



# MEASUREMENT: INCHES AND CENTIMETERS

## Nutshell

In this lesson, students will practice measurement and graphing skills by using rulers to measure the length of common objects they find outside.

## Objectives

Students will be able to....

- Measure objects using the inches and centimeter scale of a ruler
- Record measurements using the proper scale
- Graph the measurement of objects using whole and fractional numbers

## WI State and Core Standards

*Math Core:* 2.MD.1, 2.MD.9, 3.MD.4, 4.MD.4

*Science:* C.4.3, C.4.4, C.4.5, C.4.6

## Materials

- Rulers with an inch and centimeter scale
- Clipboards
- Copies of the student worksheet
- Writing utensil

## Teacher Preparation:

- notify the main office that you will be outside for a certain amount of time
- be sure students are appropriately dressed for the weather
- gather all needed materials so you don't have to run back inside
- classroom behavior guidelines are the same outdoors as they are in the classroom

## Procedure

1. Introduce the concept of measurement with rulers in an inches and centimeter scale.
2. Take students outdoors to find 5 different objects they want to measure using a 12 inch ruler and then record measurement data on the table in the student worksheet.
3. Then have students find 4 different twigs. Each twig should be measured in inches and recorded in the space provided. Students should then graph the length of each twig. Remind students to label the Y axis of the graph with the number of inches (0-12)...with each line representing 1 inch.
4. After measurements are taken and graphing is complete, students can answer the Questions and Challenge Questions sections.

## Further Enrichment

- Students could create a classroom set of data for the different types of objects they measured. Find out which student had the longest/shortest stick or leaf, etc.
- Allow students to compare the lengths of sticks to the lengths of the leaves they measured (or other comparable objects) by creating a graph with the class data.

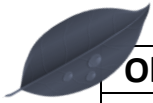


# Measurement: inches and centimeters

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

## Instructions:

1. Use a ruler to measure 5 different objects you find outside. Can you think of some ideas of what you might measure? (Hint: leaves, sticks, bark, grass)
2. Record how long your object is. Be sure to look at the ruler carefully!
3. Sketch a picture of each object you measured.
4. Turn the page over and do the next measurement activity. Be sure to graph your answers.
5. Answer the questions on the back page. See if you can do the challenge questions too!



Object	Inches	Centimeters	Sketch
1			
2			
3			
4			
5			

## Activity #2:

Use your inches ruler and measure the length of four different twigs. Record your answers in inches below. Then plot the length of each twig on the graph on the back side of this paper. You need to write in the numbers on the inches side. Use careful graphing skills if your twig measures at a  $\frac{1}{4}$ ,  $\frac{1}{2}$ , or  $\frac{3}{4}$  of an inch!

Twig 1: \_\_\_\_\_ in.

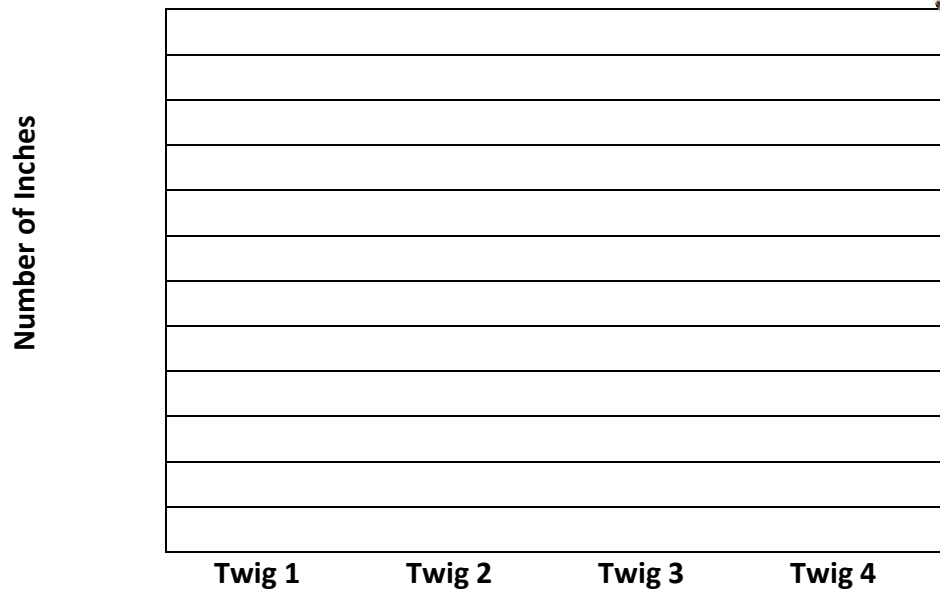
Twig 2: \_\_\_\_\_ in.

Twig 3: \_\_\_\_\_ in.

Twig 4: \_\_\_\_\_ in.



## Comparing Twig Lengths



### Questions:

1. Look back at the first table you filled in...
  - a. What was the longest object you measured?
  - b. What was the shortest object you measured?
  - c. Did you find an object that was too long for the ruler on the paper? If so, what was it?
2. What was the hardest part of measuring your objects?
3. What was your favorite object to measure?
4. Will any of the objects you measured continue to grow? Which ones?

### Challenge Questions:

1. Were any of your objects living organisms? If so, which ones?
2. Were any of your objects living at one time, but are now dead? Which ones?
3. Were any of your objects non-living things? If so, which ones?