6th Grade Math Year at a Glance

2019-2020

1st Grading Period

Integers

- *Classify rational numbers*
  6.2A classify whole numbers, integers, and rational numbers using a visual representation such as a Venn diagram to describe relationships between sets of numbers
- *Integer operations*
  6.2B identify a number, its opposite, and its absolute value;
  6.3C represent integer operations with concrete models and connect the actions with the models to standardized algorithms;
  6.3D add, subtract, multiply, and divide integers fluently
  Embed properties within integer operations (identity, commutative, & associative within Integers) 6.7D

Rational Number Conversions

- *Convert between Fraction, Decimal, Percent*
  6.2E extend representations for division to include fraction notation such as a/b represents the same number as a ÷ b where b ≠ 0.
  6.4E represent ratios and percents with concrete models, fractions, and decimals
  6.4F represent benchmark fractions and percents such as 1%, 10%, 25%, 33 1/3%, and multiples of these values using 10 by 10 grids, strip diagrams, number lines, and numbers
  6.4G generate equivalent forms of fractions, decimals, and percents using real-world problems, including problems that involve money
  6.5C use equivalent fractions, decimals, and percents to show equal parts of the same whole.
- *Compare and Order Rational Numbers*
  6.2C locate, compare, and order integers and rational numbers using a number line
  6.2D order a set of rational numbers arising from mathematical and real-world contexts
- *Coordinate Plane*
  6.11A graph points in all four quadrants using ordered pairs of rational numbers

2nd Grading Period

Rational Number Operations

- Review 5th grade rational number operations (adding & subtracting fractions and decimals)
- *Represent and Solve Multiplication and Division of Fractions/Decimals*
  6.2E extend representations for division to include fraction notation such as a/b represents the same number as a ÷ b where b ≠ 0.
  6.3A recognize that dividing by a rational number and multiplying by its reciprocal result in equivalent values
  6.3B determine, with and without computation, whether a quantity is increased or decreased when multiplied by a fraction, including values greater than or less than one
  6.3E multiply and divide positive rational numbers fluently
- *Order of Operations*
  6.7A generate equivalent numerical expressions using order of operations, including whole number exponents and prime factorization

Solving Equations

- *Equivalent Expressions*
  6.7B distinguish between expressions and equations verbally, numerically, and algebraically;
- *Properties*
  6.7D generate equivalent expressions using the properties of operations: inverse, identity, commutative, associative, and distributive properties
  6.7C determine if two expressions are equivalent using concrete models, pictorial models, and algebraic representations (in reference to properties)
- *Model and Solve one variable – one step equations & inequalities*
  6.10A model and solve one-variable, one-step equations and inequalities that represent problems, ~~including geometric concepts~~
  6.10B determine if the given value(s) make(s) one-variable, one-step equations or inequalities true
- *Represent equation/inequality solutions on number line*
  6.9B represent solutions for one-variable, one-step equations and inequalities on number lines

FINAL EXAMS

3rd Grading Period	4th Grading Period
Multiple Representations • *Write equations and inequalities to represent constraints or conditions in problems including related to area and volume* 6.9A write one-variable, one-step equations and inequalities to represent constraints or conditions within problems • *Write problem situations given one-variable, one-step equations and inequalities* 6.9C write corresponding real-world problems given one-variable, one-step equations or inequalities • *Independent vs Dependent events* 6.6A identify independent and dependent quantities from tables and graphs 6.6B write an equation that represents the relationship between independent and dependent quantities from a table • *Represent & compare rules, tables, graphs* 6.4A compare two rules verbally, numerically, graphically, and symbolically in the form of y = ax or y = x + a in order to differentiate between additive and multiplicative relationships **6.6C represent a given situation using verbal descriptions, tables, graphs, and equations in the form y = kx or y = x + b**	**Graphing and Statistics continued from 3rd grading period** **Geometry and Equations** • *Triangle relationships* 6.8A extend previous knowledge of triangles and their properties to include the sum of angles of a triangle, the relationship between the lengths of sides and measures of angles in a triangle, and determining when three lengths form a triangle • *Model area formulas* 6.8B model area formulas for parallelograms, trapezoids, and triangles by decomposing and rearranging parts of these shapes • *Determine solutions of perimeter, area, and volume problems* **6.8D determine solutions for problems involving the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers** • *Model and Solve one variable – one step equations and inequalities using geometric figures* **6.10A model and solve one-variable, one-step equations and inequalities that represent problems, including geometric concept** • *Write equations that represent problems related area and volume* 6.8C write equations that represent problems related to the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers
Proportional Reasoning • *Examples of rates and ratios* 6.4C give examples of ratios as multiplicative comparisons of two quantities describing the same attribute; 6.4D give examples of rates as the comparison by division of two quantities having different attributes, including rates as quotients; • *Apply ratios and rates to real world scenarios* 6.5A represent mathematical and real-world problems involving ratios and rates using scale factors, tables, graphs, and proportions **6.4B apply qualitative and quantitative reasoning to solve prediction and comparison of real-world problems involving ratios and rates** • *Percent applications* **6.5B solve real-world problems to find the whole given a part and the percent, to find the part given the whole and the percent, and to find the percent given the part and the whole, including the use of concrete and pictorial models** • *Convert within measurement systems* **6.4H convert units within a measurement system, including the use of proportions and unit rates**	**Financial Literacy** • Methods of Payment (6.14B, 6.14C) • Credit History (6.14D, 6.14E, 6.14F) • Financial Institutions (6.14A) • Paying for College (6.14G) • Compare Salaries (6.14H)
Graphing and Statistics • *Represent and Interpret numerical data within graphs* 6.12A represent numeric data graphically, including dot plots, stem-and-leaf plots, histograms, and box plots 6.12B use the graphical representation of numeric data to describe the center, spread, and shape of the data distribution **6.13A interpret numeric data summarized in dot plots, stem-and-leaf plots, histograms, and box plots** • *Summarize data with measures of center and graphical summaries* **6.12C summarize numeric data with numerical summaries, including the mean and median (measures of center) and the range and interquartile range (IQR) (measures of spread), and use these summaries to describe the center, spread, and shape of the data distribution** **6.12D summarize categorical data with numerical and graphical summaries, including the mode, the percent of values in each category (relative frequency table), and the percent bar graph, and use these summaries to describe the data distribution** • *Variability* 6.13B distinguish between situations that yield data with and without variability	