

## **Patterns, Functions, and Algebra**

### **Focus: Attributes and Patterning**

- K.15 The student will sort and classify objects according to attributes.
- K.16 The student will identify, describe, and extend repeating patterns.

## **Patterns, Functions, and Algebra**

### **Focus: Patterning and Equivalence**

- 1.16 The student will sort and classify concrete objects according to one or more attributes, including color, size, shape, and thickness.
- 1.17 The student will recognize, describe, extend, and create a wide variety of growing and repeating patterns.
- 1.18 The student will demonstrate an understanding of equality through the use of the equal sign.

## **Patterns, Functions, and Algebra**

### **Focus: Patterning and Numerical Sentences**

- 2.20 The student will identify, create, and extend a wide variety of patterns.
- 2.21 The student will solve problems by completing numerical sentences involving the basic facts for addition and subtraction. The student will create story problems, using the numerical sentences.
- 2.22 The student will demonstrate an understanding of equality by recognizing that the symbol = in an equation indicates equivalent quantities and the symbol  $\neq$  indicates that quantities are not equivalent.

## **Patterns, Functions, and Algebra**

### **Focus: Patterns and Property Concepts**

- 3.19 The student will recognize and describe a variety of patterns formed using numbers, tables, and pictures, and extend the patterns, using the same or different forms.
- 3.20 The student will
  - a) investigate the identity and the commutative properties for addition and multiplication; and
  - b) identify examples of the identity and commutative properties for addition and multiplication.

## **Patterns, Functions, and Algebra**

### **Focus: Geometric Patterns, Equality, and Properties**

- 4.15 The student will recognize, create, and extend numerical and geometric patterns.
- 4.16 The student will
  - a) recognize and demonstrate the meaning of equality in an equation; and
  - b) investigate and describe the associative property for addition and multiplication.

## **Patterns, Functions, and Algebra**

### **Focus: Equations and Properties**

- 5.17 The student will describe the relationship found in a number pattern and express the relationship.
- 5.18 The student will
- investigate and describe the concept of variable;
  - write an open sentence to represent a given mathematical relationship, using a variable;
  - model one-step linear equations in one variable, using addition and subtraction; and
  - create a problem situation based on a given open sentence, using a single variable.
- 5.19 The student will investigate and recognize the distributive property of multiplication over addition.

## **Patterns, Functions, and Algebra**

### **Focus: Variable Equations and Properties**

- 6.17 The student will identify and extend geometric and arithmetic sequences.
- 6.18 The student will solve one-step linear equations in one variable involving whole number coefficients and positive rational solutions.
- 6.19 The student will investigate and recognize
- the identity properties for addition and multiplication;
  - the multiplicative property of zero; and
  - the inverse property for multiplication.
- 6.20 The student will graph inequalities on a number line.

## **Patterns, Functions, and Algebra**

### **Focus: Linear Equations**

- 7.12 The student will represent relationships with tables, graphs, rules, and words.
- 7.13 The student will
- write verbal expressions as algebraic expressions and sentences as equations and vice versa; and
  - evaluate algebraic expressions for given replacement values of the variables.
- 7.14 The student will
- solve one- and two-step linear equations in one variable; and
  - solve practical problems requiring the solution of one- and two-step linear equations.
- 7.15 The student will
- solve one-step inequalities in one variable; and
  - graph solutions to inequalities on the number line.

- 7.16 The student will apply the following properties of operations with real numbers:
- a) the commutative and associative properties for addition and multiplication;
  - b) the distributive property;
  - c) the additive and multiplicative identity properties;
  - d) the additive and multiplicative inverse properties; and
  - e) the multiplicative property of zero.

## **Patterns, Functions, and Algebra**

### **Focus: Linear Relationships**

- 8.14 The student will make connections between any two representations (tables, graphs, words, and rules) of a given relationship.
- 8.15 The student will
- a) solve multistep linear equations in one variable with the variable on one and two sides of the equation;
  - b) solve two-step linear inequalities and graph the results on a number line; and
  - c) identify properties of operations used to solve an equation.
- 8.16 The student will graph a linear equation in two variables.
- 8.17 The student will identify the domain, range, independent variable, or dependent variable in a given situation.