

Mathematics: Grade 8

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/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/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:

- Compares magnitude of numbers using scientific notation
- Models and solves real world problems
- Applies Pythagorean theorem by constructing figures
- Uses strategies to determine surface area/volume of prisms, pyramids and cylinders
- Constructs convincing arguments based on analysis of data and graph interpretation
- Explains difference between independent/dependent events