

Content: Math	Grade/Course: 5th	Timeline: 5 Days (60 minutes each)
Standard(s): 5.MD.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.		
Lesson Overview: Converting measurements in the metric system		
Lesson Objective(s): I CAN STATEMENTS In this lesson, students will be able to: <ul style="list-style-type: none"> • Convert like measurements within units of weight • Students will compare and understand that to convert from smaller to larger units, they need to divide, and to convert from larger to smaller units, they will need to multiply. 		
Vocabulary:		

Description of Lesson (Including Instructional Strategies):**Anticipatory Sets:**Day 1/2:

Teacher begins the lesson by asking students:

- Whether they are aware of the two systems of measurement used most commonly around the world. Then discuss these systems—the English and the metric.
- Explain that in the United States the English system is used, while most other countries around the world use the metric system. Tell the class that the metric system was established in France and remind them that it is based on powers of ten.
- Make a class list of common units in the English or Customary system (e.g., ounces, pounds, inches, and feet) and common units in the metric system (e.g., grams, kilograms, meters, and centimeters). Then review with students how to convert between English (Customary) units and metric units.
- Show students metric to customary conversion charts:

http://www.mathatube.com/sitebuilder/images/2-m_to_c-532x511.jpg

<https://s-media-cache-ak0.pinimg.com/236x/f8/55/69/f855698580dbec7d19a56c6b73ddccdc.jpg>

**Remind students of the inverse law of multiplication and division. Explain that, if they use multiplication to convert from the metric to the English system, they can always use division to convert in the other direction.

Day 3:

- Group students into pairs. Have each pair brainstorm about the different measurements they encounter on a daily basis, from the gallon of milk they pull from the refrigerator each morning to the distance they travel to school. Encourage them to think about length (distance), weight, and volume. Next, have students create a Classroom Activity Sheet: Measuring in Daily Life. Have students fill in the measurements in the English system first. Then have them convert each measurement to the metric system. Remind students to use the conversion charts to help them move from one system to the other. Encourage students to add other ideas to the sheet.

**Sample questions are as follows.

How tall are you?

What is the difference in height between you and your sibling or best friend?

~~How much water do your parents usually buy at one time?~~

How much bread do your parents usually buy at one time?

About how much do you drink every day?

What is the distance in miles from your home to school?

What's the typical speed limit (in miles per hour) around your village?

What's the typical speed limit (in miles per hour) on the highway?

Day 4:

- Go over the answers in class and check students' conversions from English to metric. If students have added other questions to the sheet, have them share their measurements with the class.
- Assign the Take-Home Activity Sheet: Metric Stories. Have students use the information on their Classroom Activity Sheets to write a story, journal entry, or letter about a typical day if they were to wake up in a world that used only the metric system. Encourage them to include more examples of metric measurements in their daily life, such as speed limit signs and the price of gas per liter.

Day 5:

- Review and assessment:
- Have students share their stories or journal entries with class if time permits.
- Have students work on solving math problems to help with reinforcement of skills.

Guided Practice:

1. Teacher will ask students oral questions pertaining to the lesson.
2. Students will complete worksheets individually and with a group.

Formative Assessment:

Oral and visual assessment of students' ability to properly identify and define each vocabulary.

Teacher assessment through student participation during modeling, activities and solving the puzzles.

Accommodations/Modifications:

Peer Tutoring, One-to-one, Simplified Directions

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Standard(s): 5.MD.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.		
Lesson Overview: Converting units of measurement		
Lesson Objective(s): I CAN STATEMENTS In this lesson, students will be able to: <ul style="list-style-type: none"> • Convert like measurements within a unit of length • Students will understand that to convert from smaller to larger units, they need to divide, and to convert from larger to smaller units, they will need to multiply. 		
Vocabulary:		

Description of Lesson (Including Instructional Strategies):**Anticipatory Sets:**

Show the video:

Conversion Rap - <https://youtu.be/IhtgKHZti0>

Day 1/2:

Teacher begins the lesson by explaining:

- Students will understand that to convert from smaller to larger units, they need to divide, and to convert from larger to smaller units, they will need to multiply.
- Teacher will tap into student's prior knowledge by having them be fluent in multiplying and dividing by powers of 10, such as 10, 100, and 1000.
- Students need to accurately measure using a centimeter ruler, tape measure, and meter stick.
- Students need to know the metric units of length, such as kilometer (km), meter (m), centimeter (cm), and millimeter (mm), and how much of one is equal to the other. For example, 1 km = 1000 m, 1 m = 100 cm, and 1 cm = 10 mm.
- Continue with various examples of converting length within a unit.
- Show the video below to enhance the students' understanding.

Review of the metric system video - <https://youtu.be/UyDMwnkeAwQ>

Day 3:

- Review the initial lesson to review conversion term with students.
- After your introductory lesson with units of measurement, activate student knowledge by beginning this lesson with the question: How do we measure how long something is? (meter stick, tape measure, centimeter ruler)?
- Allow students to familiarize themselves with the terminology associated with measurement. Have students grouped to discuss ideas or ways to measure various object's length using the most appropriate unit. (Is it better to measure the length of the chalkboard using centimeters or meters?)
- Teacher may opt to show the previous videos to help better understand the concept being taught.

Day 4:

- Teacher will open discussion by asking students to close their eyes and visualize how big a millimeter is? (Repeat for the other units, students can give examples of objects that are about each unit, for example a millimeter is the width of an eyelash, a centimeter is the width of your index finger)

- Teacher can give students a list of various objects in the classroom to measure such as their desk top or books. The students will then pick an appropriate tool of measurement to measure objects length.
- Ask the question "How did you decide which tool to use to measure the different objects in the classroom?" (look at the object and decide which tool is best based on object size)
- Assign math problems to help with skills.

Day 5:

- Review and assessment:
- Have a measurement scavenger hunt in which students are to find measurements of assigned objects in the playground. They may be paired up to help measure and record their findings to which they will report back to the rest of the class in a presentation.
- Have students work on solving math problems to help with reinforcement of skills.

Guided Practice:

1. Teacher will ask students oral questions pertaining to the lesson.
2. Students will complete worksheets individually and with a group.

Formative Assessment:

Oral and visual assessment of students' ability to properly identify and define each vocabulary.
Teacher assessment through student participation during modeling, activities and solving the puzzles.

Accommodations/Modifications:

Peer Tutoring, One-to-one, Simplified Directions