

HS Consumer Math

Maine Virtual Academy

School Year 2025-2026 (Aug 25, 2025 - Jun 12, 2026)

UNIT	# OF TEACHING DAYS	DATES
 Unit 1: Taxes	28 teaching days	Aug 25 - Oct 10, 2025
 Unit 2: Checking	19 teaching days	Oct 13 - Nov 7, 2025
 Unit 3: Savings	18 teaching days	Nov 10 - Dec 9, 2025
 Unit 4: Budgeting	15 teaching days	Dec 10, 2025 - Jan 16, 2026
 Unit 5: Intro to Investing	18 teaching days	Jan 19 - Feb 12, 2026
 Unit 6: Investing Strategies	17 teaching days	Feb 16 - Mar 17, 2026
 Unit 7: Types of Credit	14 teaching days	Mar 18 - Apr 14, 2026
 Unit 8: Managing Credit	10 teaching days	Apr 15 - May 8, 2026
 Unit 9: Probability	10 teaching days	May 11 - May 22, 2026
 Unit 10: Insurance	14 teaching days	May 26 - Jun 12, 2026

August

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
27	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 Unit 1: Taxes	26 Unit 1: Taxes	27 Unit 1: Taxes	28 Unit 1: Taxes	29 Unit 1: Taxes	30
31	1 Labor Day	2 Unit 1: Taxes	3 Unit 1: Taxes	4 Unit 1: Taxes	5 Unit 1: Taxes	6

September

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
31	1 Labor Day	2 Unit 1: Taxes	3 Unit 1: Taxes	4 Unit 1: Taxes	5 Unit 1: Taxes	6
7	8 Unit 1: Taxes	9 Unit 1: Taxes	10 Unit 1: Taxes	11 Unit 1: Taxes	12 Unit 1: Taxes	13
14	15 Unit 1: Taxes	16 Fall NWEA	17 Fall NWEA	18 Fall NWEA	19 Unit 1: Taxes	20
21	22 Unit 1: Taxes	23 Unit 1: Taxes	24 Unit 1: Taxes	25 Unit 1: Taxes	26 Unit 1: Taxes	27
28	29 Unit 1: Taxes	30 Unit 1: Taxes	1 Unit 1: Taxes	2 Unit 1: Taxes	3 Unit 1: Taxes	4

October

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
28	29 Unit 1: Taxes	30 Unit 1: Taxes	1 Unit 1: Taxes	2 Unit 1: Taxes	3 Unit 1: Taxes	4
5	6 MTY Testing	7 MTY Testing	8 MTY Testing	9 Unit 1: Taxes	10 Unit 1: Taxes	11
12	13 Indigenous Peoples Day	14 Unit 2: Checking	15 Unit 2: Checking	16 Unit 2: Checking	17 Unit 2: Checking	18
19	20 Unit 2: Checking	21 Unit 2: Checking	22 Unit 2: Checking	23 Unit 2: Checking	24 Unit 2: Checking	25
26	27 Unit 2: Checking	28 Unit 2: Checking	29 Unit 2: Checking	30 Unit 2: Checking	31 Unit 2: Checking	1

November

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
26	27 Unit 2: Checking	28 Unit 2: Checking	29 Unit 2: Checking	30 Unit 2: Checking	31 Unit 2: Checking	1
2	3 Unit 2: Checking	4 Unit 2: Checking	5 Unit 2: Checking	6 Unit 2: Checking	7 Unit 2: Checking	8
9	10 Unit 3: Savings	11 Veterans Day	12 Unit 3: Savings	13 Unit 3: Savings	14 Unit 3: Savings	15
16	17 Unit 3: Savings	18 Unit 3: Savings	19 Unit 3: Savings	20 Unit 3: Savings	21 Unit 3: Savings	22
23	24 Unit 3: Savings	25 Unit 3: Savings	26 Thanksgiving Break	27 Thanksgiving	28 Thanksgiving Break	29
30	1 Unit 3: Savings	2 Unit 3: Savings	3 Unit 3: Savings	4 Unit 3: Savings	5 Unit 3: Savings	6

December

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
30	1 Unit 3: Savings	2 Unit 3: Savings	3 Unit 3: Savings	4 Unit 3: Savings	5 Unit 3: Savings	6
7	8 Unit 3: Savings	9 Unit 3: Savings	10 Unit 4: Budgeting	11 Unit 4: Budgeting	12 Unit 4: Budgeting	13
14	15 Unit 4: Budgeting	16 Unit 4: Budgeting	17 Unit 4: Budgeting	18 Unit 4: Budgeting	19 Unit 4: Budgeting	20
21	22 Winter Break	23 Winter Break	24 Winter Break	25 Christmas Day	26 Winter Break	27 Winter Break
28 Winter Break	29 Winter Break	30 Winter Break	31 Winter Break	1 New Year's Day	2 Winter Break	3

January

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
28 Winter Break	29 Winter Break	30 Winter Break	31 Winter Break	1 New Year's Day	2 Winter Break	3
4	5 Unit 4: Budgeting	6 Unit 4: Budgeting	7 Unit 4: Budgeting	8 Unit 4: Budgeting	9 Unit 4: Budgeting	10
11	12 Unit 4: Budgeting	13 Winter NWEA	14 Winter NWEA	15 Winter NWEA	16 Unit 4: Budgeting	17
18	19 Martin Luther King, Jr. Day	20 Unit 5: Intro to In...	21 Unit 5: Intro to In...	22 Unit 5: Intro to In...	23 Unit 5: Intro to In...	24
25	26 Unit 5: Intro to In...	27 Unit 5: Intro to In...	28 Unit 5: Intro to In...	29 Unit 5: Intro to In...	30 Unit 5: Intro to In...	31

February

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2 Unit 5: Intro to In...	3 Unit 5: Intro to In...	4 Unit 5: Intro to In...	5 Unit 5: Intro to In...	6 Unit 5: Intro to In...	7
8	9 Unit 5: Intro to In...	10 Unit 5: Intro to In...	11 Unit 5: Intro to In...	12 Unit 5: Intro to In...	13 February Break	14 February Break
15 February Break	16 Presidents' Day	17 February Break	18 February Break	19 February Break	20 February Break	21
22	23 Unit 6: Investing ...	24 Unit 6: Investing ...	25 Unit 6: Investing ...	26 Unit 6: Investing ...	27 Unit 6: Investing ...	28

March

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2 Unit 6: Investing ...	3 Unit 6: Investing ...	4 Unit 6: Investing ...	5 Unit 6: Investing ...	6 Unit 6: Investing ...	7
8	9 Unit 6: Investing ...	10 Unit 6: Investing ...	11 Unit 6: Investing ...	12 Unit 6: Investing ...	13 Unit 6: Investing ...	14
15	16 Unit 6: Investing ...	17 Unit 6: Investing ...	18 Unit 7: Types of ...	19 Unit 7: Types of ...	20 March Break	21
22	23 Unit 7: Types of ...	24 Unit 7: Types of ...	25 Unit 7: Types of ...	26 Unit 7: Types of ...	27 Unit 7: Types of ...	28
29	30 Unit 7: Types of ...	31 Unit 7: Types of ...	1 Unit 7: Types of ...	2 Unit 7: Types of ...	3 Unit 7: Types of ...	4

April

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
29	30 Unit 7: Types of ...	31 Unit 7: Types of ...	1 Unit 7: Types of ...	2 Unit 7: Types of ...	3 Unit 7: Types of ...	4
5	6 MEA Testing - Spring	7 MEA Testing - Spring	8 MEA Testing - Spring	9 MEA Testing - Spring	10 MEA Testing - Spring	11
12	13 Unit 7: Types of ...	14 Unit 7: Types of ...	15 Unit 8: Managing ...	16 Unit 8: Managing ...	17 Unit 8: Managing ...	18
19	20 April Break	21 April Break	22 April Break	23 April Break	24 April Break	25
26	27 Unit 8: Managing ...	28 Unit 8: Managing ...	29 Unit 8: Managing ...	30 Unit 8: Managing ...	1 Unit 8: Managing ...	2

May

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
26	27 Unit 8: Managing ...	28 Unit 8: Managing ...	29 Unit 8: Managing ...	30 Unit 8: Managing ...	1 Unit 8: Managing ...	2
3	4 Unit 8: Managing ...	5 Spring NWEA	6 Spring NWEA	7 Spring NWEA	8 Unit 8: Managing ...	9
10	11 Unit 9: Probability	12 Unit 9: Probability	13 Unit 9: Probability	14 Unit 9: Probability	15 Unit 9: Probability	16
17	18 Unit 9: Probability	19 Unit 9: Probability	20 Unit 9: Probability	21 Unit 9: Probability	22 Unit 9: Probability	23
24	25 Memorial Day	26 Unit 10: Insurance	27 Unit 10: Insurance	28 Unit 10: Insurance	29 Unit 10: Insurance	30
31	1 Unit 10: Insurance	2 Unit 10: Insurance	3 Unit 10: Insurance	4 Unit 10: Insurance	5 Unit 10: Insurance	6

June

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
31	1 Unit 10: Insurance	2 Unit 10: Insurance	3 Unit 10: Insurance	4 Unit 10: Insurance	5 Unit 10: Insurance	6
7	8 Unit 10: Insurance	9 Unit 10: Insurance	10 Unit 10: Insurance	11 Unit 10: Insurance	12 Unit 10: Insurance	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	1	2	3	4

HS Consumer Math

Maine Virtual Academy

UNITS (10/10 SELECTED)

	SUGGESTED DURATION
 Unit 1: Taxes	<i>28 teaching days</i>
 Unit 2: Checking	<i>19 teaching days</i>
 Unit 3: Savings	<i>18 teaching days</i>
 Unit 4: Budgeting	<i>15 teaching days</i>
 Unit 5: Intro to Investing	<i>18 teaching days</i>
 Unit 6: Investing Strategies	<i>17 teaching days</i>
 Unit 7: Types of Credit	<i>14 teaching days</i>
 Unit 8: Managing Credit	<i>10 teaching days</i>
 Unit 9: Probability	<i>10 teaching days</i>
 Unit 10: Insurance	<i>14 teaching days</i>

Unit 1: Taxes

HS Consumer Math

UNIT SUMMARY

In this unit, students will review converting between fractions, decimals, and percentages and apply these skills to calculations about money. Students will explore different ways people earn money, such as regular wages, commissions, and tips. Students will also learn about taxes, including sales tax and income tax, and how to calculate how much tax is owed.

STANDARDS

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

HSN.RN.B.3

Explain when and why the sum or product of two rational and/or irrational numbers is rational or irrational.

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.3

Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Example: The label on a $\frac{1}{2}$ -liter bottle of flavored water bottled in Maine indicates that one serving of 8 ounce contains 60 calories. The label also says that the full bottle contains 130 calories. Is this the actual amount or the estimated amount of calories in this bottle? How would you explain any discrepancy? ★

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

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.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.BF.A.1

Write a function that describes a relationship between two quantities.

Unit 1: Taxes

HS Consumer Math

HSA.SSE.A.1

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

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.

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

HSS.IC.B.6

Evaluate reports based on data. For example, use an article in the local news and interpret the validity of the information presented. Consider animal wildlife reports, medical studies, and/or manufacturer claims.

Maine Common Core - Grade 8 - Mathematics

CCSS.Math.Content.8.NS.A.1

Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.

Unit 1: Taxes

HS Consumer Math

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Lesson Practice 1.01a

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students can choose to do the IXL skill or a worksheet to further their understanding of fractions with word problems.

STANDARDS

Maine Common Core - Grade 8 - Mathematics

CCSS.Math.Content.8.NS.A.1

Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.

Lesson Practice 1.01b

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students can choose to do the IXL skill or a worksheet on converting between decimals and fractions.

STANDARDS

Maine Common Core - Grade 8 - Mathematics

CCSS.Math.Content.8.NS.A.1

Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.

Lesson Practice 1.01c

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students can choose to do an IXL skill or a worksheet on converting between decimals, fractions, and percentages.

STANDARDS

Unit 1: Taxes

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Maine Common Core - Grade 8 - Mathematics

CCSS.Math.Content.8.NS.A.1

Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.

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? ★

1.01 Assessment: Fractions, Decimals, and Percentages

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 /DOK 3/DOK4

Description: This assessment will cover the topics of converting between fractions, decimals and percent, finding the percentage of a number and the definition of integers and rational numbers. The students will be asked multiple choice and written response questions. For each student-response question, students must show or explain their work by demonstrating how they arrived at their answer with appropriate calculations or diagrams.

STANDARDS

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? ★

Maine Common Core - Grade 8 - Mathematics

CCSS.Math.Content.8.NS.A.1

Unit 1: Taxes

HS Consumer Math

Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.

Lesson Practice 1.02 Calculating Wages

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students will respond to word problems on calculating wages.

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.

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

Lesson Practice 1.02 FICA Calculations

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3/DOK 4

Description: Students will respond to word problems presenting different scenarios and asking students to calculate FICA deductions and net earnings.

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.

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

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Lesson Practice 1.03 Commission Assignment

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will respond to word problems presenting different commission scenarios and asking students to calculate gross earnings.

STANDARDS

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

HSA.REI.B.3

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

Lesson Practice 1.04 Piecework Assessment

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK 3 / DOK4

Description: Students will respond to word problems presenting different scenarios and asking students to calculate earnings based on piecework rates..

STANDARDS

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

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.

Lesson Practice 1.05 Tips Assignment

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK 3

Description: Students can choose to do the IXL skill or a worksheet on earnings based on tips.

STANDARDS

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

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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.

1.02-1.05 Assessment: Your Paycheck

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK 3 / DOK4

Description: This assessment will cover the topics of calculating gross pay, net pay, FICA deductions, commissions, piece work pay, and tips. The students will be asked multiple choice and written response questions. For each student-response question, students must show or explain their work by demonstrating how they arrived at their answer with appropriate calculations or diagrams.

STANDARDS

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

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

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.BF.A.1a

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

HSA.REI.B.3

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

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

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to the model.

Lesson Practice 1.06a Function Table from an equation

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students can choose to do the IXL skill or a worksheet on completing a function table from an equation.

STANDARDS

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

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

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.

Lesson Practice 1.06b

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students can choose to do an IXL skill or a worksheet on evaluating a function.

STANDARDS

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

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.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 $y = f(x)$.

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Lesson Practice 1.06c Function Practice problems

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will respond to word problems on writing function inequalities with real world scenarios.

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.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.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.
HSF.BF.A.1
Write a function that describes a relationship between two quantities.

Lesson Practice 1.07 Amplify Coordinate Plane Activity

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students will complete an Amplify activity asking students to identify points in the coordinate plane.

STANDARDS

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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.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.

Lesson Practice 1.07 Analyzing a Paycheck

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will respond to word problems on writing functions and plotting graphs for gross and net pay.

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.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.

1.06-1.07 Function Assessment

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK 3 /DOK4

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Description: This assessment will cover the topics of writing functions to calculate net pay, calculate the output of a function given an input, and reading graphs of linear functions.. The students will be asked multiple choice and written response questions. For each student-response question, students must show or explain their work by demonstrating how they arrived at their answer with appropriate calculations or diagrams.

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.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.BF.A.1
Write a function that describes a relationship between two quantities.
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.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 $y = f(x)$.
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.

1.08 Amplify Activity: Exploring State and Local Tax Rates

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

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Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will complete an Amplify activity asking students to interpret information presented in graphs.

STANDARDS

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

HSS.IC.B.6

Evaluate reports based on data. For example, use an article in the local news and interpret the validity of the information presented. Consider animal wildlife reports, medical studies, and/or manufacturer claims.

Lesson Practice 1.08 Calculating Sales Tax

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will respond to word problems on calculating sales tax.

STANDARDS

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

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.

Lesson Practice 1.09 Income Tax Brackets

Assessment Type: Formative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will respond to scenarios for single and married filers, calculating the income tax owed.

STANDARDS

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

HSA.SSE.A.1

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

Unit 1: Taxes

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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.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.A.1

Write a function that describes a relationship between two quantities.

Lesson Practice 1.10 Filing Taxes

Assessment Type: Formative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK 3 / DOK4

Description: Students will be given the W-2 for three individuals. With that information the students will calculate the income taxes, possible refunds, the marginal and effective tax rates.

STANDARDS

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

HSN.Q.A.3

Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Example: The label on a $\frac{1}{2}$ - liter bottle of flavored water bottled in Maine indicates that one serving of 8 ounce contains 60 calories. The label also says that the full bottle contains 130 calories. Is this the actual amount or the estimated amount of calories in this bottle? How would you explain any discrepancy? ★

1.08-1.10 Assessment

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK 3 / DOK4

Description: This assessment will cover the topics of terms related to taxes, calculating sales tax, income tax, marginal tax and effective tax rates. The students will be asked multiple choice and written response questions. For each student-response question, students must show or explain their work by demonstrating how they arrived at their answer with appropriate calculations or diagrams.

Unit 1: Taxes

HS Consumer Math

STANDARDS

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

HSA.SSE.A.1

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

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.BF.A.1

Write a function that describes a relationship between two quantities.

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.A.1a

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

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

HSN.Q.A.3

Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Example: The label on a $\frac{1}{2}$ -liter bottle of flavored water bottled in Maine indicates that one serving of 8 ounce contains 60 calories. The label also says that the full bottle contains 130 calories. Is this the actual amount or the estimated amount of calories in this bottle? How would you explain any discrepancy? ★

Unit 2: Checking

HS Consumer Math

UNIT SUMMARY

This unit combines mathematical concepts of linear functions with practical personal finance applications. Students will analyze and compare different graphs of financial data, including pie charts and bar graphs. They will explore linear functions by recognizing patterns, identifying initial values and rates of change, and writing equations in slope-intercept form. Additionally, students will learn about checking accounts, including how to read bank statements. Students will also use technology to create scatter plots, find linear regression equations, and make predictions based on data.

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.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.
HSF.LE.A.1b
Recognize situations in which one quantity changes at a constant 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.B.5
Interpret the parameters in a linear or exponential function 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

Unit 2: Checking

HS Consumer Math

positive integers would be an appropriate domain for the function.

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? ★

Unit 2: Checking

HS Consumer Math

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

Lesson Practice 2.1

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will follow prompts and reflect consumer activity in a checking register.

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.

2.1 Checking Account Statement Activity

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK 3

Description: Students Students will be shown a checking account statement and respond to multiple choice and reflection questions.

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.

Lesson Practice 2.2

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK 3 / DOK4

Description: Students will compare checking account costs and options.

STANDARDS

Unit 2: Checking

HS Consumer Math

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.

Lesson Practice 2.3

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students can choose to do an IXL skill or a worksheet on writing linear equations.

STANDARDS

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

HSF.LE.A.1b

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

2.3 Checking Fees Equations

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will create equations to represent different bank fees and calculate costs.

STANDARDS

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

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

2.4 Reconcile a Checking Account

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK 3

Description: Students will reconcile a checking account register to a checking account.

STANDARDS

Unit 2: Checking

HS Consumer Math

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

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

2.1-2.4 Assessment

Assessment Type: Summative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: This assessment will cover the topics of banking terms, creating equations on bank fees and account balances, choosing between bank accounts based on fees, and writing linear equations. The students will be asked multiple choice and written response questions. For each student-response question, students must show or explain their work by demonstrating how they arrived at their answer with appropriate calculations or diagrams.

STANDARDS

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

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

HSF.LE.A.1b

Recognize situations in which one quantity changes at a constant 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.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.

2.5 Graphing Linear Equations Worksheet

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Unit 2: Checking

HS Consumer Math

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will graph equations and identify slope and y-intercept.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
HSF.BF.A.1
Write a function that describes a relationship between two quantities.
HSF.LE.A.1b
Recognize situations in which one quantity changes at a constant 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).

Lesson Practice 2.5

Assessment Type: Summative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students can choose to do an IXL skill or a worksheet where given a function, students complete a table and graph the function.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
HSF.LE.A.1b
Recognize situations in which one quantity changes at a constant 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).

2.6 Mobile Banking Graph

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will respond to questions about a graph on how consumers use mobile

Unit 2: Checking

HS Consumer Math

banking.

STANDARDS

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

HSS.IC.A.1

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

2.6 Online Bank Simulator

Assessment Type: Formative

Assessment Tier: Authentic Performance AP

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Using an online bank simulator students will work through a series of situations using the online tools and then respond to questions.

STANDARDS

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

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

Lesson Practice 2.7

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students will respond to questions regarding Identifying trends in scatter plots.

STANDARDS

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

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).

2.7 Scatter Plots and Linear Regression

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

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HS Consumer Math

Description: Students will be given real world scenarios, asked to plot data, and draw a line of best fit. Students will then respond to questions about the graphs.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
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.B.5
Interpret the parameters in a linear or exponential function in terms of a context.

2.5 - 2.7 Assessment

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: This assessment will cover the topics of banking terms, scatter plot trends, writing equations to determine gross earnings, writing equations of proportional relationships, and evaluating functions. The students will be asked multiple choice and written response questions. For each student-response question, students must show or explain their work by demonstrating how they arrived at their answer with appropriate calculations or diagrams.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
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.LE.A.1b
Recognize situations in which one quantity changes at a constant 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.IF.B.5

Unit 2: Checking

HS Consumer Math

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.LE.B.5

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

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

HSS.IC.A.1

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

Unit 3: Savings

HS Consumer Math

UNIT SUMMARY

In this unit, students will analyze and interpret linear graphs, focusing on key features like slope, y-intercept, and intersections. They will create and graph equations representing real-world situations, such as savings account balances and interest calculations. Students will solve systems of linear equations using graphing, substitution, and elimination.

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.IF.C.7a
Graph linear and quadratic functions and show intercepts, maxima, and minima.
HSF.BF.A.1
Write a function that describes a relationship between two quantities.
HSF.LE.A.1
Distinguish between situations that can be modeled with linear functions and with exponential 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.
HSA.REI.B.3
Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.
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.
HSA.CED.A.2
Create equations in two or more variables to represent relationships between quantities; graph equations on

Unit 3: Savings

HS Consumer Math

coordinate axes with labels and scales.

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.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.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.

Maine - Grade 7 - Mathematics (2020)

7.RP.A.3

Use proportional relationships to solve multistep ratio, rate, and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.

Unit 3: Savings

HS Consumer Math

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

LP 3.1 Savings Word Problems

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will be given a graph of a linear equation or a verbal scenario about savings. The students will identify the initial amount, the rate of savings, and write an equation for each scenario.

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.IF.C.7a
Graph linear and quadratic functions and show intercepts, maxima, and minima.
HSF.BF.A.1
Write a function that describes a relationship between two quantities.

LP 3.1 Percent Change Problems

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students can choose to do an IXL skill or a worksheet to practice finding percent change.

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;

Unit 3: Savings

HS Consumer Math

relative and absolute maximums and minimums; symmetries; end behavior; and periodicity.

HSF.IF.C.7a

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

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

LP 3.2 Graphing Systems of Linear Equations

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will find the solution for a system of equations given the graph, the equations, or a real world context.

STANDARDS

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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.7a

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

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

LP 3.3 Standard Form Equations

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students can choose to do an IXL skill or a worksheet to find the x- and y-intercepts given a standard form equations.

STANDARDS

Unit 3: Savings

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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.

LP 3.4 Manipulating Equations

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK 3

Description: Students will solve equations with multiple variables for a single variable.

STANDARDS

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

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

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.

3.1-3.4 Assessment

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK 3 / DOK4

Description: This assessment will cover the topics of savings strategies, creating functions about savings, reading graphs of linear equations, and linear equations in standard form. The students will be asked multiple choice and written response questions. For each student-response question, students must show or explain their work by demonstrating how they arrived at their answer with appropriate calculations or diagrams.

STANDARDS

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

HSF.BF.A.1

Unit 3: Savings

HS Consumer Math

Write a function that describes a relationship between two quantities.

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.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.2

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

HSF.IF.C.7a

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

3.5 Spent: Simulation Game

Assessment Type: Formative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will participate in a simulation game where students have to make financial choices and decisions. Students will respond to reflection questions based on their experiences while playing the game..

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.

LP 3.6a Simple Interest

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Unit 3: Savings

HS Consumer Math

Description: Students can choose to do an IXL skill or a worksheet solving problems involving simple interest calculations.

STANDARDS

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

LP 3.6b Compound Interest

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students can choose to do an IXL skill or a worksheet solving problems involving compound interest calculations.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
HSF.LE.B.5
Interpret the parameters in a linear or exponential function in terms of a context.

LP 3.6c Simple vs. Compound Interest Problems

Assessment Type: Formative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will solve real world problems involving simple and compound interest.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
HSA.SSE.A.1a
Interpret parts of an expression, such as terms, factors, and coefficients.
HSF.LE.B.5
Interpret the parameters in a linear or exponential function in terms of a context.

Unit 3: Savings

HS Consumer Math

LP 3.7 Solving by Substitution

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will solve real world problems using systems of equations with substitution.

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.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.

LP 3.8 Solving by Elimination

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will solve real world problems using systems of equations with elimination.

STANDARDS

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

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.B.3

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

HSA.REI.C.5

Unit 3: Savings

HS Consumer Math

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.

LP 3.9 Specialized Savings Accounts Problems

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description:

Students will solve real world problems involving specialized savings accounts reading graphs and responding to questions.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
HSF.LE.A.1
Distinguish between situations that can be modeled with linear functions and with exponential functions.
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.

3.5-3.9 Assessment

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: This assessment will cover the topics of savings strategies, creating functions about budgeting and simple interest, and reading graphs regarding simple versus compound interest. The students will be asked multiple choice and written response questions. For each student-response question, students must show or explain their work by demonstrating how they arrived at their answer with appropriate calculations or diagrams.

STANDARDS

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

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HS Consumer Math

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.A.1

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

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.B.3

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

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.SSE.A.1a

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

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.LE.B.5

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

Unit 4: Budgeting

HS Consumer Math

UNIT SUMMARY

In this unit students will learn about budgeting by working with graphs, percentages, and linear modeling. Students will explore how linear equations and inequalities serve as powerful tools for financial tracking, enabling one to create graphical representations that illustrate financial position and project future savings needs. Students will use a spreadsheet to create a budget with fixed expenses (such as rent) and variable costs (such as utilities and groceries). Students will use these skills to create a budget based on a randomly selected careers, residential locations and living situations.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
HSF.BF.A.1
Write a function that describes a relationship between two quantities.
HSF.LE.B.5
Interpret the parameters in a linear or exponential function in terms of a context.
HSA.REI.D.12
Graph the solutions of a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set of a system of linear inequalities in two variables as the intersection of the corresponding half-planes.
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.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.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 4: Budgeting

HS Consumer Math

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.

Unit 4: Budgeting

HS Consumer Math

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

LP 4.1 Graphing a Budget Equation

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will be given a budgeting decision and asked to write it as an equation. Students will then graph the equation and respond to reflection questions.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
HSF.BF.A.1
Write a function that describes a relationship between two quantities.
HSF.LE.B.5
Interpret the parameters in a linear or exponential function in terms of a context.

LP 4.2 Graphing Inequalities Worksheet

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will be given different earning scenarios. They will be asked to write each as an inequality and then graph the inequality. Students will be asked to respond to reflection questions.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
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.D.12
Graph the solutions of a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set of a system of linear inequalities in two variables as the intersection of the corresponding half-planes.

Unit 4: Budgeting

HS Consumer Math

LP 4.3 Balance a Budget

Assessment Type: Summative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students will make budgeting decisions given different real life situations and costs.

STANDARDS

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

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

LP 4.4 Creating a Budget in Google Sheets

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2

Description: Students will create a budget using a spreadsheet.

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.

4.4 Uber Game

Assessment Type: Formative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will play the *Uber Game*, a simulation of working as an Uber driver, making business and budgeting decisions. Students will respond to consequences of the decisions and answer reflection questions.

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.

Unit 4: Budgeting

HS Consumer Math

LP 4.5 Graphing a System of Inequalities

Assessment Type: Formative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK 3/ DOK 4

Description: Students will use graphing to solve systems of inequalities. Students will also write inequalities given a real world scenario and find the solution.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
HSA.REI.D.12
Graph the solutions of a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set of a system of linear inequalities in two variables as the intersection of the corresponding half-planes.
HSF.LE.B.5
Interpret the parameters in a linear or exponential function in terms of a context.

LP 4.6 Unit Prices

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK 3

Description: Students will solve problems finding unit prices.

STANDARDS

Maine - Grade 7 - Mathematics (2020)
7.RP.A.1
Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. For example, if a person walks $\frac{1}{2}$ mile in each $\frac{1}{4}$ hour, compute the unit rate as the complex fraction $\frac{1/2}{1/4}$ miles per hour, equivalently 2 miles per hour.

Unit 4 Assessment

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK 3

Unit 4: Budgeting

HS Consumer Math

Description: This assessment will cover the topics of calculating budgeting percentages, write inequalities to represent constraints to determine solutions to model a minimum or maximum solution. The students will be asked multiple choice and written response questions. For each student-response question, students must show or explain their work by demonstrating how they arrived at their answer with appropriate calculations or diagrams.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
HSF.BF.A.1
Write a function that describes a relationship between two quantities.
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.LE.B.5
Interpret the parameters in a linear or exponential function in terms of a context.
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.

LP 4.7 Building a Budget

Assessment Type: Summative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Following directions students will be assigned an occupation, a city, housing type, student debt, and asked to create a budget including health insurance, groceries, transportation costs, etc. The budget will be presented in a spreadsheet.

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

Unit 4: Budgeting

HS Consumer Math

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.

Unit 5: Intro to Investing

HS Consumer Math

UNIT SUMMARY

This unit focuses on understanding and working with exponential functions. Students will learn to recognize exponential patterns and distinguish them from linear functions. Students will explore how to write, evaluate, and solve exponential functions, as well as apply them to real-world situations like investments and compound interest. Students will also calculate percent growth and decay, and compare different rates of return.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
HSF.LE.B.5
Interpret the parameters in a linear or exponential function in terms of a context.
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.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.IF.C.8
Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.
HSA.SSE.A.1
Interpret expressions that represent a quantity in terms of its 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.7

Unit 5: Intro to Investing

HS Consumer Math

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.1c

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

Unit 5: Intro to Investing

HS Consumer Math

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

LP 5.1 Inequalities in Investing

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students will respond to questions about a graph regarding inequalities in investing in the U.S.

STANDARDS

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

HSF.LE.B.5

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

LP 5.2 Exponential Growth

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK 3 /DOK4

Description: Students will respond to questions regarding investment scenarios and graphs of investment returns..

STANDARDS

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

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.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.

5.2 Amplify: Splitting Circles

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Unit 5: Intro to Investing

HS Consumer Math

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students will complete an Amplify activity asking students to model exponential growth.

STANDARDS

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

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.

LP 5.3 Writing Exponential Equations

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK 3 / DOK 4

Description: Students will be given different investment scenarios. They will be asked to write an exponential function for the situation and respond to questions.

STANDARDS

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

HSF.LE.A.1c

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

5.1 - 5.3 Assessment

Assessment Type: Summative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: This assessment will cover the topics of the impact of compounding interest and inflation on rate of return, as well as comparing graphs of linear functions to exponential functions. The students will be asked multiple choice and written response questions. For each student-response question, students must show or explain their work by demonstrating how they arrived at their answer with appropriate calculations or diagrams.

STANDARDS

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

Unit 5: Intro to Investing

HS Consumer Math

HSF.LE.A.1

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

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.A.1c

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

LP 5.4 Percent Change

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students can choose to do an IXL skill or a worksheet on finding the percent change in a given situation.

STANDARDS

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

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.LE.A.1

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

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.

LP 5.5a Growth and Decay Functions

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students can choose to do an IXL skill or a worksheet on exponential growth and

Unit 5: Intro to Investing

HS Consumer Math

decay word problems.

STANDARDS

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

HSF.LE.A.1c

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

LP 5.5b Exponential Growth in Investments

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will be given different rate of return scenarios. They will be asked to write an exponential function for the situations. Students will be asked to respond to reflection questions.

STANDARDS

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

HSF.LE.A.1c

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

LP 5.6 Roll with the Market

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students will play a game simulating the experience of participating in bull and bear markets. Students will be asked to respond to reflection questions on the experience.

STANDARDS

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

HSF.LE.B.5

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

LP 5.6 Dig Deeper into Asset Classes

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Unit 5: Intro to Investing

HS Consumer Math

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students will be given tables listing asset classes and annualized rates of return. They will be asked to find returns after different time periods. Students will be asked to respond to reflection questions.

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.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.

5.4-5.6 Assessment

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: This assessment will cover the topics of writing exponential functions and calculating the return on investment.. The students will be asked multiple choice and written response questions. For each student-response question, students must show or explain their work by demonstrating how they arrived at their answer with appropriate calculations or diagrams.

STANDARDS

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

Unit 5: Intro to Investing

HS Consumer Math

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.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.1

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

HSF.LE.B.5

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

Unit 6: Investing Strategies

HS Consumer Math

UNIT SUMMARY

This unit focuses on writing and analyzing exponential functions, especially in the context of investments and financial growth. Students will learn to graph exponential functions, understand how changing different parts of the equation affects the graph, and use technology to find the best exponential model for a set of data. The unit covers important investing concepts like dollar-cost averaging, portfolio diversification, and calculating rates of return. Students will also explore logarithms as the inverse of exponential functions and interpret exponential expressions in real-world contexts.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
HSF.LE.A.1b
Recognize situations in which one quantity changes at a constant 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.B.5
Interpret the parameters in a linear or exponential function in terms of a 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.
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.
HSA.SSE.A.1
Interpret expressions that represent a quantity in terms of its 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.
HSF.IF.C.8

Unit 6: Investing Strategies

HS Consumer Math

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

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.

HSF.BF.B.5

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

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.LE.A.1c

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

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

HSS.ID.B.6a

Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models.

HSS.ID.B.6b

Informally assess the fit of a function by plotting and analyzing residuals.

Unit 6: Investing Strategies

HS Consumer Math

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

LP 6.1 Amplify: Impact of Investing Fees on Exponential Growth

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will complete an Amplify activity asking students to write and graph exponential equations for return on investment including impact of fees.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
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.LE.A.1b
Recognize situations in which one quantity changes at a constant 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).

LP 6.2 Rate of Change Tables

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students can choose to do an IXL skill or a worksheet on the rate of change from data in tables.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
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.B.5

Unit 6: Investing Strategies

HS Consumer Math

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

LP 6.3a Negative Exponents

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students can choose to do an IXL skill or a worksheet on negative exponents.

STANDARDS

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

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.

LP 6.3b Graph Exponential Functions

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK 3

Description: Students can choose to do an IXL skill, a worksheet, or an Amplify activity to read and/or create exponential equations and then graph them.

STANDARDS

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

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.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.1

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

HSF.LE.A.2

Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a

Unit 6: Investing Strategies

HS Consumer Math

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.

LP 6.4 Exponential Regression Worksheet

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students will complete a worksheet on models of exponential regression.

STANDARDS

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

HSS.ID.B.6a

Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models.

HSS.ID.B.6b

Informally assess the fit of a function by plotting and analyzing residuals.

LP 6.5 Dollar Cost Averaging in Action

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will evaluate the impact of dollar cost averaging in monthly purchases of a mutual fund over a year with historical data using a spreadsheet. Students will be asked to respond to reflection questions.

STANDARDS

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

HSF.IF.B.6

Unit 6: Investing Strategies

HS Consumer Math

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.

6.5 Invest with Stax

Assessment Type: Formative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will play a game simulating the experience of investing in seven asset types over a 20 year time period. Students respond to reflection questions about the experience.

STANDARDS

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

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: $V_n = P(1 + r)^n$.

LP 6.6 Intro to Logarithms

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students can choose to do an IXL skill or a worksheet on converting between exponents and logarithms.

STANDARDS

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

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.

LP 6.7 Investing for Retirement

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Unit 6: Investing Strategies

HS Consumer Math

Description: Students will be given three graphs displaying information regarding investment by age groups. Students will be asked to read and interpret the graphs responding to reflection questions.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
HSA.SSE.A.1
Interpret expressions that represent a quantity in terms of its context.
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).

6.1 -6.7 Assessment

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: This assessment will cover the topics of investment terms, the impact of fees on investment returns, given an exponential function to describe the impact of the base, the exponent and the coefficient in context, evaluate a function with negative exponents, and calculations related to dollar cost averaging.. The students will be asked multiple choice and written response questions. For each student-response question, students must show or explain their work by demonstrating how they arrived at their answer with appropriate calculations or diagrams.

STANDARDS

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

Unit 6: Investing Strategies

HS Consumer Math

description of a relationship, or two input-output pairs (include reading these from a table).

HSF.LE.B.5

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

HSA.SSE.A.1

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

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: $V_n = P(1 + r)^n$.

LP 6.8 Create a Portfolio

Assessment Type: Summative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will create a portfolio of twelve investments in seven different asset classes. Students are asked to present the portfolio in a spreadsheet with calculations of rate of return and with data presented in a graph.

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.

Unit 7: Types of Credit

HS Consumer Math

UNIT SUMMARY

In this unit, students will learn about credit basics, including a review of simple and compound interest, and understand the main parts of a credit agreement like principal, interest rate, and term. Students will calculate future values of investments and loans, and explore how money can grow over time. Students will read graphs and tables that show financial information, like multi-line graphs and amortization tables.

Students will solve real-world money problems, like calculating mortgage costs and planning how to pay off debt.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
HSA.SSE.A.1
Interpret expressions that represent a quantity in terms of its context.
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.BF.A.1
Write a function that describes a relationship between two quantities.
HSF.IF.A.3
Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. For example, the Fibonacci sequence is defined recursively by $f(0) = f(1) = 1$, $f(n+1) = f(n) + f(n-1)$ for $n \geq 1$.
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.BF.A.1a
Determine an explicit expression, a recursive process, or steps for calculation from a context.
HSF.BF.A.1b

Unit 7: Types of Credit

HS Consumer Math

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.B.5

Interpret the parameters in a linear or exponential function 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.

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

HSS.IC.B.6

Evaluate reports based on data. For example, use an article in the local news and interpret the validity of the information presented. Consider animal wildlife reports, medical studies, and/or manufacturer claims.

Unit 7: Types of Credit

HS Consumer Math

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

LP 7.1 Household Debt and Credit Report

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students will be given three graphs displaying information on national household debt. Students will be asked to read and interpret the graphs then respond to reflection questions.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
HSA.SSE.A.1
Interpret expressions that represent a quantity in terms of its context.
Maine - High School - Mathematics - Statistical Reasoning (2020)
HSS.IC.B.6
Evaluate reports based on data. For example, use an article in the local news and interpret the validity of the information presented. Consider animal wildlife reports, medical studies, and/or manufacturer claims.

LP 7.2 Compound Interest Problems

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students can choose to do an IXL skill or a worksheet on compound interest problems.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
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.BF.A.1

Unit 7: Types of Credit

HS Consumer Math

Write a function that describes a relationship between two quantities.

LP 7.3 Auto Loans and Mortgages

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students are presented with two different loan options for an auto buyer and asked to analyze the costs and benefits of each option. Students will respond to reflection questions.

STANDARDS

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

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.

LP 7.3 Unit Rates

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK 3

Description: Students can choose to do an IXL skill or a worksheet on unit rates.

STANDARDS

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

HSF.LE.B.5

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

HSF.LE.A.1c

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

LP 7.4 Amplify: Future Value of Periodic Investment

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Unit 7: Types of Credit

HS Consumer Math

Description: Students will complete an Amplify activity asking students to compare loan pay off options.

STANDARDS

Maine - High School - Mathematics - Algebraic Reasoning (2020)
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.B.5
Interpret the parameters in a linear or exponential function in terms of a context.

7.1-7.4 Assessment

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description:

This assessment will cover the topics of credit terminology, calculate unit rates, calculate simple and compound interest, and the cost of borrowing. The students will be asked multiple choice and written response questions. For each student-response question, students must show or explain their work by demonstrating how they arrived at their answer with appropriate calculations or diagrams.

STANDARDS

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

Unit 7: Types of Credit

HS Consumer Math

HSF.LE.B.5

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

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

LP 7.5 Mortgage Cost Problems

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students will be given four scenarios with related questions about down payments, closing costs, monthly payments, and total costs over the life of a mortgage.

STANDARDS

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

HSF.BF.A.1

Write a function that describes a relationship between two quantities.

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).

LP 7.6 Loan Amortization Problems

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK 4

Description: Students will be given three loan scenarios. Students will use amortization tables to analyze the loans and repayment options. Students will be asked to respond to reflection questions.

STANDARDS

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

HSF.BF.A.1a

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

Unit 7: Types of Credit

HS Consumer Math

HSF.IF.A.3

Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. For example, the Fibonacci sequence is defined recursively by $f(0) = f(1) = 1$, $f(n+1) = f(n) + f(n-1)$ for $n \geq 1$.

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.

LP 7.7 Cost of Credit

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will compare credit card repayment schedules and respond to reflection questions.

STANDARDS

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

HSA.SSE.A.1

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

HSF.BF.A.1a

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

7.5-7.7 Assessment

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: This assessment will cover the topics of consumer loan terms, mortgage and credit card interest costs.. The students will be asked multiple choice and written response questions.

For each student-response question, students must show or explain their work by demonstrating how they arrived at their answer with appropriate calculations or diagrams.

STANDARDS

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

Unit 7: Types of Credit

HS Consumer Math

HSF.IF.A.3

Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. For example, the Fibonacci sequence is defined recursively by $f(0) = f(1) = 1$, $f(n+1) = f(n) + f(n-1)$ for $n \geq 1$.

HSF.BF.A.1a

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

HSA.SSE.A.1

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

Unit 8: Managing Credit

HS Consumer Math

UNIT SUMMARY

Students will learn to calculate and understand measures of central tendency, create box plots, and analyze data using various statistical tools. They will explore dot plots and histograms, using math vocabulary to describe data distributions and identify important features like outliers. Students will explore practical applications of statistics, including calculating interest on debt and understanding credit utilization. Throughout these lessons, students will develop skills in data representation, analysis, and interpretation, preparing them to evaluate real-world reports and make informed decisions based on statistical information.

STANDARDS

Maine - High School - Mathematics - Statistical Reasoning (2020)
HSS.IC.A.1
Understand statistics as a process for making inferences about population parameters based on a random sample from that population.
HSS.IC.B.6
Evaluate reports based on data. For example, use an article in the local news and interpret the validity of the information presented. Consider animal wildlife reports, medical studies, and/or manufacturer claims.
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 (interquartile range, standard deviation) of two or more different data sets.
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).
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.
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

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or refute a solution method.

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ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

LP 8.1 Box Plots

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students can choose to do an IXL skill or a worksheet on creating and analyzing box plots.

STANDARDS

Maine - High School - Mathematics - Statistical Reasoning (2020)
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 (interquartile range, standard deviation) of two or more different data sets.
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).

LP 8.2 Line Plots

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students can choose to do an IXL skill or a worksheet on creating and analyzing line plots.

STANDARDS

Maine - High School - Mathematics - Statistical Reasoning (2020)
HSS.ID.A.1
Represent data with plots on the real number line (dot plots, histograms, and box plots).

LP 8.3 Histograms

Assessment Type: Formative

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Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students can choose to do an IXL skill or a worksheet on creating and analyzing histograms.

STANDARDS

Maine - High School - Mathematics - Statistical Reasoning (2020)
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 (interquartile range, standard deviation) of two or more different data sets.
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).

8.1-8.3 Assessment

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: This assessment will cover the topics of box plots, line graphs and histograms. The students will be asked multiple choice and written response questions. For each student-response question, students must show or explain their work by demonstrating how they arrived at their answer with appropriate calculations or diagrams.

STANDARDS

Maine - High School - Mathematics - Statistical Reasoning (2020)
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 (interquartile range, standard deviation) of two or more different data sets.

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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).

LP 8.4 Avalanche v. Debt Snowball

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will compare debt repayment through the avalanche method and snowball method and respond to reflection questions.

STANDARDS

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

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 (interquartile range, standard deviation) of two or more different data sets.

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).

LP 8.5 Credit Utilization and Weighted Averages

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students will calculate credit utilization and find weighted averages to summarize data regarding credit scores. Students will be asked to respond to reflection questions.

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.

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LP 8.6 Impact of Credit Scores on Loans

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will compare three individuals with different credit scores regarding the cost of borrowing for an auto loan and a home mortgage. Students will be asked to respond to reflection questions.

STANDARDS

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

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.

8.4-8.6 Assessment

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: This assessment will cover the topics of debt reduction strategies, credit card minimum payment calculations, credit scores, and reading information from graphs.. The students will be asked multiple choice and written response questions. For each student-response question, students must show or explain their work by demonstrating how they arrived at their answer with appropriate calculations or diagrams.

STANDARDS

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

HSS.IC.A.1

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

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).

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

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.

Unit 9: Probability

HS Consumer Math

UNIT SUMMARY

This lesson focuses on understanding probability concepts that are essential for analyzing real-world situations. Students will learn about conditional probability, calculating the likelihood of an event occurring given that another event has already happened. They will also explore the concept of independence between events and how to recognize these relationships in everyday scenarios. Finally, students will use permutations and combinations to calculate probabilities for more complex events.

STANDARDS

Maine - High School - Mathematics - Statistical Reasoning (2020)
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.
HSS.CP.B.6
Find the conditional probability of A given B as the fraction of B's outcomes that also belong to A, and interpret the answer in terms of the model.

Unit 9: Probability

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HSS.CP.B.9
Use permutations and combinations to compute probabilities of compound events and solve problems.
HSS.CP.B.7
Apply the Addition Rule, $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$, and interpret the answer in terms of the model.
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.B.5
Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values.
HSS.IC.A.1
Understand statistics as a process for making inferences about population parameters based on a random sample from that population.
HSS.IC.B.3
Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.
HSS.IC.B.4
Use data from a sample survey to estimate a population mean or proportion; develop a margin of error through the use of simulation models for random sampling.
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.
HSS.ID.C.9
Distinguish between correlation and causation.
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7.SP.C.8b

Unit 9: Probability

HS Consumer Math

Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., rolling double sixes), identify the outcomes in the sample space which compose the event.

Unit 9: Probability

HS Consumer Math

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

LP 9.1 Counting Principle

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students can choose to do an IXL skill or a worksheet on the Counting Principle.

STANDARDS

Maine - Grade 7 - Mathematics (2020)

7.SP.C.8b

Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., rolling double sixes), identify the outcomes in the sample space which compose the event.

LP 9.2 Permutations

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students can choose to do an IXL skill or a worksheet on calculating permutations.

STANDARDS

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

HSS.CP.B.9

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

LP 9.3 Permutations and Combinations

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students can choose to do an IXL skill or a worksheet on calculating permutations and combinations.

STANDARDS

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

HSS.CP.B.9

Unit 9: Probability

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

LP 9.4 Correlation and Causation

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students can choose to do an IXL skill or a worksheet on correlation and causation.

STANDARDS

Maine - High School - Mathematics - Statistical Reasoning (2020)
HSS.IC.A.1
Understand statistics as a process for making inferences about population parameters based on a random sample from that population.
HSS.ID.C.9
Distinguish between correlation and causation.

9.1-9.4 Assessment

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: This assessment will cover the topics of the Counting Principle, permutations and combinations, as well as causation versus causation. The students will be asked multiple choice and written response questions. For each student-response question, students must show or explain their work by demonstrating how they arrived at their answer with appropriate calculations or diagrams.

STANDARDS

Maine - High School - Mathematics - Statistical Reasoning (2020)
HSS.ID.C.9
Distinguish between correlation and causation.
HSS.CP.B.9
Use permutations and combinations to compute probabilities of compound events and solve problems.

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7.SP.C.8

Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.

LP 9.5 Two-Way Tables

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students will populate and interpret information in two-way tables given real world statistics. Students will be asked to respond to reflection questions.

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.

HSS.ID.C.9

Distinguish between correlation and causation.

LP 9.6 Theoretical Probability

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students can choose to do an IXL skill or a worksheet on theoretical probability.

STANDARDS

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

HSS.CP.B.7

Apply the Addition Rule, $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$, and interpret the answer in terms of the model.

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

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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.B.5

Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values.

LP 9.6 Expected Value Assignment

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will calculate expected value problems related to phone insurance and playing the lottery. Students will be asked to respond to reflection questions.

STANDARDS

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

HSS.MD.A.2

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

HSS.MD.B.5

Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values.

LP 9.7 Probability of Independent and Dependent Events

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK 3

Description: Students can choose to do an IXL skill or a worksheet on calculating the probability of independent or dependent events.

STANDARDS

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

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

Unit 9: Probability

HS Consumer Math

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.

LP 9.8 Conditional Probability

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students can choose to do an IXL skill or a worksheet on calculating conditional probability.

STANDARDS

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

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.

HSS.CP.B.6

Find the conditional probability of A given B as the fraction of B's outcomes that also belong to A, and interpret the answer in terms of the model.

HSS.ID.C.9

Distinguish between correlation and causation.

Unit 9: Probability

HS Consumer Math

9.5-9.8 Assessment

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: This assessment will cover the topics of two-way tables, theoretical vs. experimental probability, independent and dependent events, as well as calculating expected value and conditional probability. The students will be asked multiple choice and written response questions.

For each student-response question, students must show or explain their work by demonstrating how they arrived at their answer with appropriate calculations or diagrams.

STANDARDS

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

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of being a smoker if you have lung cancer.

HSS.CP.B.7

Apply the Addition Rule, $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$, and interpret the answer in terms of the model.

HSS.MD.B.5

Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values.

HSS.MD.A.2

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

Unit 10: Insurance

HS Consumer Math

UNIT SUMMARY

In this unit, students will learn how to use math to understand how insurance companies set their prices and make decisions. Students will explore how insurance companies manage risk. Students will calculate expected values and use it to compare different insurance policies. Finally, students will look at how insurance companies use probabilities and expected values to decide how much to charge for different types of insurance, like auto, health, life, and renter's insurance.

STANDARDS

Maine - High School - Mathematics - Statistical Reasoning (2020)
HSS.CP.B.9
Use permutations and combinations to compute probabilities of compound events and solve problems.
HSS.MD.B.5
Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values.
HSS.MD.B.5b
Evaluate and compare strategies on the basis of expected values. For example, compare a high-deductible versus a low-deductible automobile insurance policy using various, but reasonable, chances of having a minor or a major accident.
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.MD.B.7
Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game and replacing the goalie with an extra skater).
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.IC.B.3
Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.
Maine - Grade 7 - Mathematics (2020)

Unit 10: Insurance

HS Consumer Math

7.SP.C.8

Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.

Unit 10: Insurance

HS Consumer Math

ASSESSMENT EVIDENCE (DIAGNOSTIC / FORMATIVE / SUMMATIVE)

LP 10.1 Compound Events

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: : Students can choose to do an IXL skill or a worksheet on compound events.

STANDARDS

Maine - Grade 7 - Mathematics (2020)
7.SP.C.8
Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.
Maine - High School - Mathematics - Statistical Reasoning (2020)
HSS.MD.B.7
Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game and replacing the goalie with an extra skater).

LP 10.2 Expected Value

Assessment Type: Formative

Assessment Tier: Drill & Practice (D&P)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: Students can choose to do an IXL skill or a worksheet on finding expected value.

STANDARDS

Maine - High School - Mathematics - Statistical Reasoning (2020)
HSS.MD.B.5
Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values.
HSS.MD.A.2
Calculate the expected value of a random variable; interpret it as the mean of the probability distribution.

LP 10.2 Expected Value - Auto Insurance

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Unit 10: Insurance

HS Consumer Math

Description: Using statistics on annual crashes and their severity, students will use expected value calculations to understand how insurance premiums are calculated. Students will be asked to respond to reflection questions.

STANDARDS

Maine - High School - Mathematics - Statistical Reasoning (2020)
HSS.MD.B.5b
Evaluate and compare strategies on the basis of expected values. For example, compare a high-deductible versus a low-deductible automobile insurance policy using various, but reasonable, chances of having a minor or a major accident.
HSS.MD.B.5a
Find the expected payoff for a game of chance. For example, find the expected winnings from a state lottery ticket or a game at a fast-food restaurant.

LP 10.3 Assessing the Value of a Higher Premium

Assessment Type: Formative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will be given four scenarios about health insurance premiums, the coverage provided, and the cost of medical procedures. Students will be asked to respond to questions analyzing the information to determine costs and recommend choices..

STANDARDS

Maine - High School - Mathematics - Statistical Reasoning (2020)
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.B.9
Use permutations and combinations to compute probabilities of compound events and solve problems.

Unit 10: Insurance

HS Consumer Math

HSS.MD.B.5

Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values.

10.1-10.3 Assessment

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: This assessment will cover the topics of auto and health insurance terms, expected value calculations, health insurance costs, and relative probability.. For each student-response question, students must show or explain their work by demonstrating how they arrived at their answer with appropriate calculations or diagrams.

STANDARDS

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

HSS.MD.B.5

Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values.

HSS.MD.B.5b

Evaluate and compare strategies on the basis of expected values. For example, compare a high-deductible versus a low-deductible automobile insurance policy using various, but reasonable, chances of having a minor or a major accident.

HSS.MD.B.7

Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game and replacing the goalie with an extra skater).

HSS.MD.A.2

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

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.

LP 10.4 Life Insurance Worksheet

Assessment Type: Formative

Unit 10: Insurance

HS Consumer Math

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will respond to calculate life insurance premiums and costs.

STANDARDS

Maine - High School - Mathematics - Statistical Reasoning (2020)
HSS.MD.B.7
Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game and replacing the goalie with an extra skater).
HSS.MD.A.2
Calculate the expected value of a random variable; interpret it as the mean of the probability distribution.

LP 10.5 How do Renters and Homeowners Insurance Compare?

Assessment Type: Formative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will use a table of insurance costs for homeowners and renters to respond to questions.

STANDARDS

Maine - High School - Mathematics - Statistical Reasoning (2020)
HSS.IC.B.3
Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.

The Bummer Game

Assessment Type: Formative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK4

Description: Students will play the Bummer game simulating insurance decisions an individual will make and then write responses to questions reflecting on the experience.

STANDARDS

Maine - High School - Mathematics - Statistical Reasoning (2020)
HSS.IC.B.3
Recognize the purposes of and differences among sample surveys, experiments, and observational studies;

Unit 10: Insurance

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explain how randomization relates to each.

HSS.MD.B.5

Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values.

10.4-10.5 Assessment

Assessment Type: Summative

Assessment Tier: Rehearsal & Scrimmage (R&S)

Assessment Level (DOK): DOK1 / DOK2 / DOK3

Description: This assessment will cover the topics of insurance terms, calculation of insurance premiums and payouts based on expected value data. For each student-response question, students must show or explain their work by demonstrating how they arrived at their answer with appropriate calculations or diagrams.

STANDARDS

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

HSS.MD.A.2

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

HSS.MD.B.7

Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game and replacing the goalie with an extra skater).

HSS.MD.B.5b

Evaluate and compare strategies on the basis of expected values. For example, compare a high-deductible versus a low-deductible automobile insurance policy using various, but reasonable, chances of having a minor or a major accident.

Buy a Car - Enrichment Activity

Assessment Type: Formative

Assessment Tier: Authentic Performance (AP)

Assessment Level (DOK): DOK1 / DOK2 / DOK3 / DOK 4

Description: The students will work through four slide decks exploring decisions involved with researching, choosing and financing an auto purchase.