

## Mathematics: Grade 4

### Number and Operations

- Understands numbers and number systems
- Understands meanings and relationships of operations
- Computes fluently and makes estimates

### Algebra

- Understands patterns, relations, and functions
- Analyzes mathematical situations and structures
- Uses models to understand quantitative relationships

### Geometry

- Describes spatial relationships using coordinate geometry
- Uses symmetry to analyze mathematical situations
- Uses spatial reasoning and geometric modeling to solve problems

### Measurement

- Understands measurement attributes/processes
- Applies appropriate techniques to determine measurements

### Data Analysis and Probability

- Formulates questions
- Collects, organizes, and displays relevant data
- Evaluates inferences and predictions based on data
- Applies basic concepts of probability

The process strands, **problem solving, reasoning and proof, communications, connections, and representation**, are interwoven and interdependent with the content strands.

#### Essential to Know:

- Explains and uses models to show relationship between whole numbers, common fractions, and decimals
- Uses estimation to judge the reasonableness of an answer
- Uses relationships in patterns to make predictions
- Describes geometric properties and relationships
- Uses two-dimensional coordinate grids
- Carries out simple unit conversions within a measurement system
- Represents and interprets data