

# NWEA Assessment Item Illustrating 2.MD.A.2

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**Domain:** Measurement and Data

**2.MD.A:** Measure and estimate lengths in standard units.

**Calculator Availability:** No

Use the ruler tool to measure the eraser in both centimeters (cm) and inches. Then answer Part A and Part B.



### Part A

How long is the eraser to the nearest centimeter and to the nearest inch? Enter the answers in the boxes.

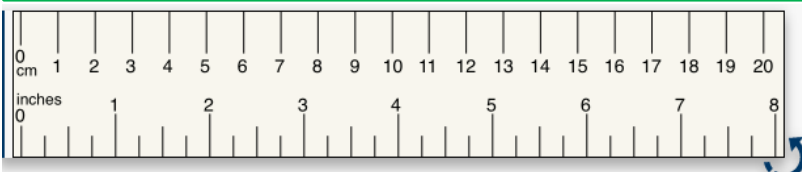
Length in centimeters:

Length in inches:

### Part B

Why are the number of centimeters and the number of inches different? Select one choice from each set to complete the sentence.

The number of centimeters is [ **greater** / **less** ] than the number of inches because one centimeter is [ **longer** / **shorter** ] than one inch.



**Alignment: 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.

Within this cluster, students demonstrate that they understand how to line up the edge of an object with the zero on the ruler. This item focuses on students' understanding that the length of a standard unit affects the number of the units needed to measure a single object. Students responding to this item apply reasoning that shows they understand the inverse relationship between a unit's size and the number of units required to measure an object.


**Coherence:** The measurement progression started in kindergarten as students explored which of an object's attributes can be measured and used direct comparison to determine which object had more/less of this attribute.<sup>K.MD.A</sup> In grade 1, students began exploring the use of an external unit to measure objects, first by comparing lengths via a reference object, and then by iterating nonstandard units.<sup>1.MD.A</sup> Students may have begun to see the relationship between unit size and the number of units as they explored a variety of nonstandard units, but the key takeaway was the need for standardized units. In grades 4 and 5, students will examine the relationship between unit size and number of units for a variety of attributes when they convert larger units to smaller units<sup>4.MD.A.1</sup> and then smaller units to

larger units.<sup>5.MD.A.1</sup> This understanding will eventually support the development of ratio reasoning in grades 6 and 7 and dimensional analysis in high school.

**Rigor:** This item attends to conceptual understanding and application. Students demonstrate understanding of the concept that when measuring an object, more iterations of a smaller unit are required than when using a larger unit. The item requires an application of mathematics in a real-world scenario because students are simulating measuring a realistic object.

**Answer Key:**

Use the ruler tool to measure the eraser in both centimeters (cm) and inches. Then answer Part A and Part B.



**Part A**  
How long is the eraser to the nearest centimeter and to the nearest inch? Enter the answers in the boxes.

Length in centimeters:

Length in inches:

**Part B**  
Why are the number of centimeters and the number of inches different? Select one choice from each set to complete the sentence.

The number of centimeters is  / **less** than the number of inches because one centimeter is  /  than one inch.

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