

Math

SIXTH GRADE

Students in sixth grade are changing physically, socially, and cognitively. The sixth-grade classroom environment addresses these changes by providing balance between elementary- and middle-level practices. While these changes are leading to emotional and academic independence, students in this grade continue to need guidance. Sixth-grade students also need an environment that challenges them and provides support as they become more responsible individuals.

The sixth-grade curriculum is designed to maximize student learning through the use of manipulatives, social interaction, and technology. The curriculum assists students as they begin the transition of mathematical thought processes from the concrete to the abstract. Opportunities are provided for students to gain a thorough understanding of decimals and fractions while integrating these number sense concepts into the other mathematical strands.

Number and Operations

1. Demonstrate computational fluency with addition, subtraction, multiplication, and division of decimals and fractions
 - Compare rational numbers written as fractions, decimals, mixed numbers, percents
 - Convert fractions and mixed numbers to decimals and percents
 - Convert terminating decimals and percents to fractions and mixed numbers
 - Write decimal numbers in expanded notation
 - Use prime factorizations
 - Identify prime and composite numbers
 - Use greatest common factor (GCF) to simplify fractions
 - Formulate algorithms using basic operations on fractions and decimals
 - Apply the distributive property to compute with fractions and decimals
 - Using least common multiple (LCM) to add and subtract fractions with unlike denominators
2. Solve problems involving decimals, percents, fractions, and proportions
 - Estimate with fractions and decimals
3. Develop and apply a variety of strategies to solve problems/ emphasis on multi-step and non-routine problems including use of exponents and integers

Algebra

4. Solve problems using numeric and geometric patterns
 - Determine a verbal rule for a function given the input and output

Geometry

5. Identify 2- and 3-dimensional figures based on attributes, properties, component parts
 - Classify quadrilaterals based on their attributes
 - Identify line and rotational symmetries of polygons
 - Classify triangles as right, obtuse, or acute
6. Plot coordinates on grids, graphs, and maps
 - Identify the coordinates of a point on the Cartesian plane
 - Compare parallel and perpendicular lines

Measurement

7. Classify angles as acute, obtuse, right, or straight
 - Estimate angle measures using 45, 90, 180, 270, or 360 degrees as referents
 - Measure angles
8. Solve problems involving perimeter and area of parallelograms and rectangles
 - Estimate perimeter and area
 - Develop formulas to determine perimeter and area of parallelograms and rectangles
9. Determine distance between 2 points on a scale drawing or map using proportional reasoning
 - Use different forms to symbolize ratios and rates (1 to 64; 1:64; $\frac{1}{64}$)
10. Convert units of length, weight, or capacity within the same system (customary and metric)

Data Analysis and Probability

11. Interpret information from bar graphs, line graphs, and circle graphs
12. Interpret and predict data using mean, median, mode, and range
13. Find the probability of a simple event
 - Express probabilities as ratios, percents, and decimals

Communication

14. Vocabulary / oral and written

Technology

15. Demonstrate the use of current technology