

Understanding the Content Standards

Clicking on each of the standards below will provide a brief description of the standard along with a breakdown of the standard through its learning objectives. For more detailed information about how to help students build toward mastery of these standards and background information, review the *Explanation of the Mathematics Content Standards*.

Kindergarten Mathematics	
Mathematical Practice	
<u>K.MP</u>	
Numerical Reasoning <u>K.NR.1</u> <u>K.NR.2</u> <u>K.NR.3</u> <u>K.NR.4</u> <u>K.NR.5</u>	Patterning & Algebraic Reasoning <u>K.PAR.6</u>
Measurement & Data Reasoning <u>K.MDR.7</u>	Geometric & Spatial Reasoning <u>K.GSR.8</u>

Understanding the Content Standards

MATHEMATICAL PRACTICES STANDARD/KEY COMPETENCY
MATHEMATICAL PRACTICES – <i>reasoning and explaining, modeling and using tools, seeing structure and generalizing</i>
<p>MP: Display perseverance and patience in problem-solving. Demonstrate skills and strategies needed to succeed in mathematics, including critical thinking, reasoning, and effective collaboration and expression. Seek help and apply feedback. Set and monitor goals.</p> <p>Understanding the Intent and Rigor of the Standard <i>This standard consists of a breakdown through several learning objectives. These learning objectives are not meant to be taught in isolation, but rather in clusters of related learning objectives. The Kindergarten curriculum map provides suggestions for clustering learning objectives within each unit.</i></p> <p>The Mathematical Practices describe the reasoning behaviors students should develop as they build an understanding of mathematics – the “habits of mind” that help students become mathematical thinkers. There are eight standards, which apply to all grade levels and conceptual categories.</p> <p>These mathematical practices describe how students should engage with the mathematics content for their grade level. Developing these habits of mind builds students’ capacity to become mathematical thinkers. These practices can be applied individually or together in mathematics lessons, and no particular order is required. In well-designed lessons, there are often two or more Mathematical Practices present.</p>
Breakdown of Standard/Key Competency (Expectation/Learning Objective)
K.MP.1 Make sense of problems and persevere in solving them.
K.MP.2 Reason abstractly and quantitatively.
K.MP.3 Construct viable arguments and critique the reasoning of others.
K.MP.4 Model with mathematics.
K.MP.5 Use appropriate tools strategically.
K.MP.6 Attend to precision.
K.MP.7 Look for and make use of structure.
K.MP.8 Look for and express regularity in repeated reasoning.

STANDARD/KEY COMPETENCY 1

NUMERICAL REASONING – counting, money, place value, numbers to 20, addition, subtraction and fluency

K.NR.1: Demonstrate and explain the relationship between numbers and quantities up to 20; connect counting to cardinality (the last number counted represents the total quantity in a set).

Understanding the Intent and Rigor of the Standard

This standard consists of a breakdown through several learning objectives. These learning objectives are not meant to be taught in isolation, but rather in clusters of related learning objectives. The Kindergarten curriculum map provides suggestions for clustering learning objectives within each unit.

When learning this standard, students will explore how numbers up to 20 are used to explain the quantity of objects. Students will be able to count and answer “how many?” when given up to 20 objects arranged in a variety of ways. When counting, students should know that the last number counted represents the total quantity in a set. Students will also be able to say the name of the number that is one more, and the number that is one less than a given number. Students will also be able to name and tell the value of a penny, nickel, or dime.

Breakdown of Standard/Key Competency 1 (Expectation/Learning Objective)

K.NR.1.1 Count up to 20 objects in a variety of structured arrangements and up to 10 objects in a scattered arrangement..

K.NR.1.2 When counting objects, explain that the last number counted represents the total quantity in a set (cardinality), regardless of the arrangement and order.

K.NR.1.3 Given a number from 1-20, identify the number that is one more or one less.

K.NR.1.4 Identify pennies, nickels, and dimes and know their name and value.

STANDARD/KEY COMPETENCY 2

NUMERICAL REASONING – counting, money, place value, numbers to 20, addition, subtraction and fluency

K.NR.2: Use count sequences within 100 to count forward and backward in sequence.

Understanding the Intent and Rigor of the Standard

This standard consists of a breakdown through several learning objectives. These learning objectives are not meant to be taught in isolation, but rather in clusters of related learning objectives. The Kindergarten curriculum map provides suggestions for clustering learning objectives within each unit.

When learning this standard, students will rote count forward to 100. Starting at 10, students will rote count forward by tens to 100. Starting at 10, students will rote count backward to 1. Once students have mastered rote counting backward from 10, students will start at 20 and rote count backward to 1. Students will also count forward within 100 and backward within 20 from a given number.

Breakdown of Standard/Key Competency 2 (Expectation/Learning Objective)

K.NR.2.1 Count forward to 100 by tens and ones and backward from 20 by ones.

K.NR.2.2 Count forward beginning from any number within 100 and count backward from any number within 20.

STANDARD/KEY COMPETENCY 3

NUMERICAL REASONING – counting, money, place value, numbers to 20, addition, subtraction and fluency

K.NR.3: Use place value understanding to compose and decompose numbers from 11–19.

Understanding the Intent and Rigor of the Standard

This standard consists of a breakdown through one learning objective. This learning objective is not meant to be taught in isolation, but rather within a cluster of related learning objectives. The Kindergarten curriculum map provides suggestions for clustering learning objectives within each unit.

When learning this standard, students will use tools such as objects, 5 frames, 10 frames, or rekenreks, to compose (to put together) and decompose (break apart) numbers into a group of ten ones and some further ones to understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.

Breakdown of Standard/Key Competency 3 (Expectation/Learning Objective)

K.NR.3.1 Describe numbers from 11 to 19 by composing (putting together) and decomposing (breaking apart) the numbers into ten ones and some more ones.

STANDARD/KEY COMPETENCY 4

NUMERICAL REASONING – counting, money, place value, numbers to 20, addition, subtraction and fluency

K.NR.4: Identify, write, represent, and compare numbers up to 20.

Understanding the Intent and Rigor of the Standard

This standard consists of a breakdown through several learning objectives. These learning objectives are not meant to be taught in isolation, but rather in clusters of related learning objectives. The Kindergarten curriculum map provides suggestions for clustering learning objectives within each unit.

When learning this standard, students will engage in multiple opportunities to count various objects. Students will identify written numerals to represent a given set of objects up to 20. Students will be able to write the numeral that represents a set of 0-20 objects. When given two groups of objects, students will verbally identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group.

Breakdown of Standard/Key Competency 4 (Expectation/Learning Objective)

K.NR.4.1 Identify written numerals 0- 20 and represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).

K.NR.4.2 Compare two sets of up to 10 objects and identify whether the number of objects in one group is more or less than the other group, using the words “greater than,” “less than,” or “the same as”.

STANDARD/KEY COMPETENCY 5

NUMERICAL REASONING – counting, money, place value, numbers to 20, addition, subtraction and fluency

K.NR.5: Explain the concepts of addition, subtraction, and equality and use these concepts to solve real-life problems within 10.

Understanding the Intent and Rigor of the Standard

This standard consists of a breakdown through several learning objectives. These learning objectives are not meant to be taught in isolation, but rather in clusters of related learning objectives. The Kindergarten curriculum map provides suggestions for clustering learning objectives within each unit.

When learning this standard, students will explore the operations of addition and subtraction and use addition and subtraction to solve problems within 10 from real-life where the result or total is unknown. They will represent situations in various ways using objects, fingers, drawings, expressions, or equations. Students will use a variety of strategies to solve addition and subtraction problems within 10. Students will fluently add and subtract using a variety of strategies.

Breakdown of Standard/Key Competency 5 (Expectation/Learning Objective)

K.NR.5.1 Compose (put together) and decompose (break apart) numbers up to 10 using objects and drawings

K.NR.5.2 Represent addition and subtraction within 10 from a given authentic situation using a variety of representations and strategies.

K.NR.5.3 Use a variety of strategies to solve addition and subtraction problems within 10.

K.NR.5.4 Fluently add and subtract within 5 using a variety of strategies to solve practical, mathematical problems

STANDARD/KEY COMPETENCY 6

PATTERNING & ALGEBRAIC REASONING – repeating patterns and time

K.PAR.6: Explain, extend, and create repeating patterns with a repetition, not exceeding 4 and describe patterns involving the passage of time.

Understanding the Intent and Rigor of the Standard

This standard consists of a breakdown through several learning objectives. These learning objectives are not meant to be taught in isolation, but rather in clusters of related learning objectives. The Kindergarten curriculum map provides suggestions for clustering learning objectives within each unit.

When learning this standard, students will identify a pattern with no more than 4 repetitions (iterations) created using shapes and numbers and extend the pattern. Students will describe patterns related to time from real-life.

Breakdown of Standard/Key Competency 6 (Expectation/Learning Objective)

K.NR.6.1 Create, extend, and describe repeating patterns with numbers and shapes, and explain the rationale for the pattern.

K.NR.6.2 Describe patterns involving the passage of time using words and phrases related to actual events.

STANDARD/KEY COMPETENCY 7

MEASUREMENT & DATA REASONING – attributes of objects, classifying objects

K.MDR.7: Observe, describe, and compare the physical and measurable attributes of objects and analyze graphical displays of data.

Understanding the Intent and Rigor of the Standard

This standard consists of a breakdown through several learning objectives. These learning objectives are not meant to be taught in isolation, but rather in clusters of related learning objectives. The Kindergarten curriculum map provides suggestions for clustering learning objectives within each unit.

When learning this standard, students will observe, describe, and compare the measurable attributes of objects and sort objects into categories by an attribute. Students will use language such as heavier, lighter, longer, taller, shorter, wider, larger, smaller to compare, describe, and order common objects. Students may use a variety of techniques and tools to compare, describe, and order objects. Students may use another object as the standard of comparison to describe object(s).

Breakdown of Standard/Key Competency 7 (Expectation/Learning Objective)

K.NR.7.1 Directly compare, describe, and order common objects, using measurable attributes (length, height, width, or weight) and describe the difference.

K.NR.7.2 Classify and sort up to ten objects into categories by an attribute; count the number of objects in each category and sort the categories by count.

K.NR.7.3 Ask questions and answer them based on gathered information, observations, and appropriate graphical displays to solve problems relevant to everyday life.

STANDARD/KEY COMPETENCY 8

GEOMETRIC & SPATIAL REASONING – 2D and 3D shapes, relative locations, attributes

K.GSR.8: Identify, describe, and compare basic shapes encountered in the environment, and form two-dimensional shapes and three-dimensional figures.

Understanding the Intent and Rigor of the Standard

This standard consists of a breakdown through several learning objectives. These learning objectives are not meant to be taught in isolation, but rather in clusters of related learning objectives. The Kindergarten curriculum map provides suggestions for clustering learning objectives within each unit.

When learning this standard, students will observe shapes in their environment and describe the shapes based on the number of sides, vertices, and other attributes. They will identify basic two-dimensional shapes (squares, circles, triangles, rectangles, hexagons, and octagons) and three-dimensional shapes (cubes, cones, cylinders, and spheres) and describe how these shapes are similar and different. Students will begin to understand how three-dimensional figures are composed of two-dimensional shapes. They will form larger shapes by putting two or more basic shapes together and will also explain the location of an object in relation to another object using positional language.

Breakdown of Standard/Key Competency 8 (Expectation/Learning Objective)

K.GSR.8.1 Identify, sort, classify, analyze, and compare two-dimensional shapes and three-dimensional figures, in different sizes and orientations, using informal language to describe their similarities, differences, number of sides and vertices, and other attributes.

K.GSR.8.2 Describe the relative location of an object using positional words.

K.GSR.8.3 Use basic shapes to represent specific shapes found in the environment by creating models and drawings.

K.GSR.8.4 Use two or more basic shapes to form larger shapes.