

**St. John's Lutheran School**  
**Mathematics Standards (Math Common Core)**

**Kindergarten Overview**

**Counting and Cardinality**

- Know number names and the count sequence.
- Count to tell the number of objects.
- Compare numbers.

**Operations and Algebraic Thinking**

- Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

**Number and Operations in Base Ten**

- Work with numbers 11–19 to gain foundations for place value.

**Measurement and Data**

- Describe and compare measurable attributes.
- Classify objects and count the number of objects in categories.

**Geometry**

- Identify and describe shapes.
- Analyze, compare, create, and compose shapes.

**Grade 1 Overview**

**Operations and Algebraic Thinking**

- Represent and solve problems involving addition and subtraction.
- Understand and apply properties of operations and the relationship between addition and subtraction.
- Add and subtract within 20.
- Work with addition and subtraction equations.

**Number and Operations in Base Ten**

- Extend the counting sequence.
- Understand place value.
- Use place value understanding and properties of operations to add and subtract.

**Measurement and Data**

- Measure lengths indirectly and by iterating length units.
- Tell and write time.
- Represent and interpret data.

**Geometry**

- Reason with shapes and their attributes.

## **Grade 2 Overview**

### **Operations and Algebraic Thinking**

- Represent and solve problems involving addition and subtraction.
- Add and subtract within 20.
- Work with equal groups of objects to gain foundations for multiplication.

### **Number and Operations in Base Ten**

- Understand place value.
- Use place value understanding and properties of operations to add and subtract.

### **Measurement and Data**

- Measure and estimate lengths in standard units.
- Relate addition and subtraction to length.
- Work with time and money.
- Represent and interpret data.

### **Geometry**

- Reason with shapes and their attributes.

## **Grade 3 Overview**

### **Operations and Algebraic Thinking**

- Represent and solve problems involving multiplication and division.
- Understand properties of multiplication and the relationship between multiplication and division.
- Multiply and divide within 100.
- Solve problems involving the four operations, and identify and explain patterns in arithmetic.

### **Number and Operations in Base Ten**

- Use place value understanding and properties of operations to perform multi-digit arithmetic.

### **Number and Operations—Fractions**

- Develop understanding of fractions as numbers.

### **Measurement and Data**

- Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.
- Represent and interpret data.
- Geometric measurement: understand concepts of area and relate area to multiplication and to addition.
- Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

### **Geometry**

- Reason with shapes and their attributes.

## Grade 4 Overview

### Operations and Algebraic Thinking

- Use the four operations with whole numbers to solve problems.
- Gain familiarity with factors and multiples.
- Generate and analyze patterns.

### Number and Operations in Base Ten

- Generalize place value understanding for multi-digit whole numbers.
- Use place value understanding and properties of operations to perform multi-digit arithmetic.

### Number and Operations—Fractions

- Extend understanding of fraction equivalence and ordering.
- Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.
- Understand decimal notation for fractions, and compare decimal fractions.

### Measurement and Data

- Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.
- Represent and interpret data.
- Geometric measurement: understand concepts of angle and measure angles.

### Geometry

- Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

## Grade 5 Overview

### Operations and Algebraic Thinking

- Write and interpret numerical expressions.
- Analyze patterns and relationships.

### Number and Operations in Base Ten

- Understand the place value system.
- Perform operations with multi-digit whole numbers and with decimals to hundredths.

### Number and Operations—Fractions

- Use equivalent fractions as a strategy to add and subtract fractions.
- Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

### Measurement and Data

- Convert like measurement units within a given measurement system.
- Represent and interpret data.
- Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.

### Geometry

- Graph points on the coordinate plane to solve real-world and mathematical problems.
- Classify two-dimensional figures into categories based on their properties.

## Grade 6 Overview

### **Ratios and Proportional Relationships**

- Understand ratio concepts and use ratio reasoning to solve problems.

### **The Number System**

- Apply and extend previous understandings of multiplication and division to divide fractions by fractions.
- Compute fluently with multi-digit numbers and find common factors and multiples.
- Apply and extend previous understandings of numbers to the system of rational numbers.

### **Expressions and Equations**

- Apply and extend previous understandings of arithmetic to algebraic expressions.
- Reason about and solve one-variable equations and inequalities.
- Represent and analyze quantitative relationships between dependent and independent variables.

### **Geometry**

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

### **Statistics and Probability**

- Develop understanding of statistical variability.
- Summarize and describe distributions.

## Grade 7 Overview

### **Ratios and Proportional Relationships**

- Analyze proportional relationships and use them to solve real-world and mathematical problems.

### **The Number System**

- Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

### **Expressions and Equations**

- Use properties of operations to generate equivalent expressions.
- Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

### **Geometry**

- Draw, construct and describe geometrical figures and describe the relationships between them.
- Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

### **Statistics and Probability**

- Use random sampling to draw inferences about a population.
- Draw informal comparative inferences about two populations.
- Investigate chance processes and develop, use, and evaluate probability models.

## **Grade 8 Overview**

### **The Number System**

- Know that there are numbers that are not rational, and approximate them by rational numbers.

### **Expressions and Equations**

- Work with radicals and integer exponents.
- Understand the connections between proportional relationships, lines, and linear equations.
- Analyze and solve linear equations and pairs of simultaneous linear equations.

### **Functions**

- Define, evaluate, and compare functions.
- Use functions to model relationships between quantities.

### **Geometry**

- Understand congruence and similarity using physical models, transparencies, or geometry software.
- Understand and apply the Pythagorean Theorem.
- Solve real-world and mathematical problems involving volume of cylinders, cones and spheres.

### **Statistics and Probability**

- Investigate patterns of association in bivariate data.

Further details of the specific standards within each category can be found at [http://www.corestandards.org/wp-content/uploads/Math\\_Standards.pdf](http://www.corestandards.org/wp-content/uploads/Math_Standards.pdf)