Grade 6 Math

Diary map is based on the 2017-2018 school year. Information may change year to year. Months are guidelines and items may be done at different times of the year.

Month	Essential Questions	Content	Skills	Assessment	Resources	Technology

Common Core Standards for Mathematical Content

Ratios and Proportional Relationships

6.RP.A Understand ratio concepts and use ratio reasoning to solve problems.

The Number System

6.NS.A Apply and extend previous understandings of multiplication and division to divide fractions by fractions.

6.NS.B Multiply and divide multi-digit numbers and find common factors and multiples.

6.NS.C Apply and extend previous understandings of numbers to the system of rational numbers.

Expressions and Equations

6.EE.A Apply and extend previous understandings of arithmetic to algebraic expressions.

6.EE.B Reason about and solve one-variable equations and inequalities.

6.EE.C Represent and analyze quantitative relationships between dependent and independent variables.

Geometry

6.G.A Solve real-world and mathematical problems involving area, surface area, and volume.

Statistics and Probability

6.SP.A Develop understanding of statistical variability.

6.SP.B Summarize and describe distributions.

Common Core Standards for Mathematical Practice

MP.1 Make sense of problems and persevere in solving them.

MP.2 Reason abstractly and quantitatively.

MP.3 Construct viable arguments and critique the reasoning of others.

MP.4 Model with mathematics.

MP.5 Use appropriate tools strategically.

MP.6 Attend to precision.

MP.7 Look for and make use of structure.

MP.8 Look for and express regularity in repeated reasoning.

*Practice standards are ongoing all year.

Ongoing **Standards:** All	**ALEKS** How are math skills practiced and applied?	**ALEKS** -Grade level math topics and prerequisites	**ALEKS** -Apply math skills to solve problems that are individualized based on level of readiness	**ALEKS** -Mastery of individualized topics		**ALEKS** -ALEKS program -iPads
Aug.-Sept. **Standards:** 6.NS.B.2 6.NS.B.4 6.EE.A.1 6.EE.A.2	**Numerical Expressions and Factors** How are whole number operations used to solve real-world problems? How are number	**Numerical Expressions and Factors** -Operations with whole numbers -Powers and exponents -Order of operations -Prime factorization	**Numerical Expressions and Factors** -Add whole numbers -Subtract whole numbers -Multiply whole numbers (3 digit x 3 digit)	**Numerical Expressions and Factors** *Big Ideas Math Course 1* by Houghton Mifflin Harcourt (2014) -textbook -Record and Practice	**Numerical Expressions and Factors** *Big Ideas Math Course 1* by Houghton Mifflin Harcourt (2014) -textbook -Record and Practice	**Numerical Expressions and Factors** -SMART Board -iPads -ELMO -Computer -Math-Aids

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	operations with fractions and mixed numbers different than with whole numbers?	-Greatest common factor -Least common multiples -Common denominators -Reducing fractions	-Divide whole numbers with 2 and 3 digit divisors -Round whole numbers -Solve problems using PEMDAS (Parenthesis, Exponents, Multiplication, Division, Addition, Subtraction) -Find the GCF (Greatest Common Factor) -Find the LCM (Least Common Multiple) -Add and subtract fractions and mixed numbers with common and unlike denominators -Use simplest form, reducing, lowest terms	Journal -Worksheets (teacher created) -*My Math* Grade 5 Volume 2 by McGraw-Hill (2016)	Journal -*My Math* Grade 5 Volume 2 by McGraw-Hill (2016)	
Oct. **Standards:** 6.NS.A.1 6.NS.B.3	**Fractions and Decimals** How is multiplication and division with fractions and mixed numbers different than with whole numbers?	**Fractions and Decimals** -Operations with fractions and mixed numbers -Order of operations -Greatest common factor -Least common multiples -Common denominators -Reduce fractions	**Fractions and Decimals** -Add and subtract fractions and mixed numbers with common denominators and unlike denominators -Multiply and divide fractions and mixed numbers -Use simplest form/reducing/lowest terms -Determine which function to perform first in a multi function problem -Solve real-life problems using fractions and/or mixed numbers	**Fractions and Decimals** *Big Ideas Math Course 1* by Houghton Mifflin Harcourt (2014) -textbook -Record and Practice Journal	**Fractions and Decimals** *Big Ideas Math Course 1* by Houghton Mifflin Harcourt (2014) -textbook -Record and Practice Journal	**Fractions and Decimals** -SMART Board -iPads -ELMO -Computer -Math-Aids

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Nov. **Standards:** 6.NS.A.1 6.NS.B.3	**Fractions and Decimals** How are decimals added, subtracted, multiplied, and divided efficiently?	**Fractions and Decimals** -Operations with decimals -Powers and multiples of ten -Order of operations -Decimal alignment in each operation -Accuracy of basic facts	**Fractions and Decimals** -Add and subtract decimals to the hundredths place -Use rounding to determine accuracy -Multiply a decimal and a whole number and two decimal numbers -Divide decimals by whole numbers and decimals; repeating quotients may occur -Round quotients to the nearest hundredths -Solve real-life problems using decimals	**Fractions and Decimals** *Big Ideas Course I* by Houghton Mifflin Harcourt (2014) -textbook -Record and Practice Journal	**Fractions and Decimals** *Big Ideas Course I* by Houghton Mifflin Harcourt (2014) -textbook -Record and Practice Journal	**Fractions and Decimals** -SMART Board -iPads -ELMO -Computer -Math-Aids
Dec. **Standards:** 6.NS.B.4 6.EE.A.A.2 6.EE.A.3 6.EE.A.4 6.EE.B.6	**Algebraic Expressions and Properties** How are algebraic expressions written and evaluated? How are properties used in mathematical expressions?	**Algebraic Expressions and Properties** -Variables in equations -Expressions with variables -Greatest Common Factor (GCF) -Commutative Property -Associative Property -Distributive Property	**Algebraic Expressions and Properties** -Add, subtract, multiply, and divide equations that contain a variable -Arrange terms in a mathematical expression in order to combine them (commutative property) -Recognize and use order of operations correctly -Compare two different equations to determine differences or similarities -Use GCF to factor algebraic expressions -Apply the properties of the operations to generate equivalent expressions	**Algebraic Expressions and Properties** *Big Ideas Course I* by Houghton Mifflin Harcourt (2014) -textbook -Record and Practice Journal	**Algebraic Expressions and Properties** *Big Ideas Course I* by Houghton Mifflin Harcourt (2014) -textbook -Record and Practice Journal	**Algebraic Expressions and Properties** -SMART Board -iPads -ELMO -Computer
Jan.	**Areas of Polygons** How is the area of	**Areas of Polygons** -All operations (+, -, x, /)	**Areas of Polygons** -Identify 3-6 sided	**Areas of Polygons** *Big Ideas Course I* by	**Areas of Polygons** *Big Ideas Course I* by	**Areas of Polygons** -SMART Board

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Standards: 6.G.A.1 6.G.A.3	parallelograms, triangles, and trapezoids found? How is the area of a 2-dimensional shape labeled? How are the lengths of line segments on a coordinate plane found?	-Order of Operations -Ordered pairs -Plotting ordered pairs -Parallel lines -Height/width; base/length -Right angles	polygons -Find the area of triangles, parallelograms, and trapezoids -Use a coordinate grid to plot ordered pairs and create triangles, parallelograms, and trapezoids -Use a coordinate grid (quadrant l only) to identify area and perimeter of triangles, parallelograms, and trapezoids -Use a formula to find the area of triangles, parallelograms, and trapezoids	Houghton Mifflin Harcourt (2014) -textbook -Record and Practice Journal	Houghton Mifflin Harcourt (2014) -textbook -Record and Practice Journal	-iPads -ELMO -Computer
Feb. **Standards:** 6.RP.A.1 6.RP.A.2 6.RP.A.3	**Ratios and Rates** How is a ratio found, written, and described? How are equivalent ratios found? How are unit rates found and compared? How are equivalent rates found? How is the percent of a number found?	**Ratios and Rates** -Ratios and fractions -Equivalent ratios and fractions -Multiplication and division -Divisibility rules -Equivalent units of measurement -Halves, tenths, and hundredths as percents -Decimal and fraction multiplication -Percents as fractions or decimals	**Ratios and Rates** -Find the ratio of two quantities -Use correct ratio language to describe a ratio relationship -Make tables to show equivalent ratios and to compare ratios -Understand the concept of a unit rate and find the unit rate to compare two items -Find a percent of a quantity as a rate per 100 -Solve problems given a whole, given a part, and given a percent	**Ratios and Rates** *Big Ideas Course I* by Houghton Mifflin Harcourt (2014) -textbook -Record and Practice Journal	**Ratios and Rates** *Big Ideas Course I* by Houghton Mifflin Harcourt (2014) -textbook -Record and Practice Journal	**Ratios and Rates** -SMART Board -iPads -ELMO -Computer

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March **Standards:** 6.NS.C.5 6.NS.C.6 6.NS.C.7 6.NS.C.8	**Ratios and Rates and Integers and the Coordinate Plane** How are positive and negative numbers unique? What is the purpose of absolute values?	**Ratios and Rates and Integers and the Coordinate Plane** -Positive and negative integers -Positive and negative fractions and decimals -Absolute values -Coordinate plane, origin, and quadrants -Ordered pairs -Reflections	**Ratios and Rates and Integers and the Coordinate Plane** -Identify a positive number and its opposite -Compare positive and negative integers -Order a set of integers and/or positive and negative numbers -Find the absolute value of a number -Plot and determine the location of an ordered pair -Reflect a point in the x-axis and the y-axis	**Ratios and Rates and Integers and the Coordinate Plane** *Big Ideas Course I* by Houghton Mifflin Harcourt (2014) -textbook -Record and Practice Journal	**Ratios and Rates and Integers and the Coordinate Plane** *Big Ideas Course I* by Houghton Mifflin Harcourt (2014) -textbook -Record and Practice Journal	**Ratios and Rates and Integers and the Coordinate Plane** -SMART Board -iPads -ELMO -Computer
April **Standards:** 6.G.A.2 6.G.A.4	**Integers and the Coordinate Plane and Surface Area and Volume** How can a coordinate gird be used to find area and perimeter?	**Integers and the Coordinate Plane, and Surface Area and Volume** -Area -Perimeter	**Integers and the Coordinate Plane, and Surface Area and Volume** -Find the area and perimeter of a rectangle graphed on the coordinate grid -Find the reflection of a point in the x and y axes	**Integers and the Coordinate Plane, and Surface Area and Volume** *Big Ideas Course I* by Houghton Mifflin Harcourt (2014) -textbook -Record and Practice Journal	**Integers and the Coordinate Plane, and Surface Area and Volume** *Big Ideas Course I* by Houghton Mifflin Harcourt (2014) -textbook -Record and Practice Journal	**Integers and the Coordinate Plane, and Surface Area and Volume** -SMART Board -iPads -ELMO -Computer
6.EE.B.5 6.EE.B.6 6.EE.B.7	**Equations and Inequalities** How are variables used to represent numbers? How are equations written from real-life situations using variables?	**Equations and Inequalities** -Variables -Algebraic Equations -Inverse operations -Independent variable -Dependent variable -Inequalities -Solution set	**Equations and Inequalities** -Read and translate a word problem into a mathematical question -Using the inverse operation of +, -, x, / find the solution of an equation	**Equations and Inequalities** *Big Ideas Course I* by Houghton Mifflin Harcourt (2014) -textbook -Record and Practice Journal	**Equations and Inequalities** *Big Ideas Course I* by Houghton Mifflin Harcourt (2014) -textbook -Record and Practice Journal	**Equations and Inequalities** -SMART Board -iPads -ELMO -Computer

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	How are equations written with two variables?					
May **Standards:** 6.EE.B.8 6.EE.C.9	**Equations and Inequalities** How are inequalities solved and graphed?	**Equations and Inequalities** -Inequalities -Solution set -Graph of an inequality	**Equations and Inequalities** -Graph and determine the solutions to inequalities using +, -, x, /	**Equations and Inequalities** *Big Ideas Course I* by Houghton Mifflin Harcourt (2014) -textbook -Record and Practice Journal	**Equations and Inequalities** *Big Ideas Course I* by Houghton Mifflin Harcourt (2014) -textbook -Record and Practice Journal	**Equations and Inequalities** -SMART Board -iPads -ELMO -Computer
6.SP.A.1 6.SP.A.2 6.SP.A.3 6.SP.B.4 6.SP.B.5	**Statistical Measures** How are statistics used in everyday living?	**Statistical Measures** -Data set -Statistical questions -Dot plots/line plots -Averages/mean -Median, mode and range	**Statistical Measures** -Define statistical questions -Compose statistical questions -Find the mean of a data set -Find the median, mode, and range of a data set -Interpret results of statistical measures	**Statistical Measures** *Big Ideas Course I* by Houghton Mifflin Harcourt (2014) -textbook -Record and Practice Journal -Presentation of survey findings	**Statistical Measures** *Big Ideas Course I* by Houghton Mifflin Harcourt (2014) -textbook -Record and Practice Journal	**Statistical Measures** -SMART Board -iPads -ELMO -Computer