

Mathematics Grade 7

CCCs	FKSAs	Essential Understandings
<u>7.NO.2i1</u> Solve multiplication problems with positive/negative numbers. (7.NS.01.2)	Ability to solve multiplication problems with positive/negative numbers.	Create an array of objects for the mathematical equation and match answer symbol (+ or -) following multiplication rules for an equation.
<u>7.NO.2i2</u> Solve division problems with positive/negative numbers. (7.NS.01.2)	Ability to solve division problems with positive/negative numbers.	Create an array of objects for the mathematical equation and match answer symbol (+ or -) following division rules for an equation.
<u>7.ME.2d1</u> Apply formula to measure area and circumference of circles. (7.G.02.4)	Ability to use the formula to determine the area of a circle.	Recognize the area of a circle and the circumference when shown a graphic representation.
<u>7.PRF.1f1</u> Use proportional relationships to solve multistep percent problems. (7.RP.01.3)	Ability to use proportional relationships to solve multistep percent problems.	Identify how one variable changes in relation to another variable in a directly proportional relationship (e.g., $a/b = c/d$ If a increases, what will happen to c?).
<u>7.NO.2f1</u> Identify the proportional relationship between two quantities (use rules or symbols to show quantitative relationships). (7.RP.01.2)	Ability to identify the proportional relationship between two quantities.	Recognize the constancy of one object to its parts (i.e., one fact, two eyes).
<u>7.DPS.1k1</u> Analyze graphs to determine or select appropriate comparative inferences about two samples or populations (use graphical representations to show quantitative relationships). (7.SP.02.4)	Ability to analyze graphs to determine appropriate comparative inferences about two samples or populations.	Understand basic information from simple graphs (e.g., interpret a bar graph using the understanding that the taller column on a graph has a higher frequency, the shorter column on a graph has a lower frequency).
<u>7.NO.2f2</u> Determine if two quantities are in a proportional relationship using a table of equivalent ratios or points graphed on a	Ability to describe the correct proportional relationship between quantities shown in a table of	Use a table to recognize the quantity of two entries, without counting, to determine which is relatively larger.

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coordinate plane. (7.RP.2.a-b)	ratios.	
<u>7.PRF.1g2</u> Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and in-equalities to solve problems by reasoning about the quantities. (7.EE.02.4)	Ability to use variables to represent quantities in a real-world or mathematical problem, construct a simple equation (equality), and solve the equation.	Record/replace a variable in an equation with a fact from a story on a graphic organizer.
<u>7.NO.2f6</u> Solve word problems involving ratios (7.RP.01.3)	Ability to solve word problems involving ratios.	Show rate when asked – Show proportion when asked – Select a set for the ratio given. (Maria stamps three letters every minute which we write as 3:1. Show me the letters she stamps in a minute).
<u>7.GM.1h2</u> Find the surface area of three-dimensional figures using nets of rectangles or triangles. (7.G.02.6)	Ability to determine the surface area of three dimensional figures using nets of rectangles and/or triangles.	Demonstrate the concept of the surface area of a rectangular prism. Fill rectangular prism

Mathematics Grade 8

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<u>8.NO.1k3</u> Use approximations of irrational numbers to locate them on a number line. (8.NS.2)	Ability to locate approximations of irrational numbers on the number line.	Recognize how values/numbers can lie between whole number values on a number line.
<u>8.ME.2d2</u> Apply the formula to find the volume of 3 dimensional shapes (i.e., [cubes], spheres, and cylinders). (8.G.03.9)	Ability to apply the formula for the volume of a cylinder to determine its volume.	Ability to recognize attributes of a 3-dimensional shape.
<u>8.PRF.1g3</u> Solve linear equations with 1 variable (8.EE.03.7)	Ability to solve real-world single-step linear equations.	Use manipulatives or graphic organizer to solve a problem
<u>8.PRF.2e2</u> Identify the rate of change (slope) and initial value (y-intercept) from graphs. (8.F.02.4)	Ability to identify the rate of change (slope) and the initial value (y-intercept) from graphs.	Indicate the point on a line that crosses the y-axis.
<u>8.DPS.1k2</u> Analyze displays of bivariate data to develop or select appropriate claims about those data. (8.SP.01.4)	Ability to analyze a display of bivariate data to determine appropriate claims.	Use graphic supports (e.g., highlighted transparency of an association) to identify the appropriate statement when given a relationship between two variables.
<u>8.PRF.1e2</u> Represent proportional relationships on a line graph. (8.EE.02.5)	Ability to qualitatively describe and select the functional relationship between two quantities represented on a line graph (e.g., where the function is increasing or decreasing, linear or nonlinear).	Recognize a positive relationship between two variables.
<u>8.PRF.1f2</u> Primary CCC: Describe or select the relationship between the two quantities given a line graph of a situation. Secondary CCC: Analyze provided	Ability to analyze information (e.g., a graph) to describe the relationship between two quantities.	Use a graph to recognize the quantity in two sets, without counting, to determine which is relatively larger.

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information (e.g., a graph) to describe the relationship between two quantities. (8.F.5)		
<u>8.GM.1g</u> Recognize congruent and similar figure. (8.G.01.4)	Ability to recognize congruent and similar figures.	Demonstrate the concept of congruent and similar (e.g., Match concrete examples of congruent shapes, match concrete examples of similar shapes).
<u>8.DPS.1h1</u> Graph bivariate data using scatter plots and identify possible associations between the variable. (8.SP.01.1)	Ability to graph bivariate data using scatter plots and identify associations between the variables.	Locate points on the x-axis and y-axis of an adapted grid (not necessarily numeric).
<u>8.ME.1e1</u> Describe the changes in surface area, area, and volume when the figure is changed in some way (e.g., scale drawings). (8.G.01.4)	FK1 Ability to describe the changes in area of a two-dimensional figure when the dimensions are changed in some way. *CCC IS A COMPOSITE OF MULTIPLE SKILLS; THIS FKSA REPRESENTS A COMPONENT SKILL AND DOES NOT ENCOMPASS THE ENTIRE CCC.	Recognize how the space inside a figure increases when the sides are lengthened.

Mathematics High School

CCCs	FKSAs	Essential Understandings
<u>H.NO.1a1</u> Simplify expressions that include exponents. (HSN.RN.01.2)	Ability to simplify expressions that contain exponents.	Create an array with a number multiplied by itself (Show me 3 rows of 3).
<u>H.ME.1b2</u> Solve a linear equation to find a missing attribute given the area, surface area, or volume and the other attribute. (HSA.REI.02.3)	Ability to use an equation to find a missing attribute when the volume of a figure is given along with the measurement of one or more of its attributes.	Identify the unknown quantity when given an equation and labeled figure.
<u>H.PRF.1c1</u> Select the appropriate graphical representation of a linear model based on real world events. (F.IE.1)	Ability to select the graphical representation of a linear model.	Match a point not on a line as not being part of a data set for a given line.
<u>H.DPS.1b1</u> Complete a graph given the data, using dot plots, histograms, or box plots. (HS-ID.01.1)	Ability to complete a histogram using given data.	Make a connection between categories in a data table to the appropriate axis of a graph.
<u>H.PRF.2c1</u> Make predictions based on a given model (for example, a weather model, data for athletes over years). (F.LE.3)	Ability to make a prediction based on a given model.	Extend a graph when provided a relationship and two choices.
<u>H.PRF.2b2</u> Solve equations with one or two variables using equations or graphs. (A.REI.1)	Ability to solve equations with two variables using equations or graphs.	Count and arrange a given number of objects into two sets in multiple combinations.
<u>H.DPS.1c1</u> Use descriptive stats; range, median, mode, mean, outliers/ gaps to describe the data set. (HS-ID.02.5)	Ability to use descriptive statistics to describe a data set.	Identify the highest and lowest value in a data set given a number line and matching symbols (concept of range).
<u>H.ME.1a2</u> Solve real world problems involving units of measurement. (HSN-	Ability to solve real world measurement problems that require interpretation and use of	Ability to solve real world measurement problems that require

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Q.01.1)	a diagram, model, table, or equation to represent relationships, identification of appropriate units of measurement, and performance of operations on quantities involving units of measurement.	interpretation and use of a table.
<u>H.PRF.2b1</u> Translate a real-world problem into a one-variable equation. (HSA.CED.01.1)	Ability to translate words, numbers, or variables representing a real world situation into a one-variable equation.	Match an equation with one variable to the real world context.
<u>H.GM.1b1</u> Use definitions to demonstrate congruency and similarity in figures. (G.SRT.01.2)	Ability to use definitions to demonstrate similarity in figures (ex. the similarity of right angles to explain the proportionality of corresponding pairs of sides).	Identify the right angle within a given triangle - Identify sides and/or hypotenuse of a right triangle.