# Whitehall-Coplay School District Syllabus

## Course Title: CP Algebra 1

**DESCRIPTION OF COURSE:** Students will strengthen their existing math skills while broadening their understanding of algebraic concepts. Concepts covered include solving and graphing linear/quadratic equations, solving and graphing inequalities, systems of equations, rules of exponents, factoring polynomials, operations involving radical and rational expressions, and quadratic equations. Individually or in groups, students will discuss and solve problems with appropriate technology. Students will demonstrate their knowledge and understanding through cooperative learning activities, projects, class discussions, homework, Study Island, and assessments involving problem-solving skills. The Algebra 1 Keystone Exam will be administered at the end of the course. Upon completion of the Algebra 1 Keystone Exam, students will continue to master Algebra 1 concepts and begin preparation for Algebra 2.

| REQUIRED TOPICS OF STUDY | SUGGESTED INSTRUCTIONAL TIME | STANDARDS/ELIGIBLE CONTENT |
|---|---|---|
| Topic 1: Solving Equations and Inequalities | 20 days | CC.2.2.8.B.3, CC.2.1.8.E.1, CC.2.1.8.E.4, CC.2.2.HS.D.7, CC.2.2.HS.D.8, CC.2.2.HS.D.9, C.C.2.2.HS.D.10, CC.2.1.HS.F.2 |
| Topic 2: Linear Equations | 12 days | CC.2.2.8.C.2, CC.2.4.HS.B.1, CC.2.4.HS.B.2, CC.2.4.HS.B.3, CC.2.4.HS.B.5, CC.2.2.HS.C.1, CC.2.2.HS.C.2, CC.2.2.HS.C.3, CC.2.2.HS.C.5., CC.2.2.HS.C.6 |
| Topic 3: Linear Functions | 10 days | CC.2.2.8.C.1, CC.2.2.8.C.2, CC.2.2.HS.C.1, CC.2.2.HS.C.2 CC.2.2.HS.C.3, CC.2.2.HS.C.4, CC.2.4.HS.B.2, CC.2.4.HS.B.3, CC.2.4.HS.B.5 |
| Topic 4: Systems of Linear Equations and Inequalities | 14 days | CC.2.1.HS.F.5, CC.2.2.8.B.3, CC.2.2.HS.D.7, CC.2.2.HS.D.9, CC.2.2.HS.D.10 |
| Topic 6: Exponents and Exponential Functions | 2 days | CC.2.2.8.B.1, CC.2.1.HS.F.1 |
| Topic 7: Polynomials and Factoring | 15 days | CC.2.2.HS.D.1 , CC.2.2.HS.D.2, CC.2.2.HS.D.3, CC.2.1.6.E.3, CC.2.1.HS.F.2 |
| Topic 11: Statistics | 10 days | CC.2.4.HS.B.1, CC.2.4.HS.B.3, CC.2.4.7.B.3, CC.2.4.HS.B.4, CC.2.4.HS.B.7, CC.2.4.HS.B.5 |

June 2024

## RESOURCES:

EnVisions Algebra I, Savvas Learning Company 2018
SAVVAS Realize
IXL
MathXL
Student companion worksheets and activities
Adaptive Practice Powered by Knewton

# Whitehall-Coplay School District Syllabus

## Course Title: CP Algebra 1
## Grade: 9

**DESCRIPTION OF COURSE:** Students will strengthen their existing math skills while broadening their understanding of algebraic concepts. Concepts covered include solving and graphing linear/quadratic equations, solving and graphing inequalities, systems of equations, rules of exponents, factoring polynomials, operations involving radical and rational expressions, and quadratic equations. Individually or in groups, students will discuss and solve problems with appropriate technology. Students will demonstrate their knowledge and understanding through cooperative learning activities, projects, class discussions, homework, Study Island, and assessments involving problem-solving skills. The Algebra 1 Keystone Exam will be administered at the end of the course. Upon completion of the Algebra 1 Keystone Exam, students will continue to master Algebra 1 concepts and begin preparation for Algebra 2.

| REQUIRED TOPICS OF STUDY | SUGGESTED INSTRUCTIONAL TIME | STANDARDS/ELIGIBLE CONTENT |
|---|---|---|
| Topic 1: Solving Equations and Inequalities | 20 days | CC.2.2.8.B.3, CC.2.1.8.E.1, CC.2.1.8.E.4, CC.2.2.HS.D.7, CC.2.2.HS.D.8, CC.2.2.HS.D.9, C.C.2.2.HS.D.10, CC.2.1.HS.F.2 |
| Topic 2: Linear Equations | 12 days | CC.2.2.8.C.2, CC.2.4.HS.B.1, CC.2.4.HS.B.2, CC.2.4.HS.B.3, CC.2.4.HS.B.5, CC.2.2.HS.C.1, CC.2.2.HS.C.2, CC.2.2.HS.C.3, CC.2.2.HS.C.5., CC.2.2.HS.C.6 |
| Topic 3: Linear Functions | 10 days | CC.2.2.8.C.1, CC.2.2.8.C.2, CC.2.2.HS.C.1, CC.2.2.HS.C.2 CC.2.2.HS.C.3, CC.2.2.HS.C.4, CC.2.4.HS.B.2, CC.2.4.HS.B.3, CC.2.4.HS.B.5 |
| Topic 4: Systems of Linear Equations and Inequalities | 14 days | CC.2.1.HS.F.5, CC.2.2.8.B.3, CC.2.2.HS.D.7, CC.2.2.HS.D.9, CC.2.2.HS.D.10 |
| Topic 6: Exponents and Exponential Functions | 2 days | CC.2.2.8.B.1, CC.2.1.HS.F.1 |
| Topic 7: Polynomials and Factoring | 15 days | CC.2.2.HS.D.1 , CC.2.2.HS.D.2, CC.2.2.HS.D.3, CC.2.1.6.E.3, CC.2.1.HS.F.2 |

| | | |
|---|---|---|
| Topic 11: Statistics | 10 days | CC.2.4.HS.B.1, CC.2.4.HS.B.3, CC.2.4.7.B.3, CC.2.4.HS.B.4, CC.2.4.HS.B.7, CC.2.4.HS.B.5 |

## RESOURCES:

EnVisions Algebra I, Savvas Learning Company 2018
SAVVAS Realize
IXL
MathXL
Student companion worksheets and activities
Adaptive Practice Powered by Knewton

# College Prep Algebra 1 Scope and Sequence

| Topic 1: Solving Equations and Inequalities (20 Days) | | |
|---|---|---|
| **Topic** | **Days** | **Resources** |
| 1-1 Operations on Real Numbers | 2 | Sets and Subsets (TKK)<br>Compare and order rational numbers (ALW)<br>Add and subtract rational numbers (J8R)<br>Multiply and Divide Rational Numbers (H6L)<br>Sort rational and irrational numbers (ALH) |
| 1-2 Solving Linear Equations | 4 | Solve Advanced Linear Equations (28N)<br>Solve one-step and two-step linear equations: word problems (UFG)<br>Solve two-step linear equations (QAK) |
| 1-3 Solving Equations With A Variable on Both Sides (3 Days) | 3 | Solve linear equations with variables on both sides (7S7)<br>Find the number of solutions to a given equation (KBP)<br>Solve linear equations :complete the solution (EVP) |
| 1-4 Literal Equations and Formulas | 1 | Rearrange multi-variable equations (WSJ) |
| 1-5 Solving Inequalities in One Variable<br>Mathematical Modeling in Three Acts | 2 | Solve advanced linear inequalities (9K8)<br>Graph solutions to advanced linear inequalities (5GC)<br>Solve two-step linear inequalities (NPZ)<br>Graph solutions to two-step linear inequalities (XVM) |
| 1-6 Compound Inequalities | 3 | Write compound inequalities from graphs (6UV)<br>Solve compound inequalities (GXA)<br>Graph solutions to compound inequalities (LHX)<br>Graph compound inequalities (BQX) |
| 1-7 Absolute Value Equations and Inequalities | 2 | Solve absolute value equations (9LF)<br>Solve absolute value inequalities (HXH)<br>Graph solutions to absolute value equations (KXA)<br>Graph solutions to absolute value inequalities (NE9) |
| Test | 1 | Checkpoint: Solve linear equations and inequalities (VYL) |

| Topic 2: Linear Equations (11 days) | | |
|---|---|---|
| **Topic** | **Days** | **Resources** |
| 2-1 Slope Intercept Form | 4 | Slope-intercept form: write an equation from a word problem (HWM)<br>Slope-intercept form: graphs and equations (G7B)<br>Slope-intercept form: write an equation (A42) |

June 2024

| | | |
|---|---|---|
| | | Find a missing coordinate using slope (5C7) |
| 2-2 Point-Slope Form | 2 | Point-slope form: graphs and equations (QCQ)<br>Point-slope form: write an equation (PPE) |
| 2-3 Standard Form<br>Mathematical Modeling in Three Acts | 2 | Graph a horizontal or vertical line (BTK)<br>Standard form: graph an equation (U6U)<br>Standard form: find x- and y-intercepts (8SN)<br>Write equations in standard form (ESP)<br>Equations of horizontal and vertical lines (K8H) |
| 2-4 Parallel and Perpendicular Lines | 2 | Write an equation for a parallel or perpendicular line (5SH)<br>Slopes of parallel and perpendicular lines (ADB) |
| Test | 1 | |

| **Topic 3: Linear Equations (10 days)** | | |
|---|---|---|
| **Topic** | **Days** | **Resources** |
| 3-1 Relations and Functions | 2 | Identify functions (VLL)<br>Domain and range of relations (2CG)<br>Relations: convert between tables, graphs, mappings and lists of points (RBG)<br>Identify functions: vertical line test (HLX) |
| 3-2 Linear Functions | 2 | Find values using function graphs (TJM)<br>Slope-intercept form: write an equation from a table (SSE)<br>Interpret the graph of a function: word problems (STU)<br>Identify linear functions from tables (F5G)<br>Complete a function table from an equation (Z73)<br>Interpret functions using everyday language (U98) |
| 3-5 Scatter Plots and Lines of Fit | 2 | Write equations for lines of best fit (Y2S)<br>Interpret a scatter plot (8BS)<br>Create scatter plots (HZJ) |
| 3-6 Analyzing Lines of Fit | 2 | Analyze a regression line of a data set (8D8)<br>Correlation and causation (KPG) |
| Test | 1 | Checkpoint: Linear modeling (U7N)<br>Checkpoint: Units and quantities (CBX) |

| Topic 4: Systems of Linear Equations and Inequalities (14 days) | | |
|---|---|---|
| **Topic** | **Days** | **Resources** |
| 4-1 Solving Systems of Equations by Graphing | 2 | Solve a system of equations by graphing (TSS)<br>Find the number of solutions to a system of equations by graphing (HJW)<br>Solve a system of equations by graphing: word problems (BVB)<br>Is (x, y) a solution to the system of equations? (LRL)<br>Write a system of equations given a graph (R78) |
| 4-2 Solving Systems of Equations by Substitution | 2 | Solve a system of equations using substitution (8P9)<br>Solve a system of equations using substitution: word problems (US9)<br>Find the number of solutions to a system of equations (ACN) |
| 4-3 Solving Systems of Equations by Elimination | 3 | Solve a system of equations using elimination (A48)<br>Solve a system of equations using any method: word problems (GDQ)<br>Solve a system of equations using elimination: word problems (NHR)<br>Solve a system of equations using any method (HLV) |
| 4-4 Linear Inequalities in Two Variables<br>Mathematical Modeling in Three Acts | 3 | Write a linear inequality from a graph (N9W)<br>Write two-variable inequalities: word problems (ZAY)<br>Graph a two-variable linear inequality (HHP)<br>Does (x, y) satisfy the inequality? (N9L)<br>Linear inequalities: solve for y (UYU) |
| 4-5 Systems of Linear Inequalities | 3 | Solve systems of linear inequalities by graphing (SGH)<br>Is (x, y) a solution to the system of linear inequalities? (VFC) |
| Test | 1 | Checkpoint: Systems of equations and inequalities (LQW)<br>Checkpoint: Represent constraints (2VV) |

| Topic 6: Exponents and Exponential Functions (Days 3) | | |
|---|---|---|
| **Topic** | **Days** | **Resources** |
| 6-1 Rational Exponents and Properties of Exponents | 2 | Multiplication with rational exponents (YG7)<br>Division with rational exponents (H47)<br>Power rule with rational exponents (QF8)<br>Simplify expressions involving rational exponents (89Q) |
| Test | 1 | |

| Topic 7: Polynomials and Factoring (15 Days) | | |
|---|---|---|
| **Topic** | **Days** | **Resources** |
| 7-1 Adding and Subtracting Polynomials | 1 | Polynomial vocabulary (MTT)<br>Add and subtract polynomials (5EK)<br>Add polynomials to find perimeter (8AS) |
| 7-2 Multiplying Polynomials | 3 | Multiplying two binomials (M7Q)<br>Multiply polynomials to find area (5VH) |
| 7-3 Multiplying Special Cases | 3 | Multiply tow binomials: special cases (9JN) |
| 7-4 Factoring Polynomials | 3 | GCF of monomials (ZZU)<br>Factor out a monomial (JZL) |
| 7-5 Factoring x2 + bx + c | 3 | Factor quadratics with leading coefficient 1 (S9P) |
| 7-6 Factoring ax2 + bx + c | 2 | Factor quadratics with other leading coefficients (7ED)<br>Factor by grouping (HAA) |
| Test | 1 | |

| Topic 11: Statistics/Probability (10 Days) | | |
|---|---|---|
| **Topic** | **Days** | **Resources** |
| 11-1 Analyzing Data Displays | 3 | Interpret line plots, histograms, and box plots (UCW)<br>Create histograms (WZU)<br>Create line plots (N2E)<br>Identify an outlier and describe the effect of removing it (XGC) |
| 11-2 Comparing Data Sets | 2 | Mean, median, mode and range (MHB)<br>Calculate quartiles and interquartile range (8H9)<br>Mean absolute deviation (A5C) |
| 11-6 Simple Probability | 2 | |
| 11-7 Compound Probability | 3 | Outcomes of compound events (GKA) |
| Test | 1 | Checkpoint: line plots, histograms, and box plots (UVL)<br>Checkpoint: Compare data sets (DJA)<br>Checkpoints: Two-way frequency tables (5GL) |

June 2024

# WCSD COURSE GUIDE - INSTRUCTIONS FOR COMPLETION

**The course guide template must be used when completing any WCSD Course Guide. Format must remain unchanged, and the formatting outlined in the table below must be followed for each line/section of the course guide.**

**Orientation: Landscape** **Font: Arial** **Text Color: Black**

**Red text is a placeholder for needed information; text which needs to be inserted. Delete these placeholder notes before finalizing your course guide. Text color must be changed to black.**

| LINE/SECTION | FONT SIZE | FONT STYLE |
|---|---|---|
| Course Title; Unit; Grade/Level | 10 | Bold |
| Name of Unit | 10 | Bold |
| Textbooks; Digital Software | 10 | Regular |
| Key Standards | 10 | Regular |
| Table | 9 | Regular |
| Revised | 10 | Regular |

**Add rows to the table on the first page of the course guide template as needed. Once a second page is needed, the document must continue by using the second page of the course guide template.**

**Begin on a new page for each new unit, using the second page of the course guide template.**

**Completed course guide must be sent to Dr. Barbara Chomik for review and approval**

## Whitehall-Coplay School District Course Guide

**Course Title: CP Algebra I** **Topic 1: Solving Equations and Inequalities**

**Grade/Level: 9**

**Textbook(s):** EnVisions Algebra I

June 2024

**Digital Software:** SAVVAS Realize

**Key Standards for Unit:**
CC.2.2.8.B.3: Analyze and solve linear equations and pairs of simultaneous linear equations.
CC.2.1.8.E.1: Distinguish between rational and irrational numbers using their properties.
CC.2.1.8.E.4: Estimate irrational numbers by comparing them to rational numbers.
CC.2.2.HS.D.7: Create and graph equations or inequalities to describe numbers or relationships.
CC.2.2.HS.D.8: Apply inverse operations to solve equations or formulas for a given variable.
CC.2.2.HS.D.9: Use reasoning to solve equations and justify the solution method.
C.C.2.2.HS.D.10: Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.
CC.2.1.HS.F.2: Apply properties of rational and irrational numbers to solve real-world or mathematical problems.

| Month | Lesson | Days | Concepts/Topics | Key Terms | Resources: Activitie Materials, Digital & Pr Resources |
|---|---|---|---|---|---|
| Sept | 1-1 Operations on Real Numbers | 1 | Understand sets and subsets<br>Compare and order real numbers<br>Operations with rational and irrational numbers | Element of a Set<br>Set<br>Subset<br>Rational Number<br>Irrational Number | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton |
| | 1-2 Solving Linear Equations | 3 | Solve linear equations<br>Solve consecutive integer problems<br>Use linear equations to solve mixture problems | Variable<br>Equation<br>Solution of an equation<br>Integer<br>Consecutive | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton<br>Desmos - Central Park |
| | 1-3 Solving Equations With A Variable on Both Sides | 3 | Solving equations with a variable on both sides<br>Understand equations with infinitely many or no solutions<br>Solve mixture problems<br>Use equations to solve problems | Identity | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton |
| | 1-4 Literal Equations and Formulas | 1 | Rewrite literal equations<br>Use literal equations to solve problems<br>Rewrite and apply formulas | Formula<br>Literal equation | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton |
| | 1-5 Solving Inequalities in One Variable | 2 | Solve inequalities<br>Solve an inequalities with variables on both sides<br>Understand inequalities with infinitely many or no solutions<br>Use inequalities to solve problems | Inequality<br>Less Than<br>Greater Than | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton<br>Mathematical Modeling in 3 Ac |
| Oct. | 1-6 Compound Inequalities | 3 | Understand compound inequalities<br>Solve a compound inequality involving “or” and “and”<br>Solve problems involving compound inequalities | Compound inequalities | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton |

| | | | | | |
|---|---|---|---|---|---|
| | 1-7 Absolute Value Equations and Inequalities | 2 | Understand and apply absolute value equations and inequalities<br>Write an absolute value inequality | Absolute value | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton |

**Course Title: CP Algebra I** **Topic 2: Linear Equations**

**Grade/Level: 9**

**Textbook(s):** EnVisions Algebra I

**Digital Software:** SAVVAS Realize

**Key Standards for Unit:**
CC.2.2.8.C.2: Use concepts of functions to model relationships between quantities.
CC.2.4.HS.B.1: Summarize, represent, and interpret data on a single count or measurement variable.
CC.2.4.HS.B.2: Summarize, represent, and interpret data on two categorical and quantitative variables.
CC.2.4.HS.B.3: Analyze linear models to make interpretations based on the data.
CC.2.4.HS.B.5: Make inferences and justify conclusions based on sample surveys, experiments, and observational studies.
CC.2.2.HS.C.1: Use the concept and notation of functions to interpret and apply them in terms of their context.
CC.2.2.HS.C.2: Graph and analyze functions and use their properties to make connections between the different representations.
CC.2.2.HS.C.3: Write functions or sequences that model relationships between two quantities.
CC.2.2.HS.C.5: Construct and compare linear, quadratic, and exponential models to solve problems.
CC.2.2.HS.C.6: Interpret functions in terms of the situations they model.

| Month | Lesson | Days | Concepts/Topics | Key Terms | Resources: Activitie Materials, Digital & Pr Resources |
|---|---|---|---|---|---|
| | 2-1 Slope Intercept Form | 3 | Graph a linear equation<br>Write an equation from a graph<br>Understand slope intercept form<br>Interpret slope and y-intercept | Slope<br>Slope intercept form<br>Y-intercept<br>Origin<br>X-coordinate<br>y-coordinate | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton<br>Desmos - Land the Plane Activ |

| | | | | | |
|---|---|---|---|---|---|
| | 2-2<br>Point-Slope Form | 2 | Understand point-slope form of a linear equation<br>Write an equation in point-slope<br>Sketch the graph of a linear equation in point-slope form<br>Apply linear equations | Point-slope form<br>Ordered Pair | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton<br>Desmos - Flags Activity |
| Nov. | 2-3 Standard Form | 2 | Understand the standard form of a linear equation<br>Sketch the graph of a linear equation in standard form<br>Relate standard form to horizontal and vertical lines<br>Use the standard form of a linear equation | Standard form of a linear equation<br>Horizontal<br>Vertical<br>X-intercept<br>Y-intercept | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptative Practice Powered b Knewton<br>Mathematical Modeling in Thre |
| | 2-4 Parallel and Perpendicular Lines | 2 | Write an equation of a line parallel and/or perpendicular to a given line<br>Understand the slopes of perpendicular lines<br>Classify lines | Parallel lines<br>Perpendicular lines<br>Reciprocal | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton |

**Course Title: CP Algebra I** **Topic 3: Linear Functions**

**Grade/Level: 9**

**Textbook(s):** EnVisions Algebra I

**Digital Software:** SAVVAS Realize

**Key Standards for Unit:**
CC.2.2.8.C.1: Define, evaluate, and compare functions.
CC.2.2.8.C.2: Use concepts of functions to model relationships between quantities.
CC.2.2.HS.C.1: Use the concept and notation of functions to interpret and apply them in terms of their context.
CC.2.2.HS.C.2: Graph and analyze functions and use their properties to make connections between the different representations.
CC.2.2.HS.C.3: Write functions or sequences that model relationships between two quantities.
CC.2.2.HS.C.4: Interpret the effects transformations have on functions and find the inverses of functions.
CC.2.2.HS.C.6: Interpret functions in terms of the situations they model.
CC.2.4.HS.B.2: Summarize, represent, and interpret data on two categorical and quantitative variables.
CC.2.4.HS.B.3: Analyze linear models to make interpretations based on the data.
CC.2.4.HS.B.5: Make inferences and justify conclusions based on sample surveys, experiments, and observational studies.

| Month | Lesson | Days | Concepts/Topics | Key Terms | Resources: Activitie Materials, Digital & Pr Resources |
|---|---|---|---|---|---|
| | 3-1 Relations and Functions | 2 | Recognize Domain and Range<br>Analyze Reasonable Domains and Ranges<br>Classify Relations and Functions<br>Identify Constraints on the Domain | Continuous<br>Discrete<br>Domain<br>Function<br>One-to-one<br>Range<br>Relations | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton |
| | 3-2 Linear Functions | 2 | Evaluate Functions in Function Notation<br>Write a Linear Function Rule<br>Analyze a Linear Function<br>Use Linear Functions to Solve Problems | Function notation<br>Linear function | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton |
| | 3-3 Transforming Linear Functions | 1 | Vertical Translations of Linear Functions<br>Horizontal Translations of Linear Functions<br>Stretches and Compressions of Linear Functions | Transformation<br>Translation | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton<br>Mathematical Modeling in Thre |
| Dec | 3-4 Arithmetic Sequences | 1 | Connect Sequences and Functions<br>Apply Recursive and Explicit Formulas | Arithmetic sequence<br>Common difference<br>Explicit formula<br>Recursive formula<br>Sequence<br>Term of a sequence | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton |
| | 3-5 Scatter Plots and Lines of Fit | 2 | Understand association<br>Use and connect mathematical representations<br>Write the equations of a trend line<br>Use and connect mathematical representations | Negative association<br>Negative correlation<br>No association<br>Positive association<br>Positive correlation<br>Trend line | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton |
| | 3-6 Analyzing | 2 | Find the Line of Best Fit | Causation | IXL |

| | | | | | |
|---|---|---|---|---|---|
| | Lines of Fit | | Understand correlation coefficients<br>Use and conduct mathematical representation | Correlation<br>Coefficient<br>Extrapolation<br>Interpolation<br>Line of best fit<br>Linear regression<br>Residual | MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton |

**Course Title: CP Algebra I** **Topic 4: Systems of Linear Equations and Inequalities**
**Grade/Level: 9**

**Textbook(s):** EnVisions Algebra I

**Digital Software:** SAVVAS Realize

**Key Standards for Unit:**
CC.2.1.HS.F.5: Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.
CC.2.2.8.B.3: Analyze and solve linear equations and pairs of simultaneous linear equations.**Lesson**
CC.2.2.HS.D.7: Create and graph equations or inequalities to describe numbers or relationships.
CC.2.2.HS.D.9: Use reasoning to solve equations and justify the solution method.
CC.2.2.HS.D.10: Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.

| Month | Lesson | Days | Concepts/Topics | Key Terms | Resources: Activitie Materials, Digital & Pr Resources |
|---|---|---|---|---|---|
| | 4-1 Solving Systems of Equations by Graphing | 2 | Solve a system of equations by graphing<br>Graph systems of equations with infinitely many solutions or no solutions<br>Write a system of equations<br>Solve a system of equations approximately | Systems of equations<br>Infinitely many solutions<br>No solutions | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton |
| | 4-2 Solving Systems of Equations by Substitution | 2 | Solve systems of equations by substitution<br>Compare graphing and substitution methods<br>Systems with infinitely many solutions or no solutions<br>Model using systems of equations | Substitution method | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton |

| | | | | | |
|---|---|---|---|---|---|
| | 4-3 Solving Systems of Equations by Elimination | 2 | Solve a system of equations by adding<br>Understand equivalent systems of equations<br>Apply elimination<br>Choose method of solving | Elimination method | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton |
| Jan. | 4-4 Linear Inequalities in Two Variables | 2 | Understand an inequality in two variables<br>Rewrite an inequality to graph it<br>Write an inequality from a graph<br>Inequalities<br>Inequalities in one variable in the coordinate plane | Linear inequality in two variables<br>Solution of an inequality in two variables | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton<br>Mathematical Modeling in Thre |
| | 4-5 Systems of Linear Inequalities | 2 | Graph a system of inequalities<br>Write a system of inequalities from a graph<br>Use a system of inequalities | Solution of a system of linear inequalities<br>System of linear inequalities | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton |

**Course Title: CP Algebra I** **Topic 6: Exponents and Exponential Functions**

**Grade/Level: 9**

**Textbook(s):** EnVisions Algebra I

**Digital Software:** SAVVAS Realize

**Key Standards for Unit:**
CC.2.2.8.B.1: Apply concepts of radicals and integers exponents to generate equivalent expressions.
CC.2.1.HS.F.1: Apply and extend the properties of exponents to solve problems with rational exponents.

| Month | Lesson | Days | Concepts/Topics | Key Terms | Resources: Activitie Materials, Digital & Pr Resources |
|---|---|---|---|---|---|
| | 6-1 Rational Exponents and Properties of Exponents | 2 | Write radical using rational expressions<br>Using the product of powers property to solve equations with rational exponents<br>Use the power of power property to solve equations with rational exponents<br>Use the power of a product property to solve quotations with rational exponents<br>Use the quotient of powers property to solve equations with rational exponents | Rational exponents<br>Base<br>Power<br>Exponent | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton |

**Course Title: CP Algebra I** **Topic 7: Polynomials and Factoring**

**Grade/Level: 9**

**Textbook(s):** EnVisions Algebra I

**Digital Software:** SAVVAS Realize

**Key Standards for Unit:**
CC.2.2.HS.D.1: Interpret the structure of expressions to represent a quantity in terms of its context.
CC.2.2.HS.D.2: Write expressions in equivalent forms to solve problems.
CC.2.2.HS.D.3: Extend the knowledge of arithmetic operations and apply to polynomials.
CC.2.1.6.E.3: Develop and/or apply number theory concepts to find common factors and multiples.
CC.2.1.HS.F.2: Apply properties of rational and irrational numbers to solve real-world or mathematical problems.

| Month | Lesson | Days | Concepts/Topics | Key Terms | Resources: Activitie Materials, Digital & Pr |
|---|---|---|---|---|---|

| | | | | | Resources |
|---|---|---|---|---|---|
| | 7-1 Adding and Subtracting Polynomials | 1 | Understand Polynomials<br>Write Polynomials in Standard Form<br>Add and Subtract Monomials<br>Add Polynomials<br>Subtract Polynomials<br>Apply Polynomials | Closure Property<br>Degree of a monomial<br>Degree of a polynomial<br>Monomial<br>Polynomial<br>Standard form of a polynomial | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton |
| | 7-2 Multiplying Polynomials | 3 | Multiply a Monomial and a Trinomial<br>Use a Table to Find the Product of Polynomials<br>Multiply Binomials<br>Multiply a Trinomial by a Binomial<br>Closure and Multiplication<br>Apply Multiplication of Binomials | | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton |
| | 7-3 Multiplying Special Cases | 2 | Determine the Square of a Binomial<br>Find the Product of a Sum and a Difference<br>Apply the Square of a Binomial | Difference of two squares | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptative Practice Powered b Knewton |
| Feb. | 7-4 Factoring Polynomials | 3 | Find the Greatest Common Factor<br>Factor Out the GCF<br>Factor a Polynomial Model | Greatest common factor | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton<br>Mathematical Modeling in 3 Ac |
| | 7-5 Factoring x2 + bx + c. | 3 | Understand Factoring a Trinomial<br>Factor $x^2+bx+c$, when $b < 0$ and $c > 0$<br>Factor $x^2+bx+c$, when $c < 0$<br>Factor a Trinomial with Two Variables<br>Apply Factoring Trinomials | | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton |
| | 7-6 Factoring ax2 + bx + c. | 2 | Factor out a GCF<br>Understand Factoring by Grouping<br>Factor a Trinomial Using Substitution | | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton |
| | 7-7 Factoring Special Cases | 2 | Understand Factoring a Perfect Square<br>Factor to Find a Dimension<br>Factor a Difference of Two Squares<br>Factor Out a Common Factor | Perfect-square Trinomial | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton |

**Course Title: CP Algebra I** **Topic 11: Statistics/Probability**

**Grade/Level: 9**

**Textbook(s):** EnVisions Algebra I

**Digital Software:** SAVVAS Realize

**Key Standards for Unit:**
CC.2.4.HS.B.1: Summarize, represent, and interpret data on a single count or measurement variable.
CC.2.4.HS.B.3: Analyze linear models to make interpretations based on the data.
CC.2.4.7.B.3: Investigate chance processes and develop, use and evaluate probability models.
CC.2.4.HS.B.4: Recognize and evaluate random processes underlying statistical experiments.
CC.2.4.HS.B.7: Apply the rules of probability to computed probabilities of compound events in a uniform probability model.
CC.2.4.HS.B.5: Make inferences and justify conclusions based on sample surveys, experiments, and observational studies.

| Month | Lesson | Days | Concepts/Topics | Key Terms | Resources: Activitie Materials, Digital & Pr Resources |
|---|---|---|---|---|---|
| March | 11-1 Analyzing Data Displays | 3 | Represent and Interpret Data in a Dot Plot, Histogram, and Box Plot<br>Choose a Data Display | Dot Plot<br>Histogram<br>Box Plots | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton |
| | 11-2 Comparing Data Sets | 2 | Compare Data Sets Displayed in Dot Plots, Box Plots, and Histograms<br>Make Observations with Data Displays | Outliers<br>Measures of Central Tendency<br>Mean<br>Median<br>Mode<br>Range<br>Interquartile Range | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton |
| | 11-3 Interpreting the Shapes of Data Displays | 1 | Interpret the Shape of a Distribution<br>Interpret the Shape of a Skewed Data Display<br>Compare Shapes of Skewed Data Displays<br>Interpret the Shape of a Symmetric Data Display<br>Compare the Shapes of Data Sets | Symmetric | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton |
| | 11-5 Two-Way Frequency Tables | 2 | Interpret a Two-Way Frequency Table<br>Interpret a Two-Way Relative Frequency Table<br>Calculate Conditional Relative Frequency<br>Interpret Conditional Relative | Conditional relative frequency<br>Join frequency<br>Joint relative frequency<br>Marginal frequency<br>Marginal relative | IXL<br>MathXL<br>Student companion worksheet activities<br>Adaptive Practice Powered by Knewton |

| | | | | | |
|---|---|---|---|---|---|
| | | | Frequency<br>Interpret Data Frequencies | frequency | Mathematical Modeling in 3 Ac |
| April | 11-6 Simple Probability | 2 | Convert between the forms of displaying probability<br>Calculate the probability of a desired event<br>Determine the likelihood of an event<br>Compare the probability of events | Event<br>Outcome<br>Probability<br>Likelihood | IXL<br>DeltaMath<br>Desmos |
| | 11-7 Compound Probability | 3 | Identifying compound probability<br>Compare the probability of events | Independent event<br>Dependent event | IXL<br>DeltaMath<br>Desmos |