Grade Level	1	**Content Area**	Mathematics
Course Title (grades 9-12 Only)	NA		
Expected Prior Knowledge *The knowledge/skills mastered earlier in the year foundational to the mastery of the required Standard in the current sample.*	Students will have previous experience with ordering three objects by length as well as comparing the lengths of two objects indirectly by using a third object. Students understand that length is measured from one end point to another end point. Students are able to determine which of the two objects is longer by physically aligning the objects.		
Alignment to Program of Instruction *Briefly outline methods of instruction found in this sequence of lessons that align to the Program of Instruction described in A.3.*	Through hands-on practice and repetition, students will master measuring objects with non-standard units with the guidance from the teacher. Students will demonstrate mastery not only through instructed lessons but through their own understanding and ability to apply what has been taught.		
Standard Number and Description *List the Number* and full description for the Required Standard or Science Performance Objective listed in section A.6.*	**1.MD.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.		
Materials/Resources Needed	Lesson 1: rulers, white board markers, poster board, Measurement Table 1 Lesson 2: paperclip, white board eraser, crayon, tape dispenser, tissue box, dowel, magazine, desktop, window, magazine rack, computer keyboard, rug, Measurement Table 2, Measurement Table 3 Summative Assessment: Unifix cubes		

* ***Standard Number****: For English Language Arts (Reading and Writing), use Grade, Strand, Standard (e.g., 3.RI.2). For K-8 Math, use Grade, Domain, Standard (e.g., 6.EE.7). For HS Math, use Conceptual Category-Domain, Standard (e.g., A-REI.6). For Science, use Grade, Strand, Concept, PO (e.g., 4.1.3.1).*

Lesson (add as needed)	Instructional Strategies The teacher will:	Student Activities The student will:
1	**Warm Up:** Ask students to walk around the room and find an item to bring back to their place. Invite two students at a time to compare their items and state whose item is longer and whose is shorter. **Introduction:** Provide for each student a ruler showing standard and metric measures. Ask why we use rulers. Ask students to describe rulers. Point out that we use smaller units to measure bigger things. For example, if we want to the width of a book, we could use inches because the length of an inch is smaller than the length of the book. If we want to measure the height of our classroom, we could use feet because the length of a foot is smaller than the height of our classroom. **Demonstration:** Hold up a poster board and a white board marker. Say, if this marker is one unit long, I wonder how many units long this poster is. How could we find out? Use several markers to demonstrate measuring the length of the poster. First, demonstrate by laying markers on the poster board with some overlap. Ask if this is an accurate way to measure. Next, use different kinds of marker of different lengths, laying them end to end. Ask if this is an accurate way to measure. Finally, demonstrate by laying markers end-to-end on the poster with no overlap. Ask if this is an accurate way to measure. Count the markers and find that six markers fit end-to-end on the poster. Notice that there is still a little bit of poster left, but an entire marker will not fit in that space. Tell the students that if a marker is a measuring unit, then we can say the poster is about 6 units long. Use a table drawn on the board and record information regarding the poster and other items measured.	**Warm Up**: Find items and compare lengths. **Introduction**: Provide feedback. Explain that we use rulers to measure items. When describing rulers, note that there are small marks, and those small marks mean something for measurement. For example, some marks indicate inches, and some indicate centimeters. **Demonstration**: Suggest how we can find out how many units long the poster is. Recognize that when measuring units overlap, this is not an accurate way to measure. Recognize that even when all measuring units are markers, if they are different lengths, this is not an accurate way to measure. Recognize that when measuring units are end-to-end with no overlap, this is an accurate way to measure. **Interaction**: Take turns using markers to measure the length or width of

<table>
<tr>
<td></td>
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<table>
<tr><th colspan="2">If a <u>marker</u> is 1 unit long, a _____ is about _____ units long.</th></tr>
<tr><th>Item</th><th>Measure</th></tr>
<tr><td>poster</td><td>6</td></tr>
<tr><td>desktop</td><td></td></tr>
<tr><td>window</td><td></td></tr>
</table>
</td>
<td>items around the room. For example, students may choose their desk top, the space between book shelves, a window, the door, Susie’s braid, etc. Record items and their measure on the table on the board.

Independent Practice: Choose a shorter item and use it as a measurement unit to measure three longer items. Name the chosen item for the measurement unit and write it in the first blank. Complete the measurement table with chosen items being measured and their measure.
<table>
<tr><th colspan="2">Measurement Table 1
If a _____is 1 unit long, a ___ is about ___ units long.</th></tr>
<tr><th>Item</th><th>Measure</th></tr>
<tr><td></td><td></td></tr>
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<td>2</td>
<td>Review: Remind that we use shorter units to measure longer items. Ask about the correct way to measure. Is it when measurement units overlap or when they are placed end-to-end?

Demonstration: Explain that yesterday we used a marker as a measurement unit. Today we will use a variety of items as measurement units. Use paperclips to measure the length of a magazine. Ask students to help you know how to measure accurately.

Use a table drawn on the board and record information regarding the magazine and other items measured.</td>
<td>Review: Respond to questions. Share Measurement Table 1.</td>
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Measurement Table 2

If a _____ is 1 unit long, a _____ is about _____ units long.

Measurement Unit	Item	Measure
paperclip	magazine	12
white board eraser	desktop	
crayon	window	
tape dispenser	magazine rack	
tissue box	computer keyboard	
dowel	rug	

Interaction: Rotate in groups through measurement stations, using a variety of items as measurement units to measure longer items. Record findings on student copies of Measurement Table 3. Record measurements on the table on the board.

Independent Practice: Choose a three items to use as measurement units and three items to measure. Complete Measurement Table 3.

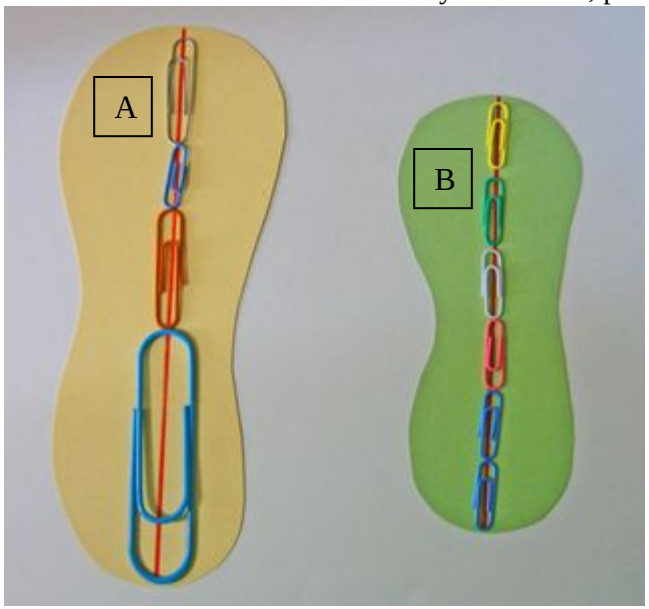
Measurement Table 2

If a _____ is 1 unit long, a _____ is about _____ units long.

Measurement Unit	Item	Measure

Summative Assessment Items:

1. Which shows an accurate way to measure, picture A or picture B?

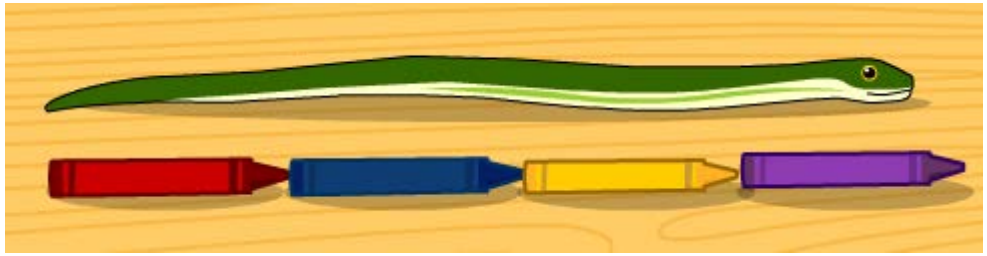


2. If a paperclip is 1 unit long, then this pencil is about _____ units long.

3. If a block is 1 unit tall, then this doll is about _____ units tall.

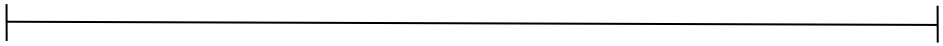
4. If a candy heart is 1 unit long, then this valentine is about _____ units long.

5. If a crayon is 1 unit long, then Sammy Snake, the classroom pet, it about _____ units long.

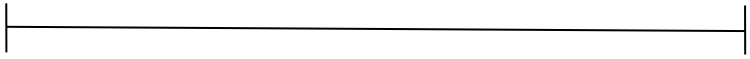


Use your Unifix cubes to measure the following line segments.

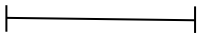
6. If a cube is 1 unit long, then this line segment is _____ units long.



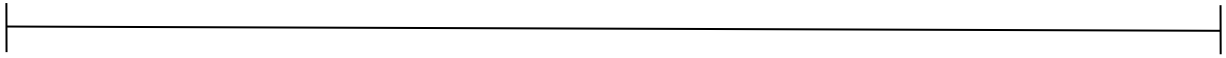
7. If a cube is 1 unit long, then this line segment is _____ units long.



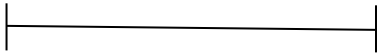
8. If a cube is 1 unit long, then this line segment is _____ units long



9. If a cube is 1 unit long, then this line segment is _____ units long



10. If a cube is 1 unit long, then this line segment is _____ units long



Answer Key: Each correct answer is awarded 1 point, and no partial credit is available. A score of 8/10 demonstrates mastery.

1. B
2. 5
3. 10
4. 7
5. 4
6. 10
7. 8
8. 2
9. 13
10. 4