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Measuring Diameter Handout

Center for Urban Resilience

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MEASURING THE DIAMETER OF A TREE

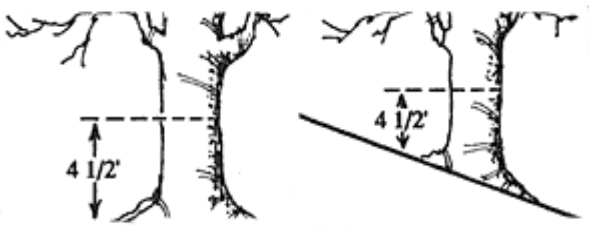
What do I need?

You will need the following items to measure the diameter of your tree.

- measuring tape
- **You need a partner** to help you with this activity.
- Data collection sheet

Instructions: How do I measure the diameter of a tree?

Step 1: Measuring the Diameter Breast Height (DBH)



The diameter of a tree at 4-1/2 feet above the ground is called the "diameter at breast height" (DBH). Stand on the uphill side of the tree and find a point 4.5 feet up the trunk. Wrap your tape measure around the tree at this point. Note you are measuring **circumference** not diameter at this point!

What if my Tree Forks?

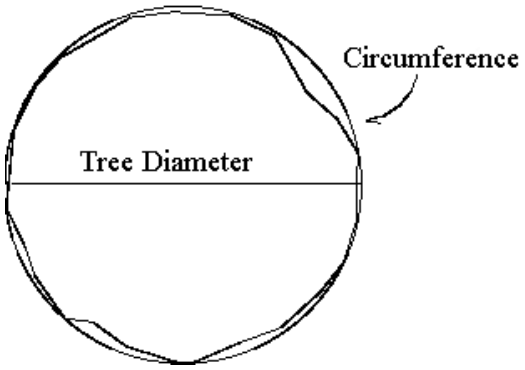
If the tree forks **below** 4.5 feet then measure the circumference of the largest stem at 4.5 feet to the nearest inch. If the tree forks **at** 4.5 feet, then measure the circumference at the smallest place below the fork.

The best tool to use to measure circumference is a flexible tape measure - or one can use a non-stretch string and a ruler. To ensure an accurate measurement make sure the tape or string is perpendicular to the axis of the trunk and is not twisted. Remember that all circumference measurements need to be made in **inches**. Make sure you record your results in on your data table.

What if my Tree has lots of stems and branches?

If the tree has multiple stems, measure the diameter of all the stems and then add all your measurements together to get an estimate of the tree's diameter.

Step 2: Determining diameter of your tree



So far you have measured the circumference of the tree - not the diameter. To convert your measurement into diameter units use the following formulas:

Circumference = 2 *π* radius

And the diameter of the tree is 2 * radius

So

Radius = Circumference/ (2 π)

And

Diameter of tree = 2 * radius

For instance, if we knew the circumference of our tree was 12 inches, we would divide 12 by 2 π (**12/ 2 π = 1.9**). Then we would multiply our answer by 2 (**1.9 x 2 = 3.8**). Then we would have our diameter → **3.8 inches**.

If your calculator does not have the π function, use 3.14.