Algebra 1
Khan Academy Video Correlations
By SpringBoard Activity and Learning Target

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 Writing simple algebraic expressions Writing algebraic expressions Writing algebraic expressions word problem Evaluating an expression example Evaluating an expression using substitution Expression terms, factors, and coefficients ***Patterns and Expressions***
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	***The "Why" of Algebra: Equation Basics*** Why we do the same thing to both sides: Simple equations Why we do the same thing to both sides: Multi-step equations Representing a relationship with a simple equation One-step equation intuition ***Simple Equations*** Simple equations of the form ax = b Simple equations of the from x/a = b Simple equations of the form x + a = b Simple equations: examples involving a variety of forms **Equations with Variable on Both Sides** Solving two-step equations Example: two-step equations Adding and subtracting from both sides of an equation Dividing from both sides of an equation Example: two-step equation with numerator x

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.	***More Complex Equations*** Solving a more complicated equation Variables on both sides Example 1: Variables on both sides Example 2: Variables on both sides Solving equations with the distributive property Solving equations with the distributive property 2 ***Equations with No Solutions or Infinitely Many Solutions*** Equation special cases Number of solutions to linear equations Number of solutions to linear equations ex 2 Number of solutions to linear equations ex 3 Rearrange formulas to isolate specific variables **Solving Literal Equations for a Variable** Solving for a variable Solving for a variable 2 Example: 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 One-step inequality involving addition Inequalities using addition and subtraction Multiplying and dividing with inequalities Multiplying and dividing with inequalities example ***Multi-Step Inequalities*** Constructing and solving a two-step inequality Constructing, solving a two-step inequality example Solving a two-step inequality Multi-step inequalities Multi-step inequalities 2 Multi-step inequalities 3 ***Compound Inequalities*** Compound inequalities Compound inequalities Compound inequalities 2 Compound inequalities 3 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 Absolute value equations Absolute value equations 1 Absolute value equations example 1 Absolute value equation example 2 Absolute value equation example Absolute value equation with no solution ***Absolute Value Inequalities*** Absolute value inequalities Absolute value inequalities example 1 Absolute inequalities 2 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? Relations and functions Recognizing functions (example 1) ***Domain and Range*** Domain and range of a relation Domain and range of a function Domain and range 1 ***Function Notation*** Evaluating with function notation Understanding function notation (example 1) Understanding function notation (example 2) Understanding function notation (example 3)
Activity 6	***Graphs of Functions***

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.	Functions as graphs Domain and range from graphs Graphical relations and functions Testing if a relationship is a function 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 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:	***Slope*** Slope of a line Slope of a line 2

• 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 of a line 3 Graphical slope of a line Slope example ***Slope and Rate of Change*** 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 Recognizing direct and inverse variation Proportionality constant for direct variation Direct variation 1 Direct variation application ***Inverse Functions*** Introduction to function inverses Function inverse example 1 Function inverses example 2 Function inverses example 3
Activity 11	***Arithmetic Sequences***

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 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.	***Slope-Intercept Form*** Constructing linear equations to solve word problems Graphing a line in slope-intercept form Converting to slope-intercept form Multiple examples of constructing linear equations in

• 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 Slope-intercept form from table Constructing equations in slope-intercept form from graphs Graphing using x- and y-intercepts Graphing using intercepts x- and y-intercepts x- and y-intercepts 2 Finding x-intercept of a line Finding intercepts for a linear function from a table Interpreting intercepts of linear functions ***Point-Slope Form*** Linear equation from slope and a point Finding a linear equation given a point and slope Converting from point-slope to slope intercept form Constructing the equation of a line given two points ***Standard Form*** Linear equations in standard form Point-slope and standard form ***Slopes of Parallel and Perpendicular Lines*** Equations of parallel and perpendicular lines Parallel lines 3 geometry Perpendicular lines geoemtry Perpendicular lines 2 geometry Perpendicular line slope 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.	***Scatter Plots*** Constructing a scatter plot Constructing scatter plot exercise example Correlation and causality ***Trend Lines*** Fitting a line to data Comparing models to fit data Estimating the line of best fit exercise Interpreting a trend line

• Compare and contrast linear, quadratic, and exponential regressions.	
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** **Linear equation word problem** **Graphs of linear equations** **Interpreting linear graphs** **Interpreting a graph exercise example** **Application problem with graph**
Activity 16	***Graphing Linear Inequalities***

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 inequalities Graphing inequalities 1 Graphing inequalities 2 Solving and graphing linear inequalities in two variables 1 Graphing linear inequalities in two variables example 2 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 Solving systems graphically Graphing systems of equations Graphical systems application problem Example 2: Graphically solving systems Example 3: Graphically solving systems ***Solving Systems with Tables and Substitution*** Example 1: Solving systems by substitution Example 2: Solving systems by substitution Example 3: Solving systems by substitution The substitution method Substitution method 2 Substitution method 3 Practice using substitution for systems ***Solving Systems using the Elimination Method*** Example 1: Solving systems by elimination Example 2: Solving systems by elimination Example 3: Solving systems by elimination Addition elimination method 1 Addition elimination method 2 Addition elimination method 3 Addition elimination method 4 Simple elimination practice

	Systems with elimination practice
	Systems Without a Unique Solution
	Infinite solutions to systems Constructing solutions to systems of equations Practice thinking about number of solutions to systems
	Classifying Systems of Equations
	Consistent and inconsistent systems Inconsistent systems of equations 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 Visualizing the solution set for a system of inequalities Graphing systems of inequalities Graphing systems of inequalities 2
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 Exponent properties 2 ***Negative and Zero Powers*** Introduction to negative exponents Thinking more about negative exponents More negative exponent intuition ***Additional Properties of Exponents*** Products and exponents raised to an exponent properties Negative and positive exponents Exponent properties 3 Exponent properties 4 Exponent properties 5 Exponent properties 6

	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 Radical equivalent to rational exponents 2 Multiply and simplify a radical expression 1 Simplifying square roots Radical expressions with higher roots Subtracting and simplifying radicals 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
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.	***Exponential Functions*** Graphing exponential functions Exponential growth functions Understanding linear and exponential models Constructing linear and exponential functions from data

• Compare graphs of exponential and linear functions.	
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 Exponential growth and decay word problems Decay of cesium 137 example 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 Adding polynomials Polynomials 2 Example: Adding polynomials with multiple variables Subtracting polynomials Subtracting polynomials with multiple variables Addition and subtraction of polynomials Adding and subtracting polynomials 1 Adding and subtracting polynomials 2 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 Multiplying binomials word problems FOIL for multiplying binomials FOIL method for multiplying binomials example 2 ***Special Products of Binomials*** Square a binomial Squaring a binomial Squaring a binomial example 2 Special products of binomials Multiplying binomials to get difference of squares
Activity 26	***Factoring by Greatest Common Factor***

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.	Factor expressions using the GCF Factoring linear binomials Factoring and the distributive property Factoring and the distributive property 2 ***Factoring Special Products*** Example: Factoring perfect square trinomials Factoring special products Example 1: Factoring difference of squares Example 2: Factoring difference of squares
Activity 27 *Factoring Trinomials* 27-1 Learning Targets: • Use algebra tiles to factor trinomials of the form $x^2 + bx + c$. • Factor trinomials of the form $x^2 + bx + c$. 27-2 Learning Targets: • Factor trinomials of the form $ax^2 + bx + c$ when the GCF is 1. • Factor trinomials of the form $ax^2 + bx + c$ when the GCF is not 1.	***Factoring Trinomials*** Factoring quadratic expressions Examples: Factoring simple quadratics Example 1: Factoring quadratic expressions Example 1: 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 Simplifying rational expressions 1 Simplifying rational expressions 2 Simplifying rational expressions 3 ***Multiplying & Dividing Rational Expressions*** Multiplying and simplifying rational expressions Multiplying and dividing rational expressions 1 Multiplying and dividing rational expressions 2 Multiplying and dividing rational expressions 3 ***Adding & Subtracting Rational Expressions*** Adding and subtracting rational expressions Adding and subtracting rational expressions 2 Adding and subtracting rational expressions 3 Subtracting rational expressions 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 Graphing a parabola by finding the roots and vertex Graphing a parabola using roots and vertex Graphing a parabola in vertex form ***Vertex and Axis of Symmetry*** Parabola vertex and axis of symmetry Finding the vertex of a parabola example Multiple examples graphing parabolas using roots and vertices
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-	**Solving Quadratic Equations** ***Vertex and Axis of Symmetry*** Parabola vertex and axis of symmetry Finding the vertex of a parabola example Multiple examples graphing parabolas using roots and vertices

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.	
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 Example: Solving simple quadratic ***Completing the Square*** Solving quadratic equations by completing the square Example 1: Completing the square Example 2: Completing the square Example 3: Completing the square ***The Quadratic Formula*** How to use the quadratic formula Example: Quadratics in standard form Example 1: Using the quadratic formula Example 2: Using the quadratic formula Example 3: Using the quadratic formula Example 4: Applying the quadratic formula Example 5: Using the quadratic formula ***Choosing a Method and Using the Discriminant*** Discriminant of quadratic equations Discriminant for types of solutions for a quadratic ***Complex Solutions*** Example: Complex roots for a quadratic
Activity 33	***Fitting Data with Quadratic and Exponential Functions***

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.	Comparing models to fit data Comparing exponential and quadratic models
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 Constructing linear and exponential functions from data 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 Systems of nonlinear equations 2 Systems of nonlinear equations 3 Non-linear systems of equations 1 Non-linear systems of equations 2 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	***Mean, Median, Mode*** Statistics intro: Mean, median and mode Finding mean, median and mode Exploring the mean and median

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.	***Distribution*** Comparing means of distributions Means and medians of different distributions 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 Constructing a box and whisker plot ***Range*** Finding the range and mid-range 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 Correlation and causality
Activity 39	***Line of Best-fit***

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.	Fitting a line to data Estimating the line of best fit exercise Comparing models to fit data Interpreting a 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 Two-way relative frequency tables Interpreting two way tables ***Categorical Date*** Analyzing trends in categorical data