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Learning Objectives

In this concept, you will learn about different tools that are used to measure both customary and metric units of measurements.

Tools for Measuring

Whether you are measuring the length of items using the customary system of measurement or the metric system of measurement, you will still have to decide which measurement tool is the best one to use.

These are the most commonly used tools for measurement:

- Rulers
- Tape measures
- Yard sticks
- Meter sticks

Rulers are used all the time in mathematics. Rulers are used to measure things that are small. Most rulers show both customary units of measurement like inches and metric units of measurement, such as the millimeter and the centimeter.

You can measure a small item in customary units or metric units.
In customary units, the barrette is about 2 inches long. In metric units, it is a little over 5 centimeters long. If an item that is being measured fits on a piece of paper, a ruler is probably the best tool to use.

Another tool to measure length is a **tape measure**. They are used to measure many of the distances that are too long for a ruler to measure easily and they are flexible, not rigid. Examples of things you would use a tape measure for could be the distance across a room or an object that is very long like a large picture frame. Tape measures most commonly show length in inches and feet, but sometimes a tape measure has both customary units and metric units marked.

A **yard stick** measures things by the yard and only shows customary units of inches and feet. Since there are three feet in a yard, a yard stick could be used for things that are longer than a piece of paper, but not too long. Some of the things that you could measure with a tape measure we could also measure with a yard stick, but it depends on if a rigid measurer like a yard stick is appropriate versus the flexible tape measure.

A **meter stick** measures one meter and shows only metric units of measurement of millimeters and centimeters. Meter sticks are used to measure objects that are larger than a piece of paper. Remember that you can use centimeters and millimeters if the object is smaller than a piece of paper. Those items are easily measured with a ruler. A meter stick is a little over 3 feet long, because a meter is approximately 3.2 feet. A meter stick closely compares to a yard stick.

For instances where a yard stick would be used for customary units, a meter stick would be used to measure metric units. For example, when measuring a table length, a yard stick would measure customary length well and a meter stick would alternately measure metric length well.

**Examples**

**Example 1**

Earlier, you were given a problem about Erin and her redecorating project in her living room. She wants to buy the most useful measuring tool she can for measuring different objects in her living room. First, Erin needs to think about the different objects she may measure such as furniture, tables, etc.
Next, Erin needs to consider what units most of the objects would be measured in. For objects of these sizes, she will most likely be measuring in feet or maybe yards or meters.

Then, Erin needs to choose a tool at the hardware store that can measure feet and perhaps even yards to meters. She decides on a tape measure for its flexibility and versatility with different units of measurement.

The answer is tape measure.

Erin buys a tape measure to help get her redecorating started.

Example 2

Which tool would you use to measure the length of a bug that needs to be seen with a magnifying glass?

First, think about the bug and its size compared to units of measurement and different tools.

Next, consider what unit would be most appropriate so you can determine the best tool. If the bug is so tiny that it needs to be seen with a magnifying glass, then it is probably smaller than inches and centimeters. The smallest unit to measure would be millimeters.

Then, match a tool with the unit you are using to measure the object. The best tool that contains millimeters is the ruler.

The answer is a ruler.

Example 3

What tool would you use to measure a toothpick?

First, consider the object by looking at it or picturing it in your mind.

Next, think about what unit would be best to measure the object. A toothpick is a small object that would be too small for a foot. The smaller units of inches, centimeters or millimeters would be more appropriate.

Then, match a tool with the unit you would use to measure the object. Whether inches, centimeters, or millimeters are used as the unit of measurement, the ruler is the tool that will work best.

The answer is ruler.

Example 4

What tool would you use to measure the length of a room?

First, picture the object in your mind or look at the space.

Next, think about what unit of measurement makes the most sense for measuring a wall. You can rule out very small units like inches, centimeters and millimeters. We can also rule out really large units like miles and kilometers. The most appropriate units are either feet, yards or meters.

Then, determine which tool can be used to measure those units. Most tape measures contain both customary and metric units, but it’s also important to think that yards and meters are quite similar so picking one or the other is appropriate.

The answer is tape measure.

Example 5

What tool would you use to measure the height of a floor lamp?
First, look at the object or picture it in your mind.

Next, think about what unit of measurement you would use to measure the object. A floor lamp is usually around the height of an average person, so we could consider feet, yards or meters for measuring.

Then, choose a tool that would measure these units. This particular object can be measured with either a rigid or flexible measuring tool. Feet and yards are measured on both a yard stick and a tape measure, and meters are measured on meter sticks and most tape measures. Any of these three tools would be appropriate to measure the lamp.

The answer is tape measure, yard stick or meter stick.

**Review**

Choose the appropriate measurement tool for each item listed below.

1. A grub collected from the garden
2. The width of a street
3. The length of a street
4. The size of a small worm
5. The distance from one town to the next

Choose the appropriate tool to measure each item in metrics and customary units.

6. The height of a light switch
7. The width of a refrigerator
8. The measurements of a placemat
9. The length of a pencil
10. The width of a chapter book
11. The length of a table cloth
12. An eyelash
13. The length of an ant
14. The width of a piece of paper
15. A television screen

**Review (Answers)**

To see the Review answers, open this PDF file and look for section 2.3.