



**Mathematics**  
Course: Grade Kindergarten

In Kindergarten, instructional time should focus on two critical areas: (1) representing and comparing whole numbers, initially with sets of objects; (2) describing shapes and space. More learning time in Kindergarten should be devoted to number than to other topics.

*New Jersey Student Learning Standards for Mathematics*

<a href="#">Unit 1</a>	20 days	In Unit 1, the students will start to make the gradual transition to using counting as a tool to connect and describe their real world. The students will start to construct the idea of counting with manipulatives (counters, graphs, five/ten frames, dot cards) to visually see numbers. Students memorize the rote counting sequence, apply one to one correspondence, and create strategies to keep track of their counting.
<a href="#">Unit 2</a>	20 days	In Unit 2, the students will develop their understanding of the <i>successor function: each successive number is a quantity that is exactly one larger</i> . Students will represent and model and solve number stories concretely using drawings, counters and acting them out. The students will explore numbers, objects, actions and shapes to find commonalities. Students will share explanations of how they solve problems, as well as represent their thinking. Students will identify, analyze and compare shapes in a variety of contexts.
<a href="#">Unit 3</a>	20 days	In Unit 3, the students will be expected to make the connection between numbers as words and a quantity of items (Cardinal Principle). Students will gain fluency with connecting a written number with the act of counting, identify the number of objects in sets, compare sets of objects as less sets, more sets. Students will count/produce sets of given sizes, count the number of objects in a combined set, and count the number of objects after some are taken away. Students will use pictures, actions, objects, written or oral language to represent their thinking. The students will apply strategies to answer exploratory problem-solving questions. Students will continue to investigate geometry concepts by comparing shapes within and across categories and analyze and describe the properties of shapes.
<a href="#">Unit 4</a>	20 days	In Unit 4, the students choose, combine, and apply strategies for answering questions. The students will use objects, pictures, actions, and explanations to solve problems and represent thinking. Students apply the Cardinal Principle to recognize and compare the number of elements in sets. Students practice advanced oral counting, independently through at least 50, and with a starting number other than 1, at least through 50. Students produce sets of given sizes, count the number of objects in combined sets, and count the number of objects that remain in a set after some are taken away. Students also compose and decompose shapes to explore how combinations of shapes can be used to compose larger shapes.
<a href="#">Unit 5</a>	20 days	In Unit 5, the students will begin to build an understanding of place value by focusing on the teen numbers, 10-19. Students further explore addition as putting numbers or objects together, or adding to. Students represent addition symbolically using the plus (+) and equal (=) signs. Students develop spatial awareness as they use positional language to describe the location of the shapes they see in their world. Students develop skills in making mathematical arguments.
<a href="#">Unit 6</a>	20 days	In Unit 6, the students will understand that the measurable attributes of objects provide a means to sort and compare objects in different ways, including length, weight and capacity. Students will measure objects using non-standard measuring tools. They will also be exposed to a variety of 3-D shapes to compare and contrast to the previous learned 2-D shapes and again sort by varying attributes. The students will also create concrete mathematical models, to model addition and subtraction number stories and equations, using graphs, strings for measurement, and manipulatives.
<a href="#">Unit 7</a>	20 days	In Unit 7, the students will connect their conceptual knowledge of addition and subtraction to using specific strategies fluently, such as counting on and counting back, and noticing patterns for one more and one less (+1, -1). Students will decompose numbers within 19. Students will represent larger teen numbers with 10 + expressions. Students begin to learn estimation strategies and begin to practice estimating objects in a set.
<a href="#">Unit 8</a>	20 days	In Unit 8, the students apply their sense of number pairs that add to ten and build upon their understanding of place value as a basis of mental calculation. Part-part-whole thinking within ten supports their conceptual understanding of fractions. Students will build upon their understanding of addition and subtraction and begin to develop fluency adding and subtracting numbers at least within 5. Students will create models of 3-dimensional shapes to describe, compare and contrast shape properties. Students note how many 3-dimensional shapes have 2-dimensional faces. Students demonstrate their mathematical reasoning skills by justifying their solutions. Throughout the unit, students will choose appropriate math tools to support operations with numbers.
<a href="#">Unit 9</a>	20 days	In Unit 9, the students continue to expand their knowledge of addition and subtraction. Students identify patterns in addition and subtraction including “doubles”, use patterns in addition and subtraction to solve problems or to recall facts efficiently, and apply their understanding of mathematical patterns in the context of function machines. Students use spatial and positional language in a variety of experiences, and develop their spatial thinking and awareness. Students continue to identify, define, and compare multiple measurable attributes of objects. Students use non-standard measuring tools to explore that measures are discrete and countable.

# Content Continuum

## Kindergarten Mathematics

Students describe their physical world using geometric ideas (e.g., shape, orientation, spatial relations) and vocabulary. They identify, name, and describe basic two dimensional shapes, such as squares, triangles, circles, rectangles, and hexagons, presented in a variety of ways.

They use basic shapes and spatial reasoning to model objects in their environment and to construct more complex shapes. *NJSLS*

Students use numbers, including written numerals, to represent quantities and to solve quantitative problems, such as counting objects in a set; counting out a given number of objects; comparing sets or numerals; and modeling simple joining and separating situations with sets of objects, or eventually with equations such as  $5 + 2 = 7$  and  $7 - 2 = 5$ .

Students choose, combine, and apply effective strategies for answering quantitative questions, including quickly recognizing the cardinalities of small sets of objects, counting and producing sets of given sizes, counting the number of objects in combined sets, or counting the number of objects that remain in a set after some are taken away. *NJSLS*

### INSTRUCTIONAL/ SUPPLEMENTAL MATERIALS

- Textbook- Everyday Mathematics 4
- Engageny.org
- Illustrative Mathematics
- New Jersey Model Curriculum

### KEY FEATURES OF REVISION

- Aligned to New Jersey Student Learning Standards
- Aligned to Understanding By Design Framework
- Aligned to Webb's Depth of Knowledge
- Problem Based Assessments & Rubrics
- Additional on-line support and resources

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