

Grade K Math Unit 7-Measurement and Data

UNIT OVERVIEW

In Kindergarten there are 2 Critical Areas of Focus. This unit is connected to Critical Focus #1, **Representing and comparing whole numbers, initially with sets of objects.**

This unit addresses 2 clusters:

-Describe and compare measurable attributes * (See Connections for explanation)

-Classify and count the number of objects in each category **

STANDARDS

CC_Common Core State Standards - Mathematics (2010) - K

Domain K.MD Measurement and Data

Cluster Statement Describe and compare measurable attributes.

Standard K.MD.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.

Standard K.MD.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.

Cluster Statement Classify objects and count the number of objects in each category.

Standard K.MD.3 Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

CONTENT ELABORATIONS

K.MD.1

K.MD.1 calls for students to describe measurable attributes of objects, such as length and weight. In order to describe attributes such as length and weight, students must have many opportunities to informally explore these attributes.

MP.4, MP.5, MP.6, MP.7 should be emphasized.

K.MD.2

K.MD.2 asks for direct comparisons of objects. Direct comparisons are made when objects are put next to each other, such as 2 children, 2 books, 2 pencils, etc. When making direct comparisons for length, students must attend to the "starting point" of each object and recognize that objects should be matched up at the end of objects to get accurate measurements. Language plays an important role in this standard as student describe the similarities and differences of measurable attributes of objects.

Students should have many opportunities to compare the lengths of two objects both directly (by comparing them with each other) and indirectly (by comparing them with a third object).

MP.2, MP.4, MP.6, MP.7 should be emphasized.

K.MD.3

K.MD.3 asks students to identify similarities and differences between objects (e.g. size, color, shape) and use the identified attributes to sort a collection of objects. Once the objects are sorted, the student counts the amount in each set. Once each set is counted, then the student is asked to sort each of the sets by the amount in each set. This objective helps to build a foundation for data collection in future grades. In later grades, students will transfer these skills to creating and analyzing various graphical representations.

MP.2, MP.4, MP.6 should be emphasized.

UNIT VOCABULARY

length
longer
shorter

weight
lighter
capacity

alike
different
sort

heavier
height
taller

holds more
holds less

size
shape

BIG IDEAS

ENDURING UNDERSTANDINGS

ESSENTIALS QUESTIONS

Choose a few questions based on the needs of your students

- Attributes can be compared
- Comparing attributes produces a number called a measure
- Selecting appropriate units to measure attributes
- Comparing length, weight, capacity, and height of objects is important
- Objects can be classified into categories
- The number of objects in a category is called a set
- A set can be counted
- Categories can be sorted according to the number of objects in the sets
- Information can be organized and recorded

- What attributes of an object can be measured?
- How can I compare 2 objects by their size?
- What does it mean to measure something?
- Does how I measure matter?
- In what ways can I measure an object?
- How are things alike and different?
- What categories can I create from the identified attributes in these objects?
- Is there more than one way to sort an object?
- How can I organize my information?

CONNECTIONS

* This cluster is connected to *Measure lengths indirectly and by iterating length units* in Grade 1

** This cluster is connected to *Know number names and the count sequence* and *Count to tell the number objects* in Kindergarten, and to *Represent and interpret data* in Grade 1.

Standards for Mathematical Practice (SMP)

MP.1 Make sense of problems and persevere in solving them

MP.2 Reason abstractly and quantitatively

MP.3 Construct viable arguments and critique the reasoning of others

MP.4 Model with mathematics

MP.5 Use appropriate tools strategically

MP.6 Attend to precision

MP.7 Look for and make use of structure (Deductive reasoning)

MP.8 Look for and express regularity in repeated reasoning (Inductive Reasoning)

DESCRIBE AND COMPARE MEASURABLE ATTRIBUTES

CONTENT

SKILLS

A.

Describe measurable attributes of objects.

Describe measurable attributes of objects.

1. Know that objects have measurable attributes and know what they are called, such as length and weight.
2. Describe an object by using attributes such as: width, height, length, weight, etc.
3. Describe more than one measurable attribute of a single object.

B.	Directly compare two objects with a measurable attribute in common.	Directly compare two objects with a measurable attribute in common. 1. Determine which object has "more of" or "less of " the attribute and describe the difference; e.g., directly compare the heights of two children and describe one child as taller/shorter 2. Use vocabulary such as: longer, shorter, taller, smaller, holds the most, holds the least, lighter, heavier, more, less, etc. when comparing measurable attributes of two objects.
CLASSIFY OBJECTS AND COUNT THE NUMBER OF OBJECTS IN EACH CATEGORY		
	CONTENT	SKILLS
A.	Classify objects into given categories.	Classify objects into given categories. 1. Recognize non-measurable attributes such as shape, color 2. Recognize measurable attributes such as length, weight, height 3. Know what classify means 4. Know what sorting means 5. Know that a category is the group that an object belongs to according to a particular, selected attribute 6. Understand one to one correspondence with ten or less objects. 7. Classify objects into categories by particular attributes. 8. Count objects in a given group. 9. Sort objects into categories and then determine the order by number of objects in each category (limit category counts to be less than or equal to ten) For example, if m&m's are categorized by the attribute of color, then are "sorted" or ordered by the number in each group (there are more red than green, the blue group has fewer than the green.)
UNIT RESOURCES		
McGraw-Hill, <u>My Math</u> Chapters 8-9 Georgia Math Frameworks, Grade K Unit 4 Debbie Diller Math Work Station materials and process Manipulatives – including, but not exclusively: pattern blocks, snap cubes, counting disks, counting bears, a variety of counters, buttons, base ten blocks, dot dice, numeral dice, spinners, number cards, five and ten frames, dominoes		