

# Grand Island Public Schools

## 8th GRADE MATHEMATICS

**As a result of their participation in this course, students will:**

### **Strand 1: Communicating Mathematical Thinking**

- Build new mathematical knowledge through problem solving. (Problem Solving)
- Apply and adapt a variety of appropriate strategies to solve problems. (Problem Solving)
- Recognize and use connections among mathematical ideas and/or apply in contexts outside of mathematics. (Connections)
- Investigate, develop, and evaluate mathematical arguments and proofs. (Reasoning and Proof)
- Select, apply, and move fluently among mathematical representations to solve problems. (Representation)

### **Strand 2: Number and Operations**

- Estimate the square root of a number.
- Read, write, order, and compare real numbers and find their approximate location on a number line.
- Use the properties of real numbers to write equivalent expressions (distributive and commutative).
- Evaluate algebraic expressions by applying the rules of order of operations (with and without technology).

### **Strand 3: Algebraic Concepts**

- Use numeric, graphic, and symbolic strategies to solve problems involving linear functions.
- Solve one and two step linear equations with one variable.
- Read and interpret tables, charts, and graphs to make comparisons and predictions.
- Write an equation in slope-intercept form from a graph, table, or situation.

### **Strand 4: Geometry, Spatial Concepts, and Measurement**

- Describe, compare, and classify three-dimensional figures.
- Use the Pythagorean Theorem to find the unknown side of a right triangle.
- Identify and perform transformations of figures, including reflections, translations, and rotations.
- Determine the slope of a line.
- Find the surface area and volume of a rectangular prism with and without formulas.
- Find the surface area of a cylinder and find the volume of cylinders and cones given the formula.

### **Strand 5: Data Analysis, Probability, and Statistics**

- Read and interpret box-and-whisker plots, data tables, and scatterplots to make comparisons and predictions.
- Use sampling strategies to address the representativeness of sample data and source of bias.