New Jersey Preschool Teaching & Learning

Mathematics

Children begin to demonstrate an understanding of number and counting. 4.1

1. **Count to 20 by ones with minimal prompting.** 4.1.1
2. **Recognize and name one-digit written numbers up to 10 with minimal prompting.** 4.1.2
3. **Know that written numbers are symbols for number quantities and, with support, begin to write numbers from 0 to 10.** 4.1.3
4. **Understand the relationship between numbers and quantities (i.e., the last word stated when counting tells "how many"):** 4.1.4
   - a Accurately count quantities of objects up to 10, using one-to one-correspondence, and accurately count as many as 5 objects in a scattered configuration. 4.1.4.A
   - b Arrange and count different kinds of objects to demonstrate understanding of the consistency of quantities (i.e., "5" is constant, whether it is a group of 5 people, 5 blocks or 5 pencils). 4.1.4.B
   - c Instantly recognize, without counting, small quantities of up to 3 or 4 objects (i.e., subitize). 4.1.4.C
5. **Use one to one correspondence to solve problems by matching sets (e.g., getting just enough straws to distribute for each juice container on the table) and comparing amounts (e.g., collecting the number of cubes needed to fill the spaces in a muffin tin with one cube each).** 4.1.5
6. **Compare groups of up to 5 objects (e.g., beginning to use terms such as "more," "less," "same").** 4.1.6

Children demonstrate an initial understanding of numerical operations. 4.2

1. **Represent addition and subtraction by manipulating up to 5 objects:** 4.2.1
   - a putting together and adding to (e.g., "3 blue pegs, 2 yellow pegs, 5 pegs altogether."); and 4.2.1.A
   - b taking apart and taking from ("I have four carrot sticks. I'm eating one. Now I have 3."). 4.2.1.B
2. **Begin to represent simple word problem data in pictures and drawings.** 4.2.2

Children begin to conceptualize measurable attributes of objects. 4.3

1. **Sort, order, pattern, and classify objects by non-measurable (e.g., color, texture, type of material) and measurable attributes (e.g., length, capacity, height).** 4.3.1

2 **Begin to use appropriate vocabulary to demonstrate awareness of the measurable attributes of length, area, weight and capacity of everyday objects (e.g., long, short, tall, light, heavy, full).** 4.3.2

3 **Compare (e.g., which container holds more) and order (e.g., shortest to longest) up to 5 objects according to measurable attributes.** 4.3.3

Children develop spatial and geometric sense. 4.4

1 **Respond to and use positional words (e.g., in, under, between, down, behind).** 4.4.1

2 **Use accurate terms to name and describe some two-dimensional shapes and begin to use accurate terms to name and describe some three-dimensional shapes (e.g., circle, square, triangle, sphere, cylinder, cube, side point, angle).** 4.4.2

3 **Manipulate, compare and discuss the attributes of:** 4.4.3

- a two-dimensional shapes (e.g., use two dimensional shapes to make designs, patterns and pictures by manipulating materials such as paper shapes, puzzle pieces, tangrams; construct shapes from materials such as straws; match identical shapes; sort shapes based on rules [something that makes them alike/different]; describe shapes by sides/angles; use pattern blocks to compose/decompose shapes when making and taking apart compositions of several shapes). 4.4.3.A
- b three-dimensional shapes by building with blocks and with other materials having height, width and depth (e.g., unit blocks, hollow blocks, attribute blocks, boxes, empty food containers, plastic pipe). 4.4.3.B