

# Math Standards

## 6<sup>th</sup> Grade

### **EALR1: The student understands and applies the concepts and procedures of mathematics.**

#### **1.1 Understand and apply concepts and procedures from number sense.**

- 1.1.1 Understand the concept of integers as the set of natural numbers (1, 2, 3...), their opposites (-1, -2, -3...), and 0.
- 1.1.2 Understand the relative values of integers and non-negative rational numbers.
- 1.1.3 Apply properties of addition and multiplication to non-negative rational numbers.
- 1.1.4 Understand the concepts of ratio and percent.
- 1.1.5 Understand the meaning of multiplication and division on non-negative rational numbers.
- 1.1.6 Apply computational procedures with fluency for addition and subtraction on non-negative rational numbers.
- 1.1.7 Understand and apply strategies and tools to complete tasks involving addition and subtraction on non-negative rational numbers.
- 1.1.8 Apply estimation strategies to predict or determine the reasonableness of answers in situations involving addition and subtraction on non-negative rational numbers.

#### **1.2 Understand and apply concepts and procedures from measurement.**

- 1.2.1 Understand the concepts of volume and extend the concept of area to surface area of rectangular prisms.
- 1.2.2 Understand the differences between square and cubic units.
- 1.2.3 *Understand how the unit of measure affects the precision of measurement. (7<sup>th</sup>)*
- 1.2.4 Understand and apply systematic procedures to measure volume and capacity for solid shapes.
- 1.2.5 *Apply formulas to find measurements of circles, triangles, and rectangular prisms. (7<sup>th</sup>)*
- 1.2.6 Understand and apply strategies to obtain reasonable estimates of volume or capacity.

#### **1.3 Understand and apply concepts and procedures from geometric sense.**

- 1.3.1 Understand the characteristics of circles and rectangular prisms.
- 1.3.2 Apply understanding of angles and polygons.
- 1.3.3 Understand the relative location of integers on a number line.
- 1.3.4 Apply understanding of rotations (turns) to two-dimensional figures.

#### **1.4 Understand and apply concepts and procedures from probability and statistics.**

- 1.4.1 Understand probability as a ration between and including 0 and 1.
- 1.4.2 Understand various ways to determine outcomes of events or situations.
- 1.4.3 Analyze how data collection methods affect the data collected.
- 1.4.4 Apply measures of central tendency to interpret a set of data.
- 1.4.5 Understand how to organize, display, and interpret data in text from single line graphs and scatter plots.
- 1.4.6 Evaluate a data set to determine how it can be, or has been, used to support a point of view.

#### **1.5 Understand and apply concepts and procedures from algebraic sense.**

- 1.5.1 Apply rules for number patterns based on two arithmetic operations.
- 1.5.2 Apply understanding of patterns involving two arithmetic operations to develop a rule.
- 1.5.3 Apply understanding of equalities and inequalities to interpret and represent relationships between quantities.
- 1.5.4 Apply understanding of tables, graphs, expressions, equations, or inequalities to represent situations involving two arithmetic operations.
- 1.5.5 Understand and apply procedures to evaluate expressions and formulas.
- 1.5.6 Understand and apply a variety of strategies to solve one-step equations.

## **EALR2: The student uses mathematics to define and solve problems.**

### **2.1 Understand problems.**

2.1.1 Analyze a situation to define a problem.

### **2.2 Apply strategies to construct solutions.**

2.2.1 Apply strategies, concepts, and procedures to devise a plan to solve the problem.

2.2.2 Apply mathematical tools to solve the problem.

## **EALR3: The student uses mathematical reasoning.**

### **3.1 Analyze information.**

3.1.1 Analyze information from a variety of sources to interpret and compare information.

### **3.2 Make predictions, inferences, conjectures, and draw conclusions.**

3.2.1 Apply prediction and inference skills to make or evaluate conjectures.

3.2.2 Apply the skills of drawing conclusions and support those conclusions using evidence.

3.2.3 Analyze procedures and results in various situations.

### **3.3 Verify results.**

3.3.1 Analyze procedures and information used to justify results using evidence.

3.3.2 Analyze thinking and mathematical ideas using models, known facts, patterns, relationships, or counter examples.

## **EALR4: The student communicates knowledge and understanding in both everyday and mathematical language.**

### **4.1 Gather information.**

4.1.1 Apply a planning process to collect information for a given purpose.

4.1.2 Understand how to extract information from multiple sources using reading, listening, and observation.

### **4.2 Organize, represent, and share information.**

4.2.1 Apply organizational skills for a given purpose.

4.2.2 Apply communication skills to clearly and effectively express or present ideas and situations using mathematical language or notation.

## **EALR5: The student understands how mathematical ideas connect within mathematics, to other subject areas, and to real-life situations.**

### **5.1 Relate concepts and procedures within mathematics.**

5.1.1 Apply concepts and procedures from a variety of mathematical areas in a given problem or situation.

5.1.2 Apply different mathematical models and representations to the same situation.

### **5.2 Relate mathematical concepts and procedures to other disciplines.**

5.2.1 Analyze mathematical patterns and ideas to extend mathematical thinking and modeling to other disciplines.

5.2.2 Know the contributions of individuals and cultures to the development of mathematics.

### **5.3 Relate mathematical concepts and procedures to real-world situations.**

5.3.1 Understand that mathematics is used in daily life and extensively outside the classroom.

5.3.2 Understand that mathematics is used within many occupations or careers.