Kindergarten Mathematics Curriculum Overview

The kindergarten math program builds upon each child's rich store of mathematical understanding and information, while putting mathematics learning into a varied, enjoyable and understandable world. The kindergarten program emphasizes verbal interactions and manipulative activities while laying the groundwork for symbolic understanding. The activities encompass a variety of mathematical strands, including counting, numeration, operations, measurement, geometry, clock and calendar use, graphs, patterns, attributes, and function ideas. Mathematical concepts are applied both in the ongoing daily routines of the classroom and common life experiences of the child.

Strand: Number Sense			
Understanding **Students will understand that**	**Essential Questions**	**Knowledge** **Students will know the/that**	**Skills** **Students will be able to**
Mathematical terminology and symbols are used in precise ways.	• Why is it important to use precise mathematical vocabulary and symbols? • How does mathematical terminology relate to common English words?	• Numbers from 0-31. • Meaning of the fraction one-half. • Meaning of placement terminology (first, second, last). • Addition and subtraction symbols: plus + and minus -.	• Use one-to-one correspondence to count a group of objects. • Count the whole numbers from 0-50 in number sequence. • Count backward from 10-0. • Write numbers from 0-10. • Read and order numbers 0-31. • Compare whole numbers using the words 'larger' and 'smaller' or 'greater than' and 'less than'. • Subtract by 1's from 10 until they get to 0.
All numbers have a distinct position on the real number line.	• What is the relationship between the position of a number on the number line and the value of the number? • How can we use a number line to solve problems?		• Place the numbers from 1 - 31 on a number line. • Use a number line or calendar to determine number patterns.
The results of an operation depend on the types of numbers involved.	• How does identifying the types of numbers involved in an operation assist in determining the reasonableness of the result?		• Add and subtract objects less than 10 using manipulatives. • Tell simple addition and subtraction stories. • Write simple number stories using pictures and number sentences.
Estimation is a logical, useful tool.	• How can estimation be used to determine the reasonableness of an answer? • When is estimation the best strategy?		• Estimate the number of objects in a jar.

Kindergarten Math Learning Standards

Strand: Data, Statistics and Probability			
Understanding **Students will understand that**	**Essential Questions**	**Knowledge** **Students will know the/that**	**Skills** **Students will be able to**
There are a variety of ways to represent, model, and analyze data and to predict future events.	• How can we use data to interpret events in the physical world and in our society?	• Bar graphs, pictographs and Venn diagrams can be used to represent data.	• Collect data by counting. • Record data in bar graphs and pictographs. • Explain the information in a simple graph.

Strand: Algebra (Patterns & Functions)			
Understanding **Students will understand that**	**Essential Questions**	**Knowledge** **Students will know the/that**	**Skills** **Students will be able to**
Many patterns exist in mathematics.	• What are number patterns and why are they useful? • How can we find number patterns? • Where do patterns exist in the physical world?		• Skip count by 2's to 20. • Skip count by 5's and 10's to 100. • Identify patterns in natural surroundings. • Generate, continue and design simple patterns. • Sort and classify objects according to their attributes. • Combine the basic shapes to make designs and patterns.

Strand: Geometry and Measurement			
Understanding **Students will understand that**	**Essential Questions**	**Knowledge** **Students will know the/that**	**Skills** **Students will be able to**
Mathematical terminology and symbols for geometry and measurement are used in precise ways.	• Why is it important to use precise mathematical vocabulary and symbols? • How does mathematical terminology relate to common English words?	• Names of 4 basic shapes: triangle, square, circle, and rectangle. • Meaning of words related to measurement: long, short, tall, heavy, light, more, less, empty, full, etc.	• Identify and draw the 4 basic shapes. • Compare shapes based on their attributes. • Compare lengths and weights of different objects (longer, shorter, heavier, lighter).
Different types of measurements are required depending on the situation or objects involved.	• How do we use different types of measurements?	• Physical characteristics and value of the penny. • Symbols for cents and for dollars. • Terms for time: minute, hour, yesterday, today and tomorrow. • Days of the week and months of the year.	• Measure using nonstandard units of measurement (i.e. using students' feet or hands) and using measuring tools (i.e.. ruler). • Use a calendar. • Read time to the nearest hour on an analog clock (a clock with hands).
The characteristics and properties of geometric figures and real-life objects can be used to solve problems.	• What are the unique characteristics associated with individual geometric figures?		• Recognize simple examples of symmetry. • Combine the basic shapes to make designs and patterns. • Cover given shapes with other shapes.