BF.B.4a
Solve an equation of the form $f(x) = c$ (where c represents the output value of the function) for a simple function f that has an inverse and write an expression for the inverse. For example, if $f(x) = 2x^3$, then solving $f(x) = c$ leads to $x = (c/2)^{1/3}$, which is the general formula for finding an input from a specific output, c , for this function.
HSF.TF.A.1
Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle.
HSF.TF.A.3
Use special triangles to determine geometrically the values of sine, cosine, tangent for $\pi/3$, $\pi/4$ and $\pi/6$, and use the unit circle to express the values of sine, cosine, and tangent for x , $\pi + x$, and $2\pi - x$ in terms of their values for x , where x is any real number.
HSF.TF.C.8
Prove the Pythagorean identity $\sin^2(\theta) + \cos^2(\theta) = 1$ and use it to find $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ given $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ and the quadrant of the angle.
HSF.TF.C.9
Prove the addition and subtraction formulas for sine, cosine, and tangent and use them to solve problems.
HSF.BF.B.4d
Produce an invertible function from a non-invertible function by restricting the domain.
Maine - High School - Mathematics - Geometric Reasoning (2020)
GR.A.7

Unit 10: Trigonometric Identities

HS Algebra 2

Define trigonometric ratios and solve problems involving right triangles.

HSG.SRT.C.6

Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.

HSG.SRT.C.8

Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems. For example, find the current height of the tallest pine tree in Maine using the angle of elevation and the distance from the tree.

HSG.SRT.C.7

Explain and use the relationship between the sine and cosine of complementary angles.

Unit 10: Trigonometric Identities

HS Algebra 2

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Lesson 10.01 - Right Triangle Trigonometry

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students learn trigonometric ratios (sin, cos, tan, csc, sec, cot) in the context of right triangles. Reciprocal properties and complementary angle properties of trigonometric ratios are explored.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.7
Create equations and/or inequalities that describe numbers or relationships.
AR.A.21
Prove and apply trigonometric identities.
Maine - High School - Mathematics - Geometric Reasoning (2020)
GR.A.7
Define trigonometric ratios and solve problems involving right triangles.
HSG.SRT.C.6
Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.

Lesson 10.02 - Solving Right Triangles

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 3

Description: Students write trigonometric equations for right triangles, and then solve the equations for missing side lengths or missing angles. Students also learn about special right triangles with angles that give convenient trigonometric ratios, and solve these triangles exactly.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.7
Create equations and/or inequalities that describe numbers or relationships.

Unit 10: Trigonometric Identities

HS Algebra 2

HSA.CED.A.4

Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance R .

HSF.BF.B.4a

Solve an equation of the form $f(x) = c$ (where c represents the output value of the function) for a simple function f that has an inverse and write an expression for the inverse. For example, if $f(x) = 2x^3$, then solving $f(x) = c$ leads to $x = (c/2)^{1/3}$, which is the general formula for finding an input from a specific output, c , for this function.

HSF.TF.B.7

Use inverse functions to solve trigonometric equations that arise in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context.

Maine - High School - Mathematics - Geometric Reasoning (2020)

GR.A.7

Define trigonometric ratios and solve problems involving right triangles.

HSG.SRT.C.6

Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.

HSG.SRT.C.7

Explain and use the relationship between the sine and cosine of complementary angles.

HSG.SRT.C.8

Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems. For example, find the current height of the tallest pine tree in Maine using the angle of elevation and the distance from the tree.

Lesson 10.03 - Angle Measurement

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students learn about the unit circle, converting angle measures between radians and degrees, and finding coterminal angles.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

Unit 10: Trigonometric Identities

HS Algebra 2

HSF.TF.A.1

Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle.

HSF.TF.A.2

Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle.

AR.A.2

Write expressions in equivalent forms to reveal information and to solve problems.

Lesson 10.04 - Trig Ratios in the Unit Circle

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students use the unit circle to find exact trigonometric ratios, and build an understanding of how related reference angles result in related ratios.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

AR.A.19

Extend the domain of trigonometric functions using the unit circle.

HSF.TF.A.2

Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle.

HSF.TF.A.1

Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle.

HSF.TF.A.3

Use special triangles to determine geometrically the values of sine, cosine, tangent for $\pi/3$, $\pi/4$ and $\pi/6$, and use the unit circle to express the values of sine, cosine, and tangent for x , $\pi + x$, and $2\pi - x$ in terms of their values for x , where x is any real number.

AR.A.21

Prove and apply trigonometric identities.

Unit 10: Trigonometric Identities

HS Algebra 2

Lesson 10.05 - Mid-Unit Assessment

Assessment Type: Summative / Diagnostic

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 3

Description: Students complete a mid-unit assessment that covers right triangle trigonometry, angle measurement, and trigonometric ratios on the unit circle.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.2
Write expressions in equivalent forms to reveal information and to solve problems.
AR.A.7
Create equations and/or inequalities that describe numbers or relationships.
HSA.CED.A.4
Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance R .
HSF.BF.B.4a
Solve an equation of the form $f(x) = c$ (where c represents the output value of the function) for a simple function f that has an inverse and write an expression for the inverse. For example, if $f(x) = 2x^3$, then solving $f(x) = c$ leads to $x = (c/2)^{1/3}$, which is the general formula for finding an input from a specific output, c , for this function.
AR.A.19
Extend the domain of trigonometric functions using the unit circle.
HSF.TF.A.1
Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle.
HSF.TF.A.2
Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle.
HSF.TF.A.3
Use special triangles to determine geometrically the values of sine, cosine, tangent for $\pi/3$, $\pi/4$ and $\pi/6$, and use the unit circle to express the values of sine, cosine, and tangent for x , $\pi + x$, and $2\pi - x$ in terms of their values for

Unit 10: Trigonometric Identities

HS Algebra 2

x , where x is any real number.

Maine - High School - Mathematics - Geometric Reasoning (2020)

GR.A.7

Define trigonometric ratios and solve problems involving right triangles.

HSG.SRT.C.6

Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.

HSG.SRT.C.7

Explain and use the relationship between the sine and cosine of complementary angles.

HSG.SRT.C.8

Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems. For example, find the current height of the tallest pine tree in Maine using the angle of elevation and the distance from the tree.

Lesson 10.06 - Inverse Trigonometry

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 3

Description: Students use the unit circle and calculators to find the angle values resulting from inverse trigonometric functions. The inverse trigonometric functions are understood to be defined on a restricted angle range, and techniques are taught for finding reference angles outside of the default range used by calculators.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

AR.A.19

Extend the domain of trigonometric functions using the unit circle.

HSF.TF.A.3

Use special triangles to determine geometrically the values of sine, cosine, tangent for $\pi/3$, $\pi/4$ and $\pi/6$, and use the unit circle to express the values of sine, cosine, and tangent for x , $\pi + x$, and $2\pi - x$ in terms of their values for x , where x is any real number.

HSF.TF.B.6

Unit 10: Trigonometric Identities

HS Algebra 2

Understand that restricting a trigonometric function to a domain on which it is always increasing or always decreasing allows its inverse to be constructed.

HSF.TF.B.7

Use inverse functions to solve trigonometric equations that arise in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context.

AR.A.21

Prove and apply trigonometric identities.

HSF.BF.B.4d

Produce an invertible function from a non-invertible function by restricting the domain.

Lesson 10.07 - Pythagorean Identities

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 3

Description: Students apply Pythagorean identities and reciprocal identities to convert from one trigonometric ratio to another. An understanding of Pythagorean identities is built up by representing trigonometric expressions with right triangles.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

AR.A.1

Interpret the structure of expressions.

HSA.SSE.A.1b

Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.

AR.A.2

Write expressions in equivalent forms to reveal information and to solve problems.

HSA.SSE.B.3

Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.

AR.A.7

Unit 10: Trigonometric Identities

HS Algebra 2

Create equations and/or inequalities that describe numbers or relationships.

AR.A.19

Extend the domain of trigonometric functions using the unit circle.

AR.A.21

Prove and apply trigonometric identities.

HSF.TF.C.8

Prove the Pythagorean identity $\sin^2(\theta) + \cos^2(\theta) = 1$ and use it to find $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ given $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ and the quadrant of the angle.

Lesson 10.08 - Angle Sum Identities

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 3

Description: Students learn and apply the sum and difference identities for trigonometric functions, simplifying expressions and finding exact trigonometric ratios for angles that are combinations of special angles.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

AR.A.1

Interpret the structure of expressions.

HSA.SSE.A.1b

Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.

AR.A.2

Write expressions in equivalent forms to reveal information and to solve problems.

HSA.SSE.B.3

Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.

AR.A.7

Create equations and/or inequalities that describe numbers or relationships.

Unit 10: Trigonometric Identities

HS Algebra 2

AR.A.19
Extend the domain of trigonometric functions using the unit circle.
HSF.TF.A.3
Use special triangles to determine geometrically the values of sine, cosine, tangent for $\pi/3$, $\pi/4$ and $\pi/6$, and use the unit circle to express the values of sine, cosine, and tangent for x , $\pi + x$, and $2\pi - x$ in terms of their values for x , where x is any real number.
AR.A.21
Prove and apply trigonometric identities.
HSF.TF.C.9
Prove the addition and subtraction formulas for sine, cosine, and tangent and use them to solve problems.

Lesson 10.09 - Unit Review

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 2

Description: A full class session is dedicated to reviewing the skills and concepts from this unit. Students complete practice problems, review vocabulary and definitions, and revisit challenging problems from earlier lessons.

Lesson 10.10 - Unit Assessment

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 3

Description: A full class session is used for a summative exam, assessing students on all covered material in the unit.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1b
Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.

Unit 10: Trigonometric Identities

HS Algebra 2

AR.A.2

Write expressions in equivalent forms to reveal information and to solve problems.

HSA.SSE.B.3

Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.

AR.A.7

Create equations and/or inequalities that describe numbers or relationships.

HSA.CED.A.4

Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance R .

HSF.BF.B.4a

Solve an equation of the form $f(x) = c$ (where c represents the output value of the function) for a simple function f that has an inverse and write an expression for the inverse. For example, if $f(x) = 2x^3$, then solving $f(x) = c$ leads to $x = (c/2)^{1/3}$, which is the general formula for finding an input from a specific output, c , for this function.

AR.A.19

Extend the domain of trigonometric functions using the unit circle.

HSF.TF.A.1

Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle.

HSF.TF.A.2

Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle.

HSF.TF.A.3

Use special triangles to determine geometrically the values of sine, cosine, tangent for $\pi/3$, $\pi/4$ and $\pi/6$, and use the unit circle to express the values of sine, cosine, and tangent for x , $\pi + x$, and $2\pi - x$ in terms of their values for x , where x is any real number.

HSF.TF.B.6

Understand that restricting a trigonometric function to a domain on which it is always increasing or always decreasing allows its inverse to be constructed.

Unit 10: Trigonometric Identities

HS Algebra 2

HSF.TF.B.7

Use inverse functions to solve trigonometric equations that arise in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context.

AR.A.21

Prove and apply trigonometric identities.

HSF.TF.C.8

Prove the Pythagorean identity $\sin^2(\theta) + \cos^2(\theta) = 1$ and use it to find $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ given $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ and the quadrant of the angle.

HSF.TF.C.9

Prove the addition and subtraction formulas for sine, cosine, and tangent and use them to solve problems.

Maine - High School - Mathematics - Geometric Reasoning (2020)

GR.A.7

Define trigonometric ratios and solve problems involving right triangles.

HSG.SRT.C.6

Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.

HSG.SRT.C.7

Explain and use the relationship between the sine and cosine of complementary angles.

HSG.SRT.C.8

Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems. For example, find the current height of the tallest pine tree in Maine using the angle of elevation and the distance from the tree.

Unit 11: Trigonometric Functions

HS Algebra 2

UNIT SUMMARY

Students explore the properties, graphs, and equations of sine and cosine functions, and extend their understanding of all trigonometric functions. They begin by identifying the basic properties of sine and cosine from graphs and/or equations, and then use these properties to convert between representations. The unit concludes with solving trigonometric equations, and finding equivalent trigonometric functions/equations using symmetry and periodicity identities.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
HSF.IF.C.7e.ii
Graph logarithmic functions, showing intercepts and end behavior and trigonometric functions, showing period, midline, and amplitude.
AR.A.19
Extend the domain of trigonometric functions using the unit circle.
HSF.TF.A.2
Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle.
HSF.TF.A.4
Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions.
AR.A.20
Model periodic phenomena with trigonometric functions.
HSF.TF.B.5
Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.
HSF.TF.B.7
Use inverse functions to solve trigonometric equations that arise in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context.
HSA.SSE.A.1
Interpret expressions that represent a quantity in terms of its context.
AR.A.2

Unit 11: Trigonometric Functions

HS Algebra 2

Write expressions in equivalent forms to reveal information and to solve problems.

HSA.CED.A.4

Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance R .

HSA.REI.D.10

Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). Show that any point on the graph of an equation in two variables is a solution to the equation.

AR.A.12

Understand the concept of a function and use function notation.

HSF.IF.A.1

Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x . The graph of f is the graph of the equation $y = f(x)$.

HSF.IF.A.2

Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.

AR.A.13

Interpret functions that arise in applications in terms of the context.

HSF.IF.B.4

For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.

HSF.IF.B.5

Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.

AR.A.14

Unit 11: Trigonometric Functions

HS Algebra 2

Analyze functions using different representations.

HSF.IF.C.7

Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in simple cases and using technology for more complicated cases.

HSF.IF.C.8

Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.

AR.A.15

Build a function that models a relationship between two quantities.

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

AR.A.16

Build new functions from existing functions.

HSF.BF.B.3

Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.

HSF.TF.A.1

Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle.

HSF.TF.A.3

Use special triangles to determine geometrically the values of sine, cosine, tangent for $\pi/3$, $\pi/4$ and $\pi/6$, and use the unit circle to express the values of sine, cosine, and tangent for x , $\pi + x$, and $2\pi - x$ in terms of their values for x , where x is any real number.

Unit 11: Trigonometric Functions

HS Algebra 2

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Lesson 11.01 - Properties of Sine & Cosine Functions

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students explore the key properties of sine and cosine functions, including amplitude, period, frequency, vertical shift, and phase shift. These properties are found from both graphical and equation representations of the functions.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
HSA.SSE.A.1
Interpret expressions that represent a quantity in terms of its context.
AR.A.12
Understand the concept of a function and use function notation.
HSA.REI.D.10
Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). Show that any point on the graph of an equation in two variables is a solution to the equation.
HSF.IF.A.1
Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x . The graph of f is the graph of the equation $y = f(x)$.
HSF.IF.A.2
Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.
AR.A.13
Interpret functions that arise in applications in terms of the context.
HSF.IF.B.4
For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key

Unit 11: Trigonometric Functions

HS Algebra 2

features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.

AR.A.14

Analyze functions using different representations.

HSF.BF.B.3

Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.

AR.A.19

Extend the domain of trigonometric functions using the unit circle.

HSF.TF.A.1

Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle.

HSF.TF.A.2

Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle.

HSF.TF.A.4

Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions.

AR.A.20

Model periodic phenomena with trigonometric functions.

Lesson 11.02 - Graphs of Sine & Cosine Functions

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 3

Description: Students create graphs of sine and cosine functions from equations (using properties), and examine how translations of the functions affect the graphs.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

HSA.SSE.A.1

Unit 11: Trigonometric Functions

HS Algebra 2

Interpret expressions that represent a quantity in terms of its context.
HSA.CED.A.4
Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance R .
AR.A.2
Write expressions in equivalent forms to reveal information and to solve problems.
HSA.REI.D.10
Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). Show that any point on the graph of an equation in two variables is a solution to the equation.
AR.A.12
Understand the concept of a function and use function notation.
HSF.IF.A.1
Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x . The graph of f is the graph of the equation $y = f(x)$.
HSF.IF.B.4
For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.
AR.A.13
Interpret functions that arise in applications in terms of the context.
AR.A.14
Analyze functions using different representations.
HSF.IF.C.7
Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in simple cases and using technology for more complicated cases.

Unit 11: Trigonometric Functions

HS Algebra 2

HSF.IF.C.7e.ii

Graph logarithmic functions, showing intercepts and end behavior and trigonometric functions, showing period, midline, and amplitude.

HSF.BF.B.3

Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.

AR.A.16

Build new functions from existing functions.

AR.A.20

Model periodic phenomena with trigonometric functions.

HSF.TF.B.5

Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.

Lesson 11.03 - Write Equations of Sine & Cosine Functions

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 3

Description: Students learn how to write equations for sine and cosine functions from given graphs and/or properties. Students test their function equations with graphing tools.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

HSA.CED.A.4

Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance R .

HSA.REI.D.10

Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). Show that any point on the graph of an equation in two variables is a solution to the equation.

AR.A.12

Unit 11: Trigonometric Functions

HS Algebra 2

Understand the concept of a function and use function notation.

HSF.IF.B.4

For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.

AR.A.14

Analyze functions using different representations.

AR.A.2

Write expressions in equivalent forms to reveal information and to solve problems.

HSA.SSE.A.1

Interpret expressions that represent a quantity in terms of its context.

HSF.IF.C.8

Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

AR.A.15

Build a function that models a relationship between two quantities.

AR.A.20

Model periodic phenomena with trigonometric functions.

HSF.TF.B.5

Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.

Lesson 11.04 - Solving Trigonometric Equations

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Unit 11: Trigonometric Functions

HS Algebra 2

Description: Students explore the symmetry and periodicity identities for all trigonometric functions, each primarily understood in the context of graphs and transformations. Trigonometric equations are solved algebraically for specific angles, and the solutions spaces are then expanded to all possible angle solutions by using the identities.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
HSA.SSE.A.1
Interpret expressions that represent a quantity in terms of its context.
AR.A.2
Write expressions in equivalent forms to reveal information and to solve problems.
AR.A.12
Understand the concept of a function and use function notation.
HSF.IF.A.1
Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x . The graph of f is the graph of the equation $y = f(x)$.
HSF.IF.A.2
Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.
HSF.IF.B.5
Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.
AR.A.14
Analyze functions using different representations.
HSF.IF.C.8
Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.
HSF.BF.B.3

Unit 11: Trigonometric Functions

HS Algebra 2

Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.

HSF.TF.A.3

Use special triangles to determine geometrically the values of sine, cosine, tangent for $\pi/3$, $\pi/4$ and $\pi/6$, and use the unit circle to express the values of sine, cosine, and tangent for x , $\pi + x$, and $2\pi - x$ in terms of their values for x , where x is any real number.

HSF.TF.A.4

Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions.

AR.A.20

Model periodic phenomena with trigonometric functions.

HSF.TF.B.5

Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.

HSF.TF.B.7

Use inverse functions to solve trigonometric equations that arise in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context.

Lesson 11.05 - Unit Review

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 2

Description: A full class session is dedicated to reviewing the skills and concepts from this unit. Students complete practice problems, review vocabulary and definitions, and revisit challenging problems from earlier lessons.

Lesson 11.06 - Unit Assessment

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 3

Description: A full class session is used for a summative exam, assessing students on all covered material in the unit.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)

Unit 11: Trigonometric Functions

HS Algebra 2

HSA.SSE.A.1
Interpret expressions that represent a quantity in terms of its context.
AR.A.2
Write expressions in equivalent forms to reveal information and to solve problems.
HSA.CED.A.4
Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance R .
HSA.REI.D.10
Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). Show that any point on the graph of an equation in two variables is a solution to the equation.
AR.A.12
Understand the concept of a function and use function notation.
HSF.IF.A.1
Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x . The graph of f is the graph of the equation $y = f(x)$.
HSF.IF.A.2
Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.
AR.A.13
Interpret functions that arise in applications in terms of the context.
HSF.IF.B.4
For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features may include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.
HSF.IF.B.5

Unit 11: Trigonometric Functions

HS Algebra 2

Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.

AR.A.14

Analyze functions using different representations.

HSF.IF.C.7

Graph functions expressed symbolically and as well as show and describe key features of the graph, by hand in simple cases and using technology for more complicated cases.

HSF.IF.C.7e.ii

Graph logarithmic functions, showing intercepts and end behavior and trigonometric functions, showing period, midline, and amplitude.

HSF.IF.C.8

Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.

AR.A.15

Build a function that models a relationship between two quantities.

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

AR.A.16

Build new functions from existing functions.

HSF.BF.B.3

Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.

AR.A.19

Extend the domain of trigonometric functions using the unit circle.

HSF.TF.A.3

Unit 11: Trigonometric Functions

HS Algebra 2

Use special triangles to determine geometrically the values of sine, cosine, tangent for $\pi/3$, $\pi/4$ and $\pi/6$, and use the unit circle to express the values of sine, cosine, and tangent for x , $\pi + x$, and $2\pi - x$ in terms of their values for x , where x is any real number.

HSF.TF.A.4

Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions.

AR.A.20

Model periodic phenomena with trigonometric functions.

HSF.TF.B.5

Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.

HSF.TF.B.7

Use inverse functions to solve trigonometric equations that arise in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context.

Unit 12: Statistics

HS Algebra 2

UNIT SUMMARY

This unit introduces students to concepts in probability and statistics, including probability calculations using various models, and calculating with statistical distributions. The unit starts with foundational formulas and rules for probability calculations, for events, compound events, and conditional probabilities. Students then explore probability models, including uniform distributions, binomial distributions, and normal distributions, and learn to compute probabilities, expected values, and standard deviations with these models. The unit concludes with concepts relating to the normal distribution, including the Law of Large Numbers and the distribution of sample means.

STANDARDS

Maine - High School - Mathematics - Statistical Reasoning (2020)
SR.A.1
Summarize, represent, and interpret data on a single count or measurement variable.
HSS.ID.A.1
Represent data with plots on the real number line (dot plots, histograms, and box plots).
HSS.ID.A.3
Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).
HSS.ID.A.4
Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve.
HSS.ID.A.2
Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.
HSS.ID.B.5
Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data.
SR.A.4
Understand and evaluate random processes underlying statistical experiments.

Unit 12: Statistics

HS Algebra 2

HSS.IC.A.1

Understand statistics as a process for making inferences about population parameters based on a random sample from that population.

SR.A.6

Understand independence and conditional probability and use them to interpret data.

HSS.CP.A.1

Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events (or, and, not).

HSS.CP.A.2

Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent.

HSS.CP.A.3

Understand the conditional probability of A given B as $P(A \text{ and } B)/P(B)$, and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B.

HSS.CP.A.4

Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results.

SR.A.7

Use the rules of probability to compute probabilities of compound events in a uniform probability model.

HSS.CP.A.5

Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer.

HSS.CP.B.9

Use permutations and combinations to compute probabilities of compound events and solve problems.

Unit 12: Statistics

HS Algebra 2

SR.A.8

Calculate expected values and use them to solve problems.

HSS.MD.A.1

Define a random variable for a quantity of interest by assigning a numerical value to each event in a sample space; graph the corresponding probability distribution using the same graphical displays as for data distributions.

HSS.MD.A.2

Calculate the expected value of a random variable; interpret it as the mean of the probability distribution.

HSS.MD.A.3

Develop a probability distribution for a random variable defined for a sample space in which theoretical probabilities can be calculated; find the expected value. For example, find the theoretical probability distribution for the number of correct answers obtained by guessing on all five questions of a multiple-choice test where each question has four choices, and find the expected grade under various grading schemes.

HSS.MD.A.4

Develop a probability distribution for a random variable defined for a sample space in which probabilities are assigned empirically; find the expected value. For example, find a current data distribution on the number of TV sets per household in the United States, and calculate the expected number of sets per household. How many TV sets would you expect to find in 100 randomly selected households?

SR.A.9

Use probability to evaluate outcomes of decisions.

Unit 12: Statistics

HS Algebra 2

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Lesson 12.01 - Probability of Compound Events

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students learn to calculate probabilities for compound events and distinguish between independent and dependent events.

STANDARDS

Maine - High School - Mathematics - Statistical Reasoning (2020)
SR.A.6
Understand independence and conditional probability and use them to interpret data.
HSS.CP.A.1
Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events (or, and, not).

Lesson 12.02 - Conditional Probability

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students find conditional probabilities using definitions, formulas, and two-way frequency tables.

STANDARDS

Maine - High School - Mathematics - Statistical Reasoning (2020)
SR.A.6
Understand independence and conditional probability and use them to interpret data.
HSS.CP.A.1
Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events (or, and, not).
HSS.CP.A.2
Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent.
HSS.CP.A.3

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Understand the conditional probability of A given B as $P(A \text{ and } B)/P(B)$, and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B.

HSS.CP.A.4

Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results.

HSS.CP.A.5

Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer.

SR.A.9

Use probability to evaluate outcomes of decisions.

HSS.ID.B.5

Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data.

Lesson 12.03 - Binomial Probability

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students practice calculating combinations and permutations. The probability formula for binomial experiments is introduced and applied.

STANDARDS

Maine - High School - Mathematics - Statistical Reasoning (2020)

SR.A.4

Understand and evaluate random processes underlying statistical experiments.

HSS.IC.A.1

Unit 12: Statistics

HS Algebra 2

Understand statistics as a process for making inferences about population parameters based on a random sample from that population.

HSS.CP.B.9

Use permutations and combinations to compute probabilities of compound events and solve problems.

SR.A.9

Use probability to evaluate outcomes of decisions.

HSS.MD.A.3

Develop a probability distribution for a random variable defined for a sample space in which theoretical probabilities can be calculated; find the expected value. For example, find the theoretical probability distribution for the number of correct answers obtained by guessing on all five questions of a multiple-choice test where each question has four choices, and find the expected grade under various grading schemes.

HSS.MD.A.4

Develop a probability distribution for a random variable defined for a sample space in which probabilities are assigned empirically; find the expected value. For example, find a current data distribution on the number of TV sets per household in the United States, and calculate the expected number of sets per household. How many TV sets would you expect to find in 100 randomly selected households?

Maine - High School - Mathematics - Algebraic Reasoning (2020)

AR.A.1

Interpret the structure of expressions.

HSA.SSE.A.1

Interpret expressions that represent a quantity in terms of its context.

HSA.SSE.A.1a

Interpret parts of an expression, such as terms, factors, and coefficients.

HSA.SSE.A.1b

Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.

Unit 12: Statistics

HS Algebra 2

Lesson 12.04 - Uniform Probability Model

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 3

Description: Students solve probability problems using combinations, permutations, and the concept of equally likely outcomes in uniform probability models.

STANDARDS

Maine - High School - Mathematics - Statistical Reasoning (2020)
SR.A.4
Understand and evaluate random processes underlying statistical experiments.
HSS.IC.A.1
Understand statistics as a process for making inferences about population parameters based on a random sample from that population.
HSS.CP.B.9
Use permutations and combinations to compute probabilities of compound events and solve problems.
HSS.MD.A.3
Develop a probability distribution for a random variable defined for a sample space in which theoretical probabilities can be calculated; find the expected value. For example, find the theoretical probability distribution for the number of correct answers obtained by guessing on all five questions of a multiple-choice test where each question has four choices, and find the expected grade under various grading schemes.
HSS.MD.A.4
Develop a probability distribution for a random variable defined for a sample space in which probabilities are assigned empirically; find the expected value. For example, find a current data distribution on the number of TV sets per household in the United States, and calculate the expected number of sets per household. How many TV sets would you expect to find in 100 randomly selected households?
SR.A.9
Use probability to evaluate outcomes of decisions.
SR.A.7
Use the rules of probability to compute probabilities of compound events in a uniform probability model.
Maine - High School - Mathematics - Algebraic Reasoning (2020)

Unit 12: Statistics

HS Algebra 2

AR.A.1
Interpret the structure of expressions.
HSA.SSE.A.1a
Interpret parts of an expression, such as terms, factors, and coefficients.
HSA.SSE.A.1b
Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.
HSA.SSE.A.1
Interpret expressions that represent a quantity in terms of its context.

Lesson 12.05 - Mid-Unit Assessment

Assessment Type: Summative / Diagnostic

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 3

Description: Students complete a mid-unit assessment that covers the probability calculations for related events, binomial probability, and the probability applications of permutations and combinations.

STANDARDS

Maine - High School - Mathematics - Statistical Reasoning (2020)
HSS.ID.B.5
Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data.
SR.A.4
Understand and evaluate random processes underlying statistical experiments.
HSS.IC.A.1
Understand statistics as a process for making inferences about population parameters based on a random sample from that population.
SR.A.6
Understand independence and conditional probability and use them to interpret data.

Unit 12: Statistics

HS Algebra 2

HSS.CP.A.1

Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events (or, and, not).

HSS.CP.A.2

Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent.

HSS.CP.A.3

Understand the conditional probability of A given B as $P(A \text{ and } B)/P(B)$, and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B.

HSS.CP.A.4

Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results.

HSS.CP.A.5

Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer.

SR.A.7

Use the rules of probability to compute probabilities of compound events in a uniform probability model.

HSS.CP.B.9

Use permutations and combinations to compute probabilities of compound events and solve problems.

HSS.MD.A.3

Develop a probability distribution for a random variable defined for a sample space in which theoretical probabilities can be calculated; find the expected value. For example, find the theoretical probability distribution for the number of correct answers obtained by guessing on all five questions of a multiple-choice test where each question has four choices, and find the expected grade under various grading schemes.

HSS.MD.A.4

Unit 12: Statistics

HS Algebra 2

Develop a probability distribution for a random variable defined for a sample space in which probabilities are assigned empirically; find the expected value. For example, find a current data distribution on the number of TV sets per household in the United States, and calculate the expected number of sets per household. How many TV sets would you expect to find in 100 randomly selected households?

SR.A.9

Use probability to evaluate outcomes of decisions.

Maine - High School - Mathematics - Algebraic Reasoning (2020)

HSA.SSE.A.1

Interpret expressions that represent a quantity in terms of its context.

HSA.SSE.A.1a

Interpret parts of an expression, such as terms, factors, and coefficients.

AR.A.1

Interpret the structure of expressions.

HSA.SSE.A.1b

Interpret multi-part expressions by viewing one or more of their parts as a single entity. For example, view $P(1+r)^n$ as the product of P and a factor not depending on P and interpret the parts.

Lesson 12.06 - Discrete Distributions and Expected Value

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: From probability tables of random variables, students graph discrete probability distributions and calculate expected values.

STANDARDS

Maine - High School - Mathematics - Statistical Reasoning (2020)

SR.A.1

Summarize, represent, and interpret data on a single count or measurement variable.

HSS.IC.A.1

Understand statistics as a process for making inferences about population parameters based on a random sample from that population.

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SR.A.8
Calculate expected values and use them to solve problems.
HSS.MD.A.1
Define a random variable for a quantity of interest by assigning a numerical value to each event in a sample space; graph the corresponding probability distribution using the same graphical displays as for data distributions.
HSS.MD.A.2
Calculate the expected value of a random variable; interpret it as the mean of the probability distribution.
HSS.MD.A.4
Develop a probability distribution for a random variable defined for a sample space in which probabilities are assigned empirically; find the expected value. For example, find a current data distribution on the number of TV sets per household in the United States, and calculate the expected number of sets per household. How many TV sets would you expect to find in 100 randomly selected households?
SR.A.4
Understand and evaluate random processes underlying statistical experiments.

Lesson 12.07 - Variance & Standard Deviation

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students compute the variance and standard deviation of random variables in probability distributions. The standard deviation for distributions are compared and understood graphically.

STANDARDS

Maine - High School - Mathematics - Statistical Reasoning (2020)
SR.A.1
Summarize, represent, and interpret data on a single count or measurement variable.
SR.A.8
Calculate expected values and use them to solve problems.
HSS.MD.A.1
Define a random variable for a quantity of interest by assigning a numerical value to each event in a sample space; graph the corresponding probability distribution using the same graphical displays as for data distributions.

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HSS.MD.A.2

Calculate the expected value of a random variable; interpret it as the mean of the probability distribution.

HSS.MD.A.4

Develop a probability distribution for a random variable defined for a sample space in which probabilities are assigned empirically; find the expected value. For example, find a current data distribution on the number of TV sets per household in the United States, and calculate the expected number of sets per household. How many TV sets would you expect to find in 100 randomly selected households?

HSS.IC.A.1

Understand statistics as a process for making inferences about population parameters based on a random sample from that population.

SR.A.4

Understand and evaluate random processes underlying statistical experiments.

Lesson 12.08 - Normal Distribution

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 2

Description: Students learn to find probabilities in the normal distribution and build an understanding of graphs of continuous distributions. Calculators are used to calculate the probabilities and intervals.

STANDARDS

Maine - High School - Mathematics - Statistical Reasoning (2020)

SR.A.1

Summarize, represent, and interpret data on a single count or measurement variable.

HSS.ID.A.3

Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).

HSS.ID.A.1

Represent data with plots on the real number line (dot plots, histograms, and box plots).

HSS.ID.A.2

Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread

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(interquartile range, standard deviation) of two or more different data sets.

HSS.ID.A.4

Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve.

SR.A.4

Understand and evaluate random processes underlying statistical experiments.

HSS.IC.A.1

Understand statistics as a process for making inferences about population parameters based on a random sample from that population.

HSS.MD.A.3

Develop a probability distribution for a random variable defined for a sample space in which theoretical probabilities can be calculated; find the expected value. For example, find the theoretical probability distribution for the number of correct answers obtained by guessing on all five questions of a multiple-choice test where each question has four choices, and find the expected grade under various grading schemes.

HSS.MD.A.4

Develop a probability distribution for a random variable defined for a sample space in which probabilities are assigned empirically; find the expected value. For example, find a current data distribution on the number of TV sets per household in the United States, and calculate the expected number of sets per household. How many TV sets would you expect to find in 100 randomly selected households?

SR.A.9

Use probability to evaluate outcomes of decisions.

Lesson 12.09 - Law of Large Numbers

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): 3

Description: Students explore how the distribution of sample means behaves with increasing sample size, and relate normal distributions as an approximation to binomial distributions.

STANDARDS

Maine - High School - Mathematics - Statistical Reasoning (2020)

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SR.A.1
Summarize, represent, and interpret data on a single count or measurement variable.
HSS.ID.A.3
Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).
HSS.ID.A.4
Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve.
SR.A.4
Understand and evaluate random processes underlying statistical experiments.
HSS.IC.A.1
Understand statistics as a process for making inferences about population parameters based on a random sample from that population.
HSS.MD.A.3
Develop a probability distribution for a random variable defined for a sample space in which theoretical probabilities can be calculated; find the expected value. For example, find the theoretical probability distribution for the number of correct answers obtained by guessing on all five questions of a multiple-choice test where each question has four choices, and find the expected grade under various grading schemes.
HSS.MD.A.4
Develop a probability distribution for a random variable defined for a sample space in which probabilities are assigned empirically; find the expected value. For example, find a current data distribution on the number of TV sets per household in the United States, and calculate the expected number of sets per household. How many TV sets would you expect to find in 100 randomly selected households?
SR.A.9
Use probability to evaluate outcomes of decisions.

Lesson 12.10 - Unit Review

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 2

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Description: A full class session is dedicated to reviewing the skills and concepts from this unit. Students complete practice problems, review vocabulary and definitions, and revisit challenging problems from earlier lessons.

Lesson 12.11 - Unit Assessment

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): 3

Description: A full class session is used for a summative exam, assessing students on all covered material in the unit.

STANDARDS

Maine - High School - Mathematics - Statistical Reasoning (2020)
SR.A.1
Summarize, represent, and interpret data on a single count or measurement variable.
HSS.ID.A.3
Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).
HSS.ID.A.4
Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve.
HSS.ID.B.5
Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data.
SR.A.4
Understand and evaluate random processes underlying statistical experiments.
HSS.IC.A.1
Understand statistics as a process for making inferences about population parameters based on a random sample from that population.
HSS.CP.A.1
Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the

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outcomes, or as unions, intersections, or complements of other events (or, and, not).

SR.A.6

Understand independence and conditional probability and use them to interpret data.

HSS.CP.A.2

Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent.

HSS.CP.A.3

Understand the conditional probability of A given B as $P(A \text{ and } B)/P(B)$, and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B.

HSS.CP.A.4

Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results.

HSS.CP.A.5

Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer.

SR.A.7

Use the rules of probability to compute probabilities of compound events in a uniform probability model.

HSS.CP.B.9

Use permutations and combinations to compute probabilities of compound events and solve problems.

SR.A.8

Calculate expected values and use them to solve problems.

HSS.MD.A.1

Define a random variable for a quantity of interest by assigning a numerical value to each event in a sample

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space; graph the corresponding probability distribution using the same graphical displays as for data distributions.

HSS.MD.A.2

Calculate the expected value of a random variable; interpret it as the mean of the probability distribution.

HSS.MD.A.3

Develop a probability distribution for a random variable defined for a sample space in which theoretical probabilities can be calculated; find the expected value. For example, find the theoretical probability distribution for the number of correct answers obtained by guessing on all five questions of a multiple-choice test where each question has four choices, and find the expected grade under various grading schemes.

HSS.MD.A.4

Develop a probability distribution for a random variable defined for a sample space in which probabilities are assigned empirically; find the expected value. For example, find a current data distribution on the number of TV sets per household in the United States, and calculate the expected number of sets per household. How many TV sets would you expect to find in 100 randomly selected households?

SR.A.9

Use probability to evaluate outcomes of decisions.

HS Algebra 2

Maine Virtual Academy

School Year 2024-2025 (Aug 26, 2024 - Jun 13, 2025)

UNIT	# OF TEACHING DAYS	DATES
 Unit 1: Equations and Inequalities	19 teaching days	Aug 26 - Sep 25, 2024
 Unit 2: Properties of Functions	9 teaching days	Sep 26 - Oct 11, 2024
 Unit 3: Function Transformations & Composition	12 teaching days	Oct 15 - Oct 30, 2024
 Unit 4: Complex Numbers & Radical Expressions	10 teaching days	Oct 31 - Nov 14, 2024
 Unit 5: Quadratic Functions	12 teaching days	Nov 15 - Dec 5, 2024
 Unit 6: Polynomial Functions	19 teaching days	Dec 6, 2024 - Jan 13, 2025
 Unit 7: Exponential Functions	10 teaching days	Jan 17 - Jan 31, 2025
 Unit 8: Logarithmic Functions	15 teaching days	Feb 3 - Feb 28, 2025
 Unit 9: Rational Functions	10 teaching days	Mar 3 - Mar 14, 2025
 Unit 10: Trigonometric Identities	13 teaching days	Mar 17 - Apr 4, 2025
 Unit 11: Trigonometric Functions	4 teaching days	Apr 7 - Apr 17, 2025
 Unit 12: Statistics	26 teaching days	Apr 28 - Jun 13, 2025

August

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
28	29	30	31	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26 Unit 1: Equations...	27 Unit 1: Equations...	28 Unit 1: Equations...	29 Unit 1: Equations...	30 Unit 1: Equations...	31

September

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2 Labor Day	3 Unit 1: Equations...	4 Unit 1: Equations...	5 Unit 1: Equations...	6 Unit 1: Equations...	7
8	9 Unit 1: Equations...	10 Fall NWEA Testing	11 Fall NWEA Testing	12 Fall NWEA Testing	13 Unit 1: Equations...	14
15	16 Unit 1: Equations...	17 Unit 1: Equations...	18 Unit 1: Equations...	19 Unit 1: Equations...	20 Unit 1: Equations...	21
22	23 Unit 1: Equations...	24 Unit 1: Equations...	25 Unit 1: Equations...	26 Unit 2: Properties...	27 Unit 2: Properties...	28
29	30 Unit 2: Properties...	1 Unit 2: Properties...	2 Unit 2: Properties...	3 Unit 2: Properties...	4 Unit 2: Properties...	5

October

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
29	30 Unit 2: Properties...	1 Unit 2: Properties...	2 Unit 2: Properties...	3 Unit 2: Properties...	4 Unit 2: Properties...	5
6	7 Maine Through Year (Tentative)	8 Maine Through Year (Tentative)	9 Maine Through Year (Tentative)	10 Unit 2: Properties...	11 Unit 2: Properties...	12
13	14 Indigenous Peoples' Day	15 Unit 3: Function T...	16 Unit 3: Function T...	17 Unit 3: Function T...	18 Unit 3: Function T...	19
20	21 Unit 3: Function T...	22 Unit 3: Function T...	23 Unit 3: Function T...	24 Unit 3: Function T...	25 Unit 3: Function T...	26
27	28 Unit 3: Function T...	29 Unit 3: Function T...	30 Unit 3: Function T...	31 Unit 4: Complex ...	1 Unit 4: Complex ...	2

November

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
27	28 Unit 3: Function T...	29 Unit 3: Function T...	30 Unit 3: Function T...	31 Unit 4: Complex ...	1 Unit 4: Complex ...	2
3	4 Unit 4: Complex ...	5 Unit 4: Complex ...	6 Unit 4: Complex ...	7 Unit 4: Complex ...	8 Unit 4: Complex ...	9
10	11 Veterans Day	12 Unit 4: Complex ...	13 Unit 4: Complex ...	14 Unit 4: Complex ...	15 Unit 5: Quadratic ...	16
17	18 Unit 5: Quadratic ...	19 Unit 5: Quadratic ...	20 Unit 5: Quadratic ...	21 Unit 5: Quadratic ...	22 Unit 5: Quadratic ...	23
24	25 Unit 5: Quadratic ...	26 Unit 5: Quadratic ...	27 Thanksgiving	28 Thanksgiving	29 Thanksgiving	30

December

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2 Unit 5: Quadratic ...	3 Unit 5: Quadratic ...	4 Unit 5: Quadratic ...	5 Unit 5: Quadratic ...	6 Unit 6: Polynomia...	7
8	9 Unit 6: Polynomia...	10 Unit 6: Polynomia...	11 Unit 6: Polynomia...	12 Unit 6: Polynomia...	13 Unit 6: Polynomia...	14
15	16 Unit 6: Polynomia...	17 Unit 6: Polynomia...	18 Unit 6: Polynomia...	19 Unit 6: Polynomia...	20 Unit 6: Polynomia...	21
22	23 Winter Break	24 Winter Break	25 Winter Break	26 Winter Break	27 Winter Break	28 Winter Break
29 Winter Break	30 Winter Break	31 Winter Break	1 New Year's Day	2 Unit 6: Polynomia...	3 Unit 6: Polynomia...	4

January

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
29 Winter Break	30 Winter Break	31 Winter Break	1 New Year's Day	2 Unit 6: Polynomia...	3 Unit 6: Polynomia...	4
5	6 Unit 6: Polynomia...	7 Unit 6: Polynomia...	8 Unit 6: Polynomia...	9 Unit 6: Polynomia...	10 Unit 6: Polynomia...	11
12	13 Unit 6: Polynomia...	14 Winter NWEA Testing	15 Winter NWEA Testing	16 Winter NWEA Testing	17 Unit 7: Exponenti...	18
19	20 Martin Luther King, Jr. Day	21 Unit 7: Exponenti...	22 Unit 7: Exponenti...	23 Unit 7: Exponenti...	24 Unit 7: Exponenti...	25
26	27 Unit 7: Exponenti...	28 Unit 7: Exponenti...	29 Unit 7: Exponenti...	30 Unit 7: Exponenti...	31 Unit 7: Exponenti...	1

February

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
26	27 Unit 7: Exponenti...	28 Unit 7: Exponenti...	29 Unit 7: Exponenti...	30 Unit 7: Exponenti...	31 Unit 7: Exponenti...	1
2	3 Unit 8: Logarithmi...	4 Unit 8: Logarithmi...	5 Unit 8: Logarithmi...	6 Unit 8: Logarithmi...	7 Unit 8: Logarithmi...	8
9	10 Unit 8: Logarithmi...	11 Unit 8: Logarithmi...	12 Unit 8: Logarithmi...	13 Unit 8: Logarithmi...	14 Unit 8: Logarithmi...	15
16	17 Presidents' Day	18 February Break	19 February Break	20 February Break	21 February Break	22
23	24 Unit 8: Logarithmi...	25 Unit 8: Logarithmi...	26 Unit 8: Logarithmi...	27 Unit 8: Logarithmi...	28 Unit 8: Logarithmi...	1

March

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
23	24 Unit 8: Logarithmi...	25 Unit 8: Logarithmi...	26 Unit 8: Logarithmi...	27 Unit 8: Logarithmi...	28 Unit 8: Logarithmi...	1
2	3 Unit 9: Rational F...	4 Unit 9: Rational F...	5 Unit 9: Rational F...	6 Unit 9: Rational F...	7 Unit 9: Rational F...	8
9	10 Unit 9: Rational F...	11 Unit 9: Rational F...	12 Unit 9: Rational F...	13 Unit 9: Rational F...	14 Unit 9: Rational F...	15
16	17 Unit 10: Trigono...	18 Unit 10: Trigono...	19 Unit 10: Trigono...	20 March Break	21 March Break	22
23	24 Unit 10: Trigono...	25 Unit 10: Trigono...	26 Unit 10: Trigono...	27 Unit 10: Trigono...	28 Unit 10: Trigono...	29
30	31 Unit 10: Trigono...	1 Unit 10: Trigono...	2 Unit 10: Trigono...	3 Unit 10: Trigono...	4 Unit 10: Trigono...	5

April

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
30	31 Unit 10: Trigono...	1 Unit 10: Trigono...	2 Unit 10: Trigono...	3 Unit 10: Trigono...	4 Unit 10: Trigono...	5
6	7 MEA Science (HS)	8 MEA Science (HS)	9 MEA Science (HS)	10 MEA Science (HS)	11 MEA Science (HS)	12
13	14 Unit 11: Trigonom...	15 Unit 11: Trigonom...	16 Unit 11: Trigonom...	17 Unit 11: Trigonom...	18 April Vacation	19 April Vacation
20 April Vacation	21 April Vacation	22 April Vacation	23 April Vacation	24 April Vacation	25 April Vacation	26
27	28 Unit 12: Statistics	29 Spring NWEA Testing	30 Spring NWEA Testing	1 Spring NWEA Testing	2 Unit 12: Statistics	3

May

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
27	28 Unit 12: Statistics	29 Spring NWEA Testing	30 Spring NWEA Testing	1 Spring NWEA Testing	2 Unit 12: Statistics	3
4	5 Unit 12: Statistics	6 Unit 12: Statistics	7 Unit 12: Statistics	8 Unit 12: Statistics	9 Unit 12: Statistics	10
11	12 MEA (ELA & Math)	13 MEA (ELA & Math)	14 MEA (ELA & Math)	15 MEA (ELA & Math)	16 MEA (ELA & Math)	17
18	19 Unit 12: Statistics	20 Unit 12: Statistics	21 Unit 12: Statistics	22 Unit 12: Statistics	23 Unit 12: Statistics	24
25	26 Memorial Day	27 Unit 12: Statistics	28 Unit 12: Statistics	29 Unit 12: Statistics	30 Unit 12: Statistics	31

June

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2 Unit 12: Statistics	3 Unit 12: Statistics	4 Unit 12: Statistics	5 Unit 12: Statistics	6 Unit 12: Statistics	7
8	9 Unit 12: Statistics	10 Unit 12: Statistics	11 Unit 12: Statistics	12 Unit 12: Statistics	13 Unit 12: Statistics	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	1	2	3	4	5

HS American Literature (English)

Maine Virtual Academy

UNITS (13/13 SELECTED)	SUGGESTED DURATION
<div></div> Unit 1: Sem. 1: Early American Literature	26 teaching days
<div></div> Unit 2: Sem. 1: American Gothic Literature	31 teaching days
<div></div> Unit 3: Sem. 1: Novel Study	15 teaching days
<div></div> Unit 4: Sem. 1: Reading Logs	80 teaching days
<div></div> Unit 5: Sem. 1: Grammar Work	80 teaching days
<div></div> Unit 6: Sem. 1: Greek & Latin Roots	80 teaching days
<div></div> Unit 7: Sem. 1: Skills Work	80 teaching days
<div></div> Unit 8: Sem. 2: Argumentative Writing	37 teaching days
<div></div> Unit 9: Sem. 2: Novel Study	14 teaching days
<div></div> Unit 10: Sem. 2: Poetry	27 teaching days
<div></div> Unit 11: Sem. 2: Reading Bookmarks	77 teaching days
<div></div> Unit 12: Sem. 2: Skills Work	77 teaching days
<div></div> Unit 13: Sem. 2: Greek & Latin Roots	77 teaching days

Unit 1: Sem. 1: Early American Literature

HS American Literature (English)

UNIT SUMMARY

In this unit, students will explore early American literature, including Native American myths, Puritan writings, and colonial texts. Students will learn how these stories and writings reflect the beliefs, values, and experiences of people living in early America.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
L.2.9-Diploma.d
Spell correctly.
L.3.9-Diploma.a
Write and edit work so that it conforms to the guidelines in a style manual appropriate for the discipline and writing task.
L.3.9-Diploma.b
Vary syntax for effect, consulting references for guidance as needed; apply an understanding of syntax to the study of complex texts when reading.
L.4.9-Diploma.d
Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).
L.5.9-Diploma.a
Interpret figures of speech (e.g., euphemism, oxymoron, hyperbole, paradox) in context and analyze their role in the text.
L.6.9-Diploma
Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.
SL.1.9-Diploma.a
Participate effectively in a range of collaborative discussions (one-on-one, in groups, student-led, and teacher-led) on grades 9-Diploma topics texts, and issues, building on others' ideas and expressing their own clearly and persuasively.
SL.1.9-Diploma.b

Unit 1: Sem. 1: Early American Literature

HS American Literature (English)

Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas.

SL.1.9-Diploma.d

Propel conversations by posing and responding to questions that probe reasoning and evidence.

SL.2.9-Diploma.b

Evaluate the speaker's technique, including use of evidence, reasoning, stylistic and rhetorical elements, or other features appropriate to the task.

SL.3.9-Diploma.a

Present information, findings, and supporting evidence, conveying a clear and distinct perspective so that listeners can follow the line of reasoning.

SL.3.9-Diploma.d

Make strategic use of multimedia (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence.

SL.4.9-Diploma

Adapt speech to a variety of contexts, demonstrating a command of language in the appropriate register.

R.2.9-Diploma

Some learners may enter your classroom without having mastered the skills identified in previous grade levels or grade spans. In cases when this occurs, teachers should

- assess where students are,
- determine what they need to learn to master the skills appropriate to their grade level or grade span, and
- access district resources to help students move toward proficiency.

R.4.9-Diploma

Cite strong and thorough textual evidence to support analysis of various texts in ways that demonstrate what the text(s) says explicitly and implicitly, including attending to moments of textual inconsistency or ambiguity.

R.5.9-Diploma.a

Provide accurate summaries of various texts that make clear the relationships among the key details and ideas.

Unit 1: Sem. 1: Early American Literature

HS American Literature (English)

R.5.9-Diploma.b
Determine the theme(s) or central idea(s) of various texts and analyze the development of the theme(s) or central idea(s) over the course of the texts, including how elements interact and build on one another, to provide a complex account or analysis.
R.6.9-Diploma
Analyze the impact of an author's choices and determine how specific individuals/characters, elements and/or techniques, events, or ideas interact and develop over the course of the text (or a series of texts).
R.7.9-Diploma
Determine the meaning of figurative, connotative, and technical word meanings and phrases as they are used in various contexts and texts; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings and/or language that is particularly evocative.
R.8.9-Diploma.a
Analyze the organization and structure of specific features and components in various texts
R.8.9-Diploma.b
Evaluate the effectiveness of text structures in conveying the overall meaning and/or purpose of the text as a whole.
R.9.9-Diploma
Analyze and evaluate how authors from various contexts (e.g. diverse, intersectional, multicultural, religious) use perspective and purpose to shape the intended content, style, and effect of various texts.
R.10.9-Diploma.a
Evaluate the effectiveness of how authors use literary and/or rhetorical strategies to develop arguments in various texts.
R.10.9-Diploma.b
Evaluate the premises, claims, and/or conclusions in various texts, verifying the information when possible and corroborating or challenging conclusions with other sources of information.
R.11.9-Diploma.a
Evaluate and synthesize multiple sources of information and various texts (e.g., literary, visual, artistic, and quantitative) in order to achieve a specific purpose or to answer a question.
R.11.9-Diploma.b

Unit 1: Sem. 1: Early American Literature

HS American Literature (English)

Analyze how various authors or texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.

R.12.9-Diploma.a

Read with sufficient accuracy and fluency to support comprehension.

R.12.9-Diploma.b

Read various on-level texts with purpose and understanding.

R.12.9-Diploma.c

Use context to confirm or self-correct word recognition.

W.1.9-Diploma.b

Assess the credibility, accuracy, and usefulness of a variety of authoritative sources in order to synthesize relevant information that leads to logical, increasingly complex conclusions.

W.1.9-Diploma.c

Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.

W.2.9-Diploma.b

Use technology and ongoing feedback, including new arguments and information, to produce increasingly dynamic writing products.

W.3.9-Diploma.e

Provide closure that enhances, supports, and reflects the purpose of the piece.

Unit 1: Sem. 1: Early American Literature

HS American Literature (English)

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Get to Know Me Activity

Assessment Type: Formative / Summative / Diagnostic

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Complete a Getting to Know Me document.

No Red Ink Diagnostic

Assessment Type: Formative / Summative / Diagnostic

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Complete a skills diagnostic to assess strengths and weaknesses in ELA skills.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

L.4.9-Diploma.b

Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., conceive, conception, conceivable).

L.4.9-Diploma.c

Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

L.6.9-Diploma

Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Read Aloud

Assessment Type: Formative / Summative / Diagnostic

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Read a passage aloud for 1 minute.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

R.12.9-Diploma.a

Unit 1: Sem. 1: Early American Literature

HS American Literature (English)

Read with sufficient accuracy and fluency to support comprehension.

R.12.9-Diploma.b

Read various on-level texts with purpose and understanding.

R.12.9-Diploma.c

Use context to confirm or self-correct word recognition.

Rip Van Winkle Pear Deck Comprehension Questions

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Complete 10 comprehension questions and 3 opinion questions about Rip Van Winkle

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

L.2.9-Diploma.d

Spell correctly.

L.5.9-Diploma.a

Interpret figures of speech (e.g., euphemism, oxymoron, hyperbole, paradox) in context and analyze their role in the text.

SL.1.9-Diploma.a

Participate effectively in a range of collaborative discussions (one-on-one, in groups, student-led, and teacher-led) on grades 9-Diploma topics texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

SL.1.9-Diploma.b

Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas.

SL.1.9-Diploma.d

Propel conversations by posing and responding to questions that probe reasoning and evidence.

R.4.9-Diploma

Unit 1: Sem. 1: Early American Literature

HS American Literature (English)

Cite strong and thorough textual evidence to support analysis of various texts in ways that demonstrate what the text(s) says explicitly and implicitly, including attending to moments of textual inconsistency or ambiguity.

R.12.9-Diploma.a

Read with sufficient accuracy and fluency to support comprehension.

RVW Creative Writing Prompt

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK3 / DOK4

Description: Complete a creative writing prompt of your choice about Rip Van Winkle.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

R.4.9-Diploma

Cite strong and thorough textual evidence to support analysis of various texts in ways that demonstrate what the text(s) says explicitly and implicitly, including attending to moments of textual inconsistency or ambiguity.

R.5.9-Diploma.b

Determine the theme(s) or central idea(s) of various texts and analyze the development of the theme(s) or central idea(s) over the course of the texts, including how elements interact and build on one another, to provide a complex account or analysis.

R.12.9-Diploma.c

Use context to confirm or self-correct word recognition.

W.2.9-Diploma.b

Use technology and ongoing feedback, including new arguments and information, to produce increasingly dynamic writing products.

W.1.9-Diploma.b

Assess the credibility, accuracy, and usefulness of a variety of authoritative sources in order to synthesize relevant information that leads to logical, increasingly complex conclusions.

Walden Note-Taking Doc

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Unit 1: Sem. 1: Early American Literature

HS American Literature (English)

Assessment Level (DOK): DOK1

Description: Complete the Note-Taking Document for Walden

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

W.1.9-Diploma.c

Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.

Transcendentalism Exit Ticket

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: A one-question written response quiz.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

R.4.9-Diploma

Cite strong and thorough textual evidence to support analysis of various texts in ways that demonstrate what the text(s) says explicitly and implicitly, including attending to moments of textual inconsistency or ambiguity.

Unit 2: Sem. 1: American Gothic Literature

HS American Literature (English)

UNIT SUMMARY

In this unit, students will explore Gothic American literature by reading spooky and mysterious stories filled with dark settings and strange characters. Students will learn how these stories use fear and emotion to show deeper ideas about human nature and society.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
W.3.9-Diploma.e
Provide closure that enhances, supports, and reflects the purpose of the piece.
W.3.9-Diploma.d
Effectively use increasingly sophisticated, precise language to establish a highly developed voice and tone.
W.3.9-Diploma.c
Use appropriate and varied transitions, along with purposeful syntax, to create cohesion that clarifies relationships among increasingly complex ideas.
W.3.9-Diploma.b
Develop and support the topic with a variety of relevant techniques and by purposefully embedding the most significant details.
W.3.9-Diploma.a
Compose clear and increasingly varied and complex pieces with purposefully designed sections that are organized to fully explore the depth and significance of ideas that are appropriate to task, audience, and purpose.
W.2.9-Diploma.c
Demonstrate and maintain command of keyboarding skills to produce sustained writing of increasing length.
W.2.9-Diploma.b
Use technology and ongoing feedback, including new arguments and information, to produce increasingly dynamic writing products.
W.2.9-Diploma.a
Develop and strengthen writing as needed by planning, composing, revising, editing, rewriting, reflecting, and/or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.
W.1.9-Diploma.d

Unit 2: Sem. 1: American Gothic Literature

HS American Literature (English)

Follow a standard format for citation (in-text and a list of sources) that applies to task, audience, and purpose.
W.1.9-Diploma.c
Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.
W.1.9-Diploma.b
Assess the credibility, accuracy, and usefulness of a variety of authoritative sources in order to synthesize relevant information that leads to logical, increasingly complex conclusions.
W.1.9-Diploma.a
Investigate self-generated questions by participating in sustained inquiry that builds increasingly complex knowledge or that solves a problem, refocusing inquiry and/or incorporating effective advanced searches as needed.
R.12.9-Diploma.b
Read various on-level texts with purpose and understanding.
R.11.9-Diploma.b
Analyze how various authors or texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.
R.10.9-Diploma.a
Evaluate the effectiveness of how authors use literary and/or rhetorical strategies to develop arguments in various texts.
L.2.9-Diploma.d
Spell correctly.
L.2.9-Diploma.b
Use a colon to introduce a list or quotation.
L.2.9-Diploma.a
Use a semicolon (and perhaps a conjunctive adverb) to link two or more closely related independent clauses.
L.1.9-Diploma.d
Resolve issues of complex or contested usage, consulting references as needed.

Unit 2: Sem. 1: American Gothic Literature

HS American Literature (English)

L.1.9-Diploma.c
Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.
L.1.9-Diploma.a
Use parallel structure.
L.1.9-Diploma.b
Use various types of phrases (noun, verb, adjectival, adverbial, participial, prepositional, absolute) and clauses (independent, dependent; noun, relative, adverbial) to convey specific meanings and add variety and interest to writing or presentations.
L.3.9-Diploma.a
Write and edit work so that it conforms to the guidelines in a style manual appropriate for the discipline and writing task.
L.5.9-Diploma.a
Interpret figures of speech (e.g., euphemism, oxymoron, hyperbole, paradox) in context and analyze their role in the text.
L.5.9-Diploma.b
Analyze nuances in the meaning of words with similar denotations.
SL.1.9-Diploma.a
Participate effectively in a range of collaborative discussions (one-on-one, in groups, student-led, and teacher-led) on grades 9-Diploma topics texts, and issues, building on others' ideas and expressing their own clearly and persuasively.
SL.1.9-Diploma.c
Work with peers to promote civil, democratic discussions and decision-making, set clear goals and deadlines, and establish individual roles as needed.
SL.1.9-Diploma.d
Propel conversations by posing and responding to questions that probe reasoning and evidence.
SL.1.9-Diploma.e
Respond thoughtfully to diverse perspectives; synthesize comments, claims, and evidence made on all sides of an

Unit 2: Sem. 1: American Gothic Literature

HS American Literature (English)

issue; resolve contradictions when possible; and determine what additional information or research is required to deepen the investigation or complete the task.

SL.3.9-Diploma.a

Present information, findings, and supporting evidence, conveying a clear and distinct perspective so that listeners can follow the line of reasoning.

R.4.9-Diploma

Cite strong and thorough textual evidence to support analysis of various texts in ways that demonstrate what the text(s) says explicitly and implicitly, including attending to moments of textual inconsistency or ambiguity.

R.5.9-Diploma.a

Provide accurate summaries of various texts that make clear the relationships among the key details and ideas.

R.6.9-Diploma

Analyze the impact of an author's choices and determine how specific individuals/characters, elements and/or techniques, events, or ideas interact and develop over the course of the text (or a series of texts).

R.8.9-Diploma.b

Evaluate the effectiveness of text structures in conveying the overall meaning and/or purpose of the text as a whole.

R.8.9-Diploma.a

Analyze the organization and structure of specific features and components in various texts

Unit 2: Sem. 1: American Gothic Literature

HS American Literature (English)

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

The Legend of Sleepy Hollow Graphic Organizer

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2

Description: A graphic organizer for note-taking.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
W.1.9-Diploma.c
Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.
W.2.9-Diploma.a
Develop and strengthen writing as needed by planning, composing, revising, editing, rewriting, reflecting, and/or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.
R.4.9-Diploma
Cite strong and thorough textual evidence to support analysis of various texts in ways that demonstrate what the text(s) says explicitly and implicitly, including attending to moments of textual inconsistency or ambiguity.

The Legend of Sleepy Hollow Creative Writing

Assessment Type: Summative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Description: Write a prequel or sequel to the original story.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
W.3.9-Diploma.a
Compose clear and increasingly varied and complex pieces with purposefully designed sections that are organized to fully explore the depth and significance of ideas that are appropriate to task, audience, and purpose.
W.3.9-Diploma.b
Develop and support the topic with a variety of relevant techniques and by purposefully embedding the most significant details.

Unit 2: Sem. 1: American Gothic Literature

HS American Literature (English)

W.3.9-Diploma.c

Use appropriate and varied transitions, along with purposeful syntax, to create cohesion that clarifies relationships among increasingly complex ideas.

W.3.9-Diploma.d

Effectively use increasingly sophisticated, precise language to establish a highly developed voice and tone.

W.3.9-Diploma.e

Provide closure that enhances, supports, and reflects the purpose of the piece.

The Tell-Tale Heart Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2

Description: Multiple-choice and true/false quiz.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

R.4.9-Diploma

Cite strong and thorough textual evidence to support analysis of various texts in ways that demonstrate what the text(s) says explicitly and implicitly, including attending to moments of textual inconsistency or ambiguity.

R.5.9-Diploma.b

Determine the theme(s) or central idea(s) of various texts and analyze the development of the theme(s) or central idea(s) over the course of the texts, including how elements interact and build on one another, to provide a complex account or analysis.

R.7.9-Diploma

Determine the meaning of figurative, connotative, and technical word meanings and phrases as they are used in various contexts and texts; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings and/or language that is particularly evocative.

Peer Review/Self Review

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK3 / DOK4

Description: Peer review another student's work or self-review your own work.

Unit 2: Sem. 1: American Gothic Literature

HS American Literature (English)

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

W.2.9-Diploma.a

Develop and strengthen writing as needed by planning, composing, revising, editing, rewriting, reflecting, and/or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

Bonus - Tell-Tale Heart Escape Room

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2

Description: An online escape room about the Tell-Tale Heart.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

R.4.9-Diploma

Cite strong and thorough textual evidence to support analysis of various texts in ways that demonstrate what the text(s) says explicitly and implicitly, including attending to moments of textual inconsistency or ambiguity.

R.5.9-Diploma.b

Determine the theme(s) or central idea(s) of various texts and analyze the development of the theme(s) or central idea(s) over the course of the texts, including how elements interact and build on one another, to provide a complex account or analysis.

R.7.9-Diploma

Determine the meaning of figurative, connotative, and technical word meanings and phrases as they are used in various contexts and texts; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings and/or language that is particularly evocative.

The Monkey's Paw Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2

Description: Multiple-choice and true/false quiz.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

Unit 2: Sem. 1: American Gothic Literature

HS American Literature (English)

R.4.9-Diploma

Cite strong and thorough textual evidence to support analysis of various texts in ways that demonstrate what the text(s) says explicitly and implicitly, including attending to moments of textual inconsistency or ambiguity.

R.5.9-Diploma.b

Determine the theme(s) or central idea(s) of various texts and analyze the development of the theme(s) or central idea(s) over the course of the texts, including how elements interact and build on one another, to provide a complex account or analysis.

R.7.9-Diploma

Determine the meaning of figurative, connotative, and technical word meanings and phrases as they are used in various contexts and texts; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings and/or language that is particularly evocative.

Legend of Sleepy Hollow Creative Writing FINAL DRAFT

Assessment Type: Summative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Description: The final creative writing (prequel/sequel) of the original story.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

W.3.9-Diploma.a

Compose clear and increasingly varied and complex pieces with purposefully designed sections that are organized to fully explore the depth and significance of ideas that are appropriate to task, audience, and purpose.

W.3.9-Diploma.b

Develop and support the topic with a variety of relevant techniques and by purposefully embedding the most significant details.

W.3.9-Diploma.c

Use appropriate and varied transitions, along with purposeful syntax, to create cohesion that clarifies relationships among increasingly complex ideas.

W.3.9-Diploma.d

Effectively use increasingly sophisticated, precise language to establish a highly developed voice and tone.

Unit 2: Sem. 1: American Gothic Literature

HS American Literature (English)

W.3.9-Diploma.e

Provide closure that enhances, supports, and reflects the purpose of the piece.

The Yellow Wallpaper Tic Tac Toe

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK3 / DOK4

Description: Student choice activities related to The Yellow Wallpaper

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

R.4.9-Diploma

Cite strong and thorough textual evidence to support analysis of various texts in ways that demonstrate what the text(s) says explicitly and implicitly, including attending to moments of textual inconsistency or ambiguity.

R.5.9-Diploma.b

Determine the theme(s) or central idea(s) of various texts and analyze the development of the theme(s) or central idea(s) over the course of the texts, including how elements interact and build on one another, to provide a complex account or analysis.

R.7.9-Diploma

Determine the meaning of figurative, connotative, and technical word meanings and phrases as they are used in various contexts and texts; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings and/or language that is particularly evocative.

Unit 3: Sem. 1: Novel Study

HS American Literature (English)

UNIT SUMMARY

In this unit, students will read and explore an American novel to understand its characters, themes, and setting. Students will learn how the story connects to American history, culture, and big ideas about life.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
R.4.9-Diploma
Cite strong and thorough textual evidence to support analysis of various texts in ways that demonstrate what the text(s) says explicitly and implicitly, including attending to moments of textual inconsistency or ambiguity.
R.5.9-Diploma.b
Determine the theme(s) or central idea(s) of various texts and analyze the development of the theme(s) or central idea(s) over the course of the texts, including how elements interact and build on one another, to provide a complex account or analysis.
R.6.9-Diploma
Analyze the impact of an author's choices and determine how specific individuals/characters, elements and/or techniques, events, or ideas interact and develop over the course of the text (or a series of texts).
R.7.9-Diploma
Determine the meaning of figurative, connotative, and technical word meanings and phrases as they are used in various contexts and texts; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings and/or language that is particularly evocative.
W.1.9-Diploma.c
Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.
SL.1.9-Diploma.a
Participate effectively in a range of collaborative discussions (one-on-one, in groups, student-led, and teacher-led) on grades 9-Diploma topics texts, and issues, building on others' ideas and expressing their own clearly and persuasively.
L.1.9-Diploma.c
Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.
L.4.9-Diploma.c

Unit 3: Sem. 1: Novel Study

HS American Literature (English)

Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

Unit 3: Sem. 1: Novel Study

HS American Literature (English)

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

The Great Gatsby Chapters 1 & 2

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Multiple-choice quiz about the novel.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
L.1.9-Diploma.c
Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.
L.4.9-Diploma.c
Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.
SL.1.9-Diploma.a
Participate effectively in a range of collaborative discussions (one-on-one, in groups, student-led, and teacher-led) on grades 9-Diploma topics texts, and issues, building on others' ideas and expressing their own clearly and persuasively.
R.4.9-Diploma
Cite strong and thorough textual evidence to support analysis of various texts in ways that demonstrate what the text(s) says explicitly and implicitly, including attending to moments of textual inconsistency or ambiguity.
R.5.9-Diploma.b
Determine the theme(s) or central idea(s) of various texts and analyze the development of the theme(s) or central idea(s) over the course of the texts, including how elements interact and build on one another, to provide a complex account or analysis.
R.6.9-Diploma
Analyze the impact of an author's choices and determine how specific individuals/characters, elements and/or techniques, events, or ideas interact and develop over the course of the text (or a series of texts).
R.7.9-Diploma
Determine the meaning of figurative, connotative, and technical word meanings and phrases as they are used in

Unit 3: Sem. 1: Novel Study

HS American Literature (English)

various contexts and texts; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings and/or language that is particularly evocative.

W.1.9-Diploma.c

Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.

The Great Gatsby Chapters 3/4

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Multiple-choice quiz about the novel.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

L.1.9-Diploma.c

Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.

L.4.9-Diploma.c

Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

SL.1.9-Diploma.a

Participate effectively in a range of collaborative discussions (one-on-one, in groups, student-led, and teacher-led) on grades 9-Diploma topics texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

R.4.9-Diploma

Cite strong and thorough textual evidence to support analysis of various texts in ways that demonstrate what the text(s) says explicitly and implicitly, including attending to moments of textual inconsistency or ambiguity.

R.5.9-Diploma.b

Determine the theme(s) or central idea(s) of various texts and analyze the development of the theme(s) or central idea(s) over the course of the texts, including how elements interact and build on one another, to provide a complex account or analysis.

R.6.9-Diploma

Unit 3: Sem. 1: Novel Study

HS American Literature (English)

Analyze the impact of an author's choices and determine how specific individuals/characters, elements and/or techniques, events, or ideas interact and develop over the course of the text (or a series of texts).

R.7.9-Diploma

Determine the meaning of figurative, connotative, and technical word meanings and phrases as they are used in various contexts and texts; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings and/or language that is particularly evocative.

W.1.9-Diploma.c

Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.

The Great Gatsby Chapters 5 & 6

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Multiple-choice quiz about the novel.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

L.1.9-Diploma.c

Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.

L.4.9-Diploma.c

Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

SL.1.9-Diploma.a

Participate effectively in a range of collaborative discussions (one-on-one, in groups, student-led, and teacher-led) on grades 9-Diploma topics texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

R.4.9-Diploma

Cite strong and thorough textual evidence to support analysis of various texts in ways that demonstrate what the text(s) says explicitly and implicitly, including attending to moments of textual inconsistency or ambiguity.

R.5.9-Diploma.b

Unit 3: Sem. 1: Novel Study

HS American Literature (English)

Determine the theme(s) or central idea(s) of various texts and analyze the development of the theme(s) or central idea(s) over the course of the texts, including how elements interact and build on one another, to provide a complex account or analysis.

R.6.9-Diploma

Analyze the impact of an author's choices and determine how specific individuals/characters, elements and/or techniques, events, or ideas interact and develop over the course of the text (or a series of texts).

R.7.9-Diploma

Determine the meaning of figurative, connotative, and technical word meanings and phrases as they are used in various contexts and texts; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings and/or language that is particularly evocative.

W.1.9-Diploma.c

Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.

The Great Gatsby Chapters 7, 8, & 9

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Multiple-choice quiz about the novel.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

L.1.9-Diploma.c

Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.

L.4.9-Diploma.c

Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

SL.1.9-Diploma.a

Participate effectively in a range of collaborative discussions (one-on-one, in groups, student-led, and teacher-led) on grades 9-Diploma topics texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

Unit 3: Sem. 1: Novel Study

HS American Literature (English)

R.4.9-Diploma
Cite strong and thorough textual evidence to support analysis of various texts in ways that demonstrate what the text(s) says explicitly and implicitly, including attending to moments of textual inconsistency or ambiguity.
R.5.9-Diploma.b
Determine the theme(s) or central idea(s) of various texts and analyze the development of the theme(s) or central idea(s) over the course of the texts, including how elements interact and build on one another, to provide a complex account or analysis.
R.6.9-Diploma
Analyze the impact of an author's choices and determine how specific individuals/characters, elements and/or techniques, events, or ideas interact and develop over the course of the text (or a series of texts).
R.7.9-Diploma
Determine the meaning of figurative, connotative, and technical word meanings and phrases as they are used in various contexts and texts; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings and/or language that is particularly evocative.
W.1.9-Diploma.c
Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.

The Great Gatsby Final Project - Novel Playlist

Assessment Type: Summative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Description: Create a playlist based on the themes within the novel. Describe why you chose the song and how it relates to the theme.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
L.1.9-Diploma.c
Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.
L.4.9-Diploma.c
Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the

Unit 3: Sem. 1: Novel Study

HS American Literature (English)

pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

SL.1.9-Diploma.a

Participate effectively in a range of collaborative discussions (one-on-one, in groups, student-led, and teacher-led) on grades 9-Diploma topics texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

R.4.9-Diploma

Cite strong and thorough textual evidence to support analysis of various texts in ways that demonstrate what the text(s) says explicitly and implicitly, including attending to moments of textual inconsistency or ambiguity.

R.5.9-Diploma.b

Determine the theme(s) or central idea(s) of various texts and analyze the development of the theme(s) or central idea(s) over the course of the texts, including how elements interact and build on one another, to provide a complex account or analysis.

R.6.9-Diploma

Analyze the impact of an author's choices and determine how specific individuals/characters, elements and/or techniques, events, or ideas interact and develop over the course of the text (or a series of texts).

R.7.9-Diploma

Determine the meaning of figurative, connotative, and technical word meanings and phrases as they are used in various contexts and texts; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings and/or language that is particularly evocative.

W.1.9-Diploma.c

Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.

The Great Gatsby Guided Notes

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2

Description: Guided notes for the novel.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

L.1.9-Diploma.c

Unit 3: Sem. 1: Novel Study

HS American Literature (English)

Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.

L.4.9-Diploma.c

Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

SL.1.9-Diploma.a

Participate effectively in a range of collaborative discussions (one-on-one, in groups, student-led, and teacher-led) on grades 9-Diploma topics texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

R.4.9-Diploma

Cite strong and thorough textual evidence to support analysis of various texts in ways that demonstrate what the text(s) says explicitly and implicitly, including attending to moments of textual inconsistency or ambiguity.

R.5.9-Diploma.b

Determine the theme(s) or central idea(s) of various texts and analyze the development of the theme(s) or central idea(s) over the course of the texts, including how elements interact and build on one another, to provide a complex account or analysis.

R.6.9-Diploma

Analyze the impact of an author's choices and determine how specific individuals/characters, elements and/or techniques, events, or ideas interact and develop over the course of the text (or a series of texts).

R.7.9-Diploma

Determine the meaning of figurative, connotative, and technical word meanings and phrases as they are used in various contexts and texts; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings and/or language that is particularly evocative.

W.1.9-Diploma.c

Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.

Unit 4: Sem. 1: Reading Logs

HS American Literature (English)

UNIT SUMMARY

In this unit, students will choose and read an American book that interests them so that they can practice reading independently. Students will explore themes, characters, and ideas in their book and share their thinking through writing and discussion.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
R.12.9-Diploma.a
Read with sufficient accuracy and fluency to support comprehension.
R.12.9-Diploma.b
Read various on-level texts with purpose and understanding.
R.12.9-Diploma.c
Use context to confirm or self-correct word recognition.

Unit 4: Sem. 1: Reading Logs

HS American Literature (English)

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

September Reading Log

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Independent reading log.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
R.12.9-Diploma.a
Read with sufficient accuracy and fluency to support comprehension.
R.12.9-Diploma.b
Read various on-level texts with purpose and understanding.
R.12.9-Diploma.c
Use context to confirm or self-correct word recognition.

October Reading Log

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Independent reading log.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
R.12.9-Diploma.a
Read with sufficient accuracy and fluency to support comprehension.
R.12.9-Diploma.b
Read various on-level texts with purpose and understanding.
R.12.9-Diploma.c
Use context to confirm or self-correct word recognition.

November Reading Log

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Independent reading log.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
R.12.9-Diploma.a
Read with sufficient accuracy and fluency to support comprehension.
R.12.9-Diploma.b
Read various on-level texts with purpose and understanding.
R.12.9-Diploma.c
Use context to confirm or self-correct word recognition.

Unit 5: Sem. 1: Grammar Work

HS American Literature (English)

UNIT SUMMARY

In this unit, students will learn and practice important grammar skills to help them write more clearly and correctly. Students will use what they learn to improve their own writing and better understand how grammar works in American literature.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)	
L.1.9-Diploma.a	
Use parallel structure.	
L.1.9-Diploma.d	
Resolve issues of complex or contested usage, consulting references as needed.	
L.1.9-Diploma.c	
Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.	
L.2.9-Diploma.c	
Observe hyphenation conventions.	
L.2.9-Diploma.d	
Spell correctly.	

Unit 5: Sem. 1: Grammar Work

HS American Literature (English)

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Grammar Work

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Complete the weekly grammar skills in the Google Doc.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)	
	L.1.9-Diploma.a
Use parallel structure.	
	L.1.9-Diploma.c
Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.	
	L.1.9-Diploma.d
Resolve issues of complex or contested usage, consulting references as needed.	
	L.2.9-Diploma.c
Observe hyphenation conventions.	
	L.2.9-Diploma.d
Spell correctly.	

Unit 6: Sem. 1: Greek & Latin Roots

HS American Literature (English)

UNIT SUMMARY

In this unit, students will learn common Greek and Latin roots to help them figure out the meaning of new words. Students will use these roots to build their vocabulary and better understand the words they read in American literature.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
L.4.9-Diploma.c
Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.
L.4.9-Diploma.b
Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., conceive, conception, conceivable).
L.6.9-Diploma
Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Unit 6: Sem. 1: Greek & Latin Roots

HS American Literature (English)

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Greek and Latin Roots

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Weekly skills work related to Greek and Latin roots.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
L.4.9-Diploma.b
Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., conceive, conception, conceivable).
L.4.9-Diploma.c
Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.
L.6.9-Diploma
Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Unit 7: Sem. 1: Skills Work

HS American Literature (English)

UNIT SUMMARY

Students will become language detectives by finding special writing patterns like parallel structures, active and passive voice, and appositive phrases in American literature. Students will strengthen their own writing by practicing these skills in creative assignments inspired by famous American authors.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)	
L.1.9-Diploma.c	
Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.	
L.2.9-Diploma.c	
Observe hyphenation conventions.	
L.1.9-Diploma.d	
Resolve issues of complex or contested usage, consulting references as needed.	
L.3.9-Diploma.b	
Vary syntax for effect, consulting references for guidance as needed; apply an understanding of syntax to the study of complex texts when reading.	
L.4.9-Diploma.c	
Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.	
L.1.9-Diploma.a	
Use parallel structure.	

Unit 7: Sem. 1: Skills Work

HS American Literature (English)

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

NRI: Identifying Parallel Elements

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Weekly skills work in an online-based program.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
L.1.9-Diploma.a
Use parallel structure.

NRI: Active and Passive Voice

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Weekly skills work in an online-based program.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
L.4.9-Diploma.c
Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.
L.3.9-Diploma.b
Vary syntax for effect, consulting references for guidance as needed; apply an understanding of syntax to the study of complex texts when reading.
L.2.9-Diploma.c
Observe hyphenation conventions.
L.1.9-Diploma.d
Resolve issues of complex or contested usage, consulting references as needed.
L.1.9-Diploma.c
Apply the understanding that usage is a matter of convention, can change over time, and is sometimes

Unit 7: Sem. 1: Skills Work

HS American Literature (English)

contestable.

L.1.9-Diploma.a

Use parallel structure.

No Red Ink - Appositive Phrases

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Weekly skills work in an online-based program.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

L.1.9-Diploma.a

Use parallel structure.

L.1.9-Diploma.c

Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.

L.1.9-Diploma.d

Resolve issues of complex or contested usage, consulting references as needed.

L.2.9-Diploma.c

Observe hyphenation conventions.

L.3.9-Diploma.b

Vary syntax for effect, consulting references for guidance as needed; apply an understanding of syntax to the study of complex texts when reading.

L.4.9-Diploma.c

Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

No Red Ink MLA

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Unit 7: Sem. 1: Skills Work

HS American Literature (English)

Assessment Level (DOK): DOK1

Description: Weekly skills work in an online-based program.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
W.1.9-Diploma.d
Follow a standard format for citation (in-text and a list of sources) that applies to task, audience, and purpose.

No Red Ink - Vague Pronouns

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Weekly skills work in an online-based program.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
L.1.9-Diploma.a
Use parallel structure.
L.1.9-Diploma.c
Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.
L.1.9-Diploma.d
Resolve issues of complex or contested usage, consulting references as needed.
L.2.9-Diploma.c
Observe hyphenation conventions.
L.3.9-Diploma.b
Vary syntax for effect, consulting references for guidance as needed; apply an understanding of syntax to the study of complex texts when reading.
L.4.9-Diploma.c
Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

Unit 7: Sem. 1: Skills Work

HS American Literature (English)

No Red Ink - Punctuating FANBOYS

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Weekly skills work in an online-based program.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
L.1.9-Diploma.a
Use parallel structure.
L.1.9-Diploma.c
Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.
L.1.9-Diploma.d
Resolve issues of complex or contested usage, consulting references as needed.
L.2.9-Diploma.c
Observe hyphenation conventions.
L.3.9-Diploma.b
Vary syntax for effect, consulting references for guidance as needed; apply an understanding of syntax to the study of complex texts when reading.
L.4.9-Diploma.c
Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

No Red Ink - Correcting Fragments

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Weekly skills work in an online-based program.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
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Unit 7: Sem. 1: Skills Work

HS American Literature (English)

L.1.9-Diploma.a
Use parallel structure.
L.1.9-Diploma.c
Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.
L.1.9-Diploma.d
Resolve issues of complex or contested usage, consulting references as needed.
L.2.9-Diploma.c
Observe hyphenation conventions.
L.3.9-Diploma.b
Vary syntax for effect, consulting references for guidance as needed; apply an understanding of syntax to the study of complex texts when reading.
L.4.9-Diploma.c
Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

No Red Ink - Commonly Confused Words

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Weekly skills work in an online-based program.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
L.1.9-Diploma.a
Use parallel structure.
L.1.9-Diploma.c
Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.
L.1.9-Diploma.d

Unit 7: Sem. 1: Skills Work

HS American Literature (English)

Resolve issues of complex or contested usage, consulting references as needed.

L.2.9-Diploma.c

Observe hyphenation conventions.

L.3.9-Diploma.b

Vary syntax for effect, consulting references for guidance as needed; apply an understanding of syntax to the study of complex texts when reading.

L.4.9-Diploma.c

Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

Unit 8: Sem. 2: Argumentative Writing

HS American Literature (English)

UNIT SUMMARY

Students will learn how to make strong arguments in writing by studying persuasive techniques used in American literature. Students will create their own argumentative essays where they clearly state their position, back it up with evidence, and respond to opposing viewpoints.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

W.1.9-Diploma.a

Investigate self-generated questions by participating in sustained inquiry that builds increasingly complex knowledge or that solves a problem, refocusing inquiry and/or incorporating effective advanced searches as needed.

W.1.9-Diploma.b

Assess the credibility, accuracy, and usefulness of a variety of authoritative sources in order to synthesize relevant information that leads to logical, increasingly complex conclusions.

W.1.9-Diploma.c

Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.

W.1.9-Diploma.d

Follow a standard format for citation (in-text and a list of sources) that applies to task, audience, and purpose.

W.2.9-Diploma.b

Use technology and ongoing feedback, including new arguments and information, to produce increasingly dynamic writing products.

W.3.9-Diploma.b

Develop and support the topic with a variety of relevant techniques and by purposefully embedding the most significant details.

W.3.9-Diploma.a

Compose clear and increasingly varied and complex pieces with purposefully designed sections that are organized to fully explore the depth and significance of ideas that are appropriate to task, audience, and purpose.

Unit 8: Sem. 2: Argumentative Writing

HS American Literature (English)

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Section 2: Brainstorm Topics

Assessment Type: Formative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK1

Description: Brainstorm topics for argumentative writing

Section 3: Gathering Evidence

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2

Description: Gather evidence for the argumentative writing

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

R.4.9-Diploma

Cite strong and thorough textual evidence to support analysis of various texts in ways that demonstrate what the text(s) says explicitly and implicitly, including attending to moments of textual inconsistency or ambiguity.

Section 4: Thesis Statement

Assessment Type: Formative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: Write a thesis statement for the argumentative writing

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

R.10.9-Diploma.b

Evaluate the premises, claims, and/or conclusions in various texts, verifying the information when possible and corroborating or challenging conclusions with other sources of information.

Section 5: Develop A Hook

Assessment Type: Formative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: Write a hook for the argumentative writing

Unit 8: Sem. 2: Argumentative Writing

HS American Literature (English)

Section 6: Background Information

Assessment Type: Formative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Description: Collect and write about the background information for the topic.

Section 7: Counterclaim

Assessment Type: Formative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Description: Develop a counterclaim for your argumentative writing.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
W.1.9-Diploma.a
Investigate self-generated questions by participating in sustained inquiry that builds increasingly complex knowledge or that solves a problem, refocusing inquiry and/or incorporating effective advanced searches as needed.
W.1.9-Diploma.b
Assess the credibility, accuracy, and usefulness of a variety of authoritative sources in order to synthesize relevant information that leads to logical, increasingly complex conclusions.
W.1.9-Diploma.c
Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.
W.1.9-Diploma.d
Follow a standard format for citation (in-text and a list of sources) that applies to task, audience, and purpose.
W.2.9-Diploma.b
Use technology and ongoing feedback, including new arguments and information, to produce increasingly dynamic writing products.
W.3.9-Diploma.a
Compose clear and increasingly varied and complex pieces with purposefully designed sections that are organized to fully explore the depth and significance of ideas that are appropriate to task, audience, and purpose.

Unit 8: Sem. 2: Argumentative Writing

HS American Literature (English)

W.3.9-Diploma.b

Develop and support the topic with a variety of relevant techniques and by purposefully embedding the most significant details.

Section 8: Introductory Paragraph

Assessment Type: Formative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Description: Write the introductory paragraph for the argumentative writing

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

W.1.9-Diploma.a

Investigate self-generated questions by participating in sustained inquiry that builds increasingly complex knowledge or that solves a problem, refocusing inquiry and/or incorporating effective advanced searches as needed.

W.1.9-Diploma.b

Assess the credibility, accuracy, and usefulness of a variety of authoritative sources in order to synthesize relevant information that leads to logical, increasingly complex conclusions.

W.1.9-Diploma.c

Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.

W.1.9-Diploma.d

Follow a standard format for citation (in-text and a list of sources) that applies to task, audience, and purpose.

W.2.9-Diploma.b

Use technology and ongoing feedback, including new arguments and information, to produce increasingly dynamic writing products.

W.3.9-Diploma.a

Compose clear and increasingly varied and complex pieces with purposefully designed sections that are organized to fully explore the depth and significance of ideas that are appropriate to task, audience, and purpose.

W.3.9-Diploma.b

Unit 8: Sem. 2: Argumentative Writing

HS American Literature (English)

Develop and support the topic with a variety of relevant techniques and by purposefully embedding the most significant details.

Section 9: Topic Sentence

Assessment Type: Formative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Description: Write the topic sentence for the argumentative writing

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
W.1.9-Diploma.a
Investigate self-generated questions by participating in sustained inquiry that builds increasingly complex knowledge or that solves a problem, refocusing inquiry and/or incorporating effective advanced searches as needed.
W.1.9-Diploma.b
Assess the credibility, accuracy, and usefulness of a variety of authoritative sources in order to synthesize relevant information that leads to logical, increasingly complex conclusions.
W.1.9-Diploma.c
Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.
W.1.9-Diploma.d
Follow a standard format for citation (in-text and a list of sources) that applies to task, audience, and purpose.
W.2.9-Diploma.b
Use technology and ongoing feedback, including new arguments and information, to produce increasingly dynamic writing products.
W.3.9-Diploma.a
Compose clear and increasingly varied and complex pieces with purposefully designed sections that are organized to fully explore the depth and significance of ideas that are appropriate to task, audience, and purpose.
W.3.9-Diploma.b
Develop and support the topic with a variety of relevant techniques and by purposefully embedding the most

Unit 8: Sem. 2: Argumentative Writing

HS American Literature (English)

significant details.

Section 10: Transitional Phrases

Assessment Type: Formative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Description: Evaluate the transitional phrases in the argumentative writing

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

W.1.9-Diploma.a

Investigate self-generated questions by participating in sustained inquiry that builds increasingly complex knowledge or that solves a problem, refocusing inquiry and/or incorporating effective advanced searches as needed.

W.1.9-Diploma.b

Assess the credibility, accuracy, and usefulness of a variety of authoritative sources in order to synthesize relevant information that leads to logical, increasingly complex conclusions.

W.1.9-Diploma.c

Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.

W.1.9-Diploma.d

Follow a standard format for citation (in-text and a list of sources) that applies to task, audience, and purpose.

W.2.9-Diploma.b

Use technology and ongoing feedback, including new arguments and information, to produce increasingly dynamic writing products.

W.3.9-Diploma.a

Compose clear and increasingly varied and complex pieces with purposefully designed sections that are organized to fully explore the depth and significance of ideas that are appropriate to task, audience, and purpose.

W.3.9-Diploma.b

Develop and support the topic with a variety of relevant techniques and by purposefully embedding the most significant details.

Unit 8: Sem. 2: Argumentative Writing

HS American Literature (English)

Section 11: Evidence & Elaboration

Assessment Type: Formative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Description: Gather and elaborate on the evidence for the argumentative writing

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
W.1.9-Diploma.a
Investigate self-generated questions by participating in sustained inquiry that builds increasingly complex knowledge or that solves a problem, refocusing inquiry and/or incorporating effective advanced searches as needed.
W.1.9-Diploma.b
Assess the credibility, accuracy, and usefulness of a variety of authoritative sources in order to synthesize relevant information that leads to logical, increasingly complex conclusions.
W.1.9-Diploma.c
Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.
W.1.9-Diploma.d
Follow a standard format for citation (in-text and a list of sources) that applies to task, audience, and purpose.
W.2.9-Diploma.b
Use technology and ongoing feedback, including new arguments and information, to produce increasingly dynamic writing products.
W.3.9-Diploma.a
Compose clear and increasingly varied and complex pieces with purposefully designed sections that are organized to fully explore the depth and significance of ideas that are appropriate to task, audience, and purpose.
W.3.9-Diploma.b
Develop and support the topic with a variety of relevant techniques and by purposefully embedding the most significant details.

Unit 8: Sem. 2: Argumentative Writing

HS American Literature (English)

Section 12: Building Body Paragraphs

Assessment Type: Formative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Description: Write the body paragraphs for the argumentative writing

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
W.1.9-Diploma.a
Investigate self-generated questions by participating in sustained inquiry that builds increasingly complex knowledge or that solves a problem, refocusing inquiry and/or incorporating effective advanced searches as needed.
W.1.9-Diploma.b
Assess the credibility, accuracy, and usefulness of a variety of authoritative sources in order to synthesize relevant information that leads to logical, increasingly complex conclusions.
W.1.9-Diploma.c
Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.
W.1.9-Diploma.d
Follow a standard format for citation (in-text and a list of sources) that applies to task, audience, and purpose.
W.2.9-Diploma.b
Use technology and ongoing feedback, including new arguments and information, to produce increasingly dynamic writing products.
W.3.9-Diploma.a
Compose clear and increasingly varied and complex pieces with purposefully designed sections that are organized to fully explore the depth and significance of ideas that are appropriate to task, audience, and purpose.
W.3.9-Diploma.b
Develop and support the topic with a variety of relevant techniques and by purposefully embedding the most significant details.

Unit 8: Sem. 2: Argumentative Writing

HS American Literature (English)

Section 13: Conclusion

Assessment Type: Formative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Description: Write the conclusion for the argumentative writing

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
W.1.9-Diploma.a
Investigate self-generated questions by participating in sustained inquiry that builds increasingly complex knowledge or that solves a problem, refocusing inquiry and/or incorporating effective advanced searches as needed.
W.1.9-Diploma.b
Assess the credibility, accuracy, and usefulness of a variety of authoritative sources in order to synthesize relevant information that leads to logical, increasingly complex conclusions.
W.1.9-Diploma.c
Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.
W.1.9-Diploma.d
Follow a standard format for citation (in-text and a list of sources) that applies to task, audience, and purpose.
W.2.9-Diploma.b
Use technology and ongoing feedback, including new arguments and information, to produce increasingly dynamic writing products.
W.3.9-Diploma.a
Compose clear and increasingly varied and complex pieces with purposefully designed sections that are organized to fully explore the depth and significance of ideas that are appropriate to task, audience, and purpose.
W.3.9-Diploma.b
Develop and support the topic with a variety of relevant techniques and by purposefully embedding the most significant details.

Unit 8: Sem. 2: Argumentative Writing

HS American Literature (English)

Argumentative Essay

Assessment Type: Summative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Description: The final argumentative essay.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
W.1.9-Diploma.a
Investigate self-generated questions by participating in sustained inquiry that builds increasingly complex knowledge or that solves a problem, refocusing inquiry and/or incorporating effective advanced searches as needed.
W.1.9-Diploma.b
Assess the credibility, accuracy, and usefulness of a variety of authoritative sources in order to synthesize relevant information that leads to logical, increasingly complex conclusions.
W.1.9-Diploma.c
Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.
W.1.9-Diploma.d
Follow a standard format for citation (in-text and a list of sources) that applies to task, audience, and purpose.
W.2.9-Diploma.b
Use technology and ongoing feedback, including new arguments and information, to produce increasingly dynamic writing products.
W.3.9-Diploma.a
Compose clear and increasingly varied and complex pieces with purposefully designed sections that are organized to fully explore the depth and significance of ideas that are appropriate to task, audience, and purpose.
W.3.9-Diploma.b
Develop and support the topic with a variety of relevant techniques and by purposefully embedding the most significant details.

Unit 9: Sem. 2: Novel Study

HS American Literature (English)

UNIT SUMMARY

In this unit, students will read and explore an American novel to understand its characters, themes, and setting. Students will learn how the story connects to American history, culture, and big ideas about life.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

L.1.9-Diploma.c

Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.

L.4.9-Diploma.c

Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

SL.1.9-Diploma.a

Participate effectively in a range of collaborative discussions (one-on-one, in groups, student-led, and teacher-led) on grades 9-Diploma topics texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

R.4.9-Diploma

Cite strong and thorough textual evidence to support analysis of various texts in ways that demonstrate what the text(s) says explicitly and implicitly, including attending to moments of textual inconsistency or ambiguity.

R.5.9-Diploma.b

Determine the theme(s) or central idea(s) of various texts and analyze the development of the theme(s) or central idea(s) over the course of the texts, including how elements interact and build on one another, to provide a complex account or analysis.

R.6.9-Diploma

Analyze the impact of an author's choices and determine how specific individuals/characters, elements and/or techniques, events, or ideas interact and develop over the course of the text (or a series of texts).

R.7.9-Diploma

Determine the meaning of figurative, connotative, and technical word meanings and phrases as they are used in various contexts and texts; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings and/or language that is particularly evocative.

W.1.9-Diploma.c

Unit 9: Sem. 2: Novel Study

HS American Literature (English)

Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.

Unit 9: Sem. 2: Novel Study

HS American Literature (English)

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

The Outsiders Pre-Reading Activity

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Pre-reading activity introducing the setting of the novel.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
L.1.9-Diploma.c
Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.
L.4.9-Diploma.c
Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.
SL.1.9-Diploma.a
Participate effectively in a range of collaborative discussions (one-on-one, in groups, student-led, and teacher-led) on grades 9-Diploma topics texts, and issues, building on others' ideas and expressing their own clearly and persuasively.
R.4.9-Diploma
Cite strong and thorough textual evidence to support analysis of various texts in ways that demonstrate what the text(s) says explicitly and implicitly, including attending to moments of textual inconsistency or ambiguity.
R.5.9-Diploma.b
Determine the theme(s) or central idea(s) of various texts and analyze the development of the theme(s) or central idea(s) over the course of the texts, including how elements interact and build on one another, to provide a complex account or analysis.
R.6.9-Diploma
Analyze the impact of an author's choices and determine how specific individuals/characters, elements and/or techniques, events, or ideas interact and develop over the course of the text (or a series of texts).
R.7.9-Diploma
Determine the meaning of figurative, connotative, and technical word meanings and phrases as they are used in

Unit 9: Sem. 2: Novel Study

HS American Literature (English)

various contexts and texts; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings and/or language that is particularly evocative.

W.1.9-Diploma.c

Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.

The Outsiders Guided Notes

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2

Description: Guided notes for the novel.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

W.1.9-Diploma.c

Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.

The Outsiders Chapters 1 + 2

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Multiple-choice quiz about the novel.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

L.4.9-Diploma.c

Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

SL.1.9-Diploma.a

Participate effectively in a range of collaborative discussions (one-on-one, in groups, student-led, and teacher-led) on grades 9-Diploma topics texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

R.4.9-Diploma

Unit 9: Sem. 2: Novel Study

HS American Literature (English)

Cite strong and thorough textual evidence to support analysis of various texts in ways that demonstrate what the text(s) says explicitly and implicitly, including attending to moments of textual inconsistency or ambiguity.

R.5.9-Diploma.b

Determine the theme(s) or central idea(s) of various texts and analyze the development of the theme(s) or central idea(s) over the course of the texts, including how elements interact and build on one another, to provide a complex account or analysis.

R.6.9-Diploma

Analyze the impact of an author's choices and determine how specific individuals/characters, elements and/or techniques, events, or ideas interact and develop over the course of the text (or a series of texts).

R.7.9-Diploma

Determine the meaning of figurative, connotative, and technical word meanings and phrases as they are used in various contexts and texts; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings and/or language that is particularly evocative.

W.1.9-Diploma.c

Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.

The Outsiders Chapters 3 + 4

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Multiple-choice quiz about the novel.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

L.4.9-Diploma.c

Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

SL.1.9-Diploma.a

Participate effectively in a range of collaborative discussions (one-on-one, in groups, student-led, and teacher-led) on grades 9-Diploma topics texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

Unit 9: Sem. 2: Novel Study

HS American Literature (English)

R.4.9-Diploma

Cite strong and thorough textual evidence to support analysis of various texts in ways that demonstrate what the text(s) says explicitly and implicitly, including attending to moments of textual inconsistency or ambiguity.

R.5.9-Diploma.b

Determine the theme(s) or central idea(s) of various texts and analyze the development of the theme(s) or central idea(s) over the course of the texts, including how elements interact and build on one another, to provide a complex account or analysis.

R.6.9-Diploma

Analyze the impact of an author's choices and determine how specific individuals/characters, elements and/or techniques, events, or ideas interact and develop over the course of the text (or a series of texts).

R.7.9-Diploma

Determine the meaning of figurative, connotative, and technical word meanings and phrases as they are used in various contexts and texts; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings and/or language that is particularly evocative.

W.1.9-Diploma.c

Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.

The Outsiders Chapters 5 + 6

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Multiple-choice quiz about the novel.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

L.4.9-Diploma.c

Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

SL.1.9-Diploma.a

Participate effectively in a range of collaborative discussions (one-on-one, in groups, student-led, and teacher-led) on grades 9-Diploma topics texts, and issues, building on others' ideas and expressing their own clearly and

Unit 9: Sem. 2: Novel Study

HS American Literature (English)

persuasively.

R.4.9-Diploma

Cite strong and thorough textual evidence to support analysis of various texts in ways that demonstrate what the text(s) says explicitly and implicitly, including attending to moments of textual inconsistency or ambiguity.

R.5.9-Diploma.b

Determine the theme(s) or central idea(s) of various texts and analyze the development of the theme(s) or central idea(s) over the course of the texts, including how elements interact and build on one another, to provide a complex account or analysis.

R.6.9-Diploma

Analyze the impact of an author's choices and determine how specific individuals/characters, elements and/or techniques, events, or ideas interact and develop over the course of the text (or a series of texts).

R.7.9-Diploma

Determine the meaning of figurative, connotative, and technical word meanings and phrases as they are used in various contexts and texts; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings and/or language that is particularly evocative.

W.1.9-Diploma.c

Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.

The Outsiders Chapters 11 & 12

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Multiple-choice quiz about the novel.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

L.4.9-Diploma.c

Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

SL.1.9-Diploma.a

Unit 9: Sem. 2: Novel Study

HS American Literature (English)

Participate effectively in a range of collaborative discussions (one-on-one, in groups, student-led, and teacher-led) on grades 9-Diploma topics texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

R.4.9-Diploma

Cite strong and thorough textual evidence to support analysis of various texts in ways that demonstrate what the text(s) says explicitly and implicitly, including attending to moments of textual inconsistency or ambiguity.

R.5.9-Diploma.b

Determine the theme(s) or central idea(s) of various texts and analyze the development of the theme(s) or central idea(s) over the course of the texts, including how elements interact and build on one another, to provide a complex account or analysis.

R.6.9-Diploma

Analyze the impact of an author's choices and determine how specific individuals/characters, elements and/or techniques, events, or ideas interact and develop over the course of the text (or a series of texts).

R.7.9-Diploma

Determine the meaning of figurative, connotative, and technical word meanings and phrases as they are used in various contexts and texts; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings and/or language that is particularly evocative.

W.1.9-Diploma.c

Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.

Nothing Gold Can Stay Assignment

Assessment Type: Summative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Description: Written response analysis of poetry

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

L.4.9-Diploma.c

Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

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SL.1.9-Diploma.a

Participate effectively in a range of collaborative discussions (one-on-one, in groups, student-led, and teacher-led) on grades 9-Diploma topics texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

R.4.9-Diploma

Cite strong and thorough textual evidence to support analysis of various texts in ways that demonstrate what the text(s) says explicitly and implicitly, including attending to moments of textual inconsistency or ambiguity.

R.5.9-Diploma.b

Determine the theme(s) or central idea(s) of various texts and analyze the development of the theme(s) or central idea(s) over the course of the texts, including how elements interact and build on one another, to provide a complex account or analysis.

R.6.9-Diploma

Analyze the impact of an author's choices and determine how specific individuals/characters, elements and/or techniques, events, or ideas interact and develop over the course of the text (or a series of texts).

R.7.9-Diploma

Determine the meaning of figurative, connotative, and technical word meanings and phrases as they are used in various contexts and texts; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings and/or language that is particularly evocative.

W.1.9-Diploma.c

Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.

The Outsiders Mock Trial-Opening Statements

Assessment Type: Summative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Description: Acting as a prosecution or defense attorney, write an opening statement.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

L.4.9-Diploma.c

Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the

Unit 9: Sem. 2: Novel Study

HS American Literature (English)

pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

SL.1.9-Diploma.a

Participate effectively in a range of collaborative discussions (one-on-one, in groups, student-led, and teacher-led) on grades 9-Diploma topics texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

R.4.9-Diploma

Cite strong and thorough textual evidence to support analysis of various texts in ways that demonstrate what the text(s) says explicitly and implicitly, including attending to moments of textual inconsistency or ambiguity.

R.5.9-Diploma.b

Determine the theme(s) or central idea(s) of various texts and analyze the development of the theme(s) or central idea(s) over the course of the texts, including how elements interact and build on one another, to provide a complex account or analysis.

R.6.9-Diploma

Analyze the impact of an author's choices and determine how specific individuals/characters, elements and/or techniques, events, or ideas interact and develop over the course of the text (or a series of texts).

R.7.9-Diploma

Determine the meaning of figurative, connotative, and technical word meanings and phrases as they are used in various contexts and texts; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings and/or language that is particularly evocative.

W.1.9-Diploma.c

Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.

Johnny on Trial Part 2: Evidence & Witnesses

Assessment Type: Summative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Description: Using evidence from the text, write a defense for Johnny.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

L.4.9-Diploma.c

Unit 9: Sem. 2: Novel Study

HS American Literature (English)

Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

SL.1.9-Diploma.a

Participate effectively in a range of collaborative discussions (one-on-one, in groups, student-led, and teacher-led) on grades 9-Diploma topics texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

R.4.9-Diploma

Cite strong and thorough textual evidence to support analysis of various texts in ways that demonstrate what the text(s) says explicitly and implicitly, including attending to moments of textual inconsistency or ambiguity.

R.5.9-Diploma.b

Determine the theme(s) or central idea(s) of various texts and analyze the development of the theme(s) or central idea(s) over the course of the texts, including how elements interact and build on one another, to provide a complex account or analysis.

R.6.9-Diploma

Analyze the impact of an author's choices and determine how specific individuals/characters, elements and/or techniques, events, or ideas interact and develop over the course of the text (or a series of texts).

R.7.9-Diploma

Determine the meaning of figurative, connotative, and technical word meanings and phrases as they are used in various contexts and texts; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings and/or language that is particularly evocative.

W.1.9-Diploma.c

Take organized notes that purposefully quote, summarize, and/or paraphrase a variety of sources while avoiding plagiarism and overreliance on any one source.

Unit 10: Sem. 2: Poetry

HS American Literature (English)

UNIT SUMMARY

Students will explore powerful poems by American writers and learn how poets use special language tools to share their ideas and feelings. Students will create their own poetry toolbox by finding patterns, discovering hidden meanings, and connecting poems to their own lives.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

R.7.9-Diploma

Determine the meaning of figurative, connotative, and technical word meanings and phrases as they are used in various contexts and texts; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings and/or language that is particularly evocative.

R.6.9-Diploma

Analyze the impact of an author's choices and determine how specific individuals/characters, elements and/or techniques, events, or ideas interact and develop over the course of the text (or a series of texts).

L.5.9-Diploma.a

Interpret figures of speech (e.g., euphemism, oxymoron, hyperbole, paradox) in context and analyze their role in the text.

L.5.9-Diploma.b

Analyze nuances in the meaning of words with similar denotations.

Unit 10: Sem. 2: Poetry

HS American Literature (English)

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Figurative Language Blooket

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: In-class activity reviewing figurative language

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
L.5.9-Diploma.a
Interpret figures of speech (e.g., euphemism, oxymoron, hyperbole, paradox) in context and analyze their role in the text.
L.5.9-Diploma.b
Analyze nuances in the meaning of words with similar denotations.
R.7.9-Diploma
Determine the meaning of figurative, connotative, and technical word meanings and phrases as they are used in various contexts and texts; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings and/or language that is particularly evocative.

Slam Poetry Writing

Assessment Type: Summative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Description: Write a poem of at least 10 lines using slam poetry techniques

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
L.5.9-Diploma.a
Interpret figures of speech (e.g., euphemism, oxymoron, hyperbole, paradox) in context and analyze their role in the text.
L.5.9-Diploma.b
Analyze nuances in the meaning of words with similar denotations.

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HS American Literature (English)

R.6.9-Diploma

Analyze the impact of an author's choices and determine how specific individuals/characters, elements and/or techniques, events, or ideas interact and develop over the course of the text (or a series of texts).

R.7.9-Diploma

Determine the meaning of figurative, connotative, and technical word meanings and phrases as they are used in various contexts and texts; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings and/or language that is particularly evocative.

Blackout Poetry

Assessment Type: Summative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Description: Create a Blackout Poetry image

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

L.5.9-Diploma.a

Interpret figures of speech (e.g., euphemism, oxymoron, hyperbole, paradox) in context and analyze their role in the text.

L.5.9-Diploma.b

Analyze nuances in the meaning of words with similar denotations.

R.6.9-Diploma

Analyze the impact of an author's choices and determine how specific individuals/characters, elements and/or techniques, events, or ideas interact and develop over the course of the text (or a series of texts).

R.7.9-Diploma

Determine the meaning of figurative, connotative, and technical word meanings and phrases as they are used in various contexts and texts; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings and/or language that is particularly evocative.

Slam Poetry Recording

Assessment Type: Summative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Unit 10: Sem. 2: Poetry

HS American Literature (English)

Description: Record your Slam Poetry

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

L.5.9-Diploma.a

Interpret figures of speech (e.g., euphemism, oxymoron, hyperbole, paradox) in context and analyze their role in the text.

L.5.9-Diploma.b

Analyze nuances in the meaning of words with similar denotations.

R.6.9-Diploma

Analyze the impact of an author's choices and determine how specific individuals/characters, elements and/or techniques, events, or ideas interact and develop over the course of the text (or a series of texts).

R.7.9-Diploma

Determine the meaning of figurative, connotative, and technical word meanings and phrases as they are used in various contexts and texts; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings and/or language that is particularly evocative.

Unit 11: Sem. 2: Reading Bookmarks

HS American Literature (English)

UNIT SUMMARY

In this unit, students will choose and read an American book that interests them so that they can practice reading independently. Students will explore themes, characters, and ideas in their book and share their thinking through writing and discussion.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
R.12.9-Diploma.a
Read with sufficient accuracy and fluency to support comprehension.
R.12.9-Diploma.b
Read various on-level texts with purpose and understanding.
R.12.9-Diploma.c
Use context to confirm or self-correct word recognition.

Unit 11: Sem. 2: Reading Bookmarks

HS American Literature (English)

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Bookmark 1

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Independent reading log.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
R.12.9-Diploma.a
Read with sufficient accuracy and fluency to support comprehension.
R.12.9-Diploma.b
Read various on-level texts with purpose and understanding.
R.12.9-Diploma.c
Use context to confirm or self-correct word recognition.

Bookmark 2

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Independent reading log.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
R.12.9-Diploma.a
Read with sufficient accuracy and fluency to support comprehension.
R.12.9-Diploma.b
Read various on-level texts with purpose and understanding.
R.12.9-Diploma.c
Use context to confirm or self-correct word recognition.

Unit 11: Sem. 2: Reading Bookmarks

HS American Literature (English)

Bookmark 3

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Independent reading log.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
R.12.9-Diploma.a
Read with sufficient accuracy and fluency to support comprehension.
R.12.9-Diploma.b
Read various on-level texts with purpose and understanding.
R.12.9-Diploma.c
Use context to confirm or self-correct word recognition.

Bookmark 4

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Independent reading log.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
R.12.9-Diploma.a
Read with sufficient accuracy and fluency to support comprehension.
R.12.9-Diploma.b
Read various on-level texts with purpose and understanding.
R.12.9-Diploma.c
Use context to confirm or self-correct word recognition.

Unit 11: Sem. 2: Reading Bookmarks

HS American Literature (English)

Bookmark 5

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Independent reading log.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
R.12.9-Diploma.a
Read with sufficient accuracy and fluency to support comprehension.
R.12.9-Diploma.b
Read various on-level texts with purpose and understanding.
R.12.9-Diploma.c
Use context to confirm or self-correct word recognition.

Unit 12: Sem. 2: Skills Work

HS American Literature (English)

UNIT SUMMARY

Students will become language detectives by finding special writing patterns like parallel structures, active and passive voice, and appositive phrases in American literature. Students will strengthen their own writing by practicing these skills in creative assignments inspired by famous American authors.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

L.1.9-Diploma.c

Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.

L.1.9-Diploma.d

Resolve issues of complex or contested usage, consulting references as needed.

L.2.9-Diploma.c

Observe hyphenation conventions.

L.3.9-Diploma.b

Vary syntax for effect, consulting references for guidance as needed; apply an understanding of syntax to the study of complex texts when reading.

L.4.9-Diploma.c

Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

Unit 12: Sem. 2: Skills Work

HS American Literature (English)

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

No Red Ink Diagnostic

Assessment Type: Diagnostic

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: English skills diagnostic.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
L.1.9-Diploma.c
Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.
L.1.9-Diploma.d
Resolve issues of complex or contested usage, consulting references as needed.
L.2.9-Diploma.c
Observe hyphenation conventions.
L.3.9-Diploma.b
Vary syntax for effect, consulting references for guidance as needed; apply an understanding of syntax to the study of complex texts when reading.
L.4.9-Diploma.c
Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

No Red Ink Week 2

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Weekly skills work in an online-based program.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
L.1.9-Diploma.c

Unit 12: Sem. 2: Skills Work

HS American Literature (English)

Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.

L.1.9-Diploma.d

Resolve issues of complex or contested usage, consulting references as needed.

L.2.9-Diploma.c

Observe hyphenation conventions.

L.3.9-Diploma.b

Vary syntax for effect, consulting references for guidance as needed; apply an understanding of syntax to the study of complex texts when reading.

L.4.9-Diploma.c

Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

No Red Ink Week 3

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Weekly skills work in an online-based program.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

L.1.9-Diploma.c

Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.

L.1.9-Diploma.d

Resolve issues of complex or contested usage, consulting references as needed.

L.2.9-Diploma.c

Observe hyphenation conventions.

L.3.9-Diploma.b

Vary syntax for effect, consulting references for guidance as needed; apply an understanding of syntax to the

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HS American Literature (English)

study of complex texts when reading.

L.4.9-Diploma.c

Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

No Red Ink Week 4

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Weekly skills work in an online-based program.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

L.1.9-Diploma.c

Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.

L.1.9-Diploma.d

Resolve issues of complex or contested usage, consulting references as needed.

L.2.9-Diploma.c

Observe hyphenation conventions.

L.3.9-Diploma.b

Vary syntax for effect, consulting references for guidance as needed; apply an understanding of syntax to the study of complex texts when reading.

L.4.9-Diploma.c

Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

No Red Ink Week 5

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Weekly skills work in an online-based program.

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STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
L.1.9-Diploma.c
Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.
L.1.9-Diploma.d
Resolve issues of complex or contested usage, consulting references as needed.
L.2.9-Diploma.c
Observe hyphenation conventions.
L.3.9-Diploma.b
Vary syntax for effect, consulting references for guidance as needed; apply an understanding of syntax to the study of complex texts when reading.
L.4.9-Diploma.c
Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

No Red Ink Week 6

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Weekly skills work in an online-based program.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
L.1.9-Diploma.c
Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.
L.1.9-Diploma.d
Resolve issues of complex or contested usage, consulting references as needed.
L.2.9-Diploma.c

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Observe hyphenation conventions.

L.3.9-Diploma.b

Vary syntax for effect, consulting references for guidance as needed; apply an understanding of syntax to the study of complex texts when reading.

L.4.9-Diploma.c

Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

No Red Ink Week 7

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Weekly skills work in an online-based program.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

L.1.9-Diploma.c

Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.

L.1.9-Diploma.d

Resolve issues of complex or contested usage, consulting references as needed.

L.2.9-Diploma.c

Observe hyphenation conventions.

L.3.9-Diploma.b

Vary syntax for effect, consulting references for guidance as needed; apply an understanding of syntax to the study of complex texts when reading.

L.4.9-Diploma.c

Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

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No Red Ink Week 8

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Weekly skills work in an online-based program.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
L.1.9-Diploma.c
Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.
L.1.9-Diploma.d
Resolve issues of complex or contested usage, consulting references as needed.
L.2.9-Diploma.c
Observe hyphenation conventions.
L.3.9-Diploma.b
Vary syntax for effect, consulting references for guidance as needed; apply an understanding of syntax to the study of complex texts when reading.
L.4.9-Diploma.c
Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

No Red Ink Week 9

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Weekly skills work in an online-based program.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
L.1.9-Diploma.c
Apply the understanding that usage is a matter of convention, can change over time, and is sometimes

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contestable.
L.1.9-Diploma.d
Resolve issues of complex or contested usage, consulting references as needed.
L.2.9-Diploma.c
Observe hyphenation conventions.
L.3.9-Diploma.b
Vary syntax for effect, consulting references for guidance as needed; apply an understanding of syntax to the study of complex texts when reading.
L.4.9-Diploma.c
Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

No Red Ink Week 10

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Weekly skills work in an online-based program.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
L.1.9-Diploma.c
Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.
L.1.9-Diploma.d
Resolve issues of complex or contested usage, consulting references as needed.
L.2.9-Diploma.c
Observe hyphenation conventions.
L.3.9-Diploma.b
Vary syntax for effect, consulting references for guidance as needed; apply an understanding of syntax to the study of complex texts when reading.

Unit 12: Sem. 2: Skills Work

HS American Literature (English)

L.4.9-Diploma.c

Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

No Red Ink Week 11

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Weekly skills work in an online-based program.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

L.1.9-Diploma.c

Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contestable.

L.1.9-Diploma.d

Resolve issues of complex or contested usage, consulting references as needed.

L.2.9-Diploma.c

Observe hyphenation conventions.

L.3.9-Diploma.b

Vary syntax for effect, consulting references for guidance as needed; apply an understanding of syntax to the study of complex texts when reading.

L.4.9-Diploma.c

Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

Unit 13: Sem. 2: Greek & Latin Roots

HS American Literature (English)

UNIT SUMMARY

In this unit, students will learn common Greek and Latin roots to help them figure out the meaning of new words. Students will use these roots to build their vocabulary and better understand the words they read in American literature.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
L.4.9-Diploma.b
Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., conceive, conception, conceivable).
L.4.9-Diploma.c
Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.
L.6.9-Diploma
Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Unit 13: Sem. 2: Greek & Latin Roots

HS American Literature (English)

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Greek & Latin Roots "Mal"

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Weekly skills work related to Greek and Latin roots.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
L.4.9-Diploma.b
Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., conceive, conception, conceivable).
L.4.9-Diploma.c
Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.
L.6.9-Diploma
Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Greek & Latin Roots "Port"

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Weekly skills work related to Greek and Latin roots.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
L.4.9-Diploma.b
Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., conceive, conception, conceivable).
L.4.9-Diploma.c
Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the

Unit 13: Sem. 2: Greek & Latin Roots

HS American Literature (English)

pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

L.6.9-Diploma

Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Greek & Latin Roots "Scop"

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Weekly skills work related to Greek and Latin roots.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

L.4.9-Diploma.b

Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., conceive, conception, conceivable).

L.4.9-Diploma.c

Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

L.6.9-Diploma

Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Greek & Latin Roots "Ann"

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Weekly skills work related to Greek and Latin roots.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

L.4.9-Diploma.b

Unit 13: Sem. 2: Greek & Latin Roots

HS American Literature (English)

Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., conceive, conception, conceivable).

L.4.9-Diploma.c

Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

L.6.9-Diploma

Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Greek & Latin Roots "Ab" or "Abs"

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Weekly skills work related to Greek and Latin roots.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)

L.4.9-Diploma.b

Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., conceive, conception, conceivable).

L.4.9-Diploma.c

Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

L.6.9-Diploma

Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

G & L Root Extra Credit!

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Unit 13: Sem. 2: Greek & Latin Roots

HS American Literature (English)

Description: Weekly skills work related to Greek and Latin roots.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
L.4.9-Diploma.b
Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., conceive, conception, conceivable).
L.4.9-Diploma.c
Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.
L.6.9-Diploma
Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Greek & Latin Roots "Vid/Vis"

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Weekly skills work related to Greek and Latin roots.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
L.4.9-Diploma.b
Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., conceive, conception, conceivable).
L.4.9-Diploma.c
Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.
L.6.9-Diploma
Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Unit 13: Sem. 2: Greek & Latin Roots

HS American Literature (English)

Greek & Latin Roots "Poly/Mono"

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Weekly skills work related to Greek and Latin roots.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
L.4.9-Diploma.b
Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., conceive, conception, conceivable).
L.4.9-Diploma.c
Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.
L.6.9-Diploma
Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Greek & Latin Roots "Bene"

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1

Description: Weekly skills work related to Greek and Latin roots.

STANDARDS

Maine - Grade 9-12 - English Language Arts & Literacy ELA (2020)
L.4.9-Diploma.b
Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., conceive, conception, conceivable).
L.4.9-Diploma.c
Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses) to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its usage.

Unit 13: Sem. 2: Greek & Latin Roots

HS American Literature (English)

L.6.9-Diploma

Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

HS American Literature (English)

Maine Virtual Academy

School Year 2024-2025 (Aug 26, 2024 - Jun 13, 2025)

UNIT	# OF TEACHING DAYS	DATES
 Unit 1: Sem. 1: Early American Literature	26 teaching days	Aug 26 - Oct 4, 2024
 Unit 2: Sem. 1: American Gothic Literature	31 teaching days	Oct 7 - Nov 25, 2024
 Unit 3: Sem. 1: Novel Study	15 teaching days	Nov 26 - Dec 19, 2024
 Unit 4: Sem. 1: Reading Logs	80 teaching days	Aug 26, 2024 - Jan 10, 2025
 Unit 5: Sem. 1: Grammar Work	80 teaching days	Aug 26, 2024 - Jan 10, 2025
 Unit 6: Sem. 1: Greek & Latin Roots	80 teaching days	Aug 26, 2024 - Jan 10, 2025
 Unit 7: Sem. 1: Skills Work	80 teaching days	Aug 26, 2024 - Jan 10, 2025
 Unit 8: Sem. 2: Argumentative Writing	37 teaching days	Jan 21 - Mar 19, 2025
 Unit 9: Sem. 2: Novel Study	14 teaching days	Mar 24 - Apr 17, 2025
 Unit 10: Sem. 2: Poetry	27 teaching days	Apr 17 - Jun 13, 2025
 Unit 11: Sem. 2: Reading Bookmarks	77 teaching days	Jan 21 - Jun 13, 2025
 Unit 12: Sem. 2: Skills Work	77 teaching days	Jan 21 - Jun 13, 2025
 Unit 13: Sem. 2: Greek & Latin Roots	77 teaching days	Jan 21 - Jun 13, 2025

August

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
28	29	30	31	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	27 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	28 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	29 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	30 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	31

September

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2 Labor Day	3 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	4 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	5 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	6 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	7
8	9 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	10 Fall NWEA Testing	11 Fall NWEA Testing	12 Fall NWEA Testing	13 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	14
15	16 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	17 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	18 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	19 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	20 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	21
22	23 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	24 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	25 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	26 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	27 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	28
29	30 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	1 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	2 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	3 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	4 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	5

October

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
29	30 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	1 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	2 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	3 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	4 Unit 1: Sem. 1: E... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	5
6	7 Maine Through Year (Tentative)	8 Maine Through Year (Tentative)	9 Maine Through Year (Tentative)	10 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	11 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	12
13	14 Indigenous Peoples' Day	15 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	16 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	17 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	18 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	19
20	21 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	22 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	23 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	24 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	25 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	26
27	28 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	29 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	30 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	31 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	1 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	2

November

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
27	28 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	29 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	30 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	31 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	1 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	2
3	4 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	5 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	6 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	7 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	8 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	9
10	11 Veterans Day	12 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	13 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	14 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	15 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	16
17	18 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	19 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	20 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	21 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	22 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	23
24	25 Unit 2: Sem. 1: A... Unit 4: Sem. 1: R... Unit 5: Sem. ... +2	26 Unit 4: Sem. 1: R... Unit 3: Sem. 1: N... Unit 5: Sem. ... +2	27 Thanksgiving	28 Thanksgiving	29 Thanksgiving	30

December

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2 Unit 4: Sem. 1: R... Unit 3: Sem. 1: N... Unit 5: Sem. ... +2	3 Unit 4: Sem. 1: R... Unit 3: Sem. 1: N... Unit 5: Sem. ... +2	4 Unit 4: Sem. 1: R... Unit 3: Sem. 1: N... Unit 5: Sem. ... +2	5 Unit 4: Sem. 1: R... Unit 3: Sem. 1: N... Unit 5: Sem. ... +2	6 Unit 4: Sem. 1: R... Unit 3: Sem. 1: N... Unit 5: Sem. ... +2	7
8	9 Unit 4: Sem. 1: R... Unit 3: Sem. 1: N... Unit 5: Sem. ... +2	10 Unit 4: Sem. 1: R... Unit 3: Sem. 1: N... Unit 5: Sem. ... +2	11 Unit 4: Sem. 1: R... Unit 3: Sem. 1: N... Unit 5: Sem. ... +2	12 Unit 4: Sem. 1: R... Unit 3: Sem. 1: N... Unit 5: Sem. ... +2	13 Unit 4: Sem. 1: R... Unit 3: Sem. 1: N... Unit 5: Sem. ... +2	14
15	16 Unit 4: Sem. 1: R... Unit 3: Sem. 1: N... Unit 5: Sem. ... +2	17 Unit 4: Sem. 1: R... Unit 3: Sem. 1: N... Unit 5: Sem. ... +2	18 Unit 4: Sem. 1: R... Unit 3: Sem. 1: N... Unit 5: Sem. ... +2	19 Unit 4: Sem. 1: R... Unit 3: Sem. 1: N... Unit 5: Sem. ... +2	20 Unit 4: Sem. 1: R... Unit 5: Sem. 1: G... Unit 6: Sem. ... +1	21
22	23 Winter Break	24 Winter Break	25 Winter Break	26 Winter Break	27 Winter Break	28 Winter Break
29 Winter Break	30 Winter Break	31 Winter Break	1 New Year's Day	2 Unit 4: Sem. 1: R... Unit 5: Sem. 1: G... Unit 6: Sem. ... +1	3 Unit 4: Sem. 1: R... Unit 5: Sem. 1: G... Unit 6: Sem. ... +1	4

January

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
29 Winter Break	30 Winter Break	31 Winter Break	1 New Year's Day	2 Unit 4: Sem. 1: R... Unit 5: Sem. 1: G... Unit 6: Sem. ... +1	3 Unit 4: Sem. 1: R... Unit 5: Sem. 1: G... Unit 6: Sem. ... +1	4
5	6 Unit 4: Sem. 1: R... Unit 5: Sem. 1: G... Unit 6: Sem. ... +1	7 Unit 4: Sem. 1: R... Unit 5: Sem. 1: G... Unit 6: Sem. ... +1	8 Unit 4: Sem. 1: R... Unit 5: Sem. 1: G... Unit 6: Sem. ... +1	9 Unit 4: Sem. 1: R... Unit 5: Sem. 1: G... Unit 6: Sem. ... +1	10 Unit 4: Sem. 1: R... Unit 5: Sem. 1: G... Unit 6: Sem. ... +1	11
12	13	14 Winter NWEA Testing	15 Winter NWEA Testing	16 Winter NWEA Testing	17	18
19	20 Martin Luther King, Jr. Day	21 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	22 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	23 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	24 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	25
26	27 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	28 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	29 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	30 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	31 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	1

February

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
26	27 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	28 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	29 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	30 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	31 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	1
2	3 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	4 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	5 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	6 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	7 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	8
9	10 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	11 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	12 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	13 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	14 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	15
16	17 Presidents' Day	18 February Break	19 February Break	20 February Break	21 February Break	22
23	24 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	25 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	26 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	27 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	28 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	1

March

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
23	24 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	25 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	26 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	27 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	28 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	1
2	3 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	4 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	5 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	6 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	7 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	8
9	10 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	11 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	12 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	13 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	14 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	15
16	17 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	18 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	19 Unit 8: Sem. 2: A... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	20 March Break	21 March Break	22
23	24 Unit 9: Sem. 2: N... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	25 Unit 9: Sem. 2: N... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	26 Unit 9: Sem. 2: N... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	27 Unit 9: Sem. 2: N... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	28 Unit 9: Sem. 2: N... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	29
30	31 Unit 9: Sem. 2: N... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	1 Unit 9: Sem. 2: N... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	2 Unit 9: Sem. 2: N... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	3 Unit 9: Sem. 2: N... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	4 Unit 9: Sem. 2: N... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	5

April

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
30	31 Unit 9: Sem. 2: N... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	1 Unit 9: Sem. 2: N... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	2 Unit 9: Sem. 2: N... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	3 Unit 9: Sem. 2: N... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	4 Unit 9: Sem. 2: N... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	5
6	7 MEA Science (HS)	8 MEA Science (HS)	9 MEA Science (HS)	10 MEA Science (HS)	11 MEA Science (HS)	12
13	14 Unit 9: Sem. 2: N... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	15 Unit 9: Sem. 2: N... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	16 Unit 9: Sem. 2: N... Unit 11: Sem. 2: ... Unit 12: Sem.... +1	17 Unit 9: Sem. 2: N... Unit 11: Sem. 2: ... Unit 12: Sem.... +2	18 April Vacation	19 April Vacation
20 April Vacation	21 April Vacation	22 April Vacation	23 April Vacation	24 April Vacation	25 April Vacation	26
27	28 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	29 Spring NWEA Testing	30 Spring NWEA Testing	1 Spring NWEA Testing	2 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	3

May

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
27	28 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	29 Spring NWEA Testing	30 Spring NWEA Testing	1 Spring NWEA Testing	2 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	3
4	5 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	6 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	7 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	8 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	9 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	10
11	12 MEA (ELA & Math)	13 MEA (ELA & Math)	14 MEA (ELA & Math)	15 MEA (ELA & Math)	16 MEA (ELA & Math)	17
18	19 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	20 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	21 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	22 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	23 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	24
25	26 Memorial Day	27 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	28 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	29 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	30 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	31

June						
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	3 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	4 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	5 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	6 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	7
8	9 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	10 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	11 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	12 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	13 Unit 11: Sem. 2: ... Unit 12: Sem. 2: ... Unit 13: Sem.... +1	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	1	2	3	4	5

HS Chemistry

Maine Virtual Academy

UNITS (10/10 SELECTED)

-  Unit 1: Introduction to Chemistry
-  Unit 2: Atomic Structure
-  Unit 3: Bonding
-  Unit 4: Stoichiometry
-  Unit 5: Group Project
-  Unit 6: Chemical Bonding
-  Unit 7: Thermochemistry and Gas Laws
-  Unit 8: Acids and Bases
-  Unit 9: Different Branches of Chemistry
-  Unit 10: Final Project

SUGGESTED DURATION

21 teaching days

16 teaching days

19 teaching days

24 teaching days

12 teaching days

15 teaching days

23 teaching days

10 teaching days

11 teaching days

19 teaching days

Unit 1: Introduction to Chemistry

HS Chemistry

UNIT SUMMARY

Students will learn about the states of matter and how to differentiate between a physical and chemical change. Students will learn about kinetic-molecular theory. Students will learn about the differences between pure substances, compounds, and mixtures. Students will learn the difference between physical and chemical changes. Students will learn the difference between physical and chemical properties.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-1

Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

HS-PS2-2

Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

National Common Core - Grade 11-12 - Science and Technical Subjects

RST.11-12.1.

Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.

RST.11-12.8.

Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.

Unit 1: Introduction to Chemistry

HS Chemistry

RST.11-12.10.

By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.

RST.11-12.4.

Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to

RST.11-12.2.

Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.

RST.11-12.5.

Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.

RST.11-12.3.

Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

RST.11-12.6.

Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.1

Write arguments focused on discipline-specific content.

CCSS.ELA-LITERACY.WHST.11-12.1.A

Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.

CCSS.ELA-LITERACY.WHST.11-12.1.B

Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form

Unit 1: Introduction to Chemistry

HS Chemistry

that anticipates the audience's knowledge level, concerns, values, and possible biases.

CCSS.ELA-LITERACY.WHST.11-12.1.C

Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.

CCSS.ELA-LITERACY.WHST.11-12.1.D

Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.

CCSS.ELA-LITERACY.WHST.11-12.1.E

Provide a concluding statement or section that follows from or supports the argument presented.

CCSS.ELA-LITERACY.WHST.11-12.2

Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

CCSS.ELA-LITERACY.WHST.11-12.2.A

Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.

CCSS.ELA-LITERACY.WHST.11-12.2.B

Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

CCSS.ELA-LITERACY.WHST.11-12.2.C

Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.

CCSS.ELA-LITERACY.WHST.11-12.2.D

Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.

CCSS.ELA-LITERACY.WHST.11-12.2.E

Provide a concluding statement or section that follows from and supports the information or explanation provided

Unit 1: Introduction to Chemistry

HS Chemistry

(e.g., articulating implications or the significance of the topic).

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

CCSS.ELA-LITERACY.WHST.11-12.9

Draw evidence from informational texts to support analysis, reflection, and research.

CCSS.ELA-LITERACY.WHST.11-12.10

Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

CCSS.ELA-LITERACY.WHST.11-12.5

Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

CCSS.ELA-LITERACY.WHST.11-12.8

Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

Unit 1: Introduction to Chemistry

HS Chemistry

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Section 1 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-1
Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
HS-PS1-2
Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
HS-PS1-7
Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Lesson 2 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-1
Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

Unit 1: Introduction to Chemistry

HS Chemistry

Lesson 3 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS2-2
Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system.

Lesson 4 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-3
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Lesson 5 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-3

Unit 1: Introduction to Chemistry

HS Chemistry

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Lesson 6 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Lesson 7 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-1

Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

Lesson 8 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Unit 1: Introduction to Chemistry

HS Chemistry

Maine - High School - Physical Sciences

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Lesson 9 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Lesson 10 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-2

Unit 1: Introduction to Chemistry

HS Chemistry

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Unit 1 Exam

Assessment Type: Summative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Evaluating understanding of key concepts through a comprehensive assessment, including multiple-choice, fill-in-the-blank, and true/false questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-1

Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

HS-PS2-2

Unit 1: Introduction to Chemistry

HS Chemistry

Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system.

Extension Activity #1

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Reinforcing procedural knowledge by interacting with virtual lab activities and completing guided worksheets to apply scientific concepts and skills.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-3
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.
National Common Core - Grade 11-12 - Science and Technical Subjects
RST.11-12.3.
Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.
RST.11-12.6.
Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.
National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)
CCSS.ELA-LITERACY.WHST.11-12.2
Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.
CCSS.ELA-LITERACY.WHST.11-12.2.A
Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.
CCSS.ELA-LITERACY.WHST.11-12.2.B

Unit 1: Introduction to Chemistry

HS Chemistry

Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

CCSS.ELA-LITERACY.WHST.11-12.2.C

Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.

CCSS.ELA-LITERACY.WHST.11-12.2.D

Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.

CCSS.ELA-LITERACY.WHST.11-12.2.E

Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).

CCSS.ELA-LITERACY.WHST.11-12.10

Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

Extension Activity #2

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Reinforcing procedural knowledge by interacting with virtual lab activities and completing guided worksheets to apply scientific concepts and skills.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

National Common Core - Grade 11-12 - Science and Technical Subjects

RST.11-12.6.

Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.

Unit 1: Introduction to Chemistry

HS Chemistry

RST.11-12.3.

Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.2

Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

CCSS.ELA-LITERACY.WHST.11-12.2.D

Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.

CCSS.ELA-LITERACY.WHST.11-12.2.E

Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).

CCSS.ELA-LITERACY.WHST.11-12.10

Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

Unit 2: Atomic Structure

HS Chemistry

UNIT SUMMARY

Students will learn the origin and progression of the atomic theory. Students will learn the units and location of atomic structures. Students will learn about atomic numbers, mass numbers, and how they create isotopes. Students will learn the structure of and how to use the periodic table. Students will learn about electrons and how they are organized in the structure of the atom.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-1

Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS4-1

Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.

HS-PS4-3

Evaluate the claims, evidence, and reasoning behind the idea that electromagnetic radiation can be described either by a wave model or a particle model, and that for some situations one model is more useful than the other.

National Common Core - Grade 11-12 - Science and Technical Subjects

RST.11-12.4.

Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to

RST.11-12.10.

By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.

Unit 2: Atomic Structure

HS Chemistry

RST.11-12.1.

Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.

RST.11-12.8.

Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.

RST.11-12.2.

Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.

RST.11-12.5.

Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.

RST.11-12.3.

Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

RST.11-12.6.

Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.

RST.11-12.7.

Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.

RST.11-12.9.

Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.1

Write arguments focused on discipline-specific content.

Unit 2: Atomic Structure

HS Chemistry

CCSS.ELA-LITERACY.WHST.11-12.1.A

Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.

CCSS.ELA-LITERACY.WHST.11-12.1.B

Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.

CCSS.ELA-LITERACY.WHST.11-12.1.C

Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.

CCSS.ELA-LITERACY.WHST.11-12.1.D

Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.

CCSS.ELA-LITERACY.WHST.11-12.1.E

Provide a concluding statement or section that follows from or supports the argument presented.

CCSS.ELA-LITERACY.WHST.11-12.2

Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

CCSS.ELA-LITERACY.WHST.11-12.2.A

Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.

CCSS.ELA-LITERACY.WHST.11-12.2.B

Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

CCSS.ELA-LITERACY.WHST.11-12.2.C

Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.

Unit 2: Atomic Structure

HS Chemistry

CCSS.ELA-LITERACY.WHST.11-12.2.D

Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.

CCSS.ELA-LITERACY.WHST.11-12.2.E

Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

CCSS.ELA-LITERACY.WHST.11-12.9

Draw evidence from informational texts to support analysis, reflection, and research.

CCSS.ELA-LITERACY.WHST.11-12.10

Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

Unit 2: Atomic Structure

HS Chemistry

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Lesson 1 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-1

Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

Lesson 2 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Lesson 3 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

Unit 2: Atomic Structure

HS Chemistry

HS-PS1-1

Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

Lesson 4 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-1

Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Lesson 5 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-1

Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons

Unit 2: Atomic Structure

HS Chemistry

in the outermost energy level of atoms.

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Lesson 6 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-1

Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Lesson 7 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

Unit 2: Atomic Structure

HS Chemistry

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-1
Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
HS-PS1-2
Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
HS-PS1-3
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Lesson 8 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-1
Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
HS-PS1-2
Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
HS-PS1-3
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Unit 2: Atomic Structure

HS Chemistry

Lesson 10 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-1
Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
HS-PS1-2
Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
HS-PS1-3
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Lesson 11 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-1
Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
HS-PS1-2
Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost

Unit 2: Atomic Structure

HS Chemistry

electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Lesson 12 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS4-1

Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.

HS-PS4-3

Evaluate the claims, evidence, and reasoning behind the idea that electromagnetic radiation can be described either by a wave model or a particle model, and that for some situations one model is more useful than the other.

Lesson 13 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-1

Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

HS-PS1-2

Unit 2: Atomic Structure

HS Chemistry

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

Unit 2 Exam

Assessment Type: Summative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Evaluating understanding of key concepts through a comprehensive assessment, including multiple-choice, fill-in-the-blank, and true/false questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-1
Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
HS-PS1-2
Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
HS-PS1-3
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.
HS-PS4-1
Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.
HS-PS4-3
Evaluate the claims, evidence, and reasoning behind the idea that electromagnetic radiation can be described either by a wave model or a particle model, and that for some situations one model is more useful than the other.

Extension Activity #1

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Reinforcing procedural knowledge by interacting with virtual lab activities and completing guided

Unit 2: Atomic Structure

HS Chemistry

worksheets to apply scientific concepts and skills.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-1
Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
HS-PS1-2
Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
HS-PS1-3
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.
National Common Core - Grade 11-12 - Science and Technical Subjects
RST.11-12.6.
Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.
RST.11-12.3.
Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.
RST.11-12.10.
By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.
National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)
CCSS.ELA-LITERACY.WHST.11-12.2
Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.
CCSS.ELA-LITERACY.WHST.11-12.2.A
Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that

Unit 2: Atomic Structure

HS Chemistry

which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.

CCSS.ELA-LITERACY.WHST.11-12.2.B

Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

CCSS.ELA-LITERACY.WHST.11-12.2.C

Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.

CCSS.ELA-LITERACY.WHST.11-12.2.D

Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.

CCSS.ELA-LITERACY.WHST.11-12.2.E

Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).

CCSS.ELA-LITERACY.WHST.11-12.10

Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

Extension Activity #2

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Reinforcing procedural knowledge by interacting with virtual lab activities and completing guided worksheets to apply scientific concepts and skills.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-1

Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

HS-PS1-2

Unit 2: Atomic Structure

HS Chemistry

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

National Common Core - Grade 11-12 - Science and Technical Subjects

RST.11-12.3.

Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

RST.11-12.6.

Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.

RST.11-12.7.

Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.

RST.11-12.9.

Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

RST.11-12.10.

By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.10

Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

CCSS.ELA-LITERACY.WHST.11-12.9

Draw evidence from informational texts to support analysis, reflection, and research.

Unit 2: Atomic Structure

HS Chemistry

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

Unit 3: Bonding

HS Chemistry

UNIT SUMMARY

Students will learn how electrons interact to create bonds. Students will learn the difference between covalent bonds and ionic bonds. Students will learn about characteristics of ions. To create and balance chemical equations. Students will learn how to create net ionic equations.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-1

Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

HS-PS1-4

Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.

National Common Core - Grade 11-12 - Science and Technical Subjects

RST.11-12.1.

Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.

RST.11-12.2.

Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.

RST.11-12.5.

Unit 3: Bonding

HS Chemistry

Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.

RST.11-12.10.

By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.

RST.11-12.8.

Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.

RST.11-12.3.

Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

RST.11-12.6.

Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.

RST.11-12.7.

Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.

RST.11-12.9.

Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.1

Write arguments focused on discipline-specific content.

CCSS.ELA-LITERACY.WHST.11-12.1.A

Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.

CCSS.ELA-LITERACY.WHST.11-12.1.B

Unit 3: Bonding

HS Chemistry

Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.

CCSS.ELA-LITERACY.WHST.11-12.1.C

Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.

CCSS.ELA-LITERACY.WHST.11-12.1.D

Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.

CCSS.ELA-LITERACY.WHST.11-12.1.E

Provide a concluding statement or section that follows from or supports the argument presented.

CCSS.ELA-LITERACY.WHST.11-12.2

Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

CCSS.ELA-LITERACY.WHST.11-12.2.A

Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.

CCSS.ELA-LITERACY.WHST.11-12.2.B

Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

CCSS.ELA-LITERACY.WHST.11-12.2.C

Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.

CCSS.ELA-LITERACY.WHST.11-12.2.D

Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.

CCSS.ELA-LITERACY.WHST.11-12.2.E

Unit 3: Bonding

HS Chemistry

Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

CCSS.ELA-LITERACY.WHST.11-12.9

Draw evidence from informational texts to support analysis, reflection, and research.

CCSS.ELA-LITERACY.WHST.11-12.10

Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

CCSS.ELA-LITERACY.WHST.11-12.5

Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

CCSS.ELA-LITERACY.WHST.11-12.8

Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

Unit 3: Bonding

HS Chemistry

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Lesson 1 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-1
Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
HS-PS1-2
Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

Lesson 2 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-1
Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
HS-PS1-2
Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
HS-PS1-3

Unit 3: Bonding

HS Chemistry

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Lesson 3 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-1

Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Lesson 4 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-1

Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

Unit 3: Bonding

HS Chemistry

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Lesson 5 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-1

Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Lesson 6 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Unit 3: Bonding

HS Chemistry

Maine - High School - Physical Sciences

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Lesson 7 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Lesson 8 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-1

Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-3

Unit 3: Bonding

HS Chemistry

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Lesson 9 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-1

Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

HS-PS1-4

Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Unit 3: Bonding

HS Chemistry

Lesson 10 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-7
Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Lesson 11 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-2
Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
HS-PS1-3
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.
HS-PS1-7
Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Unit 3 Exam

Assessment Type: Summative

Unit 3: Bonding

HS Chemistry

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Evaluating understanding of key concepts through a comprehensive assessment, including multiple-choice, fill-in-the-blank, and true/false questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-1
Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
HS-PS1-2
Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
HS-PS1-3
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.
HS-PS1-4
Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.
HS-PS1-7
Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Extension Activity #1

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Reinforcing procedural knowledge by interacting with virtual lab activities and completing guided worksheets to apply scientific concepts and skills.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-1

Unit 3: Bonding

HS Chemistry

Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

National Common Core - Grade 11-12 - Science and Technical Subjects

RST.11-12.6.

Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.

RST.11-12.3.

Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

RST.11-12.10.

By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.10

Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

CCSS.ELA-LITERACY.WHST.11-12.2

Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

CCSS.ELA-LITERACY.WHST.11-12.2.A

Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and

Unit 3: Bonding

HS Chemistry

multimedia when useful to aiding comprehension.

CCSS.ELA-LITERACY.WHST.11-12.2.B

Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

CCSS.ELA-LITERACY.WHST.11-12.2.C

Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.

CCSS.ELA-LITERACY.WHST.11-12.2.D

Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.

CCSS.ELA-LITERACY.WHST.11-12.2.E

Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).

Extension Activity #2

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Reinforcing procedural knowledge by interacting with virtual lab activities and completing guided worksheets to apply scientific concepts and skills.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

National Common Core - Grade 11-12 - Science and Technical Subjects

RST.11-12.6.

Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.

Unit 3: Bonding

HS Chemistry

RST.11-12.3.

Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

RST.11-12.7.

Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.

RST.11-12.8.

Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.

RST.11-12.9.

Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

RST.11-12.10.

By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.10

Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

CCSS.ELA-LITERACY.WHST.11-12.9

Draw evidence from informational texts to support analysis, reflection, and research.

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

Unit 4: Stoichiometry

HS Chemistry

UNIT SUMMARY

Students will learn how to do calculations using significant figures. Students will learn how to use dimensional analysis to solve chemistry problems. Students will learn how calculate using molar quantities. Students will learn how to calculate weights and percents of elements using chemical formulas. Students will learn how to calculate the products and reactants of chemical equations using stoichiometry.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

National Common Core - Grade 11-12 - Science and Technical Subjects

RST.11-12.1.

Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.

RST.11-12.8.

Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.

RST.11-12.10.

By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.

RST.11-12.2.

Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.

Unit 4: Stoichiometry

HS Chemistry

RST.11-12.5.

Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.

RST.11-12.6.

Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.

RST.11-12.3.

Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.1

Write arguments focused on discipline-specific content.

CCSS.ELA-LITERACY.WHST.11-12.1.A

Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.

CCSS.ELA-LITERACY.WHST.11-12.1.B

Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.

CCSS.ELA-LITERACY.WHST.11-12.1.C

Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.

CCSS.ELA-LITERACY.WHST.11-12.1.D

Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.

CCSS.ELA-LITERACY.WHST.11-12.1.E

Unit 4: Stoichiometry

HS Chemistry

Provide a concluding statement or section that follows from or supports the argument presented.
CCSS.ELA-LITERACY.WHST.11-12.4
Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
CCSS.ELA-LITERACY.WHST.11-12.9
Draw evidence from informational texts to support analysis, reflection, and research.
CCSS.ELA-LITERACY.WHST.11-12.10
Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.
CCSS.ELA-LITERACY.WHST.11-12.2
Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.
CCSS.ELA-LITERACY.WHST.11-12.2.A
Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.
CCSS.ELA-LITERACY.WHST.11-12.2.B
Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.
CCSS.ELA-LITERACY.WHST.11-12.2.C
Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.
CCSS.ELA-LITERACY.WHST.11-12.2.D
Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.
CCSS.ELA-LITERACY.WHST.11-12.2.E
Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).

Unit 4: Stoichiometry

HS Chemistry

CCSS.ELA-LITERACY.WHST.11-12.5

Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

CCSS.ELA-LITERACY.WHST.11-12.8

Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

Unit 4: Stoichiometry

HS Chemistry

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Lesson 1 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Lesson 5 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Lesson 6 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

Unit 4: Stoichiometry

HS Chemistry

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Lesson 7 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Lesson 8 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost

Unit 4: Stoichiometry

HS Chemistry

electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Unit 4 Exam

Assessment Type: Summative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Evaluating understanding of key concepts through a comprehensive assessment, including multiple-choice, fill-in-the-blank, and true/false questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Extension Activity #2

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Reinforcing procedural knowledge by interacting with virtual lab activities and completing guided worksheets to apply scientific concepts and skills.

Unit 4: Stoichiometry

HS Chemistry

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

National Common Core - Grade 11-12 - Science and Technical Subjects

RST.11-12.6.

Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.

RST.11-12.3.

Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

RST.11-12.10.

By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.10

Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

CCSS.ELA-LITERACY.WHST.11-12.9

Draw evidence from informational texts to support analysis, reflection, and research.

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

Unit 5: Group Project

HS Chemistry

UNIT SUMMARY

STANDARDS

Maine - High School - Earth and Space Sciences

HS-ESS3-1

Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.

HS-ESS3-2

Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.

HS-ESS3-4

Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.

Maine - High School - Engineering Design

HS-ETS1-1

Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.

HS-ETS1-2

Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.

HS-ETS1-3

Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.

Maine - High School - Life Sciences

HS-LS2-1

Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.

HS-LS2-7

Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and

Unit 5: Group Project

HS Chemistry

biodiversity.

Maine - High School - Mathematics - Geometric Reasoning (2020)

HSG.CO.D.12

Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.

HSG.GMD.A.3

Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.

HSG.MG.A.2

Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).

HSG.MG.A.3

Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).

Maine - High School - Mathematics - Quantitative Reasoning (2020)

HSN.Q.A.1

Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays. Example: Marlena made a scale drawing of the sand volleyball court at her summer camp. The drawing of the volleyball court is 6 cm long by 3 cm wide. The actual volleyball court is 18 meters long. What scale did Marlena use for the drawing? ★

HSN.Q.A.2

Define appropriate quantities for the purpose of descriptive modeling. Example: If a town in Aroostook county with a population of 1254 people is projected to double in size every 105 years, what will the population be 315 years from now? ★

National Common Core - Grade 11-12 - Science and Technical Subjects

RST.11-12.4.

Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to

Unit 5: Group Project

HS Chemistry

RST.11-12.7.

Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.

RST.11-12.9.

Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

RST.11-12.3.

Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

RST.11-12.10.

By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

CCSS.ELA-LITERACY.WHST.11-12.7

Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

CCSS.ELA-LITERACY.WHST.11-12.8

Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

CCSS.ELA-LITERACY.WHST.11-12.10

Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

CCSS.ELA-LITERACY.WHST.11-12.9

Unit 5: Group Project

HS Chemistry

Draw evidence from informational texts to support analysis, reflection, and research.

CCSS.ELA-LITERACY.WHST.11-12.2

Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

CCSS.ELA-LITERACY.WHST.11-12.2.A

Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.

CCSS.ELA-LITERACY.WHST.11-12.2.B

Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

CCSS.ELA-LITERACY.WHST.11-12.2.C

Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.

CCSS.ELA-LITERACY.WHST.11-12.2.D

Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.

CCSS.ELA-LITERACY.WHST.11-12.2.E

Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).

CCSS.ELA-LITERACY.WHST.11-12.6

Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.

Unit 5: Group Project

HS Chemistry

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Project

Assessment Type: Summative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students work collaboratively to research and present on concepts learned in the unit and exploring their real-world applications.

STANDARDS

Maine - High School - Earth and Space Sciences
HS-ESS3-1
Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.
HS-ESS3-2
Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.
HS-ESS3-4
Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.
Maine - High School - Engineering Design
HS-ETS1-1
Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
HS-ETS1-2
Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.
HS-ETS1-3
Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.
Maine - High School - Life Sciences

Unit 5: Group Project

HS Chemistry

HS-LS2-1

Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.

HS-LS2-7

Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.

Maine - High School - Mathematics - Geometric Reasoning (2020)

HSG.CO.D.12

Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.

HSG.GMD.A.3

Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.

HSG.MG.A.2

Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).

HSG.MG.A.3

Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).

Maine - High School - Mathematics - Quantitative Reasoning (2020)

HSN.Q.A.1

Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays. Example: Marlena made a scale drawing of the sand volleyball court at her summer camp. The drawing of the volleyball court is 6 cm long by 3 cm wide. The actual volleyball court is 18 meters long. What scale did Marlena use for the drawing? ★

HSN.Q.A.2

Define appropriate quantities for the purpose of descriptive modeling. Example: If a town in Aroostook county with a population of 1254 people is projected to double in size every 105 years, what will the population be 315 years

Unit 5: Group Project

HS Chemistry

from now? ★

National Common Core - Grade 11-12 - Science and Technical Subjects

RST.11-12.3.

Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

RST.11-12.4.

Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to

RST.11-12.7.

Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.

RST.11-12.9.

Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

RST.11-12.10.

By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.2

Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

CCSS.ELA-LITERACY.WHST.11-12.2.A

Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.

CCSS.ELA-LITERACY.WHST.11-12.2.B

Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

Unit 5: Group Project

HS Chemistry

CCSS.ELA-LITERACY.WHST.11-12.2.C

Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.

CCSS.ELA-LITERACY.WHST.11-12.2.D

Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.

CCSS.ELA-LITERACY.WHST.11-12.2.E

Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

CCSS.ELA-LITERACY.WHST.11-12.7

Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

CCSS.ELA-LITERACY.WHST.11-12.8

Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

CCSS.ELA-LITERACY.WHST.11-12.9

Draw evidence from informational texts to support analysis, reflection, and research.

CCSS.ELA-LITERACY.WHST.11-12.10

Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

CCSS.ELA-LITERACY.WHST.11-12.6

Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.

Unit 6: Chemical Bonding

HS Chemistry

UNIT SUMMARY

Students will learn how to identify ionic and covalent bonds based on the component elements of compounds.

Students will learn about different types of ionic and covalent bonds and how they form. Students will learn about vesper theory and how it relates to chemical structure. Students will learn about hydrogen bonding and the qualities of water. Students will learn about the differences between mixtures, solutions, and colloids. Students will learn how to create solutions and how to dilute them to specific concentrations. Students will learn how to calculate molality and when to use molality instead of molarity.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-1

Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

National Common Core - Grade 11-12 - Science and Technical Subjects

RST.11-12.1.

Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.

RST.11-12.8.

Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.

RST.11-12.10.

By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.

RST.11-12.4.

Unit 6: Chemical Bonding

HS Chemistry

Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to

RST.11-12.6.

Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.

RST.11-12.3.

Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.1

Write arguments focused on discipline-specific content.

CCSS.ELA-LITERACY.WHST.11-12.1.A

Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.

CCSS.ELA-LITERACY.WHST.11-12.1.B

Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.

CCSS.ELA-LITERACY.WHST.11-12.1.C

Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.

CCSS.ELA-LITERACY.WHST.11-12.1.D

Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.

CCSS.ELA-LITERACY.WHST.11-12.1.E

Provide a concluding statement or section that follows from or supports the argument presented.

Unit 6: Chemical Bonding

HS Chemistry

CCSS.ELA-LITERACY.WHST.11-12.2

Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

CCSS.ELA-LITERACY.WHST.11-12.2.A

Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.

CCSS.ELA-LITERACY.WHST.11-12.2.B

Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

CCSS.ELA-LITERACY.WHST.11-12.2.C

Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.

CCSS.ELA-LITERACY.WHST.11-12.2.D

Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.

CCSS.ELA-LITERACY.WHST.11-12.2.E

Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

CCSS.ELA-LITERACY.WHST.11-12.9

Draw evidence from informational texts to support analysis, reflection, and research.

CCSS.ELA-LITERACY.WHST.11-12.10

Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

CCSS.ELA-LITERACY.WHST.11-12.5

Unit 6: Chemical Bonding

HS Chemistry

Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

CCSS.ELA-LITERACY.WHST.11-12.8

Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

Unit 6: Chemical Bonding

HS Chemistry

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Lesson 1 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-1
Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
HS-PS1-3
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Lesson 2 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-1
Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
HS-PS1-3
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Unit 6: Chemical Bonding

HS Chemistry

Lesson 3 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-1
Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
HS-PS1-3
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Lesson 4 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-1
Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
HS-PS1-3
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Lesson 5 Quiz

Assessment Type: Formative

Unit 6: Chemical Bonding

HS Chemistry

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-1
Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
HS-PS1-3
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Lesson 6 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-3
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Lesson 7 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences
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Unit 6: Chemical Bonding

HS Chemistry

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Lesson 8 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Lesson 9 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Lesson 10 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

Unit 6: Chemical Bonding

HS Chemistry

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Unit 6 Exam

Assessment Type: Summative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Evaluating understanding of key concepts through a comprehensive assessment, including multiple-choice, fill-in-the-blank, and true/false questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-1

Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Extension Activity #1

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Reinforcing procedural knowledge by interacting with virtual lab activities and completing guided worksheets to apply scientific concepts and skills.

STANDARDS

Maine - High School - Physical Sciences

Unit 6: Chemical Bonding

HS Chemistry

HS-PS1-1

Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

National Common Core - Grade 11-12 - Science and Technical Subjects

RST.11-12.8.

Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.

RST.11-12.1.

Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.

RST.11-12.3.

Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

RST.11-12.10.

By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

CCSS.ELA-LITERACY.WHST.11-12.9

Draw evidence from informational texts to support analysis, reflection, and research.

CCSS.ELA-LITERACY.WHST.11-12.10

Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting

Unit 6: Chemical Bonding

HS Chemistry

or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

Extension Activity #2

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Reinforcing procedural knowledge by interacting with virtual lab activities and completing guided worksheets to apply scientific concepts and skills.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-1

Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

National Common Core - Grade 11-12 - Science and Technical Subjects

RST.11-12.3.

Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

RST.11-12.6.

Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.

RST.11-12.10.

By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.10

Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting

Unit 6: Chemical Bonding

HS Chemistry

or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

CCSS.ELA-LITERACY.WHST.11-12.9

Draw evidence from informational texts to support analysis, reflection, and research.

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

Unit 7: Thermochemistry and Gas Laws

HS Chemistry

UNIT SUMMARY

Students will learn the difference between exothermic and endothermic reactions and how to identify them. Students will learn the physical characteristics of gases. Students will learn how to use the gas laws to calculate properties of gases. Students will learn what characteristics affect the rates of reactions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-2
Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
HS-PS1-4
Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.
HS-PS1-7
Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.
HS-PS3-1
Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.
HS-PS3-2
Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motion of particles (objects) and energy associated with the relative position of particles (objects).
HS-PS3-4
Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).
HS-PS1-3
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.
HS-PS1-6

Unit 7: Thermochemistry and Gas Laws

HS Chemistry

Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.

HS-PS1-5

Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.

National Common Core - Grade 11-12 - Science and Technical Subjects

RST.11-12.1.

Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.

RST.11-12.8.

Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.

RST.11-12.10.

By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.

RST.11-12.3.

Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

RST.11-12.6.

Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.

RST.11-12.9.

Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.1

Write arguments focused on discipline-specific content.

Unit 7: Thermochemistry and Gas Laws

HS Chemistry

CCSS.ELA-LITERACY.WHST.11-12.1.A

Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.

CCSS.ELA-LITERACY.WHST.11-12.1.B

Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.

CCSS.ELA-LITERACY.WHST.11-12.1.C

Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.

CCSS.ELA-LITERACY.WHST.11-12.1.D

Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.

CCSS.ELA-LITERACY.WHST.11-12.1.E

Provide a concluding statement or section that follows from or supports the argument presented.

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

CCSS.ELA-LITERACY.WHST.11-12.9

Draw evidence from informational texts to support analysis, reflection, and research.

CCSS.ELA-LITERACY.WHST.11-12.10

Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

Unit 7: Thermochemistry and Gas Laws

HS Chemistry

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Lesson 1 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-2
Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
HS-PS1-4
Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.
HS-PS1-7
Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.
HS-PS3-1
Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.
HS-PS3-2
Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motion of particles (objects) and energy associated with the relative position of particles (objects).
HS-PS3-4
Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).

Unit 7: Thermochemistry and Gas Laws

HS Chemistry

Lesson 2 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-4
Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.
HS-PS3-1
Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.
HS-PS3-4
Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).
HS-PS1-5
Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.

Lesson 3 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-3

Unit 7: Thermochemistry and Gas Laws

HS Chemistry

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Lesson 4 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Lesson 5 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Lesson 6 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Unit 7: Thermochemistry and Gas Laws

HS Chemistry

Maine - High School - Physical Sciences
HS-PS1-2
Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
HS-PS1-3
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.
HS-PS1-6
Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.
HS-PS1-7
Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Unit 7 Exam

Assessment Type: Summative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Evaluating understanding of key concepts through a comprehensive assessment, including multiple-choice, fill-in-the-blank, and true/false questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-2
Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
HS-PS1-3
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.
HS-PS1-4
Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends

Unit 7: Thermochemistry and Gas Laws

HS Chemistry

upon the changes in total bond energy.

HS-PS1-6

Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

HS-PS3-1

Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.

HS-PS3-2

Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motion of particles (objects) and energy associated with the relative position of particles (objects).

HS-PS3-4

Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).

Extension Activity #1

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Reinforcing procedural knowledge by interacting with virtual lab activities and completing guided worksheets to apply scientific concepts and skills.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-4

Unit 7: Thermochemistry and Gas Laws

HS Chemistry

Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

HS-PS3-1

Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.

HS-PS3-2

Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motion of particles (objects) and energy associated with the relative position of particles (objects).

HS-PS3-4

Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).

National Common Core - Grade 11-12 - Science and Technical Subjects

RST.11-12.6.

Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.

RST.11-12.3.

Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

RST.11-12.10.

By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.10

Unit 7: Thermochemistry and Gas Laws

HS Chemistry

Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

CCSS.ELA-LITERACY.WHST.11-12.9

Draw evidence from informational texts to support analysis, reflection, and research.

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

Extension Activity #2

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Reinforcing procedural knowledge by interacting with virtual lab activities and completing guided worksheets to apply scientific concepts and skills.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

National Common Core - Grade 11-12 - Science and Technical Subjects

RST.11-12.6.

Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.

RST.11-12.3.

Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

RST.11-12.10.

By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects

Unit 7: Thermochemistry and Gas Laws

HS Chemistry

(ELA)
CCSS.ELA-LITERACY.WHST.11-12.10
Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.
CCSS.ELA-LITERACY.WHST.11-12.4
Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
CCSS.ELA-LITERACY.WHST.11-12.9
Draw evidence from informational texts to support analysis, reflection, and research.

Unit 8: Acids and Bases

HS Chemistry

UNIT SUMMARY

Students will learn about the characteristics of bases and acids and how to identify them. Students will learn about the pH scale and how to identify an acid or base on the scale. Students will learn how to calculate pH POH and how to calculate concentrations of acids and bases. Students will learn what neutralization reactions are and how to identify them. Students will learn how to titrate acidic and basic solutions to determine their concentration. Students will learn how to calculate oxidation numbers and to balance reactions using oxidation numbers. Students will learn how to identify oxidizing and reducing agents in oxidation reactions. Students will learn how oxidation reactions are used to create batteries.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-2
Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
HS-PS1-7
Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.
HS-PS1-6
Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.
HS-PS1-3
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.
HS-PS1-4
Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.
HS-PS1-1
Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
HS-PS3-3
Design, build, and refine a device that works within given constraints to convert one form of energy into another

Unit 8: Acids and Bases

HS Chemistry

form of energy.

National Common Core - Grade 11-12 - Science and Technical Subjects

RST.11-12.1.

Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.

RST.11-12.8.

Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.

RST.11-12.10.

By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.

RST.11-12.2.

Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.

RST.11-12.5.

Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.

RST.11-12.6.

Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.

RST.11-12.3.

Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.1

Write arguments focused on discipline-specific content.

CCSS.ELA-LITERACY.WHST.11-12.1.A

Unit 8: Acids and Bases

HS Chemistry

Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.

CCSS.ELA-LITERACY.WHST.11-12.1.B

Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.

CCSS.ELA-LITERACY.WHST.11-12.1.C

Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.

CCSS.ELA-LITERACY.WHST.11-12.1.D

Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.

CCSS.ELA-LITERACY.WHST.11-12.1.E

Provide a concluding statement or section that follows from or supports the argument presented.

CCSS.ELA-LITERACY.WHST.11-12.2

Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

CCSS.ELA-LITERACY.WHST.11-12.2.A

Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.

CCSS.ELA-LITERACY.WHST.11-12.2.B

Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

CCSS.ELA-LITERACY.WHST.11-12.2.C

Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.

CCSS.ELA-LITERACY.WHST.11-12.2.D

Unit 8: Acids and Bases

HS Chemistry

Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.

CCSS.ELA-LITERACY.WHST.11-12.2.E

Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

CCSS.ELA-LITERACY.WHST.11-12.9

Draw evidence from informational texts to support analysis, reflection, and research.

CCSS.ELA-LITERACY.WHST.11-12.10

Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

CCSS.ELA-LITERACY.WHST.11-12.5

Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

CCSS.ELA-LITERACY.WHST.11-12.8

Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

Unit 8: Acids and Bases

HS Chemistry

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Lesson 1 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-2
Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
HS-PS1-3
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.
HS-PS1-7
Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Lesson 2 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-2
Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
HS-PS1-3

Unit 8: Acids and Bases

HS Chemistry

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

HS-PS1-6

Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Lesson 3 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

HS-PS1-4

Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.

HS-PS1-6

Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.

HS-PS1-7

Unit 8: Acids and Bases

HS Chemistry

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Lesson 4 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-2
Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
HS-PS1-3
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.
HS-PS1-6
Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.
HS-PS1-7
Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Lesson 5 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

Unit 8: Acids and Bases

HS Chemistry

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

HS-PS1-4

Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.

HS-PS1-6

Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Lesson 6 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-1

Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

Unit 8: Acids and Bases

HS Chemistry

HS-PS1-4

Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

HS-PS3-3

Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.

Lesson 7 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-1

Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-4

Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Unit 8: Acids and Bases

HS Chemistry

HS-PS3-3

Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.

Unit 8 Exam

Assessment Type: Summative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Evaluating understanding of key concepts through a comprehensive assessment, including multiple-choice, fill-in-the-blank, and true/false questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-1

Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

HS-PS1-4

Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.

HS-PS1-6

Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Unit 8: Acids and Bases

HS Chemistry

HS-PS3-3

Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.

Extension Activity #1

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Reinforcing procedural knowledge by interacting with virtual lab activities and completing guided worksheets to apply scientific concepts and skills.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

HS-PS1-4

Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.

HS-PS1-6

Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Extension Activity #2

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Unit 8: Acids and Bases

HS Chemistry

Description: Reinforcing procedural knowledge by interacting with virtual lab activities and completing guided worksheets to apply scientific concepts and skills.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-2
Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
HS-PS1-3
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.
HS-PS1-6
Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.
HS-PS1-7
Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.
National Common Core - Grade 11-12 - Science and Technical Subjects
RST.11-12.6.
Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.
RST.11-12.3.
Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.
RST.11-12.10.
By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.
National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)
CCSS.ELA-LITERACY.WHST.11-12.4

Unit 8: Acids and Bases

HS Chemistry

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

CCSS.ELA-LITERACY.WHST.11-12.9

Draw evidence from informational texts to support analysis, reflection, and research.

CCSS.ELA-LITERACY.WHST.11-12.10

Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

Unit 9: Different Branches of Chemistry

HS Chemistry

UNIT SUMMARY

Students will learn about hydrocarbons and how to identify them. Students will learn about homologous series and how they can be used to predict complex compounds. Students will learn how functional groups affect the chemical and physical properties of compounds. Students will learn about molecules that are the building blocks for life and their applications in biology. Students will learn about carbohydrates and amino acids and how they are used by organisms. Students will learn about lipids and nucleic acids and how they are used by organisms. Students will learn about radioactivity, the types of radioactivity, and how to calculate half-lives of radioactive substances.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-2
Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
HS-PS1-3
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.
HS-PS1-7
Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.
HS-PS1-6
Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.
HS-PS1-8
Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during the processes of fission, fusion, and radioactive decay.
Maine - High School - Life Sciences
HS-LS1-6
Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.
HS-LS1-5

Unit 9: Different Branches of Chemistry

HS Chemistry

Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.

HS-LS1-7

Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed, resulting in a net transfer of energy.

HS-LS2-5

Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.

HS-LS1-1

Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins, which carry out the essential functions of life through systems of specialized cells.

HS-LS3-1

Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.

HS-LS3-2

Make and defend a claim based on evidence that inheritable genetic variations may result from (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.

Maine - High School - Earth and Space Sciences

HS-ESS3-2

Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.

National Common Core - Grade 11-12 - Science and Technical Subjects

RST.11-12.1.

Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.

RST.11-12.8.

Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.

Unit 9: Different Branches of Chemistry

HS Chemistry

RST.11-12.10.

By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.

RST.11-12.2.

Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.

RST.11-12.5.

Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.

RST.11-12.3.

Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

RST.11-12.6.

Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.1

Write arguments focused on discipline-specific content.

CCSS.ELA-LITERACY.WHST.11-12.1.A

Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.

CCSS.ELA-LITERACY.WHST.11-12.1.B

Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.

CCSS.ELA-LITERACY.WHST.11-12.1.C

Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion,

Unit 9: Different Branches of Chemistry

HS Chemistry

and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.

CCSS.ELA-LITERACY.WHST.11-12.1.D

Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.

CCSS.ELA-LITERACY.WHST.11-12.1.E

Provide a concluding statement or section that follows from or supports the argument presented.

CCSS.ELA-LITERACY.WHST.11-12.2

Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

CCSS.ELA-LITERACY.WHST.11-12.2.A

Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.

CCSS.ELA-LITERACY.WHST.11-12.2.B

Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

CCSS.ELA-LITERACY.WHST.11-12.2.C

Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.

CCSS.ELA-LITERACY.WHST.11-12.2.D

Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.

CCSS.ELA-LITERACY.WHST.11-12.2.E

Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task,

Unit 9: Different Branches of Chemistry

HS Chemistry

purpose, and audience.

CCSS.ELA-LITERACY.WHST.11-12.9

Draw evidence from informational texts to support analysis, reflection, and research.

CCSS.ELA-LITERACY.WHST.11-12.10

Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

CCSS.ELA-LITERACY.WHST.11-12.5

Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

CCSS.ELA-LITERACY.WHST.11-12.8

Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

CCSS.ELA-LITERACY.WHST.11-12.6

Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.

Unit 9: Different Branches of Chemistry

HS Chemistry

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Lesson 1 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Maine - High School - Life Sciences

HS-LS1-6

Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.

Lesson 2 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

Unit 9: Different Branches of Chemistry

HS Chemistry

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

HS-PS1-6

Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Lesson 3 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Unit 9: Different Branches of Chemistry

HS Chemistry

Maine - High School - Life Sciences

HS-LS1-6

Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.

Lesson 4 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Maine - High School - Life Sciences

HS-LS1-6

Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.

HS-LS1-7

Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed, resulting in a net transfer of energy.

HS-LS2-5

Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.

Lesson 5 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Unit 9: Different Branches of Chemistry

HS Chemistry

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-3
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.
Maine - High School - Life Sciences
HS-LS1-5
Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.
HS-LS1-6
Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.
HS-LS1-7
Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed, resulting in a net transfer of energy.
HS-LS2-5
Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.

Lesson 6 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-3
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to

Unit 9: Different Branches of Chemistry

HS Chemistry

infer the strength of electrical forces between particles.

Maine - High School - Life Sciences

HS-LS1-1

Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins, which carry out the essential functions of life through systems of specialized cells.

HS-LS1-6

Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.

HS-LS3-1

Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.

HS-LS3-2

Make and defend a claim based on evidence that inheritable genetic variations may result from (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.

Lesson 7 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-8

Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during the processes of fission, fusion, and radioactive decay.

Maine - High School - Earth and Space Sciences

HS-ESS3-2

Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based

Unit 9: Different Branches of Chemistry

HS Chemistry

on cost-benefit ratios.

Lesson 8 Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Assessing knowledge of concepts in section using multiple choice, true or false, and/or multi-select questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-8

Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during the processes of fission, fusion, and radioactive decay.

Maine - High School - Earth and Space Sciences

HS-ESS3-2

Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.

Unit 9 Exam

Assessment Type: Summative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Evaluating understanding of key concepts through a comprehensive assessment, including multiple-choice, fill-in-the-blank, and true/false questions.

STANDARDS

Maine - High School - Physical Sciences

HS-PS1-2

Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Unit 9: Different Branches of Chemistry

HS Chemistry

HS-PS1-6

Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.

HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

HS-PS1-8

Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during the processes of fission, fusion, and radioactive decay.

Maine - High School - Life Sciences

HS-LS1-1

Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins, which carry out the essential functions of life through systems of specialized cells.

HS-LS1-5

Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.

HS-LS1-6

Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.

HS-LS1-7

Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed, resulting in a net transfer of energy.

HS-LS2-5

Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.

HS-LS3-1

Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.

HS-LS3-2

Unit 9: Different Branches of Chemistry

HS Chemistry

Make and defend a claim based on evidence that inheritable genetic variations may result from (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.

Maine - High School - Earth and Space Sciences

HS-ESS3-2

Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.

Extension Activity #1

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Reinforcing procedural knowledge by interacting with virtual lab activities and completing guided worksheets to apply scientific concepts and skills.

STANDARDS

Maine - High School - Life Sciences

HS-LS1-5

Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.

HS-LS1-6

Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.

HS-LS1-7

Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed, resulting in a net transfer of energy.

HS-LS2-5

Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.

Maine - High School - Physical Sciences

HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to

Unit 9: Different Branches of Chemistry

HS Chemistry

infer the strength of electrical forces between particles.

National Common Core - Grade 11-12 - Science and Technical Subjects

RST.11-12.6.

Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.

RST.11-12.3.

Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

RST.11-12.10.

By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

CCSS.ELA-LITERACY.WHST.11-12.6

Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.

CCSS.ELA-LITERACY.WHST.11-12.9

Draw evidence from informational texts to support analysis, reflection, and research.

CCSS.ELA-LITERACY.WHST.11-12.10

Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

Extension Activity #2

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Unit 9: Different Branches of Chemistry

HS Chemistry

Description: Reinforcing procedural knowledge by interacting with virtual lab activities and completing guided worksheets to apply scientific concepts and skills.

STANDARDS

Maine - High School - Physical Sciences
HS-PS1-3
Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.
Maine - High School - Life Sciences
HS-LS1-1
Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins, which carry out the essential functions of life through systems of specialized cells.
HS-LS1-6
Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.
HS-LS3-1
Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.
HS-LS3-2
Make and defend a claim based on evidence that inheritable genetic variations may result from (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.
National Common Core - Grade 11-12 - Science and Technical Subjects
RST.11-12.1.
Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.
RST.11-12.3.
Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.
RST.11-12.6.

Unit 9: Different Branches of Chemistry

HS Chemistry

Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.

RST.11-12.10.

By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

CCSS.ELA-LITERACY.WHST.11-12.6

Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.

CCSS.ELA-LITERACY.WHST.11-12.9

Draw evidence from informational texts to support analysis, reflection, and research.

CCSS.ELA-LITERACY.WHST.11-12.10

Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

Unit 10: Final Project

HS Chemistry

UNIT SUMMARY

Students research concepts and technology related to chemistry and create a paper or presentation based on what they learned about the topic.

STANDARDS

National Common Core - Grade 11-12 - Science and Technical Subjects

RST.11-12.7.

Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.

RST.11-12.8.

Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.

RST.11-12.9.

Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

RST.11-12.1.

Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.

RST.11-12.10.

By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

CCSS.ELA-LITERACY.WHST.11-12.5

Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

CCSS.ELA-LITERACY.WHST.11-12.6

Unit 10: Final Project

HS Chemistry

Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.

CCSS.ELA-LITERACY.WHST.11-12.10

Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

CCSS.ELA-LITERACY.WHST.11-12.7

Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

CCSS.ELA-LITERACY.WHST.11-12.8

Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

CCSS.ELA-LITERACY.WHST.11-12.9

Draw evidence from informational texts to support analysis, reflection, and research.

CCSS.ELA-LITERACY.WHST.11-12.2

Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

CCSS.ELA-LITERACY.WHST.11-12.2.A

Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.

CCSS.ELA-LITERACY.WHST.11-12.2.B

Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

CCSS.ELA-LITERACY.WHST.11-12.2.C

Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.

CCSS.ELA-LITERACY.WHST.11-12.2.D

Unit 10: Final Project

HS Chemistry

Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.

CCSS.ELA-LITERACY.WHST.11-12.2.E

Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).

Unit 10: Final Project

HS Chemistry

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Final Project

Assessment Type: Summative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students research and present on concepts learned in the unit and exploring their real-world applications.

STANDARDS

National Common Core - Grade 11-12 - Science and Technical Subjects
RST.11-12.1.
Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.
RST.11-12.7.
Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.
RST.11-12.8.
Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.
RST.11-12.9.
Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.
RST.11-12.10.
By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.
National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)
CCSS.ELA-LITERACY.WHST.11-12.2
Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.
CCSS.ELA-LITERACY.WHST.11-12.2.A

Unit 10: Final Project

HS Chemistry

Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.

CCSS.ELA-LITERACY.WHST.11-12.2.B

Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

CCSS.ELA-LITERACY.WHST.11-12.2.C

Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.

CCSS.ELA-LITERACY.WHST.11-12.2.D

Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.

CCSS.ELA-LITERACY.WHST.11-12.2.E

Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

CCSS.ELA-LITERACY.WHST.11-12.5

Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

CCSS.ELA-LITERACY.WHST.11-12.6

Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.

CCSS.ELA-LITERACY.WHST.11-12.7

Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

CCSS.ELA-LITERACY.WHST.11-12.8

Unit 10: Final Project

HS Chemistry

Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

CCSS.ELA-LITERACY.WHST.11-12.9

Draw evidence from informational texts to support analysis, reflection, and research.

CCSS.ELA-LITERACY.WHST.11-12.10

Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

HS Chemistry

Maine Virtual Academy

School Year 2024-2025 (Aug 26, 2024 - Jun 13, 2025)

UNIT	# OF TEACHING DAYS	DATES
 Unit 1: Introduction to Chemistry	21 teaching days	Aug 26 - Sep 27, 2024
 Unit 2: Atomic Structure	16 teaching days	Sep 30 - Oct 25, 2024
 Unit 3: Bonding	19 teaching days	Oct 28 - Nov 22, 2024
 Unit 4: Stoichiometry	24 teaching days	Nov 25, 2024 - Jan 10, 2025
 Unit 5: Group Project	12 teaching days	Dec 16, 2024 - Jan 10, 2025
 Unit 6: Chemical Bonding	15 teaching days	Jan 17 - Feb 7, 2025
 Unit 7: Thermochemistry and Gas Laws	23 teaching days	Feb 10 - Mar 19, 2025
 Unit 8: Acids and Bases	10 teaching days	Mar 24 - Apr 4, 2025
 Unit 9: Different Branches of Chemistry	11 teaching days	Apr 14 - May 9, 2025
 Unit 10: Final Project	19 teaching days	May 19 - Jun 13, 2025

August

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
28	29	30	31	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26 Unit 1: Introductio...	27 Unit 1: Introductio...	28 Unit 1: Introductio...	29 Unit 1: Introductio...	30 Unit 1: Introductio...	31

September

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2 Labor Day	3 Unit 1: Introductio...	4 Unit 1: Introductio...	5 Unit 1: Introductio...	6 Unit 1: Introductio...	7
8	9 Unit 1: Introductio...	10 Fall NWEA Testing	11 Fall NWEA Testing	12 Fall NWEA Testing	13 Unit 1: Introductio...	14
15	16 Unit 1: Introductio...	17 Unit 1: Introductio...	18 Unit 1: Introductio...	19 Unit 1: Introductio...	20 Unit 1: Introductio...	21
22	23 Unit 1: Introductio...	24 Unit 1: Introductio...	25 Unit 1: Introductio...	26 Unit 1: Introductio...	27 Unit 1: Introductio...	28
29	30 Unit 2: Atomic Str...	1 Unit 2: Atomic Str...	2 Unit 2: Atomic Str...	3 Unit 2: Atomic Str...	4 Unit 2: Atomic Str...	5

October

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
29	30 Unit 2: Atomic Str...	1 Unit 2: Atomic Str...	2 Unit 2: Atomic Str...	3 Unit 2: Atomic Str...	4 Unit 2: Atomic Str...	5
6	7 Maine Through Year (Tentative)	8 Maine Through Year (Tentative)	9 Maine Through Year (Tentative)	10 Unit 2: Atomic Str...	11 Unit 2: Atomic Str...	12
13	14 Indigenous Peoples' Day	15 Unit 2: Atomic Str...	16 Unit 2: Atomic Str...	17 Unit 2: Atomic Str...	18 Unit 2: Atomic Str...	19
20	21 Unit 2: Atomic Str...	22 Unit 2: Atomic Str...	23 Unit 2: Atomic Str...	24 Unit 2: Atomic Str...	25 Unit 2: Atomic Str...	26
27	28 Unit 3: Bonding	29 Unit 3: Bonding	30 Unit 3: Bonding	31 Unit 3: Bonding	1 Unit 3: Bonding	2

November

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
27	28 Unit 3: Bonding	29 Unit 3: Bonding	30 Unit 3: Bonding	31 Unit 3: Bonding	1 Unit 3: Bonding	2
3	4 Unit 3: Bonding	5 Unit 3: Bonding	6 Unit 3: Bonding	7 Unit 3: Bonding	8 Unit 3: Bonding	9
10	11 Veterans Day	12 Unit 3: Bonding	13 Unit 3: Bonding	14 Unit 3: Bonding	15 Unit 3: Bonding	16
17	18 Unit 3: Bonding	19 Unit 3: Bonding	20 Unit 3: Bonding	21 Unit 3: Bonding	22 Unit 3: Bonding	23
24	25 Unit 4: Stoichiom...	26 Unit 4: Stoichiom...	27 Thanksgiving	28 Thanksgiving	29 Thanksgiving	30

December

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2 Unit 4: Stoichiom...	3 Unit 4: Stoichiom...	4 Unit 4: Stoichiom...	5 Unit 4: Stoichiom...	6 Unit 4: Stoichiom...	7
8	9 Unit 4: Stoichiom...	10 Unit 4: Stoichiom...	11 Unit 4: Stoichiom...	12 Unit 4: Stoichiom...	13 Unit 4: Stoichiom...	14
15	16 Unit 4: Stoichiom... Unit 5: Group Pro...	17 Unit 4: Stoichiom... Unit 5: Group Pro...	18 Unit 4: Stoichiom... Unit 5: Group Pro...	19 Unit 4: Stoichiom... Unit 5: Group Pro...	20 Unit 4: Stoichiom... Unit 5: Group Pro...	21
22	23 Winter Break	24 Winter Break	25 Winter Break	26 Winter Break	27 Winter Break	28 Winter Break
29 Winter Break	30 Winter Break	31 Winter Break	1 New Year's Day	2 Unit 4: Stoichiom... Unit 5: Group Pro...	3 Unit 4: Stoichiom... Unit 5: Group Pro...	4

January

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
29 Winter Break	30 Winter Break	31 Winter Break	1 New Year's Day	2 Unit 4: Stoichiom... Unit 5: Group Pro...	3 Unit 4: Stoichiom... Unit 5: Group Pro...	4
5	6 Unit 4: Stoichiom... Unit 5: Group Pro...	7 Unit 4: Stoichiom... Unit 5: Group Pro...	8 Unit 4: Stoichiom... Unit 5: Group Pro...	9 Unit 4: Stoichiom... Unit 5: Group Pro...	10 Unit 4: Stoichiom... Unit 5: Group Pro...	11
12	13	14 Winter NWEA Testing	15 Winter NWEA Testing	16 Winter NWEA Testing	17 Unit 6: Chemical ...	18
19	20 Martin Luther King, Jr. Day	21 Unit 6: Chemical ...	22 Unit 6: Chemical ...	23 Unit 6: Chemical ...	24 Unit 6: Chemical ...	25
26	27 Unit 6: Chemical ...	28 Unit 6: Chemical ...	29 Unit 6: Chemical ...	30 Unit 6: Chemical ...	31 Unit 6: Chemical ...	1

February

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
26	27 Unit 6: Chemical ...	28 Unit 6: Chemical ...	29 Unit 6: Chemical ...	30 Unit 6: Chemical ...	31 Unit 6: Chemical ...	1
2	3 Unit 6: Chemical ...	4 Unit 6: Chemical ...	5 Unit 6: Chemical ...	6 Unit 6: Chemical ...	7 Unit 6: Chemical ...	8
9	10 Unit 7: Thermoch...	11 Unit 7: Thermoch...	12 Unit 7: Thermoch...	13 Unit 7: Thermoch...	14 Unit 7: Thermoch...	15
16	17 Presidents' Day	18 February Break	19 February Break	20 February Break	21 February Break	22
23	24 Unit 7: Thermoch...	25 Unit 7: Thermoch...	26 Unit 7: Thermoch...	27 Unit 7: Thermoch...	28 Unit 7: Thermoch...	1

March

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
23	24 Unit 7: Thermoch...	25 Unit 7: Thermoch...	26 Unit 7: Thermoch...	27 Unit 7: Thermoch...	28 Unit 7: Thermoch...	1
2	3 Unit 7: Thermoch...	4 Unit 7: Thermoch...	5 Unit 7: Thermoch...	6 Unit 7: Thermoch...	7 Unit 7: Thermoch...	8
9	10 Unit 7: Thermoch...	11 Unit 7: Thermoch...	12 Unit 7: Thermoch...	13 Unit 7: Thermoch...	14 Unit 7: Thermoch...	15
16	17 Unit 7: Thermoch...	18 Unit 7: Thermoch...	19 Unit 7: Thermoch...	20 March Break	21 March Break	22
23	24 Unit 8: Acids and ...	25 Unit 8: Acids and ...	26 Unit 8: Acids and ...	27 Unit 8: Acids and ...	28 Unit 8: Acids and ...	29
30	31 Unit 8: Acids and ...	1 Unit 8: Acids and ...	2 Unit 8: Acids and ...	3 Unit 8: Acids and ...	4 Unit 8: Acids and ...	5

April

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
30	31 Unit 8: Acids and ...	1 Unit 8: Acids and ...	2 Unit 8: Acids and ...	3 Unit 8: Acids and ...	4 Unit 8: Acids and ...	5
6	7 MEA Science (HS)	8 MEA Science (HS)	9 MEA Science (HS)	10 MEA Science (HS)	11 MEA Science (HS)	12
13	14 Unit 9: Different ...	15 Unit 9: Different ...	16 Unit 9: Different ...	17 Unit 9: Different ...	18 April Vacation	19 April Vacation
20 April Vacation	21 April Vacation	22 April Vacation	23 April Vacation	24 April Vacation	25 April Vacation	26
27	28 Unit 9: Different ...	29 Spring NWEA Testing	30 Spring NWEA Testing	1 Spring NWEA Testing	2 Unit 9: Different ...	3

May

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
27	28 Unit 9: Different ...	29 Spring NWEA Testing	30 Spring NWEA Testing	1 Spring NWEA Testing	2 Unit 9: Different ...	3
4	5 Unit 9: Different ...	6 Unit 9: Different ...	7 Unit 9: Different ...	8 Unit 9: Different ...	9 Unit 9: Different ...	10
11	12 MEA (ELA & Math)	13 MEA (ELA & Math)	14 MEA (ELA & Math)	15 MEA (ELA & Math)	16 MEA (ELA & Math)	17
18	19 Unit 10: Final Pro...	20 Unit 10: Final Pro...	21 Unit 10: Final Pro...	22 Unit 10: Final Pro...	23 Unit 10: Final Pro...	24
25	26 Memorial Day	27 Unit 10: Final Pro...	28 Unit 10: Final Pro...	29 Unit 10: Final Pro...	30 Unit 10: Final Pro...	31

June

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2 Unit 10: Final Pro...	3 Unit 10: Final Pro...	4 Unit 10: Final Pro...	5 Unit 10: Final Pro...	6 Unit 10: Final Pro...	7
8	9 Unit 10: Final Pro...	10 Unit 10: Final Pro...	11 Unit 10: Final Pro...	12 Unit 10: Final Pro...	13 Unit 10: Final Pro...	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	1	2	3	4	5

HS US History

Maine Virtual Academy

UNITS (32/32 SELECTED)

SUGGESTED DURATION

Unit 1: The Americas, Europe, and Africa Before 1492	5 teaching days
Unit 2: Early Globalization: The Atlantic World, 1492–1650	5 teaching days
Unit 3: Creating New Social Orders: Colonial Societies, 1500–1700	5 teaching days
Unit 4: Rule Britannia! The English Empire, 1660–1763	5 teaching days
Unit 5: Imperial Reforms and Colonial Protests, 1763–1774	5 teaching days
Unit 6: America's War for Independence, 1775–1783	5 teaching days
Unit 7: Creating Republican Governments, 1776–1790	5 teaching days
Unit 8: Growing Pains: The New Republic, 1790–1820	5 teaching days
Unit 9: Industrial Transformation in the North, 1800–1850	5 teaching days
Unit 10: Jacksonian Democracy, 1820–1840	5 teaching days
Unit 11: A Nation on the Move: Westward Expansion, 1800–1860	5 teaching days
Unit 12: Cotton is King: The Antebellum South, 1800–1860	5 teaching days
Unit 13: Antebellum Idealism and Reform Impulses, 1820–1860	5 teaching days
Unit 14: Troubled Times: the Tumultuous 1850s	5 teaching days
Unit 15: The Civil War, 1860–1865	5 teaching days
Unit 16: The Era of Reconstruction, 1865–1877	5 teaching days
Unit 17: Go West Young Man! Westward Expansion, 1840–1900	5 teaching days
Unit 18: Industrialization and the Rise of Big Business, 1870–1900	5 teaching days
Unit 19: The Growing Pains of Urbanization, 1870–1900	5 teaching days
Unit 20: Politics in the Gilded Age, 1870–1900	5 teaching days
Unit 21: Leading the Way: The Progressive Movement, 1890–1920	5 teaching days
Unit 22: Age of Empire: American Foreign Policy, 1890–1914	5 teaching days
Unit 23: Americans and the Great War, 1914–1919	5 teaching days
Unit 25: Brother, Can You Spare a Dime? The Great Depression, 1929–1932	5 teaching days
Unit 26: Franklin Roosevelt and the New Deal, 1932–1941	5 teaching days
Unit 27: Fighting the Good Fight in World War II, 1941–1945	4 teaching days
Unit 28: Post-War Prosperity and Cold War Fears, 1945–1960	5 teaching days
Unit 29: Contesting Futures: America in the 1960s	2 teaching days
Unit 30: Political Storms at Home and Abroad, 1968–1980	5 teaching days
Unit 31: From Cold War to Culture Wars, 1980–2000	5 teaching days
Unit 32: The Challenges of the Twenty-First Century	5 teaching days

Unit 1: The Americas, Europe, and Africa Before 1492

HS US History

UNIT SUMMARY

In this unit, students will explore the diverse civilizations and cultures that existed in the Americas, Europe, and Africa prior to 1492. They will learn about the advanced societies of the Aztecs, Incas, and other indigenous American peoples, as well as the feudal systems and emerging nation-states of Europe. Students will examine the rich kingdoms and trade networks of West Africa, including the role of slavery within African societies. Through this study, students will develop skills in analyzing primary sources, comparing and contrasting different cultures, and understanding the complex interconnections between geography, economics, and social structures in pre-Columbian societies.

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1

Students understand major eras, major enduring themes, and historic influences in United States and world history, including the roots of democratic philosophy, ideals, and institutions in the world by:

9-12.H.1.F1

By explaining that history includes the study of the past based on the examination of a variety of primary and secondary sources and how history can help one better understand and make informed decisions about the present and future.

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

9-12.H.1.D2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the world and the implications for the present and future.

9-12.H.2

Students understand historical aspects of unity and diversity in the United States, the world, and Native American communities by:

9-12.H.2.F2

Identifying and analyzing major turning points and events in the history of Native Americans and various historical and recent immigrant groups in the United States, making use of primary and secondary sources.

9-12.H.2.D2

Unit 1: The Americas, Europe, and Africa Before 1492

HS US History

Making use of primary and secondary sources, identifying and analyzing major turning points and events in the history of world cultures as it pertains to various historical and recent migrant groups.

Unit 1: The Americas, Europe, and Africa Before 1492

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Introduction Discussion

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: WR

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1

Students understand major eras, major enduring themes, and historic influences in United States and world history, including the roots of democratic philosophy, ideals, and institutions in the world by:

9-12.H.1.F1

By explaining that history includes the study of the past based on the examination of a variety of primary and secondary sources and how history can help one better understand and make informed decisions about the present and future.

The Americas Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK2 / DOK3

Description: Multiple Choice

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

Europe on the Brink of Change Checkpoint Question

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Unit 1: The Americas, Europe, and Africa Before 1492

HS US History

Assessment Level (DOK): DOK1 / DOK2

Description: Written Response

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.D1
Analyzing and critiquing varying interpretations of historic people, issues, or events, and explain how evidence from primary and secondary sources is used to support and/or refute different interpretations.
9-12.H.1.D3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.

West Africa and the Role of Slavery Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.2
Students understand historical aspects of unity and diversity in the United States, the world, and Native American communities by:

Unit 1: The Americas, Europe, and Africa Before 1492

HS US History

9-12.H.2.F2

Identifying and analyzing major turning points and events in the history of Native Americans and various historical and recent immigrant groups in the United States, making use of primary and secondary sources.

Unit 2: Early Globalization: The Atlantic World, 1492–1650

HS US History

UNIT SUMMARY

This unit focuses on the dramatic changes brought about by European exploration and colonization of the Americas. Students will investigate the Columbian Exchange, examining how the transfer of plants, animals, diseases, and people transformed both the Old and New Worlds. They will learn about the establishment of European colonies in the Americas and the Caribbean, including the devastating impact on indigenous populations. Students will analyze the development of the transatlantic slave trade and its profound consequences for Africa and the Americas. Through these topics, students will enhance their skills in cause-and-effect analysis, evaluating historical perspectives, and understanding the long-term impacts of early globalization.

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.2

Students understand historical aspects of unity and diversity in the United States, the world, and Native American communities by:

9-12.H.2.F2

Identifying and analyzing major turning points and events in the history of Native Americans and various historical and recent immigrant groups in the United States, making use of primary and secondary sources.

9-12.H.2.D2

Making use of primary and secondary sources, identifying and analyzing major turning points and events in the history of world cultures as it pertains to various historical and recent migrant groups.

9-12.H.2.F1

Identifying and critiquing issues characterized by unity and diversity in the history of the United States, and describing their effects, using primary and secondary sources.

Unit 2: Early Globalization: The Atlantic World, 1492–1650

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Religious Upheaval Short Written Response

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK2 / DOK3

Description: Written Response

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1
Students understand major eras, major enduring themes, and historic influences in United States and world history, including the roots of democratic philosophy, ideals, and institutions in the world by:
9-12.H.1.F3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.
9-12.H.2.D2
Making use of primary and secondary sources, identifying and analyzing major turning points and events in the history of world cultures as it pertains to various historical and recent migrant groups.

Challenges to Spain's Supremacy Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1
Students understand major eras, major enduring themes, and historic influences in United States and world history, including the roots of democratic philosophy, ideals, and institutions in the world by:

Unit 2: Early Globalization: The Atlantic World, 1492–1650

HS US History

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

9-12.H.2

Students understand historical aspects of unity and diversity in the United States, the world, and Native American communities by:

9-12.H.2.D2

Making use of primary and secondary sources, identifying and analyzing major turning points and events in the history of world cultures as it pertains to various historical and recent migrant groups.

New Worlds in America Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F3

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

9-12.H.1

Students understand major eras, major enduring themes, and historic influences in United States and world history, including the roots of democratic philosophy, ideals, and institutions in the world by:

Exam One: Chapters 1&2

Assessment Type: Summative

Unit 2: Early Globalization: The Atlantic World, 1492–1650

HS US History

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK2 / DOK3

Description: The questions are a blend of multiple choice, written response and true or false questions.

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1
Students understand major eras, major enduring themes, and historic influences in United States and world history, including the roots of democratic philosophy, ideals, and institutions in the world by:
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.F3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.

Native American Research Report

Assessment Type: Formative / Summative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Description: Written Essay

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1
Students understand major eras, major enduring themes, and historic influences in United States and world history, including the roots of democratic philosophy, ideals, and institutions in the world by:
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.D1

Unit 2: Early Globalization: The Atlantic World, 1492–1650

HS US History

Analyzing and critiquing varying interpretations of historic people, issues, or events, and explain how evidence from primary and secondary sources is used to support and/or refute different interpretations.

9-12.H.2

Students understand historical aspects of unity and diversity in the United States, the world, and Native American communities by:

9-12.H.2.D2

Making use of primary and secondary sources, identifying and analyzing major turning points and events in the history of world cultures as it pertains to various historical and recent migrant groups.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.2

Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

CCSS.ELA-LITERACY.WHST.11-12.2.B

Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

CCSS.ELA-LITERACY.WHST.11-12.7

Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

CCSS.ELA-LITERACY.WHST.11-12.9

Draw evidence from informational texts to support analysis, reflection, and research.

Unit 3: Creating New Social Orders: Colonial Societies, 1500–1700

HS US History

UNIT SUMMARY

In this unit, students will explore the development of colonial societies in the Americas. They will examine the diverse colonial systems established by European powers, including the Spanish encomienda system, French fur-trading colonies, and English settlements. Students will investigate the complex interactions between European colonists, Native Americans, and enslaved Africans, and how these interactions shaped new social, economic, and cultural patterns. They will also study the emergence of distinct regional identities in the colonies. Through this unit, students will develop skills in analyzing primary sources, understanding multiple perspectives in history, and tracing the evolution of social and cultural institutions over time.

STANDARDS

Maine - Grade 9-12 - Social Studies	
9-12.H.2.F2	Identifying and analyzing major turning points and events in the history of Native Americans and various historical and recent immigrant groups in the United States, making use of primary and secondary sources.
9-12.H.2.F1	Identifying and critiquing issues characterized by unity and diversity in the history of the United States, and describing their effects, using primary and secondary sources.
9-12.H.1.D3	Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.
9-12.H.1.D2	Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the world and the implications for the present and future.
9-12.H.1.D1	Analyzing and critiquing varying interpretations of historic people, issues, or events, and explain how evidence from primary and secondary sources is used to support and/or refute different interpretations.
9-12.H.1.F3	Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.
9-12.H.1.F2	

Unit 3: Creating New Social Orders: Colonial Societies, 1500–1700

HS US History

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

9-12.G.2.D1

Summarizing and interpreting the relationship between geographic features and cultures of Maine Native Americans, and historical and recent immigrant groups in Maine, United States, and the world.

Unit 3: Creating New Social Orders: Colonial Societies, 1500–1700

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

English Settlements in America Checkpoint Question

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: WR

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.
9-12.H.1.D2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the world and the implications for the present and future.

The impact of colonization quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.

Unit 4: Rule Britannia! The English Empire, 1660–1763

HS US History

UNIT SUMMARY

This unit focuses on the expansion and consolidation of the British Empire in North America. Students will examine the political, economic, and social developments in the British colonies during this period, including the implementation of mercantilism and the Navigation Acts. They will explore the growth of colonial self-government and the tensions between colonial assemblies and royal governors. Students will also investigate the impact of the French and Indian War on British-colonial relations. Through these topics, students will enhance their skills in analyzing historical documents, understanding the complexities of imperial governance, and tracing the roots of colonial grievances that would later lead to revolution.

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.2.D2
Making use of primary and secondary sources, identifying and analyzing major turning points and events in the history of world cultures as it pertains to various historical and recent migrant groups.
9-12.H.2.F2
Identifying and analyzing major turning points and events in the history of Native Americans and various historical and recent immigrant groups in the United States, making use of primary and secondary sources.
9-12.H.2.F1
Identifying and critiquing issues characterized by unity and diversity in the history of the United States, and describing their effects, using primary and secondary sources.

Unit 4: Rule Britannia! The English Empire, 1660–1763

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

An Empire of Slavery and the Consumer Revolution quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.2.F2

Identifying and analyzing major turning points and events in the history of Native Americans and various historical and recent immigrant groups in the United States, making use of primary and secondary sources.

Great Awakening and Enlightenment Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.2.F2

Identifying and analyzing major turning points and events in the history of Native Americans and various historical and recent immigrant groups in the United States, making use of primary and secondary sources.

Exam 2: Chapters 3&4

Assessment Type: Summative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK2 / DOK3

Description: Blend of WR, and MC

STANDARDS

Maine - Grade 9-12 - Social Studies

Unit 4: Rule Britannia! The English Empire, 1660–1763

HS US History

9-12.H.2.F2

Identifying and analyzing major turning points and events in the history of Native Americans and various historical and recent immigrant groups in the United States, making use of primary and secondary sources.

9-12.H.1.F1

By explaining that history includes the study of the past based on the examination of a variety of primary and secondary sources and how history can help one better understand and make informed decisions about the present and future.

9-12.H.1.F3

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

9-12.H.1.F4

Developing individual and collaborative decisions/plans by considering multiple points of view, weighing pros and cons, building on the ideas of others, and sharing information in an attempt to sway the opinions of others.

9-12.H.1.D3

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.

9-12.H.2.D1

Identifying and critiquing issues characterized by unity and diversity in the history of other nations, and describing their effects, using primary and secondary sources.

Unit 5: Imperial Reforms and Colonial Protests, 1763-1774

HS US History

UNIT SUMMARY

In this unit, students will study the growing tensions between Great Britain and its American colonies following the French and Indian War. They will examine British efforts to exert greater control over the colonies through new taxes and regulations, such as the Sugar Act, Stamp Act, and Townshend Acts. Students will analyze colonial responses to these measures, including boycotts, protests, and the formation of committees of correspondence. They will also investigate key events like the Boston Massacre and the Boston Tea Party. Through this study, students will develop skills in analyzing cause and effect, evaluating different historical perspectives, and understanding the escalation of conflict between competing interests.

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.F3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.
9-12.H.1.D3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.

Unit 5: Imperial Reforms and Colonial Protests, 1763-1774

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

The Aftermath of the French and Indian War Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.F3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.

The Declaratory Act Checkpoint Question

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: WR

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.F3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.

Unit 5: Imperial Reforms and Colonial Protests, 1763-1774

HS US History

The Townshend Acts and the Tea Act Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.
9-12.H.1.D3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.

Disaffection: The First Continental Congress and American Identity Assignment

Assessment Type: Formative / Summative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Description: Written Assignment

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.D3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

Unit 6: America's War for Independence, 1775-1783

HS US History

UNIT SUMMARY

This unit covers the American Revolutionary War and the birth of the United States. Students will examine the outbreak of armed conflict at Lexington and Concord, the decision to declare independence, and the major military campaigns of the war. They will analyze key documents such as the Declaration of Independence and explore the roles of significant figures like George Washington, Benjamin Franklin, and Thomas Paine. Students will also investigate the international dimensions of the conflict, including French alliance and support. Through this study, students will enhance their skills in analyzing military strategy, understanding the challenges of nation-building, and evaluating the significance of key turning points in history.

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1

Students understand major eras, major enduring themes, and historic influences in United States and world history, including the roots of democratic philosophy, ideals, and institutions in the world by:

9-12.H.1.F1

By explaining that history includes the study of the past based on the examination of a variety of primary and secondary sources and how history can help one better understand and make informed decisions about the present and future.

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

9-12.H.2.F2

Identifying and analyzing major turning points and events in the history of Native Americans and various historical and recent immigrant groups in the United States, making use of primary and secondary sources.

9-12.H.2.D2

Making use of primary and secondary sources, identifying and analyzing major turning points and events in the history of world cultures as it pertains to various historical and recent migrant groups.

National Common Core - Grade 11-12 - History/Social Studies

RH.11-12.2.

Determine the central ideas or information of a primary or secondary source; provide an accurate summary that

Unit 6: America's War for Independence, 1775-1783

HS US History

makes clear the relationships among the key details and ideas.

Unit 6: America's War for Independence, 1775-1783

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

The Early Years of the Revolution Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.F1
By explaining that history includes the study of the past based on the examination of a variety of primary and secondary sources and how history can help one better understand and make informed decisions about the present and future.
9-12.H.2.F2
Identifying and analyzing major turning points and events in the history of Native Americans and various historical and recent immigrant groups in the United States, making use of primary and secondary sources.
9-12.H.2.D2
Making use of primary and secondary sources, identifying and analyzing major turning points and events in the history of world cultures as it pertains to various historical and recent migrant groups.

Black Americans in the Revolutionary War Assignment

Assessment Type: Formative / Summative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK2 / DOK3

Description: Written response

STANDARDS

Maine - Grade 9-12 - Social Studies

Unit 6: America's War for Independence, 1775-1783

HS US History

9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.F1
By explaining that history includes the study of the past based on the examination of a variety of primary and secondary sources and how history can help one better understand and make informed decisions about the present and future.
9-12.H.2.F2
Identifying and analyzing major turning points and events in the history of Native Americans and various historical and recent immigrant groups in the United States, making use of primary and secondary sources.
9-12.H.2.D2
Making use of primary and secondary sources, identifying and analyzing major turning points and events in the history of world cultures as it pertains to various historical and recent migrant groups.
National Common Core - Grade 11-12 - History/Social Studies
RH.11-12.2.
Determine the central ideas or information of a primary or secondary source; provide an accurate summary that makes clear the relationships among the key details and ideas.

Exam 3: Chapters 5&6

Assessment Type: Summative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK2 / DOK3

Description: Blend of MC and WR questions

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.2.D2

Unit 6: America's War for Independence, 1775-1783

HS US History

Making use of primary and secondary sources, identifying and analyzing major turning points and events in the history of world cultures as it pertains to various historical and recent migrant groups.

9-12.H.2.F2

Identifying and analyzing major turning points and events in the history of Native Americans and various historical and recent immigrant groups in the United States, making use of primary and secondary sources.

9-12.H.1

Students understand major eras, major enduring themes, and historic influences in United States and world history, including the roots of democratic philosophy, ideals, and institutions in the world by:

National Common Core - Grade 11-12 - History/Social Studies

RH.11-12.2.

Determine the central ideas or information of a primary or secondary source; provide an accurate summary that makes clear the relationships among the key details and ideas.

Unit 7: Creating Republican Governments, 1776–1790

HS US History

UNIT SUMMARY

In this unit, students will explore the formation of new state and national governments following the American Revolution. They will examine the creation of state constitutions, the Articles of Confederation, and the United States Constitution. Students will analyze the debates surrounding the structure of the new government, including issues of representation, division of powers, and individual rights. They will also study the ratification process and the addition of the Bill of Rights. Through these topics, students will develop skills in analyzing political theory, understanding the complexities of constitutional design, and evaluating the compromises necessary in forming a new nation.

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

9-12.CG.1

Students understand the ideals, purposes, principles, structures, and processes of constitutional government in the United States and in the American political system, as well as examples of other forms of government and political systems in the world by:

9-12.H.1.F3

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.

9-12.H.1.D2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the world and the implications for the present and future.

9-12.H.1.D3

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.

9-12.H.2.F1

Identifying and critiquing issues characterized by unity and diversity in the history of the United States, and describing their effects, using primary and secondary sources.

9-12.H.2.D1

Identifying and critiquing issues characterized by unity and diversity in the history of other nations, and describing

Unit 7: Creating Republican Governments, 1776–1790

HS US History

their effects, using primary and secondary sources.
9-12.CG.1.F2
Explaining how and why democratic institutions and interpretations of democratic ideals and constitutional principles change over time.
9-12.CG.1.F3
Describing the purpose, structures, and processes of the American political system.
9-12.CG.2.F2
Evaluating the relationship between the government and the individual as evident in the United States Constitution, the Bill of Rights, and landmark court cases.

Unit 7: Creating Republican Governments, 1776–1790

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Common Sense Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F3

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.

9-12.CG.1

Students understand the ideals, purposes, principles, structures, and processes of constitutional government in the United States and in the American political system, as well as examples of other forms of government and political systems in the world by:

9-12.CG.2.F2

Evaluating the relationship between the government and the individual as evident in the United States Constitution, the Bill of Rights, and landmark court cases.

How Much Revolutionary Change Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

Unit 7: Creating Republican Governments, 1776–1790

HS US History

9-12.CG.1.F2

Explaining how and why democratic institutions and interpretations of democratic ideals and constitutional principles change over time.

9-12.CG.1.F3

Describing the purpose, structures, and processes of the American political system.

Debating democracy and the constitutional convention quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.CG.1.F3

Describing the purpose, structures, and processes of the American political system.

9-12.CG.2.F2

Evaluating the relationship between the government and the individual as evident in the United States Constitution, the Bill of Rights, and landmark court cases.

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

9-12.CG.1.F2

Explaining how and why democratic institutions and interpretations of democratic ideals and constitutional principles change over time.

Unit 8: Growing Pains: The New Republic, 1790–1820

HS US History

UNIT SUMMARY

This unit focuses on the early years of the United States under the new Constitution. Students will examine the establishment of key institutions and policies, including the creation of the federal judiciary, the formation of political parties, and the development of foreign policy. They will analyze major events such as the Whiskey Rebellion, the XYZ Affair, and the War of 1812. Students will also explore social and economic developments, including westward expansion and the growth of slavery. Through this study, students will enhance their skills in analyzing political ideologies, understanding the challenges of implementing a new system of government, and evaluating the long-term consequences of early policy decisions.

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

9-12.CG.3.D2

Analyzing the political structures, political power, and political perspectives of the diverse historic and current cultures of the United States and the world.

9-12.CG.1

Students understand the ideals, purposes, principles, structures, and processes of constitutional government in the United States and in the American political system, as well as examples of other forms of government and political systems in the world by:

9-12.CG.1.F1

Explaining that the study of government includes the structures, functions, institutions, and forms of government.

9-12.CG.1.F2

Explaining how and why democratic institutions and interpretations of democratic ideals and constitutional principles change over time.

9-12.CG.1.F3

Describing the purpose, structures, and processes of the American political system.

9-12.H.1.D2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the world and the implications for the present and future.

Unit 8: Growing Pains: The New Republic, 1790–1820

HS US History

9-12.H.1.D3

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.

Unit 8: Growing Pains: The New Republic, 1790–1820

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Competing Visions Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.CG.1.F3
Describing the purpose, structures, and processes of the American political system.
9-12.H.1.D2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the world and the implications for the present and future.
9-12.CG.1.F1
Explaining that the study of government includes the structures, functions, institutions, and forms of government.
9-12.CG.1.F2
Explaining how and why democratic institutions and interpretations of democratic ideals and constitutional principles change over time.

Partisan Politics Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and

Unit 8: Growing Pains: The New Republic, 1790–1820

HS US History

people in the history of the United States and the implications for the present and future.
9-12.CG.1.F1
Explaining that the study of government includes the structures, functions, institutions, and forms of government.
9-12.CG.3.D2
Analyzing the political structures, political power, and political perspectives of the diverse historic and current cultures of the United States and the world.
9-12.H.1.D3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.
9-12.H.1.D2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the world and the implications for the present and future.

The United States Goes Back to War Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

Exam 4 Chapters 7&8

Assessment Type: Summative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK2 / DOK3

Unit 8: Growing Pains: The New Republic, 1790–1820

HS US History

Description: Blend of MC and WR questions

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.CG.1.F1
Explaining that the study of government includes the structures, functions, institutions, and forms of government.
9-12.CG.1.F2
Explaining how and why democratic institutions and interpretations of democratic ideals and constitutional principles change over time.
9-12.CG.1.F3
Describing the purpose, structures, and processes of the American political system.
9-12.CG.1
Students understand the ideals, purposes, principles, structures, and processes of constitutional government in the United States and in the American political system, as well as examples of other forms of government and political systems in the world by:
9-12.CG.3.D2
Analyzing the political structures, political power, and political perspectives of the diverse historic and current cultures of the United States and the world.
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.D2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the world and the implications for the present and future.
9-12.H.1.D3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.

Unit 9: Industrial Transformation in the North, 1800–1850

HS US History

UNIT SUMMARY

In this unit, students will investigate the dramatic economic and social changes brought about by industrialization in the northern United States. They will examine technological innovations, the growth of factories, and the development of transportation networks like canals and railroads. Students will analyze the impact of these changes on labor, including the rise of wage work and labor unions. They will also explore the social consequences of industrialization, such as urbanization and immigration. Through these topics, students will develop skills in analyzing economic systems, understanding the relationship between technological change and social transformation, and evaluating the costs and benefits of industrial growth.

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.CG.1

Students understand the ideals, purposes, principles, structures, and processes of constitutional government in the United States and in the American political system, as well as examples of other forms of government and political systems in the world by:

9-12.H.1

Students understand major eras, major enduring themes, and historic influences in United States and world history, including the roots of democratic philosophy, ideals, and institutions in the world by:

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

9-12.H.1.D1

Analyzing and critiquing varying interpretations of historic people, issues, or events, and explain how evidence from primary and secondary sources is used to support and/or refute different interpretations.

Unit 9: Industrial Transformation in the North, 1800–1850

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Early Industrialization in the Northeast Checkpoint Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1
Students understand major eras, major enduring themes, and historic influences in United States and world history, including the roots of democratic philosophy, ideals, and institutions in the world by:
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.D1
Analyzing and critiquing varying interpretations of historic people, issues, or events, and explain how evidence from primary and secondary sources is used to support and/or refute different interpretations.

A Vibrant Capitalist Economy Checkpoint Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1
Students understand major eras, major enduring themes, and historic influences in United States and world history, including the roots of democratic philosophy, ideals, and institutions in the world by:
9-12.H.1.F2

Unit 9: Industrial Transformation in the North, 1800–1850

HS US History

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

9-12.H.1.D1

Analyzing and critiquing varying interpretations of historic people, issues, or events, and explain how evidence from primary and secondary sources is used to support and/or refute different interpretations.

A New Social Order Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1

Students understand major eras, major enduring themes, and historic influences in United States and world history, including the roots of democratic philosophy, ideals, and institutions in the world by:

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

9-12.H.1.D1

Analyzing and critiquing varying interpretations of historic people, issues, or events, and explain how evidence from primary and secondary sources is used to support and/or refute different interpretations.

Unit 10: Jacksonian Democracy, 1820–1840

HS US History

UNIT SUMMARY

This unit focuses on the political and social changes associated with the presidency of Andrew Jackson. Students will examine the expansion of voting rights, the growth of popular politics, and the development of the second party system. They will analyze key issues of the period, including the Bank War, Indian Removal, and nullification crisis. Students will also explore the concept of Manifest Destiny and its impact on westward expansion. Through this study, students will enhance their skills in analyzing political ideologies, understanding the complexities of democratic expansion, and evaluating the tensions between federal power and states' rights.

STANDARDS

Maine - Grade 9-12 - Social Studies	
9-12.H.1.F2	
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.	
9-12.H.2.D1	
Identifying and critiquing issues characterized by unity and diversity in the history of other nations, and describing their effects, using primary and secondary sources.	
9-12.H.1.D3	
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.	
9-12.H.1.D2	
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the world and the implications for the present and future.	
9-12.H.1.F3	
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.	

Unit 10: Jacksonian Democracy, 1820–1840

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

A New political style quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.
9-12.H.1.D2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the world and the implications for the present and future.

The Tyranny and Triumph of the Majority Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.2.D1
Identifying and critiquing issues characterized by unity and diversity in the history of other nations, and describing their effects, using primary and secondary sources.
9-12.H.1.D3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.

Unit 10: Jacksonian Democracy, 1820–1840

HS US History

Exam 4: Chapters 9&10

Assessment Type: Summative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK2 / DOK3

Description: Blend of MC and WR questions

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.F3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.
9-12.H.1.D2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the world and the implications for the present and future.
9-12.H.1.D3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.
9-12.H.2.D1
Identifying and critiquing issues characterized by unity and diversity in the history of other nations, and describing their effects, using primary and secondary sources.

Unit 11: A Nation on the Move: Westward Expansion, 1800–1860

HS US History

UNIT SUMMARY

In this unit, students will explore the rapid expansion of the United States across the North American continent. They will examine the Louisiana Purchase, the Lewis and Clark expedition, and the acquisition of new territories through war and negotiation. Students will analyze the concept of Manifest Destiny and its impact on Native American populations. They will also investigate the experiences of settlers on the frontier, including the Oregon Trail and the California Gold Rush. Through these topics, students will develop skills in geographical analysis, understanding the environmental and cultural impacts of expansion, and evaluating the ethical implications of territorial conquest.

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.G.2.D1
Summarizing and interpreting the relationship between geographic features and cultures of Maine Native Americans, and historical and recent immigrant groups in Maine, United States, and the world.
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

Unit 11: A Nation on the Move: Westward Expansion, 1800–1860

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Texan Independence Written Response

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK2 / DOK3

Description: WR

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.G.2.D1
Summarizing and interpreting the relationship between geographic features and cultures of Maine Native Americans, and historical and recent immigrant groups in Maine, United States, and the world.
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

The Mexican American War Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.G.2.D1
Summarizing and interpreting the relationship between geographic features and cultures of Maine Native Americans, and historical and recent immigrant groups in Maine, United States, and the world.
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

Unit 12: Cotton is King: The Antebellum South, 1800–1860

HS US History

UNIT SUMMARY

This unit focuses on the distinctive society and economy of the American South in the decades before the Civil War. Students will examine the expansion of slavery and the cotton economy, including the domestic slave trade and the lives of enslaved people. They will analyze the social structure of the South, including the plantation system and the culture of honor among white Southerners. Students will also explore forms of resistance to slavery, such as slave rebellions and the Underground Railroad. Through this study, students will enhance their skills in analyzing economic systems, understanding the complexities of a slave society, and evaluating the moral and political debates surrounding slavery.

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

9-12.H.1.D3

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.

9-12.H.1.D2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the world and the implications for the present and future.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.2

Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

CCSS.ELA-LITERACY.WHST.11-12.9

Draw evidence from informational texts to support analysis, reflection, and research.

Unit 12: Cotton is King: The Antebellum South, 1800–1860

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Solomon Northup Remembers the New Orleans Slave Market Assignment

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK2 / DOK3

Description: WR

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.D2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the world and the implications for the present and future.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.2

Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

CCSS.ELA-LITERACY.WHST.11-12.9

Draw evidence from informational texts to support analysis, reflection, and research.

African Americans in the Antebellum United States Checkpoint Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

Unit 12: Cotton is King: The Antebellum South, 1800–1860

HS US History

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

9-12.H.1.D3

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.

Wealth and Culture in the South

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

9-12.H.1.D3

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.

Frederick Douglass on Slavery Assignment

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK2 / DOK3

Description: WR

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Unit 12: Cotton is King: The Antebellum South, 1800–1860

HS US History

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

9-12.H.1.D3

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

CCSS.ELA-LITERACY.WHST.11-12.9

Draw evidence from informational texts to support analysis, reflection, and research.

Exam 5: Chapters 11&12

Assessment Type: Summative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Description: Blend of WR and MC questions

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.D2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the world and the implications for the present and future.

9-12.H.1.D3

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.4

Unit 12: Cotton is King: The Antebellum South, 1800–1860

HS US History

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

Unit 13: Antebellum Idealism and Reform Impulses, 1820–1860

HS US History

UNIT SUMMARY

In this unit, students will investigate the various reform movements that swept through American society in the decades before the Civil War. They will examine religious revivals, utopian communities, and social reform efforts in areas such as temperance, education, and women's rights. Students will analyze the abolitionist movement, including key figures like William Lloyd Garrison and Frederick Douglass. They will also explore the transcendentalist movement and its impact on American literature and philosophy. Through these topics, students will develop skills in analyzing social movements, understanding the relationship between religious and social reform, and evaluating the long-term impacts of antebellum idealism on American society.

STANDARDS

Maine - Grade 9-12 - Social Studies	
9-12.H.1.F2	Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.CG.1.D2	Evaluating current issues by applying democratic ideals and constitutional principles of government in the United States, including checks and balances, federalism, and consent of the governed as put forth in founding documents.
9-12.H.1.F3	Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.
9-12.H.1.D3	Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.

Unit 13: Antebellum Idealism and Reform Impulses, 1820–1860

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Antebellum Communal Experiments

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.D3

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

Women's Rights Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.CG.1.D2

Evaluating current issues by applying democratic ideals and constitutional principles of government in the United States, including checks and balances, federalism, and consent of the governed as put forth in founding documents.

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

Unit 14: Troubled Times: the Tumultuous 1850s

HS US History

UNIT SUMMARY

This unit focuses on the increasing sectional tensions that ultimately led to the Civil War. Students will examine key events and issues of the 1850s, including the Compromise of 1850, the Kansas-Nebraska Act, and the Dred Scott decision. They will analyze the collapse of the second party system and the rise of the Republican Party. Students will also explore cultural and literary responses to the growing crisis, such as the publication of Uncle Tom's Cabin. Through this study, students will enhance their skills in analyzing political compromises, understanding the complexities of federalism and states' rights, and evaluating the factors that contributed to the breakdown of national unity.

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.D3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.

Unit 14: Troubled Times: the Tumultuous 1850s

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

The Compromise of 1850

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.F3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.
9-12.H.1.D3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.

The Dred Scott Decision and Sectional Strife Assignment

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK2 / DOK3

Description: WR

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.F3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.

Unit 14: Troubled Times: the Tumultuous 1850s

HS US History

9-12.H.1.D3

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.

Unit 15: The Civil War, 1860–1865

HS US History

UNIT SUMMARY

In this unit, students will study the American Civil War, one of the most significant events in U.S. history. They will examine the election of 1860, the secession crisis, and the outbreak of war. Students will analyze key military campaigns and battles, as well as the political and economic strategies of both the Union and Confederacy. They will explore the experiences of soldiers and civilians during the war, including the changing roles of women and African Americans. Students will also investigate the Emancipation Proclamation and its impact on the nature of the conflict. Through these topics, students will develop skills in analyzing military strategy, understanding the social and economic impacts of total war, and evaluating the long-term consequences of the Civil War on American society.

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.CG.1.D2

Evaluating current issues by applying democratic ideals and constitutional principles of government in the United States, including checks and balances, federalism, and consent of the governed as put forth in founding documents.

9-12.H.1.F1

By explaining that history includes the study of the past based on the examination of a variety of primary and secondary sources and how history can help one better understand and make informed decisions about the present and future.

9-12.H.1.F3

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.

9-12.H.1.D3

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.

Unit 15: The Civil War, 1860–1865

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

The Origins and Outbreak of the Civil War Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.CG.1.D2
Evaluating current issues by applying democratic ideals and constitutional principles of government in the United States, including checks and balances, federalism, and consent of the governed as put forth in founding documents.
9-12.H.1.F3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.

Early Mobilization and War Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F1
By explaining that history includes the study of the past based on the examination of a variety of primary and secondary sources and how history can help one better understand and make informed decisions about the present and future.
9-12.H.1.D3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.

Unit 15: The Civil War, 1860–1865

HS US History

The Changing Nature of War Assignment

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK2 / DOK3

Description: WR

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.D3

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.

The Union Triumphant Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F3

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.

Unit 16: The Era of Reconstruction, 1865–1877

HS US History

UNIT SUMMARY

This unit focuses on the challenges and changes in American society following the Civil War. Students will examine the different approaches to Reconstruction, including Presidential Reconstruction under Lincoln and Johnson, and Congressional Reconstruction. They will analyze the 13th, 14th, and 15th Amendments and their impact on civil rights. Students will explore the experiences of freed African Americans, including the establishment of black churches and schools, and the rise of sharecropping. They will also investigate the resistance to Reconstruction, including the formation of the Ku Klux Klan and the eventual compromise of 1877. Through this study, students will enhance their skills in analyzing political policies, understanding the challenges of social transformation, and evaluating the successes and failures of Reconstruction.

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.F3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.
9-12.H.1.D1
Analyzing and critiquing varying interpretations of historic people, issues, or events, and explain how evidence from primary and secondary sources is used to support and/or refute different interpretations.

Unit 16: The Era of Reconstruction, 1865–1877

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Restoring the Union Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.F3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.
9-12.H.1.D1
Analyzing and critiquing varying interpretations of historic people, issues, or events, and explain how evidence from primary and secondary sources is used to support and/or refute different interpretations.

ASYNCRONOUS Congress and Remaking of the South Choice Assignment

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK2 / DOK3

Description: WR

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.F3

Unit 16: The Era of Reconstruction, 1865–1877

HS US History

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.

9-12.H.1.D1

Analyzing and critiquing varying interpretations of historic people, issues, or events, and explain how evidence from primary and secondary sources is used to support and/or refute different interpretations.

Radical Reconstruction Checkpoint Question

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: WR

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

9-12.H.1.F3

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.

9-12.H.1.D1

Analyzing and critiquing varying interpretations of historic people, issues, or events, and explain how evidence from primary and secondary sources is used to support and/or refute different interpretations.

The Collapse of Reconstruction Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

Unit 16: The Era of Reconstruction, 1865–1877

HS US History

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

9-12.H.1.F3

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.

9-12.H.1.D1

Analyzing and critiquing varying interpretations of historic people, issues, or events, and explain how evidence from primary and secondary sources is used to support and/or refute different interpretations.

Chapters 15 & 16 Exam

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK2 / DOK3

Description: Blend of WR and MC questions

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

9-12.H.1.F3

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.

9-12.H.1.D1

Analyzing and critiquing varying interpretations of historic people, issues, or events, and explain how evidence from primary and secondary sources is used to support and/or refute different interpretations.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.2

Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments,

Unit 16: The Era of Reconstruction, 1865–1877

HS US History

or technical processes.

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

Unit 17: Go West Young Man! Westward Expansion, 1840-1900

HS US History

UNIT SUMMARY

In this unit, students will explore the continued westward expansion of the United States in the latter half of the 19th century. They will examine the concept of Manifest Destiny and its impact on Native American populations, including the Indian Wars and the reservation system. Students will analyze the Homestead Act, the transcontinental railroad, and their effects on settlement patterns. They will also investigate the experiences of different groups in the West, including cowboys, miners, and immigrants. Through these topics, students will develop skills in analyzing government policies, understanding the environmental and cultural impacts of expansion, and evaluating the myth and reality of the American West.

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.CG.3.D2

Analyzing the political structures, political power, and political perspectives of the diverse historic and current cultures of the United States and the world.

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

9-12.H.2

Students understand historical aspects of unity and diversity in the United States, the world, and Native American communities by:

9-12.H.2.F2

Identifying and analyzing major turning points and events in the history of Native Americans and various historical and recent immigrant groups in the United States, making use of primary and secondary sources.

Unit 17: Go West Young Man! Westward Expansion, 1840-1900

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

The Westward Spirit Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.CG.3.D2
Analyzing the political structures, political power, and political perspectives of the diverse historic and current cultures of the United States and the world.
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

Homesteading: Dreams and Realities Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.2.F2
Identifying and analyzing major turning points and events in the history of Native Americans and various historical and recent immigrant groups in the United States, making use of primary and secondary sources.
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

Unit 17: Go West Young Man! Westward Expansion, 1840-1900

HS US History

Making a Living in Gold and Cattle Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

The Assault on American Indian Life and Culture Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.2.F2
Identifying and analyzing major turning points and events in the history of Native Americans and various historical and recent immigrant groups in the United States, making use of primary and secondary sources.
9-12.H.2
Students understand historical aspects of unity and diversity in the United States, the world, and Native American communities by:

The Assault on American Indian Life and Culture Assignment

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK2 / DOK3

Unit 17: Go West Young Man! Westward Expansion, 1840-1900

HS US History

Description: Mini Essay Assignment

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.2
Students understand historical aspects of unity and diversity in the United States, the world, and Native American communities by:
9-12.H.2.F2
Identifying and analyzing major turning points and events in the history of Native Americans and various historical and recent immigrant groups in the United States, making use of primary and secondary sources.
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

The Impact of Expansion on Chinese Immigrants and Hispanic Citizens Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.CG.3.D2
Analyzing the political structures, political power, and political perspectives of the diverse historic and current cultures of the United States and the world.
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.2
Students understand historical aspects of unity and diversity in the United States, the world, and Native American communities by:

Unit 17: Go West Young Man! Westward Expansion, 1840-1900

HS US History

9-12.H.2.F2

Identifying and analyzing major turning points and events in the history of Native Americans and various historical and recent immigrant groups in the United States, making use of primary and secondary sources.

Unit 18: Industrialization and the Rise of Big Business, 1870-1900

HS US History

UNIT SUMMARY

This unit focuses on the dramatic economic changes that transformed the United States into an industrial powerhouse. Students will examine technological innovations, the growth of corporations, and the rise of industrial titans like Andrew Carnegie and John D. Rockefeller. They will analyze new business practices and organizational structures, such as vertical and horizontal integration. Students will also explore the impact of industrialization on workers, including working conditions, labor unions, and strikes. Through this study, students will enhance their skills in analyzing economic systems, understanding the relationship between technological change and social transformation, and evaluating the costs and benefits of rapid industrialization.

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

Unit 18: Industrialization and the Rise of Big Business, 1870-1900

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Inventors of the Age and Industrial Growth Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

Building Industrial America on the Backs of Labor Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

A New American Consumer Culture Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

Unit 18: Industrialization and the Rise of Big Business, 1870-1900

HS US History

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

Exam 1: Chapters 1&2

Assessment Type: Summative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Description: Blend of WR and MC questions

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.2

Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

Unit 19: The Growing Pains of Urbanization, 1870-1900

HS US History

UNIT SUMMARY

In this unit, students will investigate the rapid growth of American cities in the late 19th century. They will examine the causes of urbanization, including immigration and rural-to-urban migration. Students will analyze the challenges of urban life, such as overcrowding, poor sanitation, and crime. They will explore responses to these problems, including the development of mass transit, the City Beautiful movement, and progressive reforms. Students will also study the experiences of different ethnic and racial groups in American cities. Through these topics, students will develop skills in analyzing demographic changes, understanding the complexities of urban planning and reform, and evaluating the social and cultural impacts of urbanization.

STANDARDS

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.1.D

Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.

CCSS.ELA-LITERACY.WHST.11-12.2

Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

CCSS.ELA-LITERACY.WHST.11-12.2.B

Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

Unit 19: The Growing Pains of Urbanization, 1870-1900

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Urbanization and Its Challenges Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

The African American Great Migration Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

Relief from the Chaos of Urban Life Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

Unit 19: The Growing Pains of Urbanization, 1870-1900

HS US History

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

Change Reflected in Thought and Writing Assignment

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK2 / DOK3

Description: WR

STANDARDS

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)
CCSS.ELA-LITERACY.WHST.11-12.1.D
Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.
CCSS.ELA-LITERACY.WHST.11-12.2
Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.
CCSS.ELA-LITERACY.WHST.11-12.2.B
Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

Unit 20: Politics in the Gilded Age, 1870-1900

HS US History

UNIT SUMMARY

This unit focuses on the political landscape of the United States during a period of rapid economic growth and social change. Students will examine the characteristics of Gilded Age politics, including political machines, patronage, and corruption. They will analyze key political issues of the era, such as civil service reform, tariffs, and monetary policy. Students will also explore the emergence of populism and the Farmers' Alliance movement. Through this study, students will enhance their skills in analyzing political systems, understanding the relationship between economic interests and political power, and evaluating the strengths and weaknesses of American democracy during this period.

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

Unit 20: Politics in the Gilded Age, 1870-1900

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Political Corruption in Postbellum America

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

Farmers Revolt Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

Exam 2: Chapters 3&4

Assessment Type: Summative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Description: Blend of WR and MC

STANDARDS

Maine - Grade 9-12 - Social Studies

Unit 20: Politics in the Gilded Age, 1870-1900

HS US History

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

Unit 21: Leading the Way: The Progressive Movement, 1890-1920

HS US History

UNIT SUMMARY

In this unit, students will explore the reform movements that sought to address the problems of industrialization and urbanization. They will examine progressive reforms at the local, state, and national levels, including efforts to regulate business, improve working conditions, and expand democracy. Students will analyze key figures of the Progressive Era, such as Theodore Roosevelt, Woodrow Wilson, and Jane Addams. They will also investigate social and cultural changes, including the temperance movement and women's suffrage. Through these topics, students will develop skills in analyzing social movements, understanding the role of government in addressing societal problems, and evaluating the successes and limitations of progressive reforms.

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.F3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.

Unit 21: Leading the Way: The Progressive Movement, 1890-1920

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

The Origins of the Progressive Spirit in America Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.F3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.

Progressivism at the Grassroots Level Checkpoint Question

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: WR

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.F3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.

Unit 21: Leading the Way: The Progressive Movement, 1890-1920

HS US History

New Voices for Women and African Americans Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.F3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.

Progressivism in the White House Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.F3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.

Unit 22: Age of Empire: American Foreign Policy, 1890-1914

HS US History

UNIT SUMMARY

This unit focuses on the emergence of the United States as a world power at the turn of the 20th century. Students will examine the Spanish-American War and its consequences, including the acquisition of overseas territories. They will analyze key foreign policy doctrines, such as the Open Door policy in China and the Roosevelt Corollary to the Monroe Doctrine. Students will also explore American interventions in Latin America and the Caribbean. Through this study, students will enhance their skills in analyzing international relations, understanding the motivations behind imperialism, and evaluating the impact of American foreign policy on both the United States and other nations.

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.D2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the world and the implications for the present and future.

Unit 22: Age of Empire: American Foreign Policy, 1890-1914

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Turner, Mahan, and the Roots of Empire Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.D2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the world and the implications for the present and future.

The Spanish-American War and Overseas Empire Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.D2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the world and the implications for the present and future.

Unit 22: Age of Empire: American Foreign Policy, 1890-1914

HS US History

Economic Imperialism in East Asia Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.D2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the world and the implications for the present and future.

Exam 3: Chapters 5&6

Assessment Type: Summative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Description: Blend of WR and MC Questions

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.D2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the world and the implications for the present and future.

Unit 23: Americans and the Great War, 1914-1919

HS US History

UNIT SUMMARY

In this unit, students will investigate the United States' involvement in World War I and its aftermath. They will examine the causes of the war, the debate over American neutrality, and the factors that led to U.S. entry into the conflict. Students will analyze the mobilization of the American economy and society for war, including the draft and propaganda efforts. They will explore the impact of the war on civil liberties and social change, including women's suffrage and the Great Migration. Students will also study the Paris Peace Conference and the debate over the League of Nations. Through these topics, students will develop skills in analyzing wartime policies, understanding the global impact of the conflict, and evaluating the long-term consequences of World War I for the United States and the world.

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.D2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the world and the implications for the present and future.
9-12.H.2.D1
Identifying and critiquing issues characterized by unity and diversity in the history of other nations, and describing their effects, using primary and secondary sources.

Unit 23: Americans and the Great War, 1914-1919

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

American Isolationism and the European Origins of War Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.D2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the world and the implications for the present and future.
9-12.H.2.D1
Identifying and critiquing issues characterized by unity and diversity in the history of other nations, and describing their effects, using primary and secondary sources.

The United States Prepares for War Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.D2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the world and the implications for the present and future.

A New Home Front Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Unit 23: Americans and the Great War, 1914-1919

HS US History

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.2.D1
Identifying and critiquing issues characterized by unity and diversity in the history of other nations, and describing their effects, using primary and secondary sources.

From War to Peace Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.D2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the world and the implications for the present and future.
9-12.H.2.D1
Identifying and critiquing issues characterized by unity and diversity in the history of other nations, and describing their effects, using primary and secondary sources.

Demobilization and Its Difficult Aftermath Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

Unit 23: Americans and the Great War, 1914-1919

HS US History

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

9-12.H.1.D2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the world and the implications for the present and future.

9-12.H.2.D1

Identifying and critiquing issues characterized by unity and diversity in the history of other nations, and describing their effects, using primary and secondary sources.

Unit 25: Brother, Can You Spare a Dime? The Great Depression, 1929-1932

HS US History

UNIT SUMMARY

This unit focuses on the causes and impacts of the Great Depression. Students will examine the economic, social, and political factors that led to the stock market crash of 1929 and the subsequent economic collapse. They will analyze the effects of the Depression on different segments of American society, including farmers, industrial workers, and the middle class. Students will explore the Hoover administration's responses to the crisis and why they were ultimately seen as inadequate. They will also investigate the human toll of the Depression, including unemployment, poverty, and social dislocation. Through this study, students will enhance their skills in analyzing economic systems, understanding the interconnections between economic and social issues, and evaluating government responses to economic crises.

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

Unit 25: Brother, Can You Spare a Dime? The Great Depression, 1929-1932

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Stock Market Crashes Assignment

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK2 / DOK3

Description: WR

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

The Depths of the Great Depression Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

Unit 26: Franklin Roosevelt and the New Deal, 1932-1941

HS US History

UNIT SUMMARY

In this unit, students will explore the presidency of Franklin D. Roosevelt and his efforts to combat the Great Depression. They will examine the First and Second New Deals, analyzing key programs such as the CCC, WPA, and Social Security. Students will investigate the impact of New Deal policies on different groups, including African Americans, women, and organized labor. They will also analyze opposition to the New Deal from both the left and right. Students will explore the cultural changes of the 1930s, including New Deal art programs and the rise of radio. Through these topics, students will develop skills in analyzing government policies, understanding the expansion of federal power, and evaluating the long-term legacy of the New Deal on American society and politics.

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

9-12.H.1.D3

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.2

Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

CCSS.ELA-LITERACY.WHST.11-12.7

Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

Unit 26: Franklin Roosevelt and the New Deal, 1932-1941

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

The First New Deal

Assessment Type: Formative / Summative / Diagnostic

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description:

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

9-12.H.1.D3

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.

The New Deal Assignment

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK2 / DOK3

Description: WR

STANDARDS

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.2

Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

Unit 26: Franklin Roosevelt and the New Deal, 1932-1941

HS US History

CCSS.ELA-LITERACY.WHST.11-12.7

Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

Exam 3: Chapters 7&9

Assessment Type: Summative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Description: Blend of WR and MC questions

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

9-12.H.1.D3

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

Unit 27: Fighting the Good Fight in World War II, 1941-1945

HS US History

UNIT SUMMARY

This unit focuses on the United States' involvement in World War II. Students will examine the factors that led to U.S. entry into the war, including the attack on Pearl Harbor. They will analyze the mobilization of the American economy and society for total war, including rationing, war bond drives, and the dramatic expansion of industrial production. Students will explore the major military campaigns in both the European and Pacific theaters. They will also investigate the home front during the war, including the changing roles of women and minorities, Japanese American internment, and the beginnings of the Civil Rights movement. Through this study, students will enhance their skills in analyzing military strategy, understanding the global nature of the conflict, and evaluating the war's impact on American society and the postwar world order.

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

9-12.H.2.D1

Identifying and critiquing issues characterized by unity and diversity in the history of other nations, and describing their effects, using primary and secondary sources.

9-12.H.2.D2

Making use of primary and secondary sources, identifying and analyzing major turning points and events in the history of world cultures as it pertains to various historical and recent migrant groups.

National Common Core - Grade 11-12 - History/Social Studies

RH.11-12.2.

Determine the central ideas or information of a primary or secondary source; provide an accurate summary that makes clear the relationships among the key details and ideas.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.1.D

Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.

Unit 27: Fighting the Good Fight in World War II, 1941-1945

HS US History

CCSS.ELA-LITERACY.WHST.11-12.2

Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

Unit 27: Fighting the Good Fight in World War II, 1941-1945

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

The Origins of War: Europe, Asia, and the United States Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.2.D1
Identifying and critiquing issues characterized by unity and diversity in the history of other nations, and describing their effects, using primary and secondary sources.
9-12.H.2.D2
Making use of primary and secondary sources, identifying and analyzing major turning points and events in the history of world cultures as it pertains to various historical and recent migrant groups.

The Boy in the Striped Pajamas Parts 1, 2 &3

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK2 / DOK3

Description: WR

STANDARDS

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)
CCSS.ELA-LITERACY.WHST.11-12.1.D
Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.
CCSS.ELA-LITERACY.WHST.11-12.2

Unit 27: Fighting the Good Fight in World War II, 1941-1945

HS US History

Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

National Common Core - Grade 11-12 - History/Social Studies

RH.11-12.2.

Determine the central ideas or information of a primary or secondary source; provide an accurate summary that makes clear the relationships among the key details and ideas.

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

Unit 28: Post-War Prosperity and Cold War Fears, 1945-1960

HS US History

UNIT SUMMARY

This unit explores the United States in the immediate aftermath of World War II. Students will examine the economic boom of the 1950s, including the rise of suburbanization and consumer culture. They will analyze the origins and early years of the Cold War, including the policy of containment, the Marshall Plan, and the Korean War. Students will investigate domestic issues such as the Second Red Scare and McCarthyism, as well as early civil rights efforts like the Montgomery Bus Boycott. They will also explore cultural changes, including the rise of television and rock 'n' roll. Through this study, students will develop skills in analyzing the relationship between domestic and foreign policy, understanding the complexities of the Cold War, and evaluating the social and cultural changes of the post-war era.

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.D1
Analyzing and critiquing varying interpretations of historic people, issues, or events, and explain how evidence from primary and secondary sources is used to support and/or refute different interpretations.
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

Unit 28: Post-War Prosperity and Cold War Fears, 1945-1960

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

The Challenges of Peacetime Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.D1
Analyzing and critiquing varying interpretations of historic people, issues, or events, and explain how evidence from primary and secondary sources is used to support and/or refute different interpretations.

The Cold War Assignment

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK2 / DOK3

Description: WR

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.D1
Analyzing and critiquing varying interpretations of historic people, issues, or events, and explain how evidence from primary and secondary sources is used to support and/or refute different interpretations.

Popular Culture and Mass Media Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Unit 28: Post-War Prosperity and Cold War Fears, 1945-1960

HS US History

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.D1
Analyzing and critiquing varying interpretations of historic people, issues, or events, and explain how evidence from primary and secondary sources is used to support and/or refute different interpretations.

Chapters 11&12 Exam

Assessment Type: Summative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Description: Blend of MC and WR questions

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.D1
Analyzing and critiquing varying interpretations of historic people, issues, or events, and explain how evidence from primary and secondary sources is used to support and/or refute different interpretations.
National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)
CCSS.ELA-LITERACY.WHST.11-12.2
Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

Unit 29: Contesting Futures: America in the 1960s

HS US History

UNIT SUMMARY

This unit explores the tumultuous decade of the 1960s in American history. Students will examine the civil rights movement, including key figures like Martin Luther King Jr. and Malcolm X, and landmark events such as the March on Washington. They will analyze the impact of the Vietnam War on American society and politics, including the anti-war movement. Students will also investigate other social movements of the era, including the women's movement, the counterculture, and the rise of the New Left. Through this study, students will develop skills in analyzing social change, understanding the complexities of protest movements, and evaluating the long-term impacts of the 1960s on American culture and politics.

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

Unit 29: Contesting Futures: America in the 1960s

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

The Kennedy Promise Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

The Civil Rights Movement Marches On Assignment

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK2 / DOK3

Description: WR

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

Challenging the Status Quo Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

Unit 30: Political Storms at Home and Abroad, 1968-1980

HS US History

UNIT SUMMARY

In this unit, students will explore the political and social challenges faced by the United States from the late 1960s through the 1970s. They will examine the presidencies of Richard Nixon, Gerald Ford, and Jimmy Carter, including key events such as the Watergate scandal and the energy crisis. Students will analyze the changing nature of the Cold War, including détente with the Soviet Union and the opening of relations with China. They will also investigate domestic issues such as the environmental movement, the continuing struggle for civil rights, and the rise of conservatism. Through these topics, students will enhance their skills in analyzing political scandals, understanding the complexities of foreign policy, and evaluating the shifting political landscape of the United States.

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1

Students understand major eras, major enduring themes, and historic influences in United States and world history, including the roots of democratic philosophy, ideals, and institutions in the world by:

9-12.H.1.F1

By explaining that history includes the study of the past based on the examination of a variety of primary and secondary sources and how history can help one better understand and make informed decisions about the present and future.

9-12.H.1.D1

Analyzing and critiquing varying interpretations of historic people, issues, or events, and explain how evidence from primary and secondary sources is used to support and/or refute different interpretations.

9-12.H.1.D3

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.2

Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

Unit 30: Political Storms at Home and Abroad, 1968-1980

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Coming Apart, Coming Together Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.D1

Analyzing and critiquing varying interpretations of historic people, issues, or events, and explain how evidence from primary and secondary sources is used to support and/or refute different interpretations.

Vietnam: The Downward Spiral Assignment

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK2 / DOK3

Description: WR

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F1

By explaining that history includes the study of the past based on the examination of a variety of primary and secondary sources and how history can help one better understand and make informed decisions about the present and future.

9-12.H.1.D3

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.2

Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

Unit 30: Political Storms at Home and Abroad, 1968-1980

HS US History

Watergate: Nixon's Domestic Nightmare Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1

Students understand major eras, major enduring themes, and historic influences in United States and world history, including the roots of democratic philosophy, ideals, and institutions in the world by:

9-12.H.1.F1

By explaining that history includes the study of the past based on the examination of a variety of primary and secondary sources and how history can help one better understand and make informed decisions about the present and future.

Jimmy Carter in the Aftermath of the Storm Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1

Students understand major eras, major enduring themes, and historic influences in United States and world history, including the roots of democratic philosophy, ideals, and institutions in the world by:

9-12.H.1.D1

Analyzing and critiquing varying interpretations of historic people, issues, or events, and explain how evidence from primary and secondary sources is used to support and/or refute different interpretations.

Chapters 13 &14 Exam

Assessment Type: Summative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Unit 30: Political Storms at Home and Abroad, 1968-1980

HS US History

Description: Blend of WR and MC questions

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F1

By explaining that history includes the study of the past based on the examination of a variety of primary and secondary sources and how history can help one better understand and make informed decisions about the present and future.

9-12.H.1.D1

Analyzing and critiquing varying interpretations of historic people, issues, or events, and explain how evidence from primary and secondary sources is used to support and/or refute different interpretations.

9-12.H.1.D3

Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the world using historical sources.

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.2

Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

Unit 31: From Cold War to Culture Wars, 1980-2000

HS US History

UNIT SUMMARY

This unit focuses on the final two decades of the 20th century in American history. Students will examine the presidency of Ronald Reagan and the conservative resurgence, including supply-side economics and the end of the Cold War. They will analyze the presidencies of George H.W. Bush and Bill Clinton, including the first Gulf War and the economic boom of the 1990s. Students will also explore social and cultural issues of the era, such as the AIDS crisis, the war on drugs, and the rise of the religious right. They will investigate technological changes, including the personal computer revolution and the early internet. Through this study, students will develop skills in analyzing economic policies, understanding the changing nature of American politics, and evaluating the impact of globalization on American society.

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.F3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.

Unit 31: From Cold War to Culture Wars, 1980-2000

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

The Reagan Revolution Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.F3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.

A New World Order Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies
9-12.H.1.F2
Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.
9-12.H.1.F3
Tracing and critiquing the roots and evolution of democratic ideals and constitutional principles in the history of the United States using historical sources.

Unit 32: The Challenges of the Twenty-First Century

HS US History

UNIT SUMMARY

In this unit, students will explore the major events and issues that have shaped the United States in the 21st century. They will examine the impact of the September 11, 2001 terrorist attacks and the subsequent War on Terror, including the wars in Afghanistan and Iraq. Students will analyze the presidency of George W. Bush and the response to Hurricane Katrina. They will also investigate the 2008 financial crisis and its aftermath, including the election of Barack Obama as the first African American president. Students will explore ongoing debates over healthcare, immigration, and climate change. Through these topics, students will enhance their skills in analyzing current events, understanding the complexities of modern global politics, and evaluating the challenges facing contemporary American society.

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F1

By explaining that history includes the study of the past based on the examination of a variety of primary and secondary sources and how history can help one better understand and make informed decisions about the present and future.

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

9-12.H.1.D1

Analyzing and critiquing varying interpretations of historic people, issues, or events, and explain how evidence from primary and secondary sources is used to support and/or refute different interpretations.

Unit 32: The Challenges of the Twenty-First Century

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

The War on Terror Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

New Century, Old Disputes Quiz

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2

Description: MC

STANDARDS

Maine - Grade 9-12 - Social Studies

9-12.H.1.F2

Analyzing and critiquing major historical eras: major enduring themes, turning points, events, consequences, and people in the history of the United States and the implications for the present and future.

9-12.H.1.D1

Analyzing and critiquing varying interpretations of historic people, issues, or events, and explain how evidence from primary and secondary sources is used to support and/or refute different interpretations.

Chapters 15 &16 Exam

Assessment Type: Summative

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK3 / DOK4

Description: Blend of MC and WR

STANDARDS

Maine - Grade 9-12 - Social Studies

Unit 32: The Challenges of the Twenty-First Century

HS US History

9-12.H.1.F1

By explaining that history includes the study of the past based on the examination of a variety of primary and secondary sources and how history can help one better understand and make informed decisions about the present and future.

Unit 33: Sem 2 Research Project

HS US History

UNIT SUMMARY

In this capstone unit that overlaps with units 26-32 at the end of semester two, students will apply their historical knowledge and research skills to complete an in-depth research project on a topic of their choice related to U.S. history. Students will develop their ability to formulate research questions, gather and evaluate primary and secondary sources, and construct evidence-based arguments. Through the process of outlining, drafting, and revising their work, students will hone their writing skills, with a focus on creating clear, well-organized, and persuasive historical essays. This unit will culminate in a final research paper that demonstrates students' mastery of historical content, critical thinking, and academic writing. By completing this project, students will gain valuable experience in conducting independent research and presenting complex historical arguments, preparing them for future academic pursuits and civic engagement.

STANDARDS

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.1

Write arguments focused on discipline-specific content.

CCSS.ELA-LITERACY.WHST.11-12.1.A

Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.

CCSS.ELA-LITERACY.WHST.11-12.1.C

Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.

CCSS.ELA-LITERACY.WHST.11-12.1.D

Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.

CCSS.ELA-LITERACY.WHST.11-12.1.E

Provide a concluding statement or section that follows from or supports the argument presented.

CCSS.ELA-LITERACY.WHST.11-12.2

Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments,

Unit 33: Sem 2 Research Project

HS US History

or technical processes.

CCSS.ELA-LITERACY.WHST.11-12.2.B

Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

CCSS.ELA-LITERACY.WHST.11-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

CCSS.ELA-LITERACY.WHST.11-12.5

Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

Maine - Grade 9-12 - Social Studies

9-12.H.1

Students understand major eras, major enduring themes, and historic influences in United States and world history, including the roots of democratic philosophy, ideals, and institutions in the world by:

9-12.H.2.F1

Identifying and critiquing issues characterized by unity and diversity in the history of the United States, and describing their effects, using primary and secondary sources.

Unit 33: Sem 2 Research Project

HS US History

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Research Project Final Draft

Assessment Type: Formative / Summative / Diagnostic

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description:

STANDARDS

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)
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CCSS.ELA-LITERACY.WHST.11-12.1.C
Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.
CCSS.ELA-LITERACY.WHST.11-12.1.D
Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.
CCSS.ELA-LITERACY.WHST.11-12.1.E
Provide a concluding statement or section that follows from or supports the argument presented.
CCSS.ELA-LITERACY.WHST.11-12.2
Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

Research Project First Draft

Assessment Type: Formative / Summative / Diagnostic

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Unit 33: Sem 2 Research Project

HS US History

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description:

STANDARDS

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.1

Write arguments focused on discipline-specific content.

CCSS.ELA-LITERACY.WHST.11-12.2.B

Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

CCSS.ELA-LITERACY.WHST.11-12.5

Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

Research Project Outline

Assessment Type: Formative / Summative / Diagnostic

Assessment Tier: Drill & Practice (D&P) / Rehearsal & Scrimmage (R&S) / Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description:

STANDARDS

National Common Core - Grade 11-12 - Literacy in History/Social Studies, Science, & Technical Subjects (ELA)

CCSS.ELA-LITERACY.WHST.11-12.2.B

Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

Maine - Grade 9-12 - Social Studies

9-12.H.1

Students understand major eras, major enduring themes, and historic influences in United States and world history, including the roots of democratic philosophy, ideals, and institutions in the world by:

9-12.H.2.F1

Unit 33: Sem 2 Research Project

HS US History

Identifying and critiquing issues characterized by unity and diversity in the history of the United States, and describing their effects, using primary and secondary sources.

HS US History

Maine Virtual Academy

School Year 2024-2025 (Aug 26, 2024 - Jun 13, 2025)

UNIT	# OF TEACHING DAYS	DATES
 Unit 1: The Americas, Europe, and Africa Before 1492	5 teaching days	Aug 26 - Aug 30, 2024
 Unit 2: Early Globalization: The Atlantic World, 1492–1650	5 teaching days	Sep 3 - Sep 9, 2024
 Unit 3: Creating New Social Orders: Colonial Societies, 1500–1700	5 teaching days	Sep 16 - Sep 20, 2024
 Unit 4: Rule Britannia! The English Empire, 1660–1763	5 teaching days	Sep 23 - Sep 27, 2024
 Unit 5: Imperial Reforms and Colonial Protests, 1763-1774	5 teaching days	Sep 30 - Oct 4, 2024
 Unit 6: America's War for Independence, 1775-1783	5 teaching days	Oct 11 - Oct 18, 2024
 Unit 7: Creating Republican Governments, 1776–1790	5 teaching days	Oct 22 - Oct 28, 2024
 Unit 8: Growing Pains: The New Republic, 1790–1820	5 teaching days	Oct 28 - Nov 1, 2024
 Unit 9: Industrial Transformation in the North, 1800–1850	5 teaching days	Oct 31 - Nov 6, 2024
 Unit 10: Jacksonian Democracy, 1820–1840	5 teaching days	Nov 5 - Nov 12, 2024
 Unit 11: A Nation on the Move: Westward Expansion, 1800–1860	5 teaching days	Nov 13 - Nov 19, 2024
 Unit 12: Cotton is King: The Antebellum South, 1800–1860	5 teaching days	Nov 20 - Nov 26, 2024
 Unit 13: Antebellum Idealism and Reform Impulses, 1820–1860	5 teaching days	Nov 27 - Dec 6, 2024
 Unit 14: Troubled Times: the Tumultuous 1850s	5 teaching days	Dec 9 - Dec 13, 2024
 Unit 15: The Civil War, 1860–1865	5 teaching days	Dec 16 - Dec 20, 2024

 Unit 16: The Era of Reconstruction, 1865–1877	5 teaching days	Jan 2 - Jan 8, 2025
 Unit 17: Go West Young Man! Westward Expansion, 1840-1900	5 teaching days	Jan 17 - Jan 24, 2025
 Unit 18: Industrialization and the Rise of Big Business, 1870-1900	5 teaching days	Jan 27 - Jan 31, 2025
 Unit 19: The Growing Pains of Urbanization, 1870-1900	5 teaching days	Feb 3 - Feb 7, 2025
 Unit 20: Politics in the Gilded Age, 1870-1900	5 teaching days	Feb 10 - Feb 14, 2025
 Unit 21: Leading the Way: The Progressive Movement, 1890-1920	5 teaching days	Feb 24 - Feb 28, 2025
 Unit 22: Age of Empire: American Foreign Policy, 1890-1914	5 teaching days	Mar 3 - Mar 7, 2025
 Unit 23: Americans and the Great War, 1914-1919	5 teaching days	Mar 10 - Mar 14, 2025
 Unit 25: Brother, Can You Spare a Dime? The Great Depression, 1929-1932	5 teaching days	Mar 24 - Mar 28, 2025
 Unit 26: Franklin Roosevelt and the New Deal, 1932-1941	5 teaching days	Mar 31 - Apr 4, 2025
 Unit 27: Fighting the Good Fight in World War II, 1941-1945	4 teaching days	Apr 7 - Apr 17, 2025
 Unit 28: Post-War Prosperity and Cold War Fears, 1945-1960	5 teaching days	Apr 28 - May 7, 2025
 Unit 29: Contesting Futures: America in the 1960s	2 teaching days	May 8 - May 9, 2025
 Unit 30: Political Storms at Home and Abroad, 1968-1980	5 teaching days	May 16 - May 23, 2025
 Unit 31: From Cold War to Culture Wars, 1980-2000	5 teaching days	May 26 - Jun 2, 2025
 Unit 32: The Challenges of the Twenty-First Century	5 teaching days	Jun 3 - Jun 9, 2025
 Unit 33: Sem 2 Research Project	24 teaching days	Apr 1 - May 30, 2025

August

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
28	29	30	31	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26 Unit 1: The Ameri...	27 Unit 1: The Ameri...	28 Unit 1: The Ameri...	29 Unit 1: The Ameri...	30 Unit 1: The Ameri...	31

September

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2 Labor Day	3 Unit 2: Early Glob...	4 Unit 2: Early Glob...	5 Unit 2: Early Glob...	6 Unit 2: Early Glob...	7
8	9 Unit 2: Early Glob...	10 Fall NWEA Testing	11 Fall NWEA Testing	12 Fall NWEA Testing	13	14
15	16 Unit 3: Creating ...	17 Unit 3: Creating ...	18 Unit 3: Creating ...	19 Unit 3: Creating ...	20 Unit 3: Creating ...	21
22	23 Unit 4: Rule Brita...	24 Unit 4: Rule Brita...	25 Unit 4: Rule Brita...	26 Unit 4: Rule Brita...	27 Unit 4: Rule Brita...	28
29	30 Unit 5: Imperial R...	1 Unit 5: Imperial R...	2 Unit 5: Imperial R...	3 Unit 5: Imperial R...	4 Unit 5: Imperial R...	5

October

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
29	30 Unit 5: Imperial R...	1 Unit 5: Imperial R...	2 Unit 5: Imperial R...	3 Unit 5: Imperial R...	4 Unit 5: Imperial R...	5
6	7 Maine Through Year (Tentative)	8 Maine Through Year (Tentative)	9 Maine Through Year (Tentative)	10	11 Unit 6: America's ...	12
13	14 Indigenous Peoples' Day	15 Unit 6: America's ...	16 Unit 6: America's ...	17 Unit 6: America's ...	18 Unit 6: America's ...	19
20	21	22 Unit 7: Creating ...	23 Unit 7: Creating ...	24 Unit 7: Creating ...	25 Unit 7: Creating ...	26
27	28 Unit 7: Creating ... Unit 8: Growing P...	29 Unit 8: Growing P...	30 Unit 8: Growing P...	31 Unit 8: Growing P... Unit 9: Industrial ...	1 Unit 8: Growing P... Unit 9: Industrial ...	2

November

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
27	28 Unit 7: Creating ... Unit 8: Growing P...	29 Unit 8: Growing P...	30 Unit 8: Growing P...	31 Unit 8: Growing P... Unit 9: Industrial ...	1 Unit 8: Growing P... Unit 9: Industrial ...	2
3	4 Unit 9: Industrial ...	5 Unit 9: Industrial ... Unit 10: Jacksoni...	6 Unit 9: Industrial ... Unit 10: Jacksoni...	7 Unit 10: Jacksoni...	8 Unit 10: Jacksoni...	9
10	11 Veterans Day	12 Unit 10: Jacksoni...	13 Unit 11: A Nation ...	14 Unit 11: A Nation ...	15 Unit 11: A Nation ...	16
17	18 Unit 11: A Nation ...	19 Unit 11: A Nation ...	20 Unit 12: Cotton is...	21 Unit 12: Cotton is...	22 Unit 12: Cotton is...	23
24	25 Unit 12: Cotton is...	26 Unit 12: Cotton is...	27 Thanksgiving	28 Thanksgiving	29 Thanksgiving	30

December

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2 Unit 13: Antebell...	3 Unit 13: Antebell...	4 Unit 13: Antebell...	5 Unit 13: Antebell...	6 Unit 13: Antebell...	7
8	9 Unit 14: Troubled...	10 Unit 14: Troubled...	11 Unit 14: Troubled...	12 Unit 14: Troubled...	13 Unit 14: Troubled...	14
15	16 Unit 15: The Civil...	17 Unit 15: The Civil...	18 Unit 15: The Civil...	19 Unit 15: The Civil...	20 Unit 15: The Civil...	21
22	23 Winter Break	24 Winter Break	25 Winter Break	26 Winter Break	27 Winter Break	28 Winter Break
29 Winter Break	30 Winter Break	31 Winter Break	1 New Year's Day	2 Unit 16: The Era ...	3 Unit 16: The Era ...	4

January

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
29 Winter Break	30 Winter Break	31 Winter Break	1 New Year's Day	2 Unit 16: The Era ...	3 Unit 16: The Era ...	4
5	6 Unit 16: The Era ...	7 Unit 16: The Era ...	8 Unit 16: The Era ...	9	10	11
12	13	14 Winter NWEA Testing	15 Winter NWEA Testing	16 Winter NWEA Testing	17 Unit 17: Go West...	18
19	20 Martin Luther King, Jr. Day	21 Unit 17: Go West...	22 Unit 17: Go West...	23 Unit 17: Go West...	24 Unit 17: Go West...	25
26	27 Unit 18: Industrial...	28 Unit 18: Industrial...	29 Unit 18: Industrial...	30 Unit 18: Industrial...	31 Unit 18: Industrial...	1

February

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
26	27 Unit 18: Industrial...	28 Unit 18: Industrial...	29 Unit 18: Industrial...	30 Unit 18: Industrial...	31 Unit 18: Industrial...	1
2	3 Unit 19: The Gro...	4 Unit 19: The Gro...	5 Unit 19: The Gro...	6 Unit 19: The Gro...	7 Unit 19: The Gro...	8
9	10 Unit 20: Politics i...	11 Unit 20: Politics i...	12 Unit 20: Politics i...	13 Unit 20: Politics i...	14 Unit 20: Politics i...	15
16	17 Presidents' Day	18 February Break	19 February Break	20 February Break	21 February Break	22
23	24 Unit 21: Leading t...	25 Unit 21: Leading t...	26 Unit 21: Leading t...	27 Unit 21: Leading t...	28 Unit 21: Leading t...	1

March

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
23	24 Unit 21: Leading t...	25 Unit 21: Leading t...	26 Unit 21: Leading t...	27 Unit 21: Leading t...	28 Unit 21: Leading t...	1
2	3 Unit 22: Age of E...	4 Unit 22: Age of E...	5 Unit 22: Age of E...	6 Unit 22: Age of E...	7 Unit 22: Age of E...	8
9	10 Unit 23: America...	11 Unit 23: America...	12 Unit 23: America...	13 Unit 23: America...	14 Unit 23: America...	15
16	17	18	19	20 March Break	21 March Break	22
23	24 Unit 25: Brother, ...	25 Unit 25: Brother, ...	26 Unit 25: Brother, ...	27 Unit 25: Brother, ...	28 Unit 25: Brother, ...	29
30	31 Unit 26: Franklin ...	1 Unit 26: Franklin ... Unit 33: Sem 2 R...	2 Unit 26: Franklin ... Unit 33: Sem 2 R...	3 Unit 26: Franklin ... Unit 33: Sem 2 R...	4 Unit 26: Franklin ... Unit 33: Sem 2 R...	5

April

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
30	31 Unit 26: Franklin ...	1 Unit 26: Franklin ... Unit 33: Sem 2 R...	2 Unit 26: Franklin ... Unit 33: Sem 2 R...	3 Unit 26: Franklin ... Unit 33: Sem 2 R...	4 Unit 26: Franklin ... Unit 33: Sem 2 R...	5
6	7 MEA Science (HS)	8 MEA Science (HS)	9 MEA Science (HS)	10 MEA Science (HS)	11 MEA Science (HS)	12
13	14 Unit 27: Fighting t... Unit 33: Sem 2 R...	15 Unit 27: Fighting t... Unit 33: Sem 2 R...	16 Unit 27: Fighting t... Unit 33: Sem 2 R...	17 Unit 27: Fighting t... Unit 33: Sem 2 R...	18 April Vacation	19 April Vacation
20 April Vacation	21 April Vacation	22 April Vacation	23 April Vacation	24 April Vacation	25 April Vacation	26
27	28 Unit 28: Post-War... Unit 33: Sem 2 R...	29 Spring NWEA Testing	30 Spring NWEA Testing	1 Spring NWEA Testing	2 Unit 28: Post-War... Unit 33: Sem 2 R...	3

May

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
27	28 Unit 28: Post-War... Unit 33: Sem 2 R...	29 Spring NWEA Testing	30 Spring NWEA Testing	1 Spring NWEA Testing	2 Unit 28: Post-War... Unit 33: Sem 2 R...	3
4	5 Unit 28: Post-War... Unit 33: Sem 2 R...	6 Unit 28: Post-War... Unit 33: Sem 2 R...	7 Unit 28: Post-War... Unit 33: Sem 2 R...	8 Unit 29: Contesti... Unit 33: Sem 2 R...	9 Unit 29: Contesti... Unit 33: Sem 2 R...	10
11	12 MEA (ELA & Math)	13 MEA (ELA & Math)	14 MEA (ELA & Math)	15 MEA (ELA & Math)	16 MEA (ELA & Math)	17
18	19 Unit 30: Political ... Unit 33: Sem 2 R...	20 Unit 30: Political ... Unit 33: Sem 2 R...	21 Unit 30: Political ... Unit 33: Sem 2 R...	22 Unit 30: Political ... Unit 33: Sem 2 R...	23 Unit 30: Political ... Unit 33: Sem 2 R...	24
25	26 Memorial Day	27 Unit 31: From Col... Unit 33: Sem 2 R...	28 Unit 31: From Col... Unit 33: Sem 2 R...	29 Unit 31: From Col... Unit 33: Sem 2 R...	30 Unit 31: From Col... Unit 33: Sem 2 R...	31

June

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2 Unit 31: From Col...	3 Unit 32: The Chal...	4 Unit 32: The Chal...	5 Unit 32: The Chal...	6 Unit 32: The Chal...	7
8	9 Unit 32: The Chal...	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	1	2	3	4	5