



Standards and Benchmarks

Mathematics / Kindergarten

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Subject:	Grade:	Strand:
Mathematics	*Kindergarten	(Select One)

Key:

Subject

Strand

Grade

Standard

Benchmark

Mathematics

Numbers & Operations

Kindergarten

N1. Understand numbers, ways of representing numbers, relationships among numbers, and number systems

- N1a.Count with understanding to 100 and recognize "how many" in sets of objects up to 50
- N1c.Develop understanding of the relative position and magnitude of whole numbers and of ordinal numbers (up to 20th) and cardinal numbers and their connections
- N1e.Connect number words (up to 25) and numerals to the quantities they represent, using various physical models and representations
- N1f.Understand and represent commonly used fractions of a whole shape or group of objects with illustrations, using $\frac{1}{4}$, $\frac{1}{3}$, and $\frac{1}{2}$

N2. Understand meanings of operations and how they relate to one another

- N2b.Understand the effects of adding and subtracting single-digit whole numbers

N3. Compute fluently and make reasonable estimates

- N3a.Develop and use strategies for single-digit whole-number computations, with a focus on addition and subtraction
- N3c.Use a variety of methods and tools to compute, including objects, mental computation, estimation, paper and pencil, and calculators

Algebra

A1. Understand patterns, relations, and functions

- A1a.Sort, classify, and order up to 3 objects by properties, such as size (small, medium, large), number, color, and shape
- A1b.Recognize, describe, and extend patterns such as sequences of sounds and shapes or simple numeric patterns

A3. Use mathematical models to represent and understand quantitative relationships

- A3a.Model situations that involve the addition and subtraction of single-digit whole numbers, using manipulatives

A4. Analyze change in various contexts

- A4a.Describe qualitative change, using words such as taller, shorter, bigger, smaller, longer

Geometry

G1. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships

- G1a.Identify and draw the following grade-level shapes:circle, square, triangle, oval, star, diamond, rectangle. Identify cylinder, sphere, cone, cube.
- G1b.Describe attributes and parts grade-level shapes
- G1c.Investigate and predict the results of putting together and taking apart grade-level shapes

G2. Specify locations and describe spatial relationships using coordinate geometry and other representational systems

- G2a. Describe, name, and interpret relative positions in space using "above, near, over, under, inside, outside, beside" and apply ideas about relative position
- G2b. Describe, name, and interpret direction and distance in navigating space and apply ideas about direction and distance by moving themselves according to directions

G3. Apply transformations and use symmetry to analyze mathematical situations

- G3b. Recognize and create basic shapes that have one line of symmetry

G4. Use visualization, spatial reasoning, and geometric modeling to solve problems

- G4a. Create mental images of grade-level geometric shapes using spatial memory and spatial visualization
- G4b. Recognize and represent grade-level shapes from different perspectives
- G4d. Recognize geometric grade-level shapes and structures in the environment and specify their location

Measurement**M1. Understand measurable attributes of objects and the units, systems, and processes of measurement**

- M1a. Recognize the attributes of length with nonstandard units, volume and weight with pictures, and time to the nearest 1/2 hour
- M1b. Compare and order objects according to these attributes (size, shape, color)

M2. Apply appropriate techniques, tools, and formulas to determine measurements

- M2a. Measure with multiple copies of units of the same size, such as paper clips laid end to end
- M2b. Use repetition of a single unit to measure something larger than the unit, for instance, measuring the length of a room with a single meterstick
- M2c. Use tools to measure

Data Analysis & Probability**DP1. Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them**

- DP1a. Pose questions and gather data about themselves and their surroundings
- DP1b. Sort and classify objects according to one attribute and organize data about the objects
- DP1c. Represent data in picture graphs and tally charts using concrete objects, pictures, and graphs

Mathematical Process**P1. Develop and use problem solving skills**

- P1a. Build new mathematical knowledge through problem solving

P4. Connect mathematical ideas inside and outside of mathematical contexts

- P4a. Recognize and use connections among mathematical ideas
- P4c. Recognize and apply mathematics in contexts outside of mathematics

P5. Represent mathematical ideas clearly

- P5a. Create and use representations (such as pictures, graphs, illustrations, models, and tally charts to organize, record, and communicate mathematical ideas