

Florida Department of Education



2008 Voluntary Prekindergarten Education Standards: Mathematical Thinking

VI. Mathematical and Scientific Thinking

A. Mathematical Thinking

A.a. Number Sense

- A.a.1. Demonstrates understanding of one to one correspondence
 - Benchmark a: Child demonstrates one to one correspondence when counting.
 - Benchmark b: Child demonstrates one to one correspondence to determine if two sets are equal.
- A.a.2. Shows understanding of how to count and construct sets
 - Benchmark a: Child counts sets in the range of 10 to 15 objects.
 - Benchmark b: Child constructs sets in the range of 10 to 15 objects.
- A.a.3. Shows understanding by participating in the comparison of quantities
 - Benchmark a: Child compares two sets to determine if they are equal.
 - Benchmark b: Child compares two sets to determine if one set has more.
 - Benchmark c: Child compares two sets to determine if one set has less.
 - Benchmark d: Child determines one set of objects is a lot more than another set of objects.
- A.a.4. Assigns and relates numerical representations among numerals (written), sets of objects, and number names (spoken) in the range of five to ten
- A.a.5. Counts and knows the sequence of number names (spoken)
 - Benchmark a: Child counts and recognizes number names (spoken) in the range of 10 to 15.
 - Benchmark b: Child counts up through 31 by understanding the pattern of adding by one, with teacher support and multiple experiences over time.
- A.a.6. Shows understanding of and uses appropriate terms to describe ordinal positions
 - Benchmark a: Child demonstrates the concept of ordinal position with concrete objects (e.g., children or objects).
 - Benchmark b: Child names ordinal positions (e.g., first, second, third, fourth, fifth).

A.b. Number and Operations

- A.b.1. Shows understanding of how to combine sets and remove from a concrete set of objects (receptive understanding)
Benchmark a: Child indicates there are more when they combine (add) sets of objects together.
Benchmark b: Child indicates there are less when they remove (subtract) objects from a set.
- A.b.2. Shows understanding of addition and subtraction using a concrete set of objects (expressive understanding) or story problems found in everyday classroom activities
Benchmark a: Child combines sets of objects to equal a set no larger than ten.
Benchmark b: Child removes objects from a set no larger than ten.
Benchmark c: Child uses concrete objects to solve complex problems (e.g., fingers, blocks).
- A.b.3. Begins to develop an understanding of separating a set into a maximum of four parts, with teacher support and multiple experiences over time.

A.c. Patterns and Seriation

- A.c.1. Recognizes patterns and non-patterns (e.g., red/blue, red/blue vs. rainbow)
- A.c.2. Duplicates identical patterns with at least two elements
- A.c.3. Recognizes pattern units (e.g., red/blue, dog/cat, red/blue/yellow, dog/cat/cow)
- A.c.4. Orders, compares, and describes objects according to a single attribute (seriation)
Benchmark a: Child places objects in increasing order of size where the increasing unit is constant (e.g., unit blocks)
Benchmark b: Child verbalizes why objects were placed in order (e.g., describes process of how and why), with teacher support and multiple experiences over time.

A.d. Geometry

- A.d.1. Understands various two-dimensional shapes, including circle, triangle, square, rectangle, oval, and other less common shapes (e.g., trapezoid)
Benchmark a: Child categorizes (sorts) examples of two-dimensional shapes.
Benchmark b: Child names two-dimensional shapes
Benchmark c: Child constructs examples of two-dimensional shapes.
Benchmark d: Child identifies the number of sides of two-dimensional shapes
- A.d.2. Shows understanding that two-dimensional shapes are equivalent (remain the same) in different orientations
Benchmark a: Child slides shapes, with teacher support and multiple experiences over time.
Benchmark b: Child flips shapes, with teacher support and multiple experiences over time.
Benchmark c: Child rotates shapes, with teacher support and multiple experiences over time.
- A.d.3. Understands various three-dimensional shapes, including sphere, cube, cone, and other less common shapes (e.g., cylinder, pyramid)
Benchmark a: Child categorizes (sorts) examples of three-dimensional shapes.
Benchmark b: Child names three-dimensional shapes.
- A.d.4. Analyzes and constructs examples of simple symmetry and non-symmetry in two-dimensions, using concrete objects.

A.e. Spatial Relations

- A.e.1. Shows understanding of and uses several positional words (e.g., above, below, next to, beside, on top of, inside, outside)
Benchmark a: Child shows understanding of positional words (receptive knowledge).
Benchmark b: Child uses the positional terms verbally (expressive knowledge), such as above, below, next to, beside, on top of, inside and outside, with teacher support and multiple experiences over time.
- A.e.2. Describes relative position from different perspectives (e.g., “I am on top of the climber and you are below me.”)
- A.e.3. Understands and can tell the difference between orientation terms such as horizontal, diagonal, and vertical
- A.e.4. Uses directions to move through space and find places in space (e.g., obstacle courses, Simon Says, Mother May I?, hop scotch, giving simple directions)

A.f. Measurement

- A.f.1. Compares continuous quantities using length, weight, and height
Benchmark a: Child measures or compares the length of one or more objects using a non-standard reference (e.g., paperclips), with teacher support and multiple experiences over time.
Benchmark b: Child measures or compares the weight of one or more objects using non-standard reference (e.g., beans), with teacher support and multiple experiences over time.
Benchmark c: Child measures or compares the height of one or more objects using non-standard reference (e.g., pencils), with teacher support and multiple experiences over time.
Benchmark d: Child uses measurement vocabulary (e.g., length, weight, height) and comparative terminology (e.g., more, less, shorter, longer, heaviest, lightest), with teacher support and multiple experiences over time.
- A.f.2. Represents and analyzes data
Benchmark a: Child assists with collecting and sorting materials to be graphed.
Benchmark b: Child works with teacher and small groups to represent mathematical relations in charts and graphs.
Benchmark c: Child analyzes, with teacher and small group, the relationship between items/objects represented by charts and graphs.
Benchmark d: Child predicts the results of a data collection, with teacher support and multiple experiences over time.