

### **3.G.2 What is a Centimeter?**

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*An introduction to measuring length in the metric system*

<b>Grade Level</b>	3
<b>Sessions</b>	(1): 1 at 50-60 minutes
<b>Seasonality</b>	None
<b>Instructional Mode(s)</b>	Whole Class, Small Groups
<b>Team Size</b>	2 students
<b>WPS Benchmarks</b>	03.SC.TE.05
<b>MA Frameworks</b>	N/A
<b>Key Words</b>	Centimeter, Foot, Inch, Ruler,

### **Summary**

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This lesson introduces the students to the metric system with respect to the length of objects. Students will become familiar with measuring common objects, such as a pencil or desk, and will learn how centimeters compare to inches.

### **Learning Objectives**

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*2002 Worcester Public Schools (WPS) Benchmarks for Grade 3*

1. 03.SC.TE.05 Develop a knowledge and understanding of the metric measurement system.

### **Additional Learning Objectives**

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1. Students will make estimations and test predictions using a ruler.
2. Students will become familiar with the concepts of an inch, a centimeter, a foot and a meter.

### **Required Background Knowledge**

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None

### **Essential Questions**

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1. How big is a centimeter?
2. How big is an inch?
3. Which is smaller: an inch or a centimeter?
4. How is the metric measurement system commonly used?

## **Introduction / Motivation**

The instructor might begin the lesson by asking students how tall they are. (S)he might then explain the metric system and note that one hundred centimeters equal one meter, just as twelve inches equal one foot. (S)he may also contrast the size of a centimeter and an inch.

## **Procedure**

The instructor will:

1. Lead the students through the What is a Centimeter? worksheet.
2. Divide the class into pairs.
3. Ask each pair to complete the Measurements in Everyday Life worksheet.
4. Collect several straight objects that can be easily measured from around the classroom (ex. a book, a block)
5. Hold up one object at a time and ask the students to estimate the length of the object and record their estimate on the Estimate the Length worksheet.
6. Ask one student to take an actual measurement of the object, in inches and centimeters.
7. Ask all students to record these measurements on their Estimate the Length worksheets.

## **Materials List**

<b>Materials per student</b>	<b>Amount</b>	<b>Location</b>
<u>What is a Centimeter?</u> Worksheet	One	End of lesson plan – print or photocopy
<u>Measurements in Everyday Life</u> Worksheet	One	End of lesson plan – print or photocopy
<u>Estimate the Length</u> Worksheet	One	End of lesson plan – print or photocopy
Metric Ruler	One	Classroom

## **Vocabulary with Definitions**

1. *Centimeter* – a unit of measure that equals one one-hundredth of a meter.
2. *Foot* – a unit of measure in the British Imperial System that equals twelve inches.
3. *Estimate* – to make an educated guess.
4. *Inch* – a unit of measure in the British Imperial System that is one twelfth of a foot.
5. *Metric* – a unit of measurement based on the meter.

## **Assessment / Evaluation of Students**

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The instructor may assess the students in any/all of the following manners:

1. Collect student worksheets to determine whether students understand the metric system and can correctly measure a variety of objects.
2. Use student worksheets and class observations to determine whether students understand the concept of "estimation".

## **Lesson Extensions**

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None

## **Attachments**

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1. What is a Centimeter?
2. Measurements in Everyday Life
3. Estimate the Length

## **Troubleshooting Tips**

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None

## **Safety Issues**

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None

## **Additional Resources**

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None

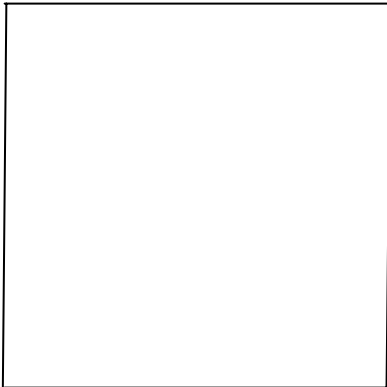
## What is a Centimeter?

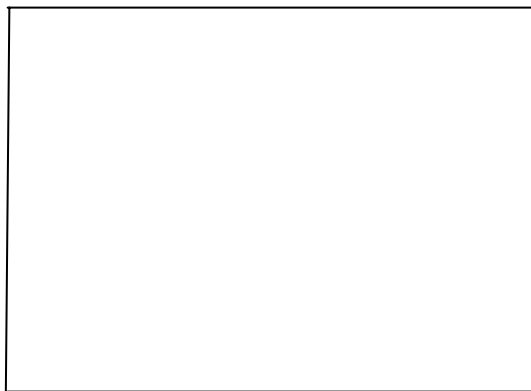
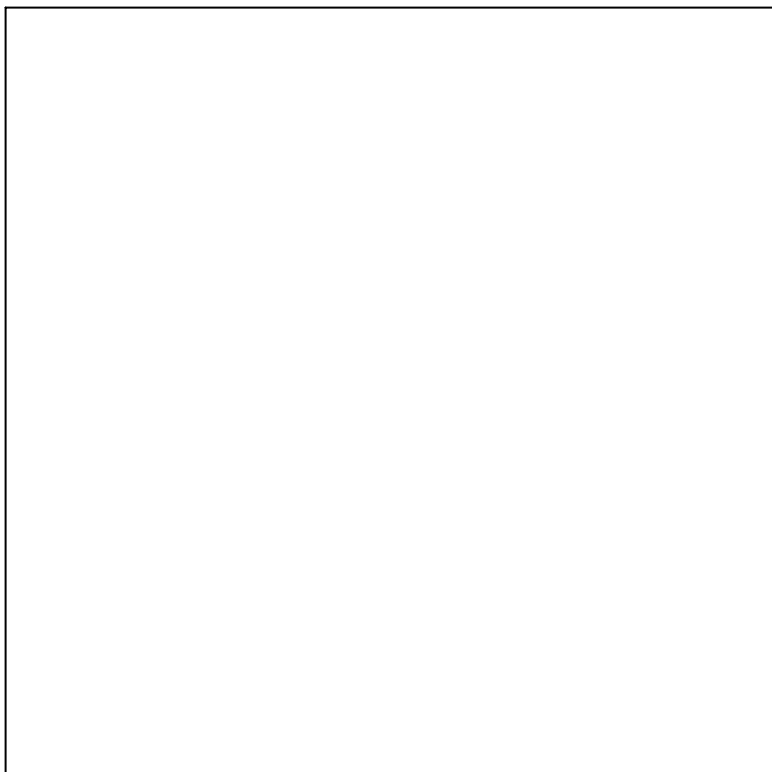
Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Directions:

1. Color the shape that has two sides that measure 5 centimeters and two sides that measure 10 centimeters **red**.
2. Color the shape that has all four sides that measure 5 centimeters **green**.
3. Color the shape that has two sides that measure 7 centimeters and two sides that measure 5 centimeters **blue**.
4. Color the shape that has all four sides that measure 10 centimeters **yellow**.





## Everyday Measurements

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Directions:** Use a ruler marked with centimeters and inches. Measure each of the following objects record the measurements. Ask a partner to help you with some of the measurements.

1. A Pencil \_\_\_\_\_ centimeters \_\_\_\_\_ inches

2. Your Thumb \_\_\_\_\_ centimeters \_\_\_\_\_ inches

3. The height of your desk \_\_\_\_\_ centimeters \_\_\_\_\_ inches

4. The width of your desk \_\_\_\_\_ centimeters \_\_\_\_\_ inches

5. The length of your foot \_\_\_\_\_ centimeters \_\_\_\_\_ inches

6. The length of your arm \_\_\_\_\_ centimeters \_\_\_\_\_ inches

7. The thickness of a textbook \_\_\_\_\_ centimeters \_\_\_\_\_ inches

8. The height of a third grader \_\_\_\_\_ centimeters \_\_\_\_\_ inches

## Estimate the Length

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Directions:** Your teacher will hold up an object. *Estimate*, in inches and centimeters, how long the object is. After estimating, measure the object and record its true length.

### Object 1:

Estimated length: \_\_\_\_\_ centimeters \_\_\_\_\_ inches

Actual length: \_\_\_\_\_ centimeters \_\_\_\_\_ inches

### Object 2:

Estimated length: \_\_\_\_\_ centimeters \_\_\_\_\_ inches

Actual length: \_\_\_\_\_ centimeters \_\_\_\_\_ inches

### Object 3:

Estimated length: \_\_\_\_\_ centimeters \_\_\_\_\_ inches

Actual length: \_\_\_\_\_ centimeters \_\_\_\_\_ inches

### Object 4:

Estimated length: \_\_\_\_\_ centimeters \_\_\_\_\_ inches

Actual length: \_\_\_\_\_ centimeters \_\_\_\_\_ inches