

## Mathematics: Grade 7

### Number and Operations

- Understands numbers and number systems
- Understands meanings/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 measurement techniques

### 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:

- Analyzes problem solving methods involving fractions, decimals, percents, proportions and ratios
- Represents/analyzes relations and functions w/ tables, graphs, etc.
- Applies properties of similarity/congruent figures
- Justifies conjectures involving similarity/congruence
- Graphs points/identifies coordinates of points in coordinate plane
- Uses investigation to determine how geometric formulas derived
- Understands characteristics of a system of measurements
- Applies fundamental concepts of measures of central tendency
- Represents probabilities as ratios, proportions, decimals between 0,1 and percentages between 0 -100