**Algebra 1**

**Khan Academy Video Correlations  
By SpringBoard Activity and Learning Target**

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| **SB Activity** | **Video(s)** |
| **Unit 1: Equations and Inequalities** | |
| **Activity 1**  *Investigating Patterns*  1-1 Learning Targets:   * + - * Identify patterns in data.       * Use tables, graphs, and expressions to model situations.       * Use expressions to make predictions.   1-2 Learning Targets:   * Use patterns to write expressions. * Use tables, graphs, and expressions to model situations. | ***Algebraic Expressions*** |
| [**Treating units algebraically and dimensional analysis**](https://www.khanacademy.org/math/algebra/introduction-to-algebra/units-algebra/v/dimensional-analysis-units-algebraically)  [**Writing simple algebraic expressions**](http://www.khanacademy.org/math/algebra/introduction-to-algebra/writing-expressions-tutorial/v/writing-expressions-1)  [**Writing algebraic expressions**](http://www.khanacademy.org/math/algebra/introduction-to-algebra/writing-expressions-tutorial/v/writing-expressions-2)  [**Writing algebraic expressions word problem**](http://www.khanacademy.org/math/algebra/introduction-to-algebra/writing-expressions-tutorial/v/writing-expressions-3-exercise-example-1)  [**Evaluating an expression example**](http://www.khanacademy.org/math/algebra/introduction-to-algebra/variable-and-expressions/v/variables-and-expressions-1)  [**Evaluating an expression using substitution**](http://www.khanacademy.org/math/algebra/introduction-to-algebra/variable-and-expressions/v/evaluate-a-formula-using-substitution)  [**Expression terms, factors, and coefficients**](https://www.khanacademy.org/math/cc-sixth-grade-math/cc-6th-expressions-and-variables/cc-6th-writing-expressions/v/expression-terms-factors-and-coefficients) |
| ***Patterns and Expressions*** |
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| **Activity 2**  *Solving Equations*  2-1 Learning Targets:   * Use the algebraic method to solve an equation. * Write and solved an equation to model a real-world situation.   2-2 Learning Targets:   * Write and solve an equation to model a real-world situation. * Interpret parts of an expression in terms of its context.   2-3 Learning Targets:   * Solve complex equations with variables on both sides and justify each step in the solution process. * Write and solve an equation to model a real-world situation.   2-4 Learning Targets:   * Identify equations that have no solution. * Identify equations that have infinitely many solutions.   2-5 Learning Targets:   * Solve literal equations for a specified variable. * Use a formula that has been solved for a specified variable to determine an unknown quantity. | ***The “Why” of Algebra: Equation Basics*** |
| [**Why we do the same thing to both sides: Simple equations**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/why-of-algebra/v/why-we-do-the-same-thing-to-both-sides-simple-equations)  [**Why we do the same thing to both sides: Multi-step equations**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/why-of-algebra/v/why-we-do-the-same-thing-to-both-sides-multi-step-equations)  [**Representing a relationship with a simple equation**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/why-of-algebra/v/representing-a-relationship-with-a-simple-equation)  [**One-step equation intuition**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/why-of-algebra/v/one-step-equation-intuition) |
| ***Simple Equations*** |
| [**Simple equations of the form ax = b**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/equations_beginner/v/simple-equations)  [**Simple equations of the from x/a = b**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/equations_beginner/v/solving-one-step-equations-2)  [**Simple equations of the form x + a = b**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/equations_beginner/v/solving-one-step-equations)  [**Simple equations: examples involving a variety of forms**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/equations_beginner/v/one-step-equations) |
| **Equations with Variable on Both Sides** |
| [**Solving two-step equations**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/why-of-algebra/v/why-we-do-the-same-thing-to-both-sides-two-step-equations)  [**Example: two-step equations**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/equations_beginner/v/two-step-equations)  [**Adding and subtracting from both sides of an equation**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/why-of-algebra/v/adding-and-subtracting-the-same-thing-from-both-sides)  [**Dividing from both sides of an equation**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/why-of-algebra/v/intuition-why-we-divide-both-sides)  [**Example: two-step equation with numerator x**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/equations_beginner/v/solving-equations-1) |
| ***More Complex Equations*** |
| [**Solving a more complicated equation**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/equations_beginner/v/equations-2)  [**Variables on both sides**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/basic-equation-practice/v/equations-3)  [**Example 1: Variables on both sides**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/basic-equation-practice/v/multi-step-equations-1)  [**Example 2: Variables on both sides**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/basic-equation-practice/v/solving-equations-2)  [**Solving equations with the distributive property**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/complicated_equations/v/solving-equations-with-the-distributive-property)  [**Solving equations with the distributive property 2**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/complicated_equations/v/solving-equations-with-the-distributive-property-2) |
| ***Equations with No Solutions or Infinitely Many Solutions*** |
| [**Equation special cases**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/solutions-linear-equations/v/equation-special-cases)  [**Number of solutions to linear equations**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/solutions-linear-equations/v/number-of-solutions-to-linear-equations)  [**Number of solutions to linear equations ex 2**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/solutions-linear-equations/v/number-of-solutions-to-linear-equations-ex-2)  [**Number of solutions to linear equations ex 3**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/solutions-linear-equations/v/number-of-solutions-to-linear-equations-ex-3)  [**Rearrange formulas to isolate specific variables**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/solving_for_variable/v/rearrange-formulas-to-isolate-specific-variables) |
| **Solving Literal Equations for a Variable** |
| [**Solving for a variable**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/solving_for_variable/v/solving-for-a-variable)  [**Solving for a variable 2**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/solving_for_variable/v/solving-for-a-variable-2)  [**Example: Solving for a variable**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/solving_for_variable/v/example-of-solving-for-a-variable) |
| **Activity 3**  *Solving Inequalities*  3-1 Learning Targets:   * Understand what is meant by a solution of an inequality. * Graph solutions of inequalities on a number line.   3-2 Learning Targets:   * Write inequalities to represent real-world situations. * Solve multi-step inequalities.   3-3 Learning Targets:   * Graph compound inequalities. * Solve compound inequalities. | ***One-Step Inequalities*** |
| [**Constructing and solving a one-step inequality**](http://www.khanacademy.org/math/algebra/linear_inequalities/inequalities/v/inequalities)  [**One-step inequality involving addition**](http://www.khanacademy.org/math/algebra/linear_inequalities/inequalities/v/one-step-inequalities)  [**Inequalities using addition and subtraction**](http://www.khanacademy.org/math/algebra/linear_inequalities/inequalities/v/inequalities-using-addition-and-subtraction)  [**Multiplying and dividing with inequalities**](http://www.khanacademy.org/math/algebra/linear_inequalities/inequalities/v/inequalities-using-multiplication-and-division)  [**Multiplying and dividing with inequalities example**](http://www.khanacademy.org/math/algebra/linear_inequalities/inequalities/v/one-step-inequalities-2) |
| ***Multi-Step Inequalities*** |
| [**Constructing and solving a two-step inequality**](http://www.khanacademy.org/math/algebra/linear_inequalities/inequalities/v/interpreting-inequalities)  [**Constructing, solving a two-step inequality example**](http://www.khanacademy.org/math/algebra/linear_inequalities/inequalities/v/writing-and-using-inequalities-3)  [**Solving a two-step inequality**](http://www.khanacademy.org/math/algebra/linear_inequalities/inequalities/v/solving-inequalities)  [**Multi-step inequalities**](http://www.khanacademy.org/math/algebra/linear_inequalities/inequalities/v/multi-step-inequalities)  [**Multi-step inequalities 2**](http://www.khanacademy.org/math/algebra/linear_inequalities/inequalities/v/multi-step-inequalities-2)  [**Multi-step inequalities 3**](http://www.khanacademy.org/math/algebra/linear_inequalities/inequalities/v/multi-step-inequalities-3) |
| ***Compound Inequalities*** |
| [**Compound inequalities**](http://www.khanacademy.org/math/algebra/linear_inequalities/compound_absolute_value_inequali/v/compound-inequalities)  [**Compound inequalities**](http://www.khanacademy.org/math/algebra/linear_inequalities/compound_absolute_value_inequali/v/compund-inequalities)  [**Compound inequalities 2**](http://www.khanacademy.org/math/algebra/linear_inequalities/compound_absolute_value_inequali/v/compund-inequalities-2)  [**Compound inequalities 3**](http://www.khanacademy.org/math/algebra/linear_inequalities/compound_absolute_value_inequali/v/compound-inequalities-3)  [**Compound inequalities 4**](http://www.khanacademy.org/math/algebra/linear_inequalities/compound_absolute_value_inequali/v/compound-inequalities-4) |
| **Activity 4**  *Absolute Value Equations and Inequalities*  4-1 Learning Targets:   * Understand what is meant by a solution of an absolute value equation. * Solve absolute value equations.   4-2 Learning Targets:   * Solve absolute value inequalities. * Graph solutions of absolute value inequalities. | ***Absolute Value Equations*** |
| [**Absolute value equations**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/absolute-value-equations/v/absolute-value-equations)  [**Absolute value equations**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/absolute-value-equations/v/u02-l2-t2-we1-absolute-value-equations-avi)  [**Absolute value equations 1**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/absolute-value-equations/v/absolute-value-equations-1)  [**Absolute value equations example 1**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/absolute-value-equations/v/absolute-value-equations-example-1)  [**Absolute value equation example 2**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/absolute-value-equations/v/absolute-value-equation-example-2)  [**Absolute value equation example**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/absolute-value-equations/v/absolute-value-equation-example)  [**Absolute value equation with no solution**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/absolute-value-equations/v/absolute-value-equation-with-no-solution) |
| ***Absolute Value Inequalities*** |
| [**Absolute value inequalities**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/absolute-value-equations/v/absolute-value-inequalities)  [**Absolute value inequalities example 1**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/absolute-value-equations/v/absolute-value-inequalities-example-1)  [**Absolute inequalities 2**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/absolute-value-equations/v/absolute-inequalities-2)  [**Absolute value inequalities example 3**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/absolute-value-equations/v/absolute-value-inequalities-example-3) |
| **Unit 2: Functions** | |
| **Activity 5**  *Functions and Function Notation*  5-1 Learning Targets:   * Represent relations and functions using tables, diagrams, and graphs. * Identify relations that are functions.   5-2 Learning Targets:   * Describe the domain and range of a function. * Find input-output pairs for a function.   5-3 Learning Targets:   * Use and interpret function notation. * Evaluate a function for specific values of the domain. | ***Relations and Functions*** |
| [**What is a function?**](http://www.khanacademy.org/math/algebra/algebra-functions/relationships_functions/v/what-is-a-function)  [**Relations and functions**](http://www.khanacademy.org/math/algebra/algebra-functions/relationships_functions/v/relations-and-functions)  [**Recognizing functions (example 1)**](http://www.khanacademy.org/math/algebra/algebra-functions/recognizing-functions/v/recognizing-functions-example-1) |
| ***Domain and Range*** |
| [**Domain and range of a relation**](http://www.khanacademy.org/math/algebra/algebra-functions/domain_and_range/v/domain-and-range-of-a-relation)  [**Domain and range of a function**](http://www.khanacademy.org/math/algebra/algebra-functions/domain_and_range/v/domain-and-range-of-a-function)  [**Domain and range 1**](http://www.khanacademy.org/math/algebra/algebra-functions/domain_and_range/v/domain-and-range-1) |
| ***Function Notation*** |
| [**Evaluating with function notation**](http://www.khanacademy.org/math/algebra/algebra-functions/relationships_functions/v/linear-function-graphs)  [**Understanding function notation (example 1)**](http://www.khanacademy.org/math/algebra/algebra-functions/relationships_functions/v/understanding-function-notation-example-1)  [**Understanding function notation (example 2)**](http://www.khanacademy.org/math/algebra/algebra-functions/relationships_functions/v/understanding-function-notation-example-2)  [**Understanding function notation (example 3)**](http://www.khanacademy.org/math/algebra/algebra-functions/relationships_functions/v/understanding-function-notation-example-3) |
| **Activity 6**  *Graphs of Functions*  6-1 Learning Targets:   * Relate the domain and range of a function to its graph. * Identify and interpret key features of graphs.   6-2 Learning Targets:   * Relate the domain and range of a function to its graph and to its function rule. * Identify and interpret key features of graphs.   6-3 Learning Targets:   * Identify and interpret key features of graphs. * Determine the reasonable domain and range for a real-world situation. | ***Graphs of Functions*** |
| [**Functions as graphs**](http://www.khanacademy.org/math/algebra/algebra-functions/recognizing-functions/v/functions-as-graphs)  [**Domain and range from graphs**](http://www.khanacademy.org/math/algebra/algebra-functions/domain_and_range/v/domain-and-range-from-graphs)  [**Graphical relations and functions**](http://www.khanacademy.org/math/algebra/algebra-functions/recognizing-functions/v/graphical-relations-and-functions)  [**Testing if a relationship is a function**](http://www.khanacademy.org/math/algebra/algebra-functions/recognizing-functions/v/testing-if-a-relationship-is-a-function)  [**Interpreting a graph exercise example**](http://www.khanacademy.org/math/algebra/algebra-functions/graphing_functions/v/interpreting-a-graph-exercise-example) |
| **Activity 7**  *Graphs of Functions*  7-1 Learning Targets:   * Graph a function given a table. * Write an equation for a function given a table or graph.   7-2 Learning Targets:   * Graph a function describing a real-world situation and identify and interpret key features of the graph.   7-3 Learning Targets:   * Given a verbal description of a function, make a table and a graph of the function. * Graph a function and identify and interpret key features of the graph. | **Graphs of Functions** |
| [**Graphing exponential functions**](http://www.khanacademy.org/math/algebra/algebra-functions/graphing_functions/v/graphing-exponential-functions)  [**Interpreting a graph exercise example**](http://www.khanacademy.org/math/algebra/algebra-functions/graphing_functions/v/interpreting-a-graph-exercise-example) |
| **Activity 8**  *Transformations of Functions*  8-1 Learning Targets:   * Identify the effect on the graph of replacing f(x) by f(x) + k. * Identify the transformation used to produce one graph from another. | **N/A** |
| **Activity 9**  *Rates of Change*  9-1 Learning Targets:   * Determine the slope of a line from a graph. * Develop and use the formula for slope.   9-2 Learning Targets:   * Calculate and interpret the rate of change for a function. * Understand the connection between rate of change and slope.   9-3 Learning Targets:   * Show that a linear function has a constant rate of change. * Understand when the slope of a line is positive, negative, zero, or undefined. * Identify functions that do not have a constant rate of change and understand that these functions are not linear. | ***Slope*** |
| [**Slope of a line**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/slope-and-intercepts/v/slope-of-a-line)  [**Slope of a line 2**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/slope-and-intercepts/v/slope-of-a-line-2)  [**Slope of a line 3**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/slope-and-intercepts/v/slope-of-a-line-3)  [**Graphical slope of a line**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/slope-and-intercepts/v/graphical-slope-of-a-line)  [**Slope example**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/slope-and-intercepts/v/slope-example) |
| ***Slope and Rate of Change*** |
| [**Slope and rate of change**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/slope-and-intercepts/v/slope-and-rate-of-change) |
| **Activity 10**  *Linear Models*  10-1 Learning Targets:   * Write and graph direct variation. * Identify the constant of variation.   10-2 Learning Targets:   * Write and graph indirect variations. * Distinguish between direct and indirect variation.   10-3 Learning Targets:   * Write, graph, and analyze a linear model for a real-world situation. * Interpret aspects of a model in terms of the real-world situation.   10-4 Learning Targets:   * Write the inverse function for a linear function. * Determine the domain and range of an inverse function. | ***Variation*** |
| [**Direct and inverse variation**](http://www.khanacademy.org/math/algebra-basics/core-algebra-linear-equations-inequalities/core-algebra-direct_inverse_variation/v/direct-and-inverse-variation)  [**Recognizing direct and inverse variation**](http://www.khanacademy.org/math/algebra-basics/core-algebra-linear-equations-inequalities/core-algebra-direct_inverse_variation/v/recognizing-direct-and-inverse-variation)  [**Proportionality constant for direct variation**](http://www.khanacademy.org/math/algebra-basics/core-algebra-linear-equations-inequalities/core-algebra-direct_inverse_variation/v/proportionality-constant-for-direct-variation)  [**Direct variation 1**](http://www.khanacademy.org/math/algebra-basics/core-algebra-linear-equations-inequalities/core-algebra-direct_inverse_variation/v/direct-variation-1)  [**Direct variation application**](http://www.khanacademy.org/math/algebra-basics/core-algebra-linear-equations-inequalities/core-algebra-direct_inverse_variation/v/direct-variation-application) |
| ***Inverse Functions*** |
| [**Introduction to function inverses**](http://www.khanacademy.org/math/algebra/algebra-functions/function_inverses/v/introduction-to-function-inverses)  [**Function inverse example 1**](http://www.khanacademy.org/math/algebra/algebra-functions/function_inverses/v/function-inverse-example-1)  [**Function inverses example 2**](http://www.khanacademy.org/math/algebra/algebra-functions/function_inverses/v/function-inverses-example-2)  [**Function inverses example 3**](http://www.khanacademy.org/math/algebra/algebra-functions/function_inverses/v/function-inverses-example-3) |
| **Activity 11**  *Arithmetic Sequences*  11-1 Learning Targets:   * Identify sequences that are arithmetic sequences. * Use the common difference to determine a specified term of an arithmetic sequence.   11-2 Learning Targets:   * Develop an explicit formula for the nth term of an arithmetic sequence. * Use an explicit formula to find any term of an arithmetic sequence. * Write a formula for an arithmetic sequence given two terms or a graph.   11-3 Learning Targets:   * Use function notation to write a general formula for the nth term of an arithmetic sequence. * Find any term of an arithmetic sequence written as a function.   11-4 Learning Targets:   * Write a recursive formula for a given arithmetic sequence. * Use a recursive formula to find the terms of an arithmetic sequence. | ***Arithmetic Sequences*** |
| [**Arithmetic sequences**](https://www.khanacademy.org/math/precalculus/seq_induction/seq_and_series/v/arithmetic-sequences)  [**Explicit and recursive definitions of sequences**](https://www.khanacademy.org/math/precalculus/seq_induction/seq_and_series/v/explicit-and-recursive-definitions-of-sequences) |
| **Activity 12**  *Forms of Linear Functions*  12-1 Learning Targets:   * Write the equation of a line in slope-intercept form. * Use slope-intercept form to solve problems.   12-2 Learning Targets:   * Write the equation of a line in point-slope form. * Use point-slope form to solve problems.   12-3 Learning Targets:   * Write the equation of a line in standard form. * Use the standard form of a linear equation to solve problems.   12-4 Learning Targets:   * Describe the relationship among the slopes of parallel lines and perpendicular lines. * Write an equation of a line that contains a given point and is parallel or perpendicular to a given line. | ***Slope-Intercept Form*** |
| [**Constructing linear equations to solve word problems**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/equation-of-a-line/v/word-problem-solving-4)  [**Graphing a line in slope-intercept form**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/graphing-slope-intercept/v/graphing-a-line-in-slope-intercept-form)  [**Converting to slope-intercept form**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/graphing-slope-intercept/v/converting-to-slope-intercept-form)  [**Multiple examples of constructing linear equations in slope-intercept form**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/equation-of-a-line/v/linear-equations-in-slope-intercept-form)  [**Slope-intercept form from table**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/equation-of-a-line/v/slope-intercept-form-from-table)  [**Constructing equations in slope-intercept form from graphs**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/equation-of-a-line/v/graphs-using-slope-intercept-form)  [**Graphing using x- and y-intercepts**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/graphing_with_intercepts/v/graphing-using-x-and-y-intercepts)  [**Graphing using intercepts**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/graphing_with_intercepts/v/graphing-using-intercepts)  [**x- and y-intercepts**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/graphing_with_intercepts/v/x-and-y-intercepts)  [**x- and y-intercepts 2**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/graphing_with_intercepts/v/x-and-y-intercepts-2)  [**Finding x-intercept of a line**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/graphing_with_intercepts/v/finding-x-intercept-of-a-line)  [**Finding intercepts for a linear function from a table**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/graphing_with_intercepts/v/finding-intercepts-for-a-linear-function-from-a-table)  [**Interpreting intercepts of linear functions**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/graphing_with_intercepts/v/interpreting-intercepts-of-linear-functions) |
| ***Point-Slope Form*** |
| [**Linear equation from slope and a point**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/equation-of-a-line/v/equation-of-a-line-1)  [**Finding a linear equation given a point and slope**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/equation-of-a-line/v/equation-of-a-line-2)  [**Converting from point-slope to slope intercept form**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/point-slope-form/v/converting-from-point-slope-to-slope-intercept-form)  [**Constructing the equation of a line given two points**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/equation-of-a-line/v/equation-of-a-line-3) |
| ***Standard Form*** |
| [**Linear equations in standard form**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/point-slope-form/v/linear-equations-in-standard-form)  [**Point-slope and standard form**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/point-slope-form/v/point-slope-and-standard-form) |
| ***Slopes of Parallel and Perpendicular Lines*** |
| [**Equations of parallel and perpendicular lines**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/more-analytic-geometry/v/equations-of-parallel-and-perpendicular-lines)  [**Parallel lines 3**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/more-analytic-geometry/v/parallel-lines-3) **geometry**  [**Perpendicular lines**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/more-analytic-geometry/v/perpendicular-lines) **geoemtry**  [**Perpendicular lines 2**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/more-analytic-geometry/v/perpendicular-lines-2) **geometry**  [**Perpendicular line slope**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/point-slope-form/v/converting-from-point-slope-to-slope-intercept-form) **geometry** |
| **Activity 13**  *Equations from Data*  13-1 Learning Targets:   * Use collected data to make a scatter plot. * Determine the equation of a trend line.   13-2 Learning Targets:   * Use a linear model to make predictions. * Use technology to perform a linear regression.   13-3 Learning Targets:   * Use technology to perform quadratic and exponential regressions, and then make predictions. * Compare and contrast linear, quadratic, and exponential regressions. | ***Scatter Plots*** |
| [**Constructing a scatter plot**](http://www.khanacademy.org/math/probability/regression/prob-stats-scatter-plots/v/constructing-scatter-plot)  [**Constructing scatter plot exercise example**](http://www.khanacademy.org/math/probability/regression/prob-stats-scatter-plots/v/constructing-scatter-plot-exercise-example)  [**Correlation and causality**](http://www.khanacademy.org/math/probability/regression/regression-correlation/v/correlation-and-causality) |
| ***Trend Lines*** |
| [**Fitting a line to data**](http://www.khanacademy.org/math/probability/regression/regression-correlation/v/fitting-a-line-to-data)  [**Comparing models to fit data**](http://www.khanacademy.org/math/probability/regression/prob-stats-scatter-plots/v/comparing-models-to-fit-data)  [**Estimating the line of best fit exercise**](http://www.khanacademy.org/math/probability/regression/regression-correlation/v/estimating-the-line-of-best-fit-exercise)  [**Interpreting a trend line**](http://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-data/cc-8th-patterns-in-data/v/interpreting-trend-line) |
| **Unit 3: Extensions of Linear Concepts** | |
| **Activity 14**  *Piecewise-Defined Linear Functions*  *14-1* Learning Targets   * Use function notation and interpret statements that use function notation in terms of a context. * Calculate the rate of change of a linear function presented in multiple representation.   14-2 Learning Targets   * Write linear equations in two variables given a table of values, a graph, or a verbal description. * Determine the domain and range of a linear function, determine their reasonableness, and represent them using inequalities.   14-3 Learning Targets   * Evaluate a function at specific inputs within the function's domain. * Graph piecewise-defined functions. | **N/A** |
| **Activity 15**  *Comparing Equations*  15-1 Learning Targets:   * Write a linear equation given a graph or a table. * Analyze key features of a function given its graph.   15-2 Learning Targets:   * Graph and analyze functions on the same coordinate plane. * Write inequalities to represent real-world situations.   15-3 Learning Targets:   * Write a linear equation given a verbal description. * Graph and analyze functions on the same coordinate plane. | ***Writing and Graphing Equations*** |
| [**Exploring linear relationships**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/graphing_solutions2/v/exploring-linear-relationships)  [**Linear equation word problem**](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/linear-equation-word-problems-tu/v/linear-equation-word-problem-example)  [**Graphs of linear equations**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/graphing_solutions2/v/graphs-of-linear-equations)  [**Interpreting linear graphs**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/graphing_solutions2/v/interpreting-linear-graphs)  [**Interpreting a graph exercise example**](http://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-relationships-functions/linear-nonlinear-functions-tut/v/interpreting-a-graph-exercise-example)  [**Application problem with graph**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/graphing_solutions2/v/application-problem-with-graph) |
| **Activity 16**  *Inequalities in Two Variables*  16-1 Learning Targets:   * Write linear inequalities in two variables. * Read and interpret the graph of the solutions of a linear inequality in two variables.   16-2 Learning Targets:   * Graph on a coordinate plane the solutions of a linear inequality in two variables. * Interpret the graph of the solutions of a linear inequality in two variables. | ***Graphing Linear Inequalities*** |
| [**Graphing inequalities**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/graphing-linear-inequalities/v/graphing-inequalities)  [**Graphing inequalities 1**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/graphing-linear-inequalities/v/graphing-inequalities-1)  [**Graphing inequalities 2**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/graphing-linear-inequalities/v/graphing-inequalities-2)  [**Solving and graphing linear inequalities in two variables 1**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/graphing-linear-inequalities/v/solving-and-graphing-linear-inequalities-in-two-variables-1)  [**Graphing linear inequalities in two variables example 2**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/graphing-linear-inequalities/v/graphing-linear-inequalities-in-two-variables-example-2)  [**Graphing linear inequalities in two variables 3**](http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/graphing-linear-inequalities/v/graphing-linear-inequalities-in-two-variables-3) |
| **Activity 17**  *Solving Systems of Linear Equations*  17-1 Learning Targets:   * Solve a system of linear equations by graphing. * Interpret the solution of a system of linear equations.   17-2 Learning Targets:   * Solve a system of linear equations using a table or the substitution method. * Interpret the solution of a system of linear equations.   17-3 Learning Targets:   * Use the elimination method to solve a system of linear equations. * Write a system of linear equations to model a situation.   17-4 Learning Targets:   * Explain when a system of linear equations has no solution. * Explain when a system of linear equations has infinitely many solutions.   17-5 Learning Targets:   * Determine the number of solutions of a system of equations. * Classify a system of linear equations as independent or dependent and as consistent or inconsistent. | ***Solving Systems by Graphing*** |
| [**Solving linear systems by graphing**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/systems-through-examples/v/solving-linear-systems-by-graphing)  [**Solving systems graphically**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/systems-through-examples/v/solving-systems-graphically)  [**Graphing systems of equations**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/systems-through-examples/v/graphings-systems-of-equations)  [**Graphical systems application problem**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/systems-through-examples/v/graphical-systems-application-problem)  [**Example 2: Graphically solving systems**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/systems-through-examples/v/solving-systems-by-graphing-2)  [**Example 3: Graphically solving systems**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/systems-through-examples/v/solving-systems-by-graphing-3) |
| ***Solving Systems with Tables and Substitution*** |
| [**Example 1: Solving systems by substitution**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/systems-with-substitution/v/solving-systems-by-substitution-1)  [**Example 2: Solving systems by substitution**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/systems-with-substitution/v/solving-systems-by-substitution-2)  [**Example 3: Solving systems by substitution**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/systems-with-substitution/v/solving-systems-by-substitution-3)  [**The substitution method**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/systems-with-substitution/v/the-substitution-method)  [**Substitution method 2**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/systems-with-substitution/v/substitution-method-2)  [**Substitution method 3**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/systems-with-substitution/v/substitution-method-3)  [**Practice using substitution for systems**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/systems-with-substitution/v/practice-using-substitution-for-systems) |
| ***Solving Systems using the Elimination Method*** |
| [**Example 1: Solving systems by elimination**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/solving-systems-addition-elimination/v/solving-systems-by-elimination)  [**Example 2: Solving systems by elimination**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/solving-systems-addition-elimination/v/solving-systems-by-elimination-2)  [**Example 3: Solving systems by elimination**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/solving-systems-addition-elimination/v/solving-systems-by-elimination-3)  [**Addition elimination method 1**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/solving-systems-addition-elimination/v/addition-elimination-method-1)  [**Addition elimination method 2**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/solving-systems-addition-elimination/v/addition-elimination-method-2)  [**Addition elimination method 3**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/solving-systems-addition-elimination/v/addition-elimination-method-3)  [**Addition elimination method 4**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/solving-systems-addition-elimination/v/addition-elimination-method-4)  [**Simple elimination practice**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/solving-systems-addition-elimination/v/simple-elimination-practice)  [**Systems with elimination practice**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/solving-systems-addition-elimination/v/systems-with-elimination-practice) |
| ***Systems Without a Unique Solution*** |
| [**Infinite solutions to systems**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/systems-solutions/v/infinite-solutions-to-systems)  [**Constructing solutions to systems of equations**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/systems-solutions/v/constructing-solutions-to-systems-of-equations)  [**Practice thinking about number of solutions to systems**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/systems-solutions/v/practice-thinking-about-number-of-solutions-to-systems) |
| ***Classifying Systems of Equations*** |
| [**Consistent and inconsistent systems**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/systems-solutions/v/consistent-and-inconsistent-systems)  [**Inconsistent systems of equations**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/systems-solutions/v/inconsistent-systems-of-equations)  [**Independent and dependent systems**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/systems-solutions/v/independent-and-dependent-systems) |
| **Activity 18**  *Solving Systems of Linear Inequalities*  18-1 Learning Targets:   * Determine whether an ordered pair is a solution of a system of linear inequalities. * Graph the solutions of a system of linear inequalities.   18-2 Learning Targets:   * Identify solutions to systems of linear inequalities when the solution region is determined by parallel lines. * Interpret solutions of systems of linear inequalities. | ***Solving Systems of Linear Inequalities*** |
| [**Testing solutions for a system of inequalities**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/system-of-inequalities/v/testing-solutions-for-a-system-of-inequalities)  [**Visualizing the solution set for a system of inequalities**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/system-of-inequalities/v/graphical-system-of-inequalities)  [**Graphing systems of inequalities**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/system-of-inequalities/v/graphing-systems-of-inequalities-2)  [**Graphing systems of inequalities 2**](http://www.khanacademy.org/math/algebra/systems-of-eq-and-ineq/system-of-inequalities/v/u06-l3-t1-we3-graphing-systems-of-inequalities) |
| **Unit 4: Exponents, Radicals, and Polynomials** | |
| **Activity 19**  *Exponent Rules*  19-1 Learning Targets:   * Develop basic exponent properties. * Simplify expressions involving exponents.   19-2 Learning Targets:   * Understand what is meant by negative and zero powers. * Simplify expressions involving exponents.   19-3 Learning Targets:   * Develop the Power of a Power, Power of a Product, and the Power of a Quotient Properties. * Simplify expressions involving exponents. | ***Basic Exponent Properties*** |
| [**Exponent properties 1**](https://www.khanacademy.org/math/algebra/exponent-equations/exponent-properties-algebra/v/exponent-properties-1)  [**Exponent properties 2**](https://www.khanacademy.org/math/algebra/exponent-equations/exponent-properties-algebra/v/exponent-properties-2) |
| ***Negative and Zero Powers*** |
| [**Introduction to negative exponents**](http://www.khanacademy.org/math/algebra/exponent-equations/alg-integer-exponents/v/introduction-to-negative-exponents)  [**Thinking more about negative exponents**](https://www.khanacademy.org/math/algebra/exponent-equations/alg-integer-exponents/v/thinking-more-about-negative-exponents)  [**More negative exponent intuition**](https://www.khanacademy.org/math/algebra/exponent-equations/alg-integer-exponents/v/more-negative-exponent-intuition) |
| ***Additional Properties of Exponents*** |
| [**Products and exponents raised to an exponent properties**](https://www.khanacademy.org/math/algebra/exponent-equations/alg-integer-exponents/v/products-and-exponents-raised-to-an-exponent-properties)  [**Negative and positive exponents**](https://www.khanacademy.org/math/algebra/exponent-equations/exponent-properties-algebra/v/negative-and-positive-exponents)  [**Exponent properties 3**](https://www.khanacademy.org/math/algebra/exponent-equations/exponent-properties-algebra/v/exponent-properties-3)  [**Exponent properties 4**](https://www.khanacademy.org/math/algebra/exponent-equations/exponent-properties-algebra/v/exponent-properties-4)  [**Exponent properties 5**](https://www.khanacademy.org/math/algebra/exponent-equations/exponent-properties-algebra/v/exponent-properties-5)  [**Exponent properties 6**](https://www.khanacademy.org/math/algebra/exponent-equations/exponent-properties-algebra/v/exponent-properties-6)  [**Exponent properties 7**](https://www.khanacademy.org/math/algebra/exponent-equations/exponent-properties-algebra/v/exponent-properties-7) |
| **Activity 20**  *Operations with Radicals*  20-1 Learning Targets:   * Write and simplify radical expressions. * Understand what is meant by a rational exponent.   20-2 Learning Targets:   * Add radical expressions. * Subtract radical expressions.   20-3 Learning Targets:   * Multiply and divide radical expressions. * Rationalize the denominator of a radical expression. | ***Operations with Radicals*** |
| [**Radical equivalent to rational exponents**](http://www.khanacademy.org/math/algebra/exponent-equations/simplifying-radical-expressions/v/radical-equivalent-to-rational-exponents)  [**Radical equivalent to rational exponents 2**](http://www.khanacademy.org/math/algebra/exponent-equations/simplifying-radical-expressions/v/radical-equivalent-to-rational-exponents-2)  [**Multiply and simplify a radical expression 1**](http://www.khanacademy.org/math/algebra/exponent-equations/simplifying-radical-expressions/v/multiply-and-simplify-a-radical-expression-1)  [**Simplifying square roots**](http://www.khanacademy.org/math/algebra/exponent-equations/simplifying-radical-expressions/v/simplifying-square-roots)  [**Radical expressions with higher roots**](http://www.khanacademy.org/math/algebra/exponent-equations/simplifying-radical-expressions/v/radical-expressions-with-higher-roots)  [**Subtracting and simplifying radicals**](http://www.khanacademy.org/math/algebra/exponent-equations/simplifying-radical-expressions/v/subtracting-and-simplifying-radicals)  [**Simplifying cube roots**](http://www.khanacademy.org/math/algebra/exponent-equations/simplifying-radical-expressions/v/simplifying-cube-roots) |
| **Activity 21**  *Geometric Sequences*  21-1 Learning Targets:   * Identify geometric sequences and the common ratio in a geometric sequence. * Distinguish between arithmetic and geometric sequences.   21-2 Learning Targets:   * Write a recursive formula for a geometric sequence. * Write an explicit formula for a geometric sequence. * Use a formula to find a given term of a geometric sequence. | ***Geometric Sequences*** |
| [**Geometric sequences introduction**](http://www.khanacademy.org/math/precalculus/seq_induction/precalc-geometric-sequences/v/geometric-sequences-introduction) |
| **Activity 22**  *Exponential Functions*  22-1 Learning Targets:   * Understand the definition of an exponential function. * Graph and analyze exponential growth functions.   22-2 Learning Targets:   * Describe characteristics of exponential decay functions. * Graph and analyze exponential decay functions.   22-3 Learning Targets:   * Describe key features of graphs of exponential functions. * Compare graphs of exponential and linear functions. | ***Exponential Functions*** |
| [**Graphing exponential functions**](http://www.khanacademy.org/math/algebra/algebra-functions/graphing_functions/v/graphing-exponential-functions)  [**Exponential growth functions**](http://www.khanacademy.org/math/algebra2/exponential_and_logarithmic_func/exp_growth_decay/v/exponential-growth-functions)  [**Understanding linear and exponential models**](http://www.khanacademy.org/math/algebra2/exponential_and_logarithmic_func/exp_growth_decay/v/linear-exponential-models)  [**Constructing linear and exponential functions from data**](http://www.khanacademy.org/math/algebra2/exponential_and_logarithmic_func/exp_growth_decay/v/constructing-linear-and-exponential-functions-from-data) |
| **Activity 23**  *Modeling with Exponential Functions*  23-1 Learning Targets:   * Create an exponential function to model compound interest,   23-2 Learning Targets:   * Create an exponential function to fit population data. * Interpret values in an exponential function. | ***Examples of Exponential Functions*** |
| [**Introduction to compound interest**](http://www.khanacademy.org/economics-finance-domain/core-finance/interest-tutorial/compound-interest-tutorial/v/introduction-to-compound-interest)  [**Exponential growth and decay word problems**](http://www.khanacademy.org/math/algebra2/exponential_and_logarithmic_func/exponential-modeling/v/word-problem-solving-exponential-growth-and-decay)  [**Decay of cesium 137 example**](http://www.khanacademy.org/math/algebra2/exponential_and_logarithmic_func/exponential-modeling/v/decay-of-cesium-137-example)  [**Modeling ticket fines with exponential function**](http://www.khanacademy.org/math/algebra2/exponential_and_logarithmic_func/exponential-modeling/v/modeling-ticket-fines-with-exponential-function) |
| **Activity 24**  *Adding and Subtracting Polynomials*  24-1 Learning Targets:   * Identify parts of a polynomial. * Identify the degree of a polynomial.   24-2 Learning Targets:   * Use algebra tiles to add polynomials. * Add polynomials algebraically.   24-3 Learning Targets:   * Subtract polynomials algebraically. | ***Adding and Subtracting Polynomials*** |
| [**Terms coefficients and exponents in a polynomial**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/polynomial_basics/v/terms-coefficients-and-exponents-in-a-polynomial)  [**Adding polynomials**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/polynomial_basics/v/adding-polynomials)  [**Polynomials 2**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/polynomial_basics/v/polynomials-2)  [**Example: Adding polynomials with multiple variables**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/polynomial_basics/v/example-adding-polynomials-with-multiple-variables)  [**Subtracting polynomials**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/polynomial_basics/v/subtracting-polynomials)  [**Subtracting polynomials with multiple variables**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/polynomial_basics/v/subtracting-polynomials-with-multiple-variables)  [**Addition and subtraction of polynomials**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/polynomial_basics/v/addition-and-subtraction-of-polynomials)  [**Adding and subtracting polynomials 1**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/polynomial_basics/v/adding-and-subtracting-polynomials-1)  [**Adding and subtracting polynomials 2**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/polynomial_basics/v/adding-and-subtracting-polynomials-2)  [**Adding and subtracting polynomials 3**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/polynomial_basics/v/adding-and-subtracting-polynomials-3) |
| **Activity 25**  *Multiplying Polynomials*  25-1 Learning Targets:   * Use a graphic organizer to multiply expressions. * Use the Distributive Property to multiply expressions.   25-2 Learning Targets:   * Multiply binomials. * Find special products of binomials.   25-3 Learning Targets:   * Use a graphic organizer to multiply polynomials. * Use the Distributive Property to multiply polynomials. | ***Multiplying Polynomials*** |
| [**Multiplying binomials and polynomials**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/multiplying-binomials/v/multiplication-of-polynomials)  [**Multiplying binomials word problems**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/multiplying-binomials/v/multiplying-polynomials-2)  [**FOIL for multiplying binomials**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/multiplying-binomials/v/multiplying-binomials)  [**FOIL method for multiplying binomials example 2**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/multiplying-binomials/v/multiplying-polynomials1) |
| ***Special Products of Binomials*** |
| [**Square a binomial**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/multiplying-binomials/v/square-a-binomial)  [**Squaring a binomial**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/multiplying-binomials/v/special-products-of-polynomials-1)  [**Squaring a binomial example 2**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/multiplying-binomials/v/special-products-of-polynomials-2)  [**Special products of binomials**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/multiplying-binomials/v/special-products-of-binomials)  [**Multiplying binomials to get difference of squares**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/multiplying-binomials/v/special-polynomials-products-1) |
| **Activity 26**  *Factoring*  26-1 Learning Targets:   * Identify the GCF of the terms in a polynomial. * Factor the GCF from a polynomial.   26-2 Learning Targets:   * Factor a perfect square trinomial. * Factor a difference of two squares. | ***Factoring by Greatest Common Factor*** |
| [**Factor expressions using the GCF**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/Factoring-simple-expressions/v/factor-polynomials-using-the-gcf)  [**Factoring linear binomials**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/Factoring-simple-expressions/v/factoring-linear-binomials)  [**Factoring and the distributive property**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/Factoring-simple-expressions/v/factoring-and-the-distributive-property)  [**Factoring and the distributive property 2**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/Factoring-simple-expressions/v/factoring-and-the-distributive-property-2) |
| ***Factoring Special Products*** |
| [**Example: Factoring perfect square trinomials**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/factoring-special-products/v/factoring-perfect-square-trinomials)  [**Factoring special products**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/factoring-special-products/v/factoring-special-products)  [**Example 1: Factoring difference of squares**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/factoring-special-products/v/factoring-difference-of-squares)  [**Example 2: Factoring difference of squares**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/factoring-special-products/v/u09-l2-t1-we3-factoring-special-products-3) |
| **Activity 27**  *Factoring Trinomials*  27-1 Learning Targets:   * Use algebra tiles to factor trinomials of the form x2 + bx + c. * Factor trinomials of the form x2 + bx + c.   27-2 Learning Targets:   * Factor trinomials of the form ax2 + bx + c when the GCF is 1. * Factor trinomials of the form ax2 + bx + c when the GCF is not 1. | ***Factoring Trinomials*** |
| [**Factoring quadratic expressions**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/factoring-quadratic-expressions/v/factoring-quadratic-expressions)  [**Examples: Factoring simple quadratics**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/factoring-quadratic-expressions/v/factoring-polynomials-1)  [**Example 1: Factoring quadratic expressions**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/factoring-quadratic-expressions/v/factoring-trinomials-with-a-leading-1-coefficient)  [**Example 1: Factoring trinomials with a common factor**](http://www.khanacademy.org/math/algebra/multiplying-factoring-expression/factoring-quadratic-expressions/v/factoring-trinomials-with-a-common-factor) |
| **Activity 28**  *Simplifying Rational Expressions*  28-1 Learning Targets:   * Simplify a rational expression by dividing a polynomial by a monomial. * Simplify a rational expression by dividing out common factors.   28-2 Learning Targets:   * Divide a polynomial of degree one or two by a polynomial of degree one or two. * Express the remainder of polynomial division as a rational expression.   28-3 Learning Targets:   * Multiply rational expressions. * Divide rational expressions.   28-4 Learning Targets:   * Identify the least common multiple (LCM) of algebraic expressions. * Add and subtract rational expressions. | ***Simplifying Rational Expressions*** |
| [**Simplifying rational expressions introduction**](http://www.khanacademy.org/math/algebra2/rational-expressions/simplifying-rational-alg/v/simplifying-rational-expressions-introduction)  [**Simplifying rational expressions 1**](http://www.khanacademy.org/math/algebra2/rational-expressions/simplifying-rational-alg/v/simplifying-rational-expressions-1)  [**Simplifying rational expressions 2**](http://www.khanacademy.org/math/algebra2/rational-expressions/simplifying-rational-alg/v/simplifying-rational-expressions-2)  [**Simplifying rational expressions 3**](http://www.khanacademy.org/math/algebra2/rational-expressions/simplifying-rational-alg/v/simplifying-rational-expressions-3) |
| ***Multiplying & Dividing Rational Expressions*** |
| [**Multiplying and simplifying rational expressions**](http://www.khanacademy.org/math/algebra2/rational-expressions/multi-div-rational-exp/v/multiplying-and-simplifying-rational-expressions)  [**Multiplying and dividing rational expressions 1**](http://www.khanacademy.org/math/algebra2/rational-expressions/multi-div-rational-exp/v/multiplying-and-dividing-rational-expressions-1)  [**Multiplying and dividing rational expressions 2**](http://www.khanacademy.org/math/algebra2/rational-expressions/multi-div-rational-exp/v/multiplying-and-dividing-rational-expressions-2)  [**Multiplying and dividing rational expressions 3**](http://www.khanacademy.org/math/algebra2/rational-expressions/multi-div-rational-exp/v/multiplying-and-dividing-rational-expressions-3) |
| ***Adding & Subtracting Rational Expressions*** |
| [**Adding and subtracting rational expressions**](http://www.khanacademy.org/math/algebra2/rational-expressions/rational_expressions/v/adding-and-subtracting-rational-expressions)  [**Adding and subtracting rational expressions 2**](http://www.khanacademy.org/math/algebra2/rational-expressions/rational_expressions/v/adding-and-subtracting-rational-expressions-2)  [**Adding and subtracting rational expressions 3**](http://www.khanacademy.org/math/algebra2/rational-expressions/rational_expressions/v/adding-and-subtracting-rational-expressions-3)  [**Subtracting rational expressions**](http://www.khanacademy.org/math/algebra2/rational-expressions/rational_expressions/v/subtracting-rational-expressions)  [**Simplifying first for subtracting rational expressions**](http://www.khanacademy.org/math/algebra2/rational-expressions/rational_expressions/v/simplifying-first-for-subtracting-rational-expressions) |
| **Unit 5: Quadratic Functions** | |
| **Activity 29**  *Introduction to Quadratic Functions*  29-1 Learning Targets:   * Model a real-world situation with a quadratic function. * Identify quadratic functions. * Write a quadratic function in standard form.   29-2 Learning Targets:   * Graph a quadratic function. * Interpret key features of the graph of a quadratic function. | ***Graphing Parabolas*** |
| [**Graphing a parabola with a table of values**](http://www.khanacademy.org/math/algebra/quadratics/solving_graphing_quadratics/v/graphing-a-quadratic-function)  [**Graphing a parabola by finding the roots and vertex**](http://www.khanacademy.org/math/algebra/quadratics/solving_graphing_quadratics/v/quadratic-functions-3)  [**Graphing a parabola using roots and vertex**](http://www.khanacademy.org/math/algebra/quadratics/solving_graphing_quadratics/v/graphing-a-parabola-using-roots-and-vertex)  [**Graphing a parabola in vertex form**](http://www.khanacademy.org/math/algebra/quadratics/solving_graphing_quadratics/v/graphing-a-parabola-in-vertex-form) |
| ***Vertex and Axis of Symmetry*** |
| [**Parabola vertex and axis of symmetry**](http://www.khanacademy.org/math/algebra/quadratics/solving_graphing_quadratics/v/quadratic-functions-2)  [**Finding the vertex of a parabola example**](http://www.khanacademy.org/math/algebra/quadratics/solving_graphing_quadratics/v/finding-the-vertex-of-a-parabola-example)  [**Multiple examples graphing parabolas using roots and vertices**](http://www.khanacademy.org/math/algebra/quadratics/solving_graphing_quadratics/v/graphs-of-quadratic-functions) |
| **Activity 30**  *Graphing Quadratic Functions*  30-1 Learning Targets:   * Graph translations of the quadratic parent function. * Identify and distinguish among transformations.   30-2 Learning Targets:   * Graph vertical stretches and shrinks of the quadratic parent function. * Identify and distinguish among transformations.   30-3 Learning Targets:   * Graph reflections of the quadratic parent function. * Identify and distinguish among transformations. * Compare functions represented in different ways. | **N/A** |
| **Activity 31**  *Solving Quadratic Equations by Graphing and Factoring*  31-1 Learning Targets:   * Use a graph to solve a quadratic equation. * Use factoring to solve a quadratic equation. * Describe the connection between the zeros of a quadratic function and the x-intercepts of the function's graph.   31-2 Learning Targets:   * Identify the axis of symmetry of the graph of a quadratic function. * Identify the vertex of the graph of a quadratic function.   31-3 Learning Targets:   * Use the axis of symmetry, the vertex, and the zeros to graph a quadratic function. * Interpret the graph of a quadratic function. | **Solving Quadratic Equations** |
|  |
| ***Vertex and Axis of Symmetry*** |
| [**Parabola vertex and axis of symmetry**](http://www.khanacademy.org/math/algebra/quadratics/solving_graphing_quadratics/v/quadratic-functions-2)  [**Finding the vertex of a parabola example**](http://www.khanacademy.org/math/algebra/quadratics/solving_graphing_quadratics/v/finding-the-vertex-of-a-parabola-example)  [**Multiple examples graphing parabolas using roots and vertices**](http://www.khanacademy.org/math/algebra/quadratics/solving_graphing_quadratics/v/graphs-of-quadratic-functions) |
| **Activity 32**  *Algebraic Methods of Solving Quadratic Equations*  32-1 Learning Targets:   * Solve quadratic equations by the square root method. * Provide examples of quadratic equations having a given number of real solutions.   32-2 Learning Targets:   * Solve quadratic equations by completing the square. * Complete the square to analyze a quadratic function.   32-3 Learning Targets:   * Derive the quadratic formula. * Solve quadratic equations using the quadratic formula.   32-4 Learning Targets:   * Choose a method to solve a quadratic equation. * Use the discriminant to determine the number of real solutions of a quadratic equation.   32-5 Learning Targets:   * Use the imaginary unit i to write complex numbers. * Solve a quadratic equation that has complex solutions. | ***The Square Root Method*** |
| [**Solving quadratic equations by square roots**](http://www.khanacademy.org/math/algebra/quadratics/quadratics-square-root/v/solving-quadratic-equations-by-square-roots)  [**Example: Solving simple quadratic**](http://www.khanacademy.org/math/algebra/quadratics/quadratics-square-root/v/simple-quadratic-equation) |
| ***Completing the Square*** |
| [**Solving quadratic equations by completing the square**](http://www.khanacademy.org/math/algebra/quadratics/completing_the_square/v/solving-quadratic-equations-by-completing-the-square)  [**Example 1: Completing the square**](http://www.khanacademy.org/math/algebra/quadratics/completing_the_square/v/ex1-completing-the-square)  [**Example 2: Completing the square**](http://www.khanacademy.org/math/algebra/quadratics/completing_the_square/v/ex2-completing-the-square)  [**Example 3: Completing the square**](http://www.khanacademy.org/math/algebra/quadratics/completing_the_square/v/completing-the-square-to-solve-quadratic-equations) |
| ***The Quadratic Formula*** |
| [**How to use the quadratic formula**](http://www.khanacademy.org/math/algebra/quadratics/quadratic-formula/v/using-the-quadratic-formula)  [**Example: Quadratics in standard form**](http://www.khanacademy.org/math/algebra/quadratics/quadratic-formula/v/quadratic-equations-in-standard-form)  [**Example 1: Using the quadratic formula**](http://www.khanacademy.org/math/algebra/quadratics/quadratic-formula/v/quadratic-formula-1)  [**Example 2: Using the quadratic formula**](http://www.khanacademy.org/math/algebra/quadratics/quadratic-formula/v/quadratic-formula-2)  [**Example 3: Using the quadratic formula**](http://www.khanacademy.org/math/algebra/quadratics/quadratic-formula/v/quadratic-formula-3)  [**Example 4: Applying the quadratic formula**](http://www.khanacademy.org/math/algebra/quadratics/quadratic-formula/v/application-problem-with-quadratic-formula)  [**Example 5: Using the quadratic formula**](http://www.khanacademy.org/math/algebra/quadratics/quadratic-formula/v/applying-the-quadratic-formula) |
| ***Choosing a Method and Using the Discriminant*** |
| [**Discriminant of quadratic equations**](http://www.khanacademy.org/math/algebra2/polynomial_and_rational/quad_formula_tutorial/v/discriminant-of-quadratic-equations)  [**Discriminant for types of solutions for a quadratic**](http://www.khanacademy.org/math/algebra2/polynomial_and_rational/quad_formula_tutorial/v/discriminant-for-types-of-solutions-for-a-quadratic) |
| ***Complex Solutions*** |
| [**Example: Complex roots for a quadratic**](http://www.khanacademy.org/math/algebra2/polynomial_and_rational/quad_formula_tutorial/v/complex-roots-from-the-quadratic-formula) |
| **Activity 33**  *Applying Quadratic Equations*  33-1 Learning Targets:   * Write a quadratic function to fit data. * Use a quadratic model to solve problems.   33-2 Learning Targets:   * Solve quadratic equations. * Interpret the solutions of a quadratic equation in a real-world context. | ***Fitting Data with Quadratic and Exponential Functions*** |
| [**Comparing models to fit data**](http://www.khanacademy.org/math/probability/regression/prob-stats-scatter-plots/v/comparing-models-to-fit-data)  [**Comparing exponential and quadratic models**](http://www.khanacademy.org/math/algebra2/exponential_and_logarithmic_func/exp_growth_decay/v/comparing-exponentials-quadratics) |
| **Activity 34**  *Modeling with Functions*  34-1 Learning Targets:   * Construct linear, quadratic, and exponential models for data. * Graph and interpret linear, quadratic, and exponential functions.   34-2 Learning Targets:   * Identify characteristics of linear, quadratic, and exponential functions. * Compare linear, quadratic, and exponential functions.   34-3 Learning Targets:   * Compare piecewise-defined, linear, quadratic, and exponential functions. * Write a verbal description that matches a given graph. | ***Modeling with Functions*** |
| [**Comparing exponential and quadratic models**](http://www.khanacademy.org/math/algebra2/exponential_and_logarithmic_func/exp_growth_decay/v/comparing-exponentials-quadratics)  [**Constructing linear and exponential functions from data**](http://www.khanacademy.org/math/algebra2/exponential_and_logarithmic_func/exp_growth_decay/v/constructing-linear-and-exponential-functions-from-data)  [**Constructing linear and exponential functions from graph**](http://www.khanacademy.org/math/algebra2/exponential_and_logarithmic_func/exp_growth_decay/v/constructing-linear-and-exponential-functions-from-graph) |
| **Activity 35**  *Systems of Equations*  35-1 Learning Targets:   * Write a function to model a real-world situation. * Solve a system of equations by graphing.   35-2 Learning Targets:   * Write a system of equations to model a real-world situation. * Solve a system of equations algebraically. | ***Solving Systems of Nonlinear Equations*** |
| [**Systems of nonlinear equations 1**](http://www.khanacademy.org/math/algebra2/systems_eq_ineq/non-linear-systems-tutorial/v/systems-of-nonlinear-equations-1)  [**Systems of nonlinear equations 2**](http://www.khanacademy.org/math/algebra2/systems_eq_ineq/non-linear-systems-tutorial/v/systems-of-nonlinear-equations-2)  [**Systems of nonlinear equations 3**](http://www.khanacademy.org/math/algebra2/systems_eq_ineq/non-linear-systems-tutorial/v/systems-of-nonlinear-equations-3)  [**Non-linear systems of equations 1**](http://www.khanacademy.org/math/algebra2/systems_eq_ineq/non-linear-systems-tutorial/v/non-linear-systems-of-equations-1)  [**Non-linear systems of equations 2**](http://www.khanacademy.org/math/algebra2/systems_eq_ineq/non-linear-systems-tutorial/v/non-linear-systems-of-equations-2)  [**Non-linear systems of equations 3**](http://www.khanacademy.org/math/algebra2/systems_eq_ineq/non-linear-systems-tutorial/v/non-linear-systems-of-equations-3) |
| **Unit 6: Probability and Statistics** | |
| **Activity 36**  *Measures of Center and Spread*  36-1 Learning Targets:   * Interpret differences in center and spread of data in context. * Compare center and spread of two or more data sets. * Determine the mean absolute deviation of a set of data.   36-2 Learning Targets:   * Interpret differences in center and spread of data in context. * Compare center and spread of two or more data sets. * Determine the mean absolute deviation of a set of data. | ***Mean, Median, Mode*** |
| [**Statistics intro: Mean, median and mode**](http://www.khanacademy.org/math/probability/descriptive-statistics/central_tendency/v/statistics-intro-mean-median-and-mode)  [**Finding mean, median and mode**](http://www.khanacademy.org/math/probability/descriptive-statistics/central_tendency/v/mean-median-and-mode)  [**Exploring the mean and median**](http://www.khanacademy.org/math/probability/descriptive-statistics/central_tendency/v/exploring-mean-and-median-module) |
| ***Distribution*** |
| [**Comparing means of distributions**](http://www.khanacademy.org/math/probability/descriptive-statistics/central_tendency/v/comparing-distribution-means)  [**Means and medians of different distributions**](http://www.khanacademy.org/math/probability/descriptive-statistics/central_tendency/v/comparing-means-and-medians)  [**Variance of a population**](http://www.khanacademy.org/math/probability/descriptive-statistics/variance_std_deviation/v/variance-of-a-population) |
| **Activity 37**  *Dot and Box Plots and the Normal Distribution*  37-1 Learning Targets:   * Construct representations of univariate data in a real-world context. * Describe characteristics of a data distribution, such as center, shape, and spread, using graphs and numerical summaries. * Compare distributions, commenting on similarities and differences among them.   37-2 Learning Targets:   * Use modified box plots to summarize data in a way that shows outliers. * Compare distributions, commenting on similarities and differences among them. | ***Box and Whisker*** |
| [**Box and whisker plot**](http://www.khanacademy.org/math/probability/descriptive-statistics/box-and-whisker-plots/v/reading-box-and-whisker-plots)  [**Constructing a box and whisker plot**](http://www.khanacademy.org/math/probability/descriptive-statistics/box-and-whisker-plots/v/constructing-a-box-and-whisker-plot) |
| ***Range*** |
| [**Finding the range and mid-range**](http://www.khanacademy.org/math/probability/descriptive-statistics/box-and-whisker-plots/v/range-and-mid-range)  [**Introduction to the normal distribution**](http://www.khanacademy.org/math/probability/statistics-inferential/normal_distribution/v/introduction-to-the-normal-distribution) |
| **Activity 38**  *Correlation*  38-1 Learning Targets:   * Describe a linear relationship between two numerical variables in terms of direction and strength. * Use the correlation coefficient to describe the strength and direction of a linear relationship between two numerical variables.   38-2 Learning Targets:   * Calculate correlation. * Distinguish between correlation and causation. | ***Correlation*** |
| [**Constructing a scatter plot**](http://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-data/cc-8th-scatter-plots/v/constructing-scatter-plot)  [**Correlation and causality**](http://www.khanacademy.org/math/probability/regression/regression-correlation/v/correlation-and-causality) |
| **Activity 39**  *The Best-Fit Line*  39-1 Learning Targets:   * Describe the linear relationship between two numerical variables using the best-fit line. * Use the equation of the best-fit line to make predictions and compare the predictions to actual values.   39-2 Learning Targets:   * Use technology to determine the equation of the best-fit line. * Describe the linear relationship between two numerical variables using the best-fit line. * Use residuals to investigate whether a given line is an appropriate model of the relationship between numerical variables.   39-3 Learning Targets:   * Interpret the slope of the best-fit line in the context of the data. * Distinguish between scatter plots that show a linear relationship and those where the relationship is not linear.   39-4 Learning Targets:   * Create a residual plot given a set of data and the equation of the best-fit line. * Use residuals to investigate whether a line is an appropriate description of the relationship between numerical variables. | ***Line of Best-fit*** |
| [**Fitting a line to data**](http://www.khanacademy.org/math/probability/regression/regression-correlation/v/fitting-a-line-to-data)  [**Estimating the line of best fit exercise**](http://www.khanacademy.org/math/probability/regression/regression-correlation/v/estimating-the-line-of-best-fit-exercise)  [**Comparing models to fit data**](http://www.khanacademy.org/math/probability/regression/prob-stats-scatter-plots/v/comparing-models-to-fit-data)  [**Interpreting a trend line**](http://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-data/cc-8th-patterns-in-data/v/interpreting-trend-line) |
| **Activity 40**  *Bivariate Data*  40-1 Learning Targets:   * Summarize bivariate categorical data in a two-way frequency table. * Interpret frequencies and relative frequencies in two-way tables.   40-2 Learning Targets:   * Interpret frequencies and relative frequencies in two-way tables. * Recognize and describe patterns of association in two-way tables. | ***Two-way Frequency Tables*** |
| [**Two-way frequency tables and Venn diagrams**](http://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-data/two-way-tables/v/two-way-frequency-tables-and-venn-diagrams)  [**Two-way relative frequency tables**](http://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-data/two-way-tables/v/two-way-relative-frequency-tables)  [**Interpreting two way tables**](http://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-data/two-way-tables/v/interpreting-two-way-tables) |
| ***Categorical Date*** |
| [**Analyzing trends in categorical data**](http://www.khanacademy.org/math/probability/statistical-studies/categorical-data/v/analyzing-trends-categorical-data) |