

Measuring Length in Centimeters

NCTM Standards 1, 2, 6, 7, 8, 9, 10
Common Core State Standards 4.MD 1

Lesson Planner

STUDENT OBJECTIVES

- To relate centimeters, meters, and kilometers
- To choose the appropriate unit of measure for a given length

2 Teach and Practice

MATERIALS

- A** Estimating Length with Cuisenaire® Rods (TG pp. 732–733)
- B** Measuring Length in Centimeters (TG p. 734)
- C** Playing a Game: *Build-a-Foot* (TG p. 735)
- D** Using Centimeters, Meters, and Kilometers (CCRG pp. CC 69–CC 70)

- meterstick

Added Activity

Lesson Notes

Activity D has been added to **Lesson 9.5**. Introduce this activity after Activity C. Alternatively, you might use this activity in place of Activity C.

About the Activity

In Activity D, students will explore centimeters, meters, and kilometers. Students already have a visual benchmark for the centimeter. In this activity, they will develop some benchmarks for a meter and a kilometer and convert between units. Then, students will determine whether a given length is best measured in centimeters, meters, or kilometers.

2 Teach and Practice

D Using Centimeters, Meters, and Kilometers

whole class



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Purpose To relate centimeters, meters, and kilometers

Introduce Remind students that they have measured lengths using centimeters and that a white Cuisenaire® Rod is 1 centimeter long. Tell students that in this activity they will estimate longer lengths using meters and kilometers. Show students a meterstick. Guide students to see that there are 100 centimeters in a meter. Ask students to name things that are about 1 meter long. Finally, explain that there are 1,000 meters in 1 kilometer. Tell students that 1 kilometer is about 10 football fields long. On the board, write the following.

$$1 \text{ meter (m)} = 100 \text{ centimeters (cm)}$$

$$1 \text{ kilometer (km)} = 1,000 \text{ meters (m)}$$

Task Ask students to help you complete a table. Draw a table on the board with a row for meters and a row for centimeters. Fill in one or two pairs of numbers and then silently invite a student to fill in the corresponding number of centimeters. For example, if you write 6 (meters) the student should write 600 (centimeters).

meters	1	2	6	4	8
centimeters	100	200			

Continue with different numbers of meters. You might also fill in an amount in the row for centimeters and invite a student to fill in the corresponding number of meters.

Repeat this activity using a table with a row for kilometers and a row for meters. Again, fill in one or two pairs of numbers to get students started.

kilometers	1	2	5	3	7
meters	1,000	2,000			

Practice Have students determine which would be the best unit of measure to use for the given lengths. Write the following lengths on the board. Have students work in pairs to decide which is the best unit of measure.

length of a pencil centimeters

distance across our state kilometers

your height meters

the length of a soccer field meters

the length of your shoe centimeters

the distance from our school to the state capital kilometers

Materials

- For students: a meterstick

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Ongoing Assessment

- Do students recognize that when converting from a larger to a smaller unit of measure, you multiply?



Talk Math

- ❓ Which lengths are best measured in centimeters? Possible answer: lengths that are shorter than 1 meter
- ❓ Which lengths were best measured in meters? Possible answer: lengths that are longer than 1 meter, but shorter than a kilometer
- ❓ Which lengths were best measured in kilometers? Possible answer: very long distances

