

Mathematics

Grade Preschool

NJ DOE, NJPTLS:

In a high-quality preschool classroom, preschoolers are intentionally introduced to and engage in the ‘big ideas’ of mathematics. Teachers note children’s interests and strengths in addition to assessing each child’s prior experience and informal knowledge, effectively integrating differentiated math experiences into children’s daily routines and transitions.

Unit	Time	Overview
<u>Unit 1</u> Number Sense and Operations	30 days	This unit will introduce children to the foundational concepts of number sense and operations by engaging them in meaningful, hands-on experiences with counting, number words and symbols, comparing quantities, and solving simple addition and subtraction problems. Through playful exploration, conversation, and everyday routines, children will develop an understanding that numbers represent quantity, can be used to compare groups, and help solve real-world problems. Children will also begin to recognize and write numerals, count objects with one-to-one correspondence, and explain their thinking using mathematical language.
<u>Unit 2</u> Geometry	30 days	This unit will introduce children to the foundational concepts of geometry by helping them explore shapes, spatial relationships, and transformations through hands-on experiences, movement, and play. Children will learn to recognize, name, and describe two- and three-dimensional shapes; use positional words to describe the location of objects and people; and solve problems by building, combining, and changing shapes. Through observation, construction, and conversation, children will begin to understand how shapes and space are part of the world around them and how they can use math language to describe what they see and do.
<u>Unit 3</u> Measurement	30 days	This unit introduces preschool children to foundational concepts of measurement by encouraging them to explore and compare the attributes of everyday objects. Through play, exploration, and guided conversations, children will learn to describe, compare, and order objects based on measurable attributes such as length, weight, capacity, and size. They will begin to use appropriate vocabulary to express comparisons and will develop an understanding of the purpose and process of measuring using both standard and nonstandard units.
<u>Unit 4</u> Algebra	20 days	This unit introduces preschool children to early algebraic thinking by helping them recognize, describe, and create patterns in their environment. Through hands-on exploration, movement, music, and visual stimuli, children will develop foundational skills in identifying alternating, increasing, and decreasing patterns. They will learn to copy and extend simple patterns, predict what comes next in a sequence, and observe changes in quantities or events. These experiences lay the groundwork for future understanding of operations, relationships, and functions in mathematics.
<u>Unit 5</u> Data Analysis	20 days	This unit introduces preschool children to the foundational ideas of data analysis by engaging them in hands-on experiences with collecting, sorting, classifying, and representing information. Through playful exploration of real objects, pictures, and personal experiences, children will learn how to observe attributes, make comparisons, ask questions, and organize data in simple charts, graphs, and drawings. These experiences help children understand that data can be used to answer questions, make decisions, and describe the world around them.

Content Continuum

Preschool Mathematics

Students informally experiment with math problem-solving strategies using objects or pictures.

Students draw pictures to begin to represent simple number stories (to five) and may begin to use number symbols in their drawings.

Students begin to use objects, drawings and actions to represent how they approached a mathematical problem.

Students begin to use objects, pictures, words (and may begin to use number symbols [to five]) to solve simple everyday problems (to ten).

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Possibilities for learning across all the math domains (identified in the Common Core State Standards for Mathematics as counting and cardinality, operations and algebraic thinking, number and operations in base ten, measurement and data, and geometry) are available, daily, in classroom activity/interest areas, during small and large group teacher-child interactions, and out of doors.

Children are encouraged to interact, pursue problem solving strategies and reflect. Teachers facilitate a supportive learning environment by continuously observing, listening and scaffolding children's mathematical thinking in everyday contexts.

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INSTRUCTIONAL / SUPPLEMENTAL MATERIALS

[Preschool Math Standards](#)
[Preschool Teacher Guidelines](#)
[Highscope Preschool Curriculum](#)
[Illustrative Mathematics K-12](#)

KEY FEATURES OF UNITS

- Incorporates 2014 NJDOE Math Standards
- Intentional Focus on Math Discourse and Academic and Math Vocabulary
- Extensive inclusion of Prerequisite Skills
- Incorporation of Personalized Instruction (not certain if you have this in Preschool?)
- Opportunities for solitary, parallel, and small- and large-group play indoors and outdoors
- Systematically assist children in developing social competence and confidence



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