2nd Grade Math

ELG 2.MD.A Measure and estimate lengths in standard units

Vertical Progression:

Kindergarten	**K.MD.A Describe and compare measurable attributes.** ○ **K.MD.A.1** Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. ○ **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. *For example, directly compare the heights of two children and describe one child as taller/shorter.*
1st Grade	**1.MD.A Measure lengths indirectly and by iterating length units.** ○ **1.MD.A.1** Order three objects by length; compare the lengths of two objects indirectly by using a third object. ○ **1.MD.A.2** Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. *Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps*.
2nd Grade	**2.MD.A Measure and estimate lengths in standard units.** ○ **2.MD.A.1**. Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes. ○ **2.MD.A.2** Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen. ○ **2.MD.A.3** Estimate lengths using units of inches, feet, centimeters, and meters. ○ **2.MD.A.4** Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.
3rd Grade	**3.MD.A Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.** ○ **3.MD.A.2** Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. **3.MD.B Represent and interpret data.** ○ **3.MD.B.4** Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters. **3.MD.C Geometric measurement: understand concepts of area and relate area to multiplication and to addition.** ○ **3.MD.C.5** Recognize area as an attribute of plane figures and understand concepts of area measurement. ○ **3.MD.C.5.a** A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.

Students will demonstrate command of the ELG by:

- Measuring object lengths by selecting and using appropriate tools, such as rulers, yardsticks, meter sticks, and measuring tapes.
- Estimating lengths using inches, feet, centimeters, and meter units.
- Measuring lengths using inches, feet, centimeters, and meter units.
- Measuring objects twice using differently sized units of measure (feet and inches, centimeters and inches) and describing how results relate to the units' sizes.
- Measuring to determine how much longer one object is than another and expressing the difference in standard unit lengths.

Vocabulary:

- centimeter
- estimate
- estimation
- foot
- inch
- length
- measurement
- unit

Sample Instructional/Assessment Tasks:

1) **Standard: 2.MD.A.1**

Source: Howard County Public Schools (Assessment Task #2)
https://grade2commoncoremath.wikispaces.hcpss.org/Assessing+2.MD.1

Item Prompt:

1. What tool would you use to measure your height? Yardstick Ruler
2. How many inches are in one foot?
3. What is something that is about 5 inches long?
4. Measure any crayon in inches. It is _____ inches long.
5. What tool would you use to measure the size of your foot? Yardstick Ruler
6. Measure your pencil in inches. It is _____ inches long.

Correct answers:

1. Yardstick
2. 12 inches are in one foot.
3. Answers will vary. Answer must be reasonable.
4. Answers will vary. Answer must be reasonable.
5. Ruler
6. Answers will vary. Answer must be reasonable

2) **Standard(s): 2.MD.A.3**
Source: **http://www.k-5mathteachingresources.com/support-files/estimating-length.pdf**

Item Prompt: Estimating Length

Materials: rulers, variety of classroom objects

Item Prompt:

1) Estimate the length of a classroom object.
2) Record your estimate.
3) Check your estimate by measuring the object with a ruler.
4) How close was your estimate?
5) Repeat with other classroom objects.

Sample Form:

Item	**My Estimate** 	**Actual Measurement** 	**How close was my estimate?**

3) **Standard(s): 2.MD.A.4**

Source: https://grade2commoncoremath.wikispaces.hcpss.org/Assessing+2.MD.4

Materials:

- Ruler, dry erase board, eraser, and pen for each student
- Journals, school box, and other school items from the students' desks (measure some of these ahead of time)

Directions:

1. Instruct students to take out several items from their desk. Journals, school boxes, crayon boxes, and glue sticks are preferred as they are generally similar sizes.
2. Students are to measure 2 of the items and record the length on their dry erase board.
3. Students will find the difference in length of the two items and write it on the dry erase board.
4. Repeat using inches or centimeters.

Correct Answer: Students who demonstrate mastery accurately measure items from their desks and find the difference of the lengths of the two objects.