

LESSON M2 Using metric measurements

Lesson Summary

Students use meter sticks and centimeter rulers to make linear measurements.

Objectives

- Estimate lengths using centimeters and meters
- Communicate ideas with key math vocabulary: *measure, centimeter, meter, length, estimate.*

Materials

- *Measuring Penny* by Loreen Leedy T = Teacher Bag S = Student Bag
- Meter sticks
- Metric rulers

Preparation

Worksheet: Prepare a worksheet with various things in your school to measure in meters.

Language Development

Key Math Vocabulary

ENGLISH	SPANISH
length	longitud
measure	<i>medir</i>
metric	<i>metrico</i>
ruler	<i>regla</i>
centimeter	<i>centimetre</i>
meter	<i>metri</i>

ENGLISH	SPANISH
estimate	estimado

Cognates are shown in italics; pointing out the similarity of these words to their English equivalents will help your Spanish-speaking students acquire vocabulary.



WHOLE GROUP

STEP 1 Introduce the meter.

1 Introduce the lesson.

In the next few days, we'll be thinking about measurement using different units. Today we'll use something called a meter stick.

2 Introduce the meter stick.

Show students a meter stick.

This looks a lot like a yard stick that we've used before. It is a little longer than a yard stick.

The meter stick is divided into 100 parts. The parts are called centimeters.

How many centimeters are there in all? (100)



How many meters long do you think our room is? (Answers will vary)

Let's find out.

Use meter sticks and have students help lay them end to end to find out how many whole meter sticks equal the length of the room. Express the length as ___ meters plus ___ of a meter. (Example: 12 meters and about $\frac{1}{2}$ of a meter)

Let's make more estimates.

Take the students outdoors, the gym, or another room such as the library. Have students work in teams of three. Give each student one length to first estimate and then to measure with meter sticks. Demonstrate how to measure using just one meter stick by holding the ending place with a finger while moving the stick to begin at that place. Have two students measure while the third keeps track of the number of iterations of the meter stick are made.



WHOLE GROUP

STEP 2 Share estimates and measurements

1 Record estimates and meters.

When students have completed their estimates and measurements. Go through each object one at a time. Point to the width of a shelf and ask the group to estimate the number of meters. Then have the group who actually measured it, share their estimate and measurement.

Continue until every group has had a chance to present their estimates and measurements.

Choose one measurement that is not an exact number of meters.

How can we measure the part that is not exactly one meter?

2 Demonstrate how to use the centimeter ruler.

Hold up the yard stick.

Just as with yard sticks and rulers that are broken into inches, the meter stick is broken into smaller parts call centimeters. Explain that the ruler.

Hold up the meter stick and point to the centimeters. Have students help you count to verify that there are 100. Then show students a centimeter ruler. Count the centimeters together with the students.

There are 30 centimeters on the ruler. Let's measure the part that was not exactly one meter. I can write an addition equation that matches the two colors of tiles on the ten-frame.

Demonstrate measuring the part and the record on the board.

Estimate	Meters	Centimeters
3m	2m + about $\frac{1}{2}$ m	37m



WHOLE GROUP

STEP 3 Guide students to use centimeter rulers.

1 Students estimate using centimeters.

Now you will make estimates using centimeters. Use the second part of your worksheet to make your estimate and then to measure.

Distribute a centimeter ruler to each group. Assign a different object from the worksheet to each group. Remind students in each group to work together to decide on an estimate and then record only on their worksheet.

2 Students measure using the centimeter ruler.

Have groups work together to measure their objects. As you observe, make sure that they are aligning the ruler at the end of the object being measured. If the length is longer than the ruler, have them place their finger at the end of the ruler, and then move it to begin at the finger. The recorder should add 30 plus the number of additional centimeters.

Math Vocabulary

- inch
- meter
- centimeter

CONTINUE

LESSON **M2** Using metric measurements



WHOLE GROUP

STEP 4

Share estimates and measurements

1 Introduce the lesson.

When students have completed measuring, point to one of the objects and have the group estimate the number of centimeter. Then have the group who measured that object, report their estimates and measurements. Do this for each object. Record their numbers on the board.

Object	Estimate	Measurement	Difference
Desk	70 cm	78 cm	
Calendar	27 cm	36 cm	

Have students calculate the difference between their estimates and the actual measurements.

Read the definition of meter and centimeter in their glossaries. Then have students add meter and centimeter to their math vocabulary lists. Explain that we can say that a centimeter is one of one hundred parts of a meter.

2 Record measurements on sentence strips.

Place the sentence strips in a paper bag. Remove two strips at a time and ask students to compare the lengths. For , the folder is 24 cm and the scissors are 14 cm. The folder is 10 cm longer than the scissors.

Continue until every student has had a chance to pull two sentence strips from the bag.

STOP