
UNITS OF LENGTH: CUSTOMARY & METRIC (5TH GRADE)

TEACHER GUIDE

Objective: The student will be able to use their knowledge of the standardized mathematics exam chart and their multiplication/division skills to successfully convert units of length within the customary and metric systems.

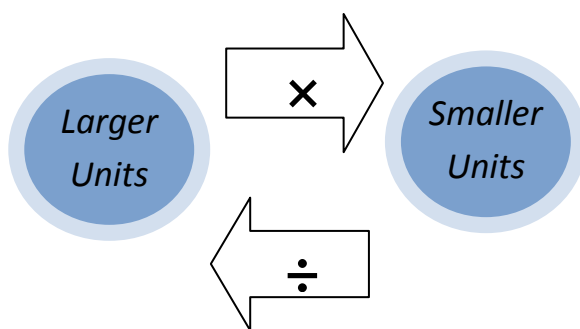
TEKS: 5.10(A): The student is expected to perform simple conversions within the same measurement system (SI (metric) or customary)

5.10(C): The student is expected to select and use appropriate units and formulas to measure length, perimeter, area, and volume.

To have students complete this lesson, students will need to become familiar with the 5th grade standardized mathematics exam chart. The mathematics chart should include useful mathematics information, as well as, a metric and customary ruler to help solve problems.

How to convert from one unit to another:

- In order to convert a smaller unit to a larger unit, divide the number of smaller units there are in one of the larger units.
- In order to convert a larger unit to a smaller unit, multiply the number of smaller units there are in one of the larger units.



The above method requires the students to know about the customary and metric units. They must know which units are larger than others. For example, a foot is larger than an inch. The description of the customary and metric units of length must be discussed thoroughly in order for students to successfully solve conversion problems.

Example #1:

Your fish tank is 6 feet long. How many inches is this?

First, students need to use the mathematics chart to compare feet and inches.

- 1 foot = 12 inches
- A foot is larger than an inch. To convert a larger unit to a smaller unit, multiplication will be performed.
- To convert 6 feet to inches, students will multiply 6 feet by the number of inches in one foot
- $6 \text{ feet} \times 12 \text{ inches} = 72 \text{ inches}$

Your fish tank is 72 inches long.

Example #2:

**The distance from home plate to first base on a baseball field is 90 feet?
How many yards is this?**

First, students need to use the mathematics chart to compare yards and feet.

- 1 yard = 3 feet
- A foot is smaller than a foot. To convert a smaller unit to a larger unit, division will be performed.
- To convert 90 feet to yards, students will divide 90 feet by the number of feet in one yard.
- $90 \text{ feet} \div 3 \text{ feet} = 30 \text{ yards}$

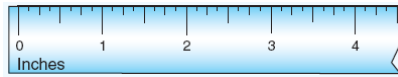
The distance from home plate to first base is 30 yards.

Name _____

Date _____

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Customary Units



Inch (in) - about the length of small paper clip

Foot (ft) - about the length of sheet of notebook paper

Yard (yd) - about the width of a door

Mile (mi) - 4 laps around a track

Metric Units



Millimeter (mm) - about the thickness of a dime

Centimeter (cm) - about the width of a fingernail

Meter (m) - about the width of a door

Kilometer (km) - about 5 city blocks

Choose the appropriate unit that you would use to measure each of the following. Record the appropriate unit on the chart below.

- 1] Length of an eel
- 2] Length of a goldfish
- 3] Height of a fish tank
- 4] Height of a tree frog

Customary	Metric

Use the information from the mathematics chart to help convert units of measure for the following problems.



Did you know that the American Alligator is the largest reptile in North America? The average size for an adult female is 8.2 feet (2.6 m), and the average size for a male is 11.2 feet (3.4 m). After the alligator reaches a length of 4 feet long, it is considered safe from predators (except for humans and occasionally other alligators).

- 5] How many inches in length is a female alligator? (Round 8.2 to the nearest foot.)
- 6] How many inches in length is a male alligator? (Round 11.2 to the nearest foot.)

Stingray Flats (an exhibit at the Texas State Aquarium) is home to several different kinds of stingrays. The smallest ray is the Short-nose electric ray, which is only about 4 inches (10 cm) across and weighs about 1 pound (0.5 kg). The biggest ray is the Manta ray which is over 21 feet wide and weighs several thousand pounds.

- 7] How many millimeters long is a Short-nose electric ray?
- 8] How many yards wide is a Manta ray?

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ANSWER KEY

1] Length of an eel

2] Length of a goldfish

3] Height of a fish tank

4] Height of a tree frog

5] 96 inches

6] 132 inches

7] 100 millimeters

8] 7 yards

Customary	Metric
<i>Feet</i>	<i>Meters</i>
<i>Inches</i>	<i>Centimeters</i>
<i>Inches</i>	<i>Centimeters</i>
<i>Inches</i>	<i>Centimeters</i>