

04-Measurement and Data

Content Area: **Math**
Course(s):
Time Period: **Full Year**
Length: **8 weeks**
Status: **Published**

General Overview, Course Description or Course Philosophy

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.

1. 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 $7 - 2 = 5$. (Kindergarten students should see addition and subtraction equations, and student writing of equations in kindergarten is encouraged, but it is not required.) 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.
2. 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 (e.g., with different sizes and orientations), as well as three-dimensional shapes such as cubes, cones, cylinders, and spheres. They use basic shapes and spatial reasoning to model objects in their environment and to construct more complex shapes.

In this unit, students will focus on the following skills and concepts:

- Describe measurable attributes of objects, such as length or weight.
- Describe several measurable attributes of a single object.
- Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference.
- Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

OBJECTIVES, ESSENTIAL QUESTIONS, ENDURING UNDERSTANDINGS

Enduring Understandings:

- Measurement is the dimension, quantity or capacity of an object compared to a standard.
- A category is a group of objects that have similar attributes.
- When comparing two lengths, one end of each length must match.

Essential Questions:

- What are some ways to measure objects?
- How can we compare measurements of objects?
- What are ways to categorize objects?
- How do we sort objects?

CONTENT AREA STANDARDS

MA.K-12.3	Construct viable arguments and critique the reasoning of others.
MA.K-12.4	Model with mathematics.
MA.K-12.5	Use appropriate tools strategically.
MA.K-12.6	Attend to precision.
MA.K.MD	Measurement and Data
MA.K.MD.A	Describe and compare measurable attributes.
MA.K.MD.A.1	Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
MA.K.MD.A.2	Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference.
MA.K.MD.B	Classify objects and count the number of objects in each category.
MA.K.MD.B.3	Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

RELATED STANDARDS (Technology, 21st Century Life & Careers, ELA Companion Standards are Required)

LA.SL.K.1	Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.
LA.SL.K.1.A	Follow agreed-upon norms for discussions (e.g., listening to others with care and taking turns speaking about the topics and texts under discussion).
SEL.PK-12.5.2	Utilize positive communication and social skills to interact effectively with others
WRK.K-12.P.1	Act as a responsible and contributing community members and employee.

WRK.K-12.P.4

Demonstrate creativity and innovation.

WRK.K-12.P.5

Utilize critical thinking to make sense of problems and persevere in solving them.

TECH.K-12.P.1

Act as a responsible and contributing community members and employee.

STUDENT LEARNING TARGETS

- I can identify attributes (features or qualities) that can be used to measure an object such as width, height, length, weight
- I can describe measurable attributes using the appropriate vocabulary
 - Width (e.g., thick, thin, wide, skinny)
 - Height (e.g., tall, short)
 - Length (e.g., long, short)
 - Weight (e.g., light, heavy)
- I can identify more than one measurable attribute of an object (e.g., width, height, length, weight, etc.)
- I can describe an object using more than one measurable attribute
- I can explain how two objects can be compared using the same attribute
- I can directly compare two objects and tell which one has more of or less of a particular attribute
- I can describe the difference between the same attribute for two objects (e.g., longer than, shorter than, taller than, lighter than, etc.)
- I can explain how the objects are classified and how they are alike or different
- I can classify (sort) a group of objects into categories by a particular attribute
- I can count the number of objects in each category of a group of objects
- I can sort categories by the number of objects in each (Limit category counts to be less than or equal to 10)
- I can compare the categories using words like most and least

Declarative Knowledge

Students will understand:

- Measurable attributes refer to characteristics of objects that can be measured.
- Essential Vocabulary: attribute, width, length, weight, height, graph, more, most, least, fewest, column, row

Procedural Knowledge

Students will be able to:

- Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
- Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference.
- Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

EVIDENCE OF LEARNING

Refer to the 'Formative Assessments' and 'Summative Assessments' sections.

Formative Assessments

- Self-Assessments/Student Friendly Scales
- White-board responses
- Exit Tickets
- Math Talks
- Participation
- Teacher Observation
- IXL

Summative Assessments

- Benchmark Assessment/SGO Assessment

RESOURCES (Instructional, Supplemental, Intervention Materials)

Everday Counts Calendar Math Grade K

IXL

Everday Mathematics Resources and Grade K Lessons:

1.1

1.7

1.8

2.7

3.1

3.5

4.1

4.3

4.9-4.10

5.1

6.1-6.3

6.6-6.7

6.10

7.2

7.6-7.7

7.13

8.3

INTERDISCIPLINARY CONNECTIONS

- Technology/Multimedia: Educational Tech Applications
- Career Readiness: Utilize Critical Thinking to Make Sense of Problems and Persevere in Solving Them
- English/Language Arts: Literacy suggestions:
 - Ten Beads Tall: Measuring Is Child's Play
 - Tall
 - Where's My Teddy?
 - Who Sank the Boat?
 - Bugs, Bugs, Bugs
 - Building a House
 - Spaghetti and Meatballs for All: A Mathematical Story
 - This Train
 - The Apple Pie Tree
 - Twelve Snails to One Lizard: A Tale of Mischief and Measurement
 - Much Bigger Than Martin
 - Inch by Inch
 - How Big Were the Dinosaurs?
 - A House for Birdie
 - Mighty Maddie
 - The Best Bug Parade
 - How Big Is a Foot?
 - Inchworm and a Half
 - Millions to Measure
 - Cock-a-Doodle-Do
 - Just a Little Bit
 - Is a Blue Whale the Biggest Thing There Is?
 - Seven Blind Mice
 - How Many Snails: A Counting Book
 - Frog and Toad Are Friends
 - I Spy Book Series
 - Three Little Firefighters
 - The Button Box
 - Caps for Sale
 - Pigs at Odds: Fun with Math and Games
 - Wacky Wednesday
 - The Best Vacation Ever
 - Probably Pistachio
 - And to Think that I Saw It on Mulberry Street
 - All in a Day
 - Moonbear's Bargain
 - The Grouchy Ladybug
 - The Very Hungry Caterpillar
 - Today Is Monday

- Jesse Bear, What Will You Wear?
- January's Child: A Birthday Month Book
- Clocks and More Clocks
- One Lighthouse, One Moon
- My Grandmother's Clock
- The Tortoise and the Hare
- May I Bring a Friend?
- Chicken Soup with Rice: A Book of Months
- Me Counting Time: From Seconds to Centuries

ACCOMMODATIONS & MODIFICATIONS FOR SUBGROUPS

See link to Accommodations & Modifications document in course folder.

- modify activity
- simplify directions
- check-ins
- visuals
- manipulatives
- wait time
- additional time for tasks
- verbal responses
- illustrations