6th Grade

Gr	Unit	Time Period	Essential Skills
6	Factors and Multiples	August (2-3 weeks)	**Common Factors and Multiples: Students use factors and multiples to solve problems.** *6.NCC.11:* Solve real-world and mathematical problems with the greatest common factor of two whole numbers less than or equal to 100. *6.NCC.12* Solve real-world and mathematical problems with the least common multiple of two whole numbers less than or equal to 12
6	Desmos Unit 1 (Area/ Surface Area) Family Resource Family Resource Spanish Version	September (4 weeks)	**Geometry & Measurement: Area, Volume, & Surface Area Students solve problems involving area, volume, and surface area.** *6.GM.1*: Find the area of triangles, quadrilaterals, and polygons by composing or decomposing to solve real-world and mathematical problems. *6.GM.2:* Apply the formulas V = lwh and V = Bh to find the volume of right rectangular prisms with fractional edge lengths to solve real-world and mathematical problems, including solving for an unknown dimension. *6.GM.3:* Construct nets of a rectangular prism, rectangular pyramid, triangular prism, and triangular pyramid, using the nets to find the surface area of these prisms.
6	DESMOS Unit 2 Introducing Ratios Family Resource Family Resource Spanish Version	October (4 weeks)	**Ratio & Rates:Students understand ratio concepts and use proportional reasoning to solve problems.** *6.PR.1:* Use precise ratio language and notation to describe a ratio as a relationship between two quantities. *6.PR.4:* Create various representations to compare ratios and find missing values to solve real-world and mathematical problems.
6	DESMOS Unit 3 Unit Rates and Percentages Family Resource Family Resource Spanish Version	October-November (4 weeks)	**Ratio & Rates :Students understand ratio concepts and use proportional reasoning to solve problems.** *6.PR.2:* Calculate unit rates to include unit pricing and constant speed. *6.PR.3:* Give examples of unit rates as a ratio that compares two quantities with different units of measure, limited to non-complex fractions. *6.PR.4:* Create various representations to compare ratios and find missing values to solve real-world and mathematical

			problems. *6.PR.5:* Find a percent of a quantity as a rate per 100 and solve problems involving finding the whole when given a part and the percent. **Conversions:Students apply measurement knowledge to solve real-world problems.** *6.GM.7:* Convert measurements within and between the metric and customary measurement systems to solve real-world and mathematical problems. **Number Concepts & Computations:Rational Numbers** *6.NCC.5*: Convert between fractions, decimals, and percents in real-world and mathematical problems.
6	DESMOS Unit 4 Dividing Fractions & supplement for +, - & x Family Resource Family Resource Spanish Version	December-January (4 weeks)	**Number Concepts & Computations:Rational Numbers** *6.NCC.5*: Convert between fractions, decimals, and percents in real-world and mathematical problems. **Rational Number Operations** **Students extend previous knowledge of operations to decimals and fractions, involving positive rational numbers.** *6.NCC.6*: Interpret and represent quotients of fractions. • Fractions include all forms of fractions. *6.NCC.7*: Solve problems involving the division of fractions in real-world and mathematical problems. • Fractions include all forms of fractions.
6	DESMOS Unit 5 Decimal Arithmetic & Khan Academy Family Resource Family Resource Spanish Version	January-February (5 weeks)	**Rational Number Operations** **Students extend previous knowledge of operations to decimals and fractions, involving positive rational numbers.** *6.NCC.9:* Use any standard algorithm to fluently add and subtract multi-digit decimals and fractions in real-world and mathematical problems. *6.NCC.10:* Use any standard algorithm to fluently multiply and divide multi-digit decimals and fractions in real-world and mathematical problems. **Common Factors and Multiples** **Students use factors and multiples to solve problems.** *6.NCC.11*: Solve real-world and mathematical problems with the greatest common factor of two whole numbers less than or equal to 100. *6.NCC.12*: Solve real-world and mathematical problems with the least common multiple of two whole numbers less than or equal to 12.

6	DESMOS Unit 6 Expressions & Equations (Desmos Vocab) (Supplement Vocab: associative, commutative, distributive, identity properties) Family Resource Family Resource Spanish Version	February-March (4 weeks) **If possible, before Spring Break**	**Common Factors and Multiples: Students use factors and multiples to solve problems.** 6.NCC.13: Use the distributive property and the greatest common factor to rewrite the sum of two whole numbers, 1 through 100. **Algebra Expressions** **Students extend their understanding of arithmetic to algebraic expressions.** 6.ALG.1: Read and write expressions in real-world or mathematical problems in which letters stand for numbers. 6.ALG.2: Use mathematical terms to identify parts of an expression, including the *names of operations, terms, factors, coefficients, variables, and constants.* 6.ALG.3: Write and evaluate expressions for given values of variables, using order of operations, including expressions with whole number exponents. 6.ALG.4: Generate equivalent expressions by applying the *associative, commutative, distributive, and identity properties.* 6.ALG.5: Identify when two expressions are equivalent by using properties of operations including like terms. Equations & Inequalities Students focus on reasoning about and solving equations and inequalities.
6	Desmos Unit 7 Positive & Negative Numbers Family Resource Family Resource Spanish Version	March-April (4 weeks)	**Algebra Expressions** **Students extend their understanding of arithmetic to algebraic expressions.** 6.ALG.6: Use substitution to determine if a given value in a specified set makes an equation or inequality true. • Include the following inequality symbols: <, >, ≤, ≥, ≠ 6.ALG.7: Write and solve one-step equations in real-world and mathematical problems, involving positive rational numbers and zero. 6.ALG.8: Write, solve, and graph one-step inequalities in real-world and mathematical problems. **Concepts & Computations: Rational Numbers** **Students use fractions, decimals, integers, and absolute values to represent real-world situations.** 6.NCC.1: Explain positive and negative integers as being opposite values or directions and the meaning of 0 in a real-world context. 6.NCC.2: Find and plot rational numbers on horizontal and vertical number lines in real-world and mathematical problems. 6.NCC.3: Compare rational numbers, using inequalities (<, >,≤,

			≥, ≠) and order on a number line. *6.NCC.4*: Interpret the absolute value of numbers for positive or negative quantities in a real-world context. **Coordinate Plane System: Students graph points in all four quadrants.** *6.GM.4:* Find and graph pairs of rational numbers in all four quadrants of the coordinate plane in real-world and mathematical problems. *6.GM.5:* Draw polygons in the coordinate plane when given coordinates for the vertices. *6.GM.6*: Use coordinates to calculate vertical and horizontal distances between points with the same x-coordinate or the same y-coordinate to solve real-world and mathematical problems.
6	DESMOS Unit 8 Describing Data DESMOS Unit 8 Describing Data (Continued) Family Resource Family Resource Spanish Version	April-May (4 weeks)	**Measures of Center: Students explore mean, median, and mode.** 6.SP.2 Determine the difference between a measure of center (mean & median) and a measure of variation (range & interquartile range). *6.SP.3:* Calculate and interpret any measure of center (mean, median, and mode) of a numerical data set. *6.SP.4*: Determine which measure of center (mean or median) is more appropriate to describe the center of data and justify the choice. *6.SP.5:* Describe how the mean or median is affected by outliers of a numerical data set. **Measures of Variation: Students explore range and interquartile range.** *6.SP.6:* Calculate and interpret the measure of variation [range and interquartile range (IQR)] of a numerical data set. *6.SP.7*: Determine which measure of variation (range or interquartile range) is more appropriate to describe the shape; justify the choice. **Numerical Data:Students summarize and describe distributions.** *6.SP.8*: Represent numerical data on a number line, histogram, and box plot. *6.SP.9*: Calculate the relative frequency of an interval of data values when given a histogram. *6.SP.10*: Interpret a box plot to answer statistical questions about a data set.

6	Supplement		**Statistics & Probability: Statistical & Nonstatistical** **Students recognize that data collected to answer a statistical question can be analyzed by their distributions.** *6.SP.1*: Identify the difference between statistical and non-statistical questions and write simple statistical questions that allow variable responses. ***with Unit 4/5** **Students extend previous knowledge of operations to decimals and fractions, involving positive rational numbers.** *6.NCC.8:* Divide multi-digit numbers fluently in real-world and mathematical problems.

Highlighted areas ~possible emphasis on the number of items on the Summative test per the AR Math Blueprint.