

Sixth Grade Math Curricula

The sixth grade Mathematics Curriculum focuses on five process strands: problem solving, reasoning and proof, mathematical communication, connections, and representations. Interweaved into these process strands are five content strands: number sense and operations, algebra, geometry, measurement, and statistics and probability. The entwining of these content strands and process strands will allow our children to become mathematically proficient in conceptual understanding, procedural fluency and problem solving. Our district's Mathematics Curriculum has been aligned with the revised New York State Standards for Mathematics. <http://www.emsc.nysed.gov>

CONTENT STRANDS

Number Sense and Operations

- Understand, represent, and use numbers in integer, fraction, decimal, percent, exponential, and expanded notation forms
- Understand and apply ratios, portions, and percents through a wide variety of hands-on explorations
- Recognize prime and composite numbers
- Understand the operations of addition, subtraction, multiplication and division of whole numbers, fractions and decimals
- Understand reference frames
- Estimate and round numbers to trillion
- Define and identify the commutative and associative properties of addition and multiplication
- Define and identify various properties of addition and multiplication
- Locate and order rational numbers on a number line (positive and negative)
- Add, subtract, multiply, divide fractions, mixed numbers with unlike denominators
- Identify the multiplicative inverse of a number
- Represent fractions as repeating decimals
- Find multiple representations of rational numbers
- Evaluate numerical expressions using order of operations (including exponents of two and three)
- Represent repeated multiplication in exponential form vice versa
- Evaluate expressions having exponents where the power is an exponent of one, two, or three

Algebra

- Use number models and number sentences
- Understand uses of variables
- Understand problem representations in problem solving
- Understand variables and open sentences

- Create, solve and explain 2-step equations
- Translate 2-step verbal expressions in algebraic expressions
- Use substitution to evaluate algebraic expressions

Geometry

- Understand angles and rotations
- Calculate area and volume of various polygons both on and off a coordinate plane
- Investigate circles and Pi
- Identify and classify geometric solids and polygons
- Identify acute, obtuse, and right angles
- Explore tessellations and transformations
- Identify and plot points in all four quadrants

Measurement

- Use linear measurements
- Draw and measure plane geometric figures using rulers, compasses and protractors
- Identify equivalent customary, metric and equivalent metric units of capacity
- Estimate volume, area, and circumference of geometric solids and polygons

Statistics and Probability

- Collect, organize, analyze and display data and make predictions
- Use spreadsheets to create graphs, tables and charts to interpret data
- Analyze the difference between mean, median, mode, and range using stem and leaf plot
- Develop the concept of sampling when collecting data from a population and decide the best method to collect data for a particular question
- List possible outcomes for compound events
- Determine the probability of dependent events
- Determine the number of possible outcomes for a compound event by using the fundamental counting principle