

Sixth Grade Concepts and Student Outcomes

[District 102 Priority Standards - Sixth Grade](#)

Chapter 1: Numerical Expressions and Factors

Student Outcomes - In Grade 6, children will:

- Determine which operation to perform
- Divide multi-digit numbers
- Write expressions as powers
- Find values of powers
- Evaluate numerical expressions with whole-number exponents
- Use divisibility rules to find prime factorizations of numbers
- Use diagrams to identify common factors
- Find greatest common factors
- Use diagrams to identify common multiples
- Find least common multiples
- Use least common multiples to add and subtract fractions

[Chapter 1 Overview and Background for Families](#)

Chapter 2: Fractions and Decimals

Student Outcomes - In Grade 6, children will:

- Use models to multiply fractions
- Multiply fractions by fractions
- Write reciprocals of numbers
- Use models to divide fractions
- Divide fractions by fractions
- Use models to divide mixed numbers
- Divide mixed numbers
- Use models to add and subtract decimals
- Add and subtract decimals
- Use models to multiply decimals
- Multiply decimals
- Use models to divide decimals
- Divide decimals
- Solve real-life problems

[Chapter 2 Overview and Background for Families](#)

Chapter 3: Algebraic Expressions and Properties

Student Outcomes - In Grade 6, children will:

- Use order of operations to evaluate algebraic expressions
- Use variables to represent numbers in algebraic expressions
- Write algebraic expressions
- Use properties of operations to generate equivalent expressions
- Use the Distributive Property to find products
- Use the Distributive Property to simplify algebraic expressions
- Use the Distributive Property to produce equivalent expressions
- Solve real-life problems

[Chapter 3 Overview and Background for Families](#)

Chapter 4: Areas of Polygons

Student Outcomes - In Grade 6, children will:

- Find areas of parallelograms
- Find areas of triangles
- Find areas of trapezoids
- Find areas of composite figures
- Draw polygons in the coordinate plane
- Find distances in the coordinate plane
- Solve real-life problems

[Chapter 4 Overview and Background for Families](#)

Chapter 5: Ratios and Rates

Student Outcomes - In Grade 6, children will:

- Understand the concept of a ratio
- Use ratios to describe the relationship between two quantities
- Use ratio tables to find equivalent ratios
- Understand the concepts of rates and unit rates
- Write unit rates
- Compare ratios
- Compare unit rates
- Graph ordered pairs to compare ratios and rates
- Write percents as fractions with denominators of 100
- Write fractions as percents
- Find percents of numbers
- Find the whole given the part and the percent
- Use conversion factors (rates) to convert units of measurement
- Solve real-life problems

[Chapter 5 Overview and Background for Families](#)

Chapter 6: Integers and the Coordinate Plane

Student Outcomes - In Grade 6, children will:

- Understand positive and negative integers and use them to describe real-life situations
- Graph integers on a number line
- Use a number line to compare positive and negative integers
- Use a number line to order positive and negative integers for real-life situations
- Understand positive and negative numbers and use them to describe real-life situations
- Graph numbers on a number line
- Find the absolute value of numbers
- Use absolute value to compare numbers in real-life situations
- Describe the locations of points in the coordinate plane
- Plot points in the coordinate plane given ordered pairs
- Find distances between points in the coordinate plane
- Understand reflections of points in the coordinate plane

[Chapter 6 Overview and Background for Families](#)

Chapter 7: Equations and Inequalities

Student Outcomes - In Grade 6, children will:

- Write word sentences as equations
- Use addition or subtraction to solve equations
- Use substitution to check answers
- Use multiplication or division to solve equations
- Use substitution to check answers
- Identify independent and dependent variables
- Write equations in two variables
- Use tables and graphs to analyze the relationship between two variables
- Write word sentences as inequalities
- Use a number line to graph the solution set of inequalities
- Use inequalities to represent real-life situations
- Use addition or subtraction to solve inequalities
- Use a number line to graph the solution set of inequalities
- Use multiplication or division to solve inequalities
- Use a number line to graph the solution set of inequalities
- Solve real-life problems

[Chapter 7 Overview and Background for Families](#)

Chapter 8: Surface Area and Volume

Student Outcomes - In Grade 6, children will:

- Draw three dimensional figures
- Find the number of faces, edges, and vertices of solids
- Use nets to represent prisms
- Find the surface area of prisms
- Use nets to represent pyramids
- Find the surface area of pyramids
- Find the volume of prisms with fractional edge lengths by using models
- Find the volume of prisms by using formulas
- Solve real-life problems

[Chapter 8 Overview and Background for Families](#)

Chapter 9: Statistical Measures

Student Outcomes - In Grade 6, children will:

- Recognize statistical questions
- Use dot plots to display numerical data
- Understand the concept of the mean of data sets
- Find the mean of data sets
- Compare and interpret the means of data sets
- Understand the concept of measures of center
- Find the median and mode of data sets
- Find the range of data sets
- Find the interquartile range of data sets
- Check for outliers in data sets

- Understand the meaning of mean absolute deviation
- Find the mean absolute deviation of data sets

[Chapter 9 Overview and Background for Families](#)

Chapter 10: Data Displays

Student Outcomes - In Grade 6, children will:

- Make and interpret stem-and-leaf plots
- Make histograms
- Use histograms to analyze data
- Describe shapes of distributions
- Choose appropriate measures of center and variation to represent data sets
- Make and interpret box-and-whisker plots
- Compare box-and-whisker plots

[Chapter 10 Overview and Background for Families](#)