

## **K-4 MATH**

### **Module Descriptions**

This course provides skills and knowledge for assisting students with math content typically taught in K-4. The course content is designed and adapted from standards recommended by the National Council of Teachers of Mathematics. It includes the specific skill building areas of number sense, computational techniques, algebraic thinking, geometry, measurement, data and probability as they apply to younger school learners in elementary schools.

#### **Module A: Mathematical Literacy (1.5 hours)**

The paraeducator will:

- 1) Identify common misconceptions about mathematics.
- 2) Identify the role of communication in mathematical literacy development.
- 3) Identify the goal of problem-solving and its development in the classroom.
- 4) Compare and contrast mathematical literacy and language/reading/writing (literacy) development.

#### **Module B: Patterns (2.5 hours)**

The paraeducator will:

- 1) Use concrete materials to aid pattern recognition and generalization.
- 2) Describe patterns and other relationships to interpret data using tables and graphs.
- 3) Employ strategies of problem-solving to make predictions and determine the likelihood of an event.
- 4) Relate basic patterns to algebraic concept development.

#### **Module C: Number Representation and Manipulation (6 hours)**

The paraeducator will:

- 1) Use multiple models to develop understandings of place value and the base-ten number system.
- 2) Use patterns to explore algorithms for basic mathematical operations.
- 3) Understand the meaning, effects, and relationships of the basic mathematical operations.
- 4) Define and communicate appropriate use of basic operations (applications, money, time, etc.)

#### **Module D: Equivalency and Number Comparison (2 hours)**

The paraeducator will:

- 1) Use concrete materials to develop meanings for commonly used fractions, decimals, sets and wholes
- 2) Demonstrate equivalent forms of the same number through use of models, drawings and other strategies.
- 3) Compare numbers as equal, greater than and less than, using a variety of strategies.

#### **Module E: Spatial Development and Measurement (3 hours)**

The paraeducator will:

- 1) Recognize and explore 2-D geometric shapes by their attributes (specific quadrilaterals, triangle, and circle; symmetry, diagonals, etc.).
- 2) Recognize and explore 3-D geometric shapes by their attributes (cube, cylinder, cone, and pyramid).
- 3) Solve problems using geometric relationships and spatial reasoning
- 4) Identify angle types.
- 5) Use both standard and non-standard measurements for perimeter and area.