

Just In Time Quick Check
Standard of Learning (SOL) 4.8a

Strand: Measurement and Geometry

Standard of Learning (SOL) 4.8a

The student will estimate and measure length and describe the result in U.S. Customary and metric units.

Grade Level Skills:

- Determine an appropriate unit of measure (inch, foot, yard, mile, millimeter, centimeter, and meter) to use when measuring length in both U.S. Customary and metric units.
- Estimate and measure length in U.S. Customary and metric units, measuring to the nearest part of an inch ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$), and to the nearest foot, yard, millimeter, centimeter, or meter, and record the length including the unit of measure (e.g., 24 inches).
- Compare estimates of the length with the actual measurement of the length.

Just in Time Quick Check

Just in Time Quick Check Teacher Notes

Supporting Resources:

- VDOE Mathematics Instructional Plans (MIPS)
 - [Body Part Measurements](#) (Word / [PDF](#))
- VDOE Algebra Readiness Remediation Plans
 - [Measure Bingo](#) (Word / [PDF](#))
 - [Measure in Inches and Centimeters](#) (Word / [PDF](#))
- VDOE Word Wall Cards: Grade 4 [Word](#) / [PDF](#)
 - Ruler
 - Millimeter and Centimeter
 - Inches, Feet, and Yards
 - Mile and Yards

Supporting and Prerequisite SOL: [3.7a](#), [3.8a](#), [2.8a](#)

SOL 4.8a - Just in Time Quick Check

- 1) Fill in the table with the most appropriate unit to determine length using inches, yards, or miles.

What is being measured?	Most appropriate unit of measure
Length of a house	
Length between two cities	
Length of a marker	

- 2) Which unit of measure would be most appropriate to determine the length of a crayon: meters, centimeters, or millimeters?

- 3) What is the length of the pencil below to the nearest $\frac{1}{8}$ inch? _____



- 4) Look at the picture of the toy car.



- a) Estimate the length of the toy car in centimeters: _____
- b) Estimate the length of the toy car in millimeters: _____

5) Use the centimeter ruler to find the actual length of the toy car.



a) Toy car length in centimeters: _____

b) Toy car length in millimeters: _____

c) How did your estimates compare to the actual measurements of the toy car? Explain below.

SOL 4.8a - Just in Time Quick Check Teacher Notes

Common Errors/Misconceptions and their Possible Indications

- 1) Fill in the table with the most appropriate unit to determine length using inches, yards, or miles.

What is being measured?	Most appropriate unit of measure
Length of a house	
Length between two cities	
Length of a marker	

Some students may have difficulty choosing a unit of measure for objects because they lack exposure and experience with using them. A common misconception some students may have is to pick the largest or the smallest unit of measure for objects or scenarios that are unfamiliar to them. Teachers may wish to offer students experiences to have visual comparisons and measure "real" examples of each type of measurement in order to create benchmarks. This can be helpful with correcting the misconception and solidifying understanding.

- 2) Which unit of measure would be most appropriate to determine the length of a crayon: meters, centimeters, or millimeters?

Students may be able to eliminate meters as a choice understanding that it is too large a unit of measure to measure a crayon. A common error some students may have is confusing the unit size of centimeters and millimeters. Teachers may find it helpful to use objects that measure five centimeters versus objects that measure five millimeters to show the difference between the two units. Teachers may wish to offer students experiences to have visual comparisons and measure "real" examples of each type of measurement in order to create benchmarks. This can be helpful with correcting the misconception and solidifying understanding.

- 3) What is the length of the pencil below to the nearest $\frac{1}{8}$ inch? _____



Some students may have difficulty measuring objects because they are unsure of where to line the ruler up with the edge of the object. A common error some students may have is to place the end of the ruler at the end of an object instead of at the 0-inch mark when measuring. Teachers may wish to show students different rulers and correct placement for accurate measurements. In addition, some students may struggle measuring to the nearest eighth of an inch because many rulers measure to the sixteenth of an inch, or they may struggle with identifying fractional parts on a number line. Teachers may wish to show students that rulers are number lines and have students find the

fractional length of a line, dot, or mark on the ruler. Students may benefit from exposure to using rulers that are marked with eighths before using rulers that are marked with sixteenths.

- 4) Look at the picture of the toy car.

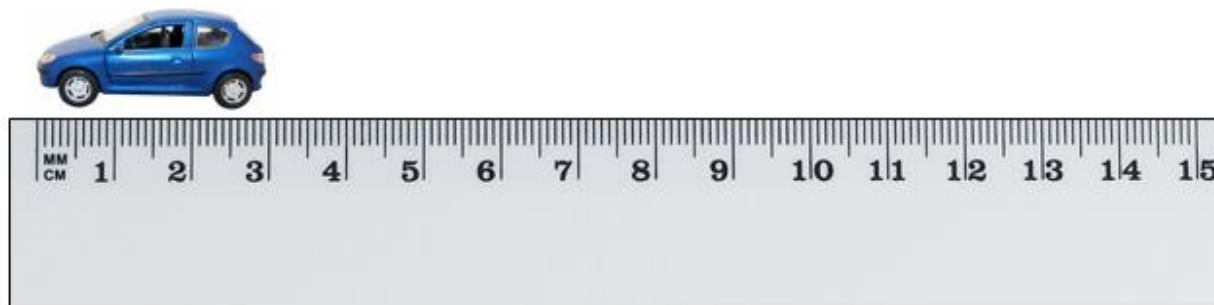


a) Estimate the length of the toy car in centimeters: _____

b) Estimate the length of the toy car in millimeters: _____

Students may have more difficulty with metric measurements because they have not had as many experiences with this system outside of school. Teachers may wish to provide “real” experiences for students to help create benchmarks. Exposure to measuring the length of different objects in centimeters and millimeters will help students visualize these lengths and make more accurate estimates.

- 5) Use the centimeter ruler to find the actual length of the toy car.



a) Toy car length in centimeters: _____

b) Toy car length in millimeters: _____

c) How did your estimates compare to the actual measurements of the toy car? Explain below.

Some students may confuse the measurement for centimeters and millimeters. It would be helpful to take time to explore the ruler with students so they understand how to read it properly for each unit. Teachers may wish to guide students in reading the ruler in millimeters by helping them make the connection that there are ten millimeters in a centimeter. In part “c” the student is asked to explain how their estimates compared to the actual measurements. This is an opportunity to see if students were able to relate their estimations to the actual measurements and how they might try to correct their thinking in the future. Some students may not be able to verbalize this independently. Teachers should provide guided opportunities for students to discuss estimates and actual measurements.