

Activity

Measurement and the Sciences

CHAPTER
2**Little Millie Metric**

When making measurements, it is important to use the correct metric unit. Read the story below and fill in the blanks with the right unit. Choose the unit from the following list. Each unit will be used only once.

milliliter	liter	gram
kilogram	millimeter	centimeter
meter	kilometer	degrees Celsius

It was a beautiful day. The temperature was a mild 27 _____. Little Millie Metric was packing a lunch basket to take to Grandma's house. She carefully poured 500 _____ of homemade lemonade into a bottle, which she put in the basket. Then she placed 0.5 _____ of cheese, 200 _____ of roast beef, and several large chocolate chip cookies in the basket. She strapped the basket on the back of her moped and took a quick check of the gas tank. There were several _____ of gasoline left.

After traveling a little more than 5 _____, Millie discovered she had lost her way. At the next corner she spotted a very hairy character leaning against a lamppost. He looked to be only $1\frac{1}{2}$ _____ tall. He had a wolfish grin and dark, piercing eyes. He introduced himself as Mr. W and offered to help Millie.

Mr. W's directions turned out to be the long way to Grandma's house. So Millie arrived an hour late. She let herself in and found Grandma in bed. Grandma did not look well. Had she always been so hairy? And those ears! "My goodness," Millie gasped, "what big ears you have, Grandma—at least 15 _____." "To which Grandma replied, "The better to hear you, my dear." Then Millie spotted the teeth. "My, Grandma, what big teeth you have—longer than 25 _____." "This last observation made Grandma very angry. She jumped out of bed and snarled, "The better to eat you!" Now Millie realized that this was not Grandma, but the hairy Mr. W!

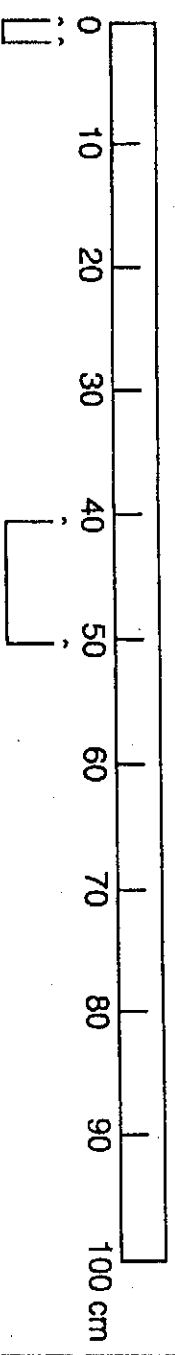
Date: _____ Names: _____

METRIC MEASUREMENT (LENGTH)

INTRODUCTION: If your hand is 3 inches wide, how many centimeters wide is it? Which metric unit is closest to the length of 1 yard?

OBJECTIVE: In this activity, we will review metric units for measuring distance or length—the meter, decimeter, centimeter, and millimeter. We will also use these units to estimate and then measure the sizes of various objects around the room.

Meterstick: 1 meter (m) = 10 decimeters (dm) OR 100 centimeters (cm) OR 1,000 millimeters (mm)
Here is a visual representation of a meterstick.

**PROCEDURE:**

1. Use a meterstick to measure the objects listed in the chart below. Make sure you use the metric side of the meterstick (with numbers to 100 cm, not 36 inches).
2. Measure the objects in the units listed. Write the unit abbreviation after the measurement you get (example: instead of 47.5, write 47.5 cm).

OBJECT	MEASUREMENT	UNITS
Length of your table		Meters (m)
Width of your table		Decimeters (dm)
Length of a piece of paper		Centimeters (cm)
Width/thickness of a pencil		Millimeters (mm)

3. Which unit above is closest to the following size:

- a. the thickness of a fingernail? _____
- b. the width of a finger? _____
- c. the width of a hand? _____
- d. longer than your leg? _____

100	1	2	3	4	5	6	7	8	9	
10s	0	1	2	3	4	5	6	7	8	9
1s	0	1	2	3	4	5	6	7	8	9
SCORE	0	1	2	3	4	5	6	7	8	9
10s	0	1	2	3	4	5	6	7	8	9
1s	0	1	2	3	4	5	6	7	8	9

Date: _____ Names: _____

4. Keep the sizes of each of the metric units in mind. For each object listed in the chart below:

- Choose the most appropriate unit of measurement (m, dm, cm, mm) and record that unit in the chart in the "Unit Chosen" column.
- Estimate the size of that object using the units you choose and the "body parts" in steps 3a–d above. You may actually lay fingers side-by-side along an object to see how many centimeters long it is. Record your estimates in the chart below under the "Estimate" column.

c. Get up and measure the objects listed using the units that you chose. Record your measurements in the chart below the "Measurement" column. You do not have to measure the items in the order listed.

OBJECT	UNIT CHOSEN	ESTIMATE (WITH UNITS)	MEASUREMENT (WITH UNITS)
Height of table			
Length of tabletop			
Height of classroom door			
Thickness of tabletop			
Width of cabinets			
Thickness of a pencil lead			
Width of your table leg			

QUESTIONS:

- Which unit might be best used to measure:
 - shoe length? _____
 - thickness of hair strands? _____
 - a bus length? _____
 - width of a door? _____
 - length of a hallway? _____
 - height of the letter "E"? _____
 - length of a pencil? _____

2. How is the metric system simpler to use than English units (like inches, feet, and yards)?

Name _____

Date _____

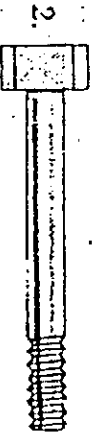
Per. _____

Estimating and Measuring

Estimate the length of each object in centimeters.
Then find the length of each object to the nearest centimeter.



____ cm ____ cm



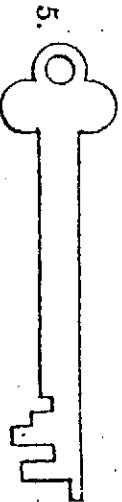
____ cm ____ cm



____ cm ____ cm



____ cm ____ cm



____ cm ____ cm



____ cm ____ cm



____ cm ____ cm



____ cm ____ cm

Estimate each of the following to the nearest meter.
Use a meter stick to find each to the nearest meter.

9. the height of a door

____ m ____ m

10. the length of your classroom

____ m ____ m

11. the width of your classroom

____ m ____ m

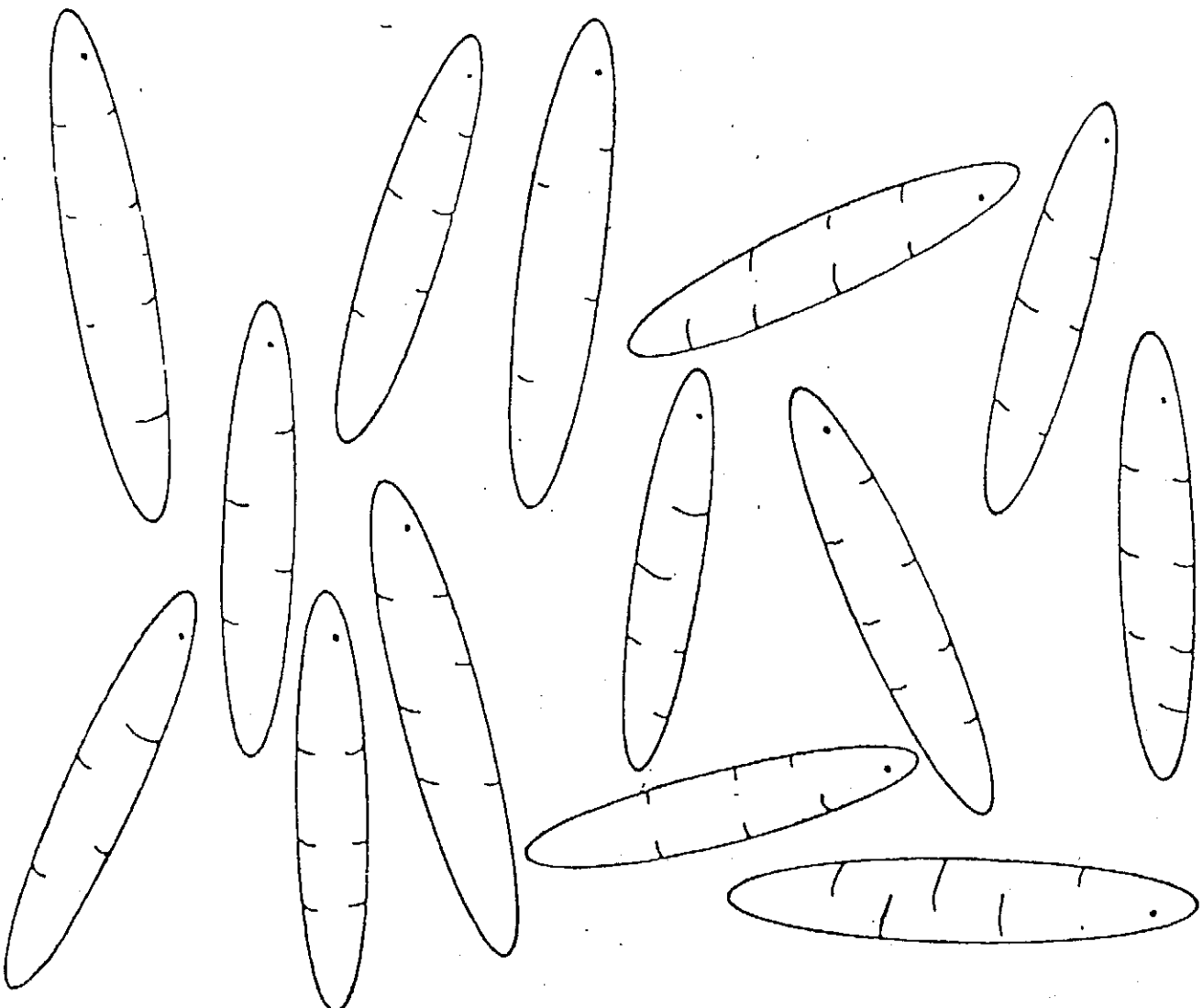
Estimate	Measurement
____ cm	____ cm
____ cm	____ cm
____ cm	____ cm
____ cm	____ cm
____ cm	____ cm
____ cm	____ cm
____ cm	____ cm
____ cm	____ cm

Estimate	Measurement
____ m	____ m
____ m	____ m
____ m	____ m

NAME _____ DATE _____
 CLASS _____ TEACHER _____

LINEAR MEASUREMENT - 1

Measure how long each worm is in centimeters. Then circle the longest worm.



NAME _____ DATE _____

CLASS _____ TEACHER _____

LINEAR MEASUREMENT - II

A board was cut into the twenty pieces shown below. Could you measure each of the twenty boards, then add up their lengths to see how long the original board was? 14 MILLIMETERS

