

Use More Language

Objective Demonstrate the relationships among different customary units of length and different metric units of length.

35 minutes



Teach this lesson:

- **Before** or during textbook lessons on length
- **Before** students complete the activities on page 51 of the student worktext

You need these materials:

- Transparency 25
- rulers with inches and centimeters
- index cards
- measuring tape with feet, yardstick, and meterstick
- Vocabulary Cards

Lesson Vocabulary

Essential Vocabulary

- | | | |
|------------|-----------------|----------------|
| inch (in.) | foot (ft) | yard (yd) |
| mile (mi) | centimeter (cm) | decimeter (dm) |
| meter (m) | kilometer (km) | |

A Introduce

Review measurement of length with students. Write the words *customary* and *metric* on the board. Ask: *What units of length do we use for customary measurements?* Elicit units that students know and write them under *customary*. Add units as needed so the list includes *inches, feet, yards, and miles*. Ask: *What units of length do we use for metric measurements?* Elicit units, write them under *metric*, and add other units as needed so the list includes *centimeters, decimeters, meters, and kilometers*.

Show students larger classroom items, such as bulletin boards, tables, or walls. Invite a volunteer to measure a large bulletin board and read the number of inches measured. Explain that for large objects, we use larger units.

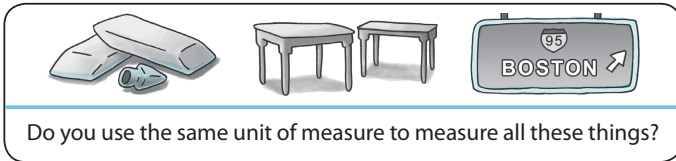
Ask students to tell what they know about measuring large objects. Ask: *How would you measure the bulletin board? Should we use inches or centimeters, or another unit to measure it?* (use a larger unit)

Read the Lesson Objective aloud with students. Explain that they will learn about metric and customary units of length and how different units in each system are related to each other.

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Learn the Language



There are 12 inches in 1 foot.

There are 3 feet in 1 yard.

How many inches are in 1 yard? 36 inches

How many centimeters are in 1 decimeter?
10 centimeters

How many meters are in 1 kilometer?
1,000 meters

Customary Units	Metric Units
12 inches (in.) = 1 foot (ft)	10 centimeters (cm) = 1 decimeter (dm)
36 inches (in.) = 1 yard (yd)	100 centimeters (cm) = 1 meter (m)
3 feet (ft) = 1 yard (yd)	1,000 meters (m) = 1 kilometer (km)

This table of measures has customary and metric units to measure small and large objects.

Practice the Language

Directions Which customary or metric unit would you use to measure the length of each object?

- your foot
inches or centimeters
- the distance from one city to another
miles or kilometers
- a soccer field
yards or meters

Use a separate sheet of paper to answer these problems:

- Write these units of length in order from smallest to largest: yard inch mile foot
inch, foot, yard, mile
- Write these units of length in order from smallest to largest: kilometer decimeter meter centimeter
centimeter, decimeter, meter, kilometer
- Tell what unit of measure you would use to measure the length of the playground and why. Write a complete sentence.
Answers will vary, but should be feet or yards, or decimeters or meters.

Highlighted words and phrases may affect student comprehension.

B Teach and Learn

Introduce the customary and metric units of length that you wrote on the board.

As you say the name of each unit, point to it, showing that the units in each list are in order from smallest to largest.

Think Aloud

BP 1 Say: *I want to measure the length of the hallway. Is it easier to use inches, feet, yards, or miles? To use inches is difficult because they are small. I would have to count a lot of inches. It doesn't make sense to use miles because a mile is very long. The hallway is not a mile long. So I should use feet or yards. Yes, these are the best ways to measure something as long as a hallway.*

Say: *I can also use metric units to measure. If I use metric units, centimeters are too small and kilometers are too long. Decimeters or meters are the best units to measure a hallway.*

Have students look at the pictures on the top of page 51 of the student worktext.

Read the question aloud with students. Have them share how they would measure small and large objects.

Use Transparency 25 to teach students the relationships among units. Point to the table on the transparency. Read the table aloud. Ask: *Why do we say that 12 inches are equal to 1 foot? What does this mean?* (They are equivalent measures in the customary system.) Encourage students to look at each box and discuss what each one means within systems.

Point to the list of abbreviations for measurements. Explain that sometimes we use abbreviations to write a measurement rather than the whole word.

BP 1 Discuss the concept of distance with the class. *Say: When we want to measure the distance, or how far one place is from another, we use miles for customary units and kilometers for metric units. What unit would you use to measure the distance from the school door to the parking lot? (feet or yards, meters) What would you use to measure the distance between our school and the post office? (miles or kilometers)*

Guide students to the table on page 51 of the student worktext. Read the text and table aloud. Then have students read along with you and answer the questions.

Model measuring a large object, such as a classroom table. Use a ruler to measure the length of the table in inches. Then use a measuring tape with feet markings or a yardstick to measure it. Write the different lengths on the board and point out the differences to students. Repeat, using the metric ruler and the meterstick. Write the lengths on the board.

Have students take turns measuring large objects with the rulers, measuring tape, yardstick, and meterstick.

Have students fill out the Vocabulary Cards for this lesson in pairs.

Have them use the Notes section to write examples of objects that they could measure with each unit.

C Review and Practice

Practice and review the names and relationships among units. Distribute index cards and group students in pairs.

Display Transparency 25 for reference and practice. Have students write each unit and its equivalent on a card as follows: *12 inches = 1 foot*. Then ask them to put the units in order from smallest to largest.

Next, have students look at the list of objects on Transparency 25 and choose which unit they would use within a system. Tell them to take turns writing each object on the respective card. Ask them to explain to their partners why they chose a particular unit to measure each object. Circulate around the room to assess understanding of units and their uses.

Read the directions for Practice the Language on page 51 of the student worktext. Have students complete the activity individually.

D Assess and Intervene

Can students choose appropriate customary or metric units to measure objects? Can students demonstrate size relationships among units, based on Practice the Language on page 51? Use the rubric to identify students who need extra support through additional help and the Intervention activity.

Intermediate

- Identifies at least 2 units correctly.
- Orders units within each system with no more than 2 errors.
- Explanation includes the appropriate unit, but the sentence may be incomplete and the reason may be unclear.

Example of a sentence a student might write: *Yard because inch small and mile big.*

Advanced

- Identifies all 3 units correctly.
- Orders units within each system with no more than 1 error.
- Explanation is a complete sentence, and includes the appropriate unit and a logical reason for using that unit.

Example of a sentence a student might write: *I use meter because centimeter is too small and kilometer is too big.*

INTERVENTION

10 minutes



If students are having difficulty making connections between inches and feet or between centimeters and meters, have them use the Vocabulary Cards to practice. Ask pairs of students to sort their cards into customary and metric units. Then have students sort the cards in each system in order from smallest to largest. Have one student say the name of an object that can be measured using these units of length. Help students choose the most appropriate unit in each system and explain their choice.