KCDS Mathematics: Pre-Kindergarten

Mathematics helps young children make sense of the world around them and understand their physical world. Children are inclined to make comparisons, notice similarities and differences in objects and group their toys and materials. The ability to organize information into categories, quantify data and solve problems helps children to learn about time, space and numbers.

When children play in the sandbox, cook applesauce and complete a puzzle, they are engaging in activities that allow them to develop the thinking skills that are naturally used in daily life. Children learn the uses of mathematics to describe and explore relationships among objects and materials in the environment. They increasingly develop the vocabulary and skills to measure, describe patterns and to express order and position.

Counting and cardinality, operations and algebraic thinking, and measurement and data are important learning standards for creating a strong foundation for mathematics for children ages 3 to 5. These standards are integrated throughout the school year in the Keith pre-kindergarten curriculum.

KCDS Pre-Kindergarten Mathematics (Grade Level at a Glance)

1st Trimester

Counting and Cardinality	Operations and Algebraic Thinking	Number and Operations in Base 10	Measurement and Data	Geometry
Students will count to 50 by ones and tens. They will count, write, and represent a number of objects from 0-10. They will compare groups of objects or numerals (1-10) using >, <, or = symbols. They will estimate up to 10. They will identify pennies and dimes as representing ones and tens.	Students will represent addition with objects, fingers, claps, drawings, or equations (+0 +1) up to the sum of 10. Students will identify and create AB and ABC patterns.	Throughout the year, students will gain a foundation for place value by counting objects to represent each day until the 100th day of school and beyond, bundling objects into groups of 10 and one hundred.	Students will describe the length of an object using nonstandard units. They will measure time by days, weeks, and months with daily calendar practice. Students will graph data using various bar graphs throughout the year. Students will test and graph results of equal chance probability.	Students will describe objects in the environment using names of 2-D shapes, describing these shapes' attributes and their relative positions using terms such as above, below, beside, in front of, behind, and next to.

2nd Trimester

Counting and Cardinality	Operations and Algebraic Thinking	Number and Operations in Base 10	Measurement and Data	Geometry
Students will count from 1 to 100 by ones and fives. They will count, write, and represent a number of objects from 0-20. They will compare groups of objects or numerals (1-20) using >, <, or = symbols. They will estimate up to 20. They will identify nickels as representing fives.	Students will represent addition with objects, fingers, claps, drawings, or equations (+2 +3) up to the sum of 10. Students will identify and create AAB and ABB patterns.	Throughout the year, students will gain a foundation for place value by counting objects to represent each day until the 100th day of school and beyond, bundling objects into groups of 10 and one hundred.	Students will describe the length of an object using inches in standard measure (ruler). Students will graph data using various bar graphs throughout the year. Students will test and graph results of most likely, least likely, and impossible probability.	Students will identify, describe the attributes of more 2-D shapes: polygons including pentagon, hexagon, octagon, and trapezoid.

3rd Trimester

Counting and Cardinality	Operations and Algebraic Thinking	Number and Operations in Base 10	Measurement and Data	Geometry
Students will count from 1 to 100 by twos and practice counting forward beginning from a given number. They will count, write, and represent a number of objects from 0-100. They will compare groups of objects or numerals (1-100) using >, <, or + symbols.	Students will represent addition with objects, fingers, claps, drawings, or equations (+4 +5 up to sum of 10). Students will identify and create more complex patterns (ABCD).	Throughout the year, students will gain a foundation for place value by counting objects to represent each day until the 100th day of school and beyond, bundling objects into groups of 10 and one hundred.	Students will describe the perimeter of various shapes using nonstandard and standard units. Students will graph data using various bar graphs throughout the year. Students will test and graph results of equal chance, most likely, least likely, and impossible probability.	Students will describe objects in the environment using names of 3-D shapes (and identifying them as "solids"), and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to. They will model shapes in the world by building shapes from components (sticks and clay balls) and drawings. Students will combine various shapes to create new shapes. They will identify and create symmetry in various drawings and objects and discover congruence and similarity.