

# NWEA Assessment Item Illustrating 1.MD.A.2

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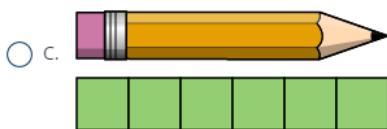
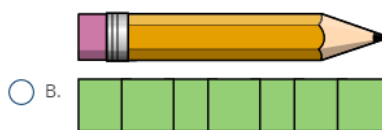
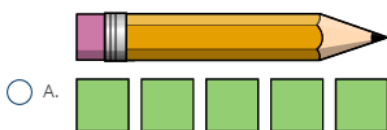
**Domain:** Measurement and Data

**1.MD.A:** Measure lengths indirectly and by iterating length units.

**Calculator Availability:** No



Which picture shows a correct way to measure the pencil with unit tiles?



What is the length of the pencil in unit tiles?

A. 5 unit tiles

B. 6 unit tiles

C. 7 unit tiles

**Alignment: 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.*

Key areas of focus in grade 1 are measuring lengths and understanding the relationship between units of measurement and length. This item is a straightforward approach to determining whether a student understands how to measure linear units by lining them up end to end with no gaps or overlaps. Students identify the pencil that is being correctly measured and count the tiles to determine the length of the pencil in terms of tile lengths. It should be noted that unit tiles were used in this item because they are sometimes used in classrooms to introduce this concept. When using unit tiles, students should understand that it is the edge of the tile, not the entire tile, that is used to determine the length. This is important in helping distinguish linear measure from area.

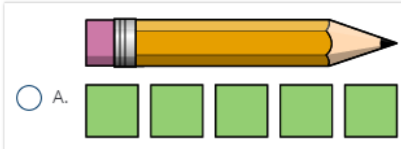
**Coherence:** Although measurement itself is an important concept for students to learn, linear measurement in the primary grades also supports understanding of counting, number magnitude, and number lines. In kindergarten, students described and compared measurable attributes of objects, including length.<sup>K.MD.A</sup> In grade 1, measuring lengths using nonstandard units<sup>1.MD.A.2</sup> supports the grade-

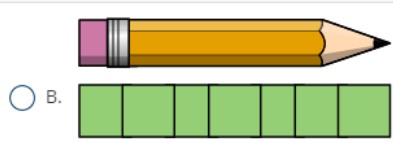
level work of counting.<sup>1.NBT.A.1</sup> Work with nonstandard units is a stepping-stone to understanding magnitude on number lines and rulers; this will be explored in grade 2 when students measure length using standard units and standard measuring tools<sup>2.MD.A</sup> and when they represent lengths on a number line diagram.<sup>2.MD.B.6</sup> Understanding number lines will support the introduction of fractions in grade 3 and the concept of values between whole numbers.<sup>3.NF.A.2</sup> Students will also explore how linear measure relates to area in grade 3<sup>3.MD.C</sup> and to volume in grade 5.<sup>5.MD.C</sup>

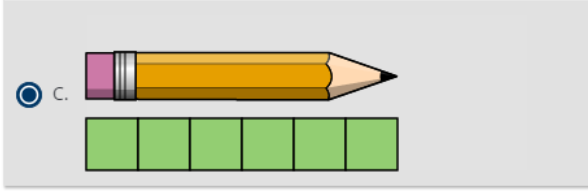
**Rigor:** This item attends to conceptual understanding, procedural skill and application of mathematics in a real-world setting. Students must understand that length is measured from one endpoint to another endpoint, that they must use another length unit iteratively to make the measurement, and that there cannot be gaps or overlaps between the units. Counting tiles to find the length of the pencil is a procedural skill. This item attends to application of mathematics because of the use of a real-world object, a pencil.

**Answer Key:**

Which picture shows a correct way to measure the pencil with unit tiles?

A. 

B. 

C. 

What is the length of the pencil in unit tiles?

A. 5 unit tiles

B. 6 unit tiles

C. 7 unit tiles

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