How to Estimate the Age of a Tree

NEW YORK
RESTORATION
PROJECT

The Oldest Tree

Some of the redwood trees in California are over 2,000 years old! Here in NYC the oldest (and tallest) tree is the 'Queen's Giant,' a tulip tree in Alley Pond Park, which is estimated to be 350 years old. It was standing at the time that George Washington's army was nearby fighting battles during the American Revolution.

The Queen's Giant, Alley Pond Park

Materials:

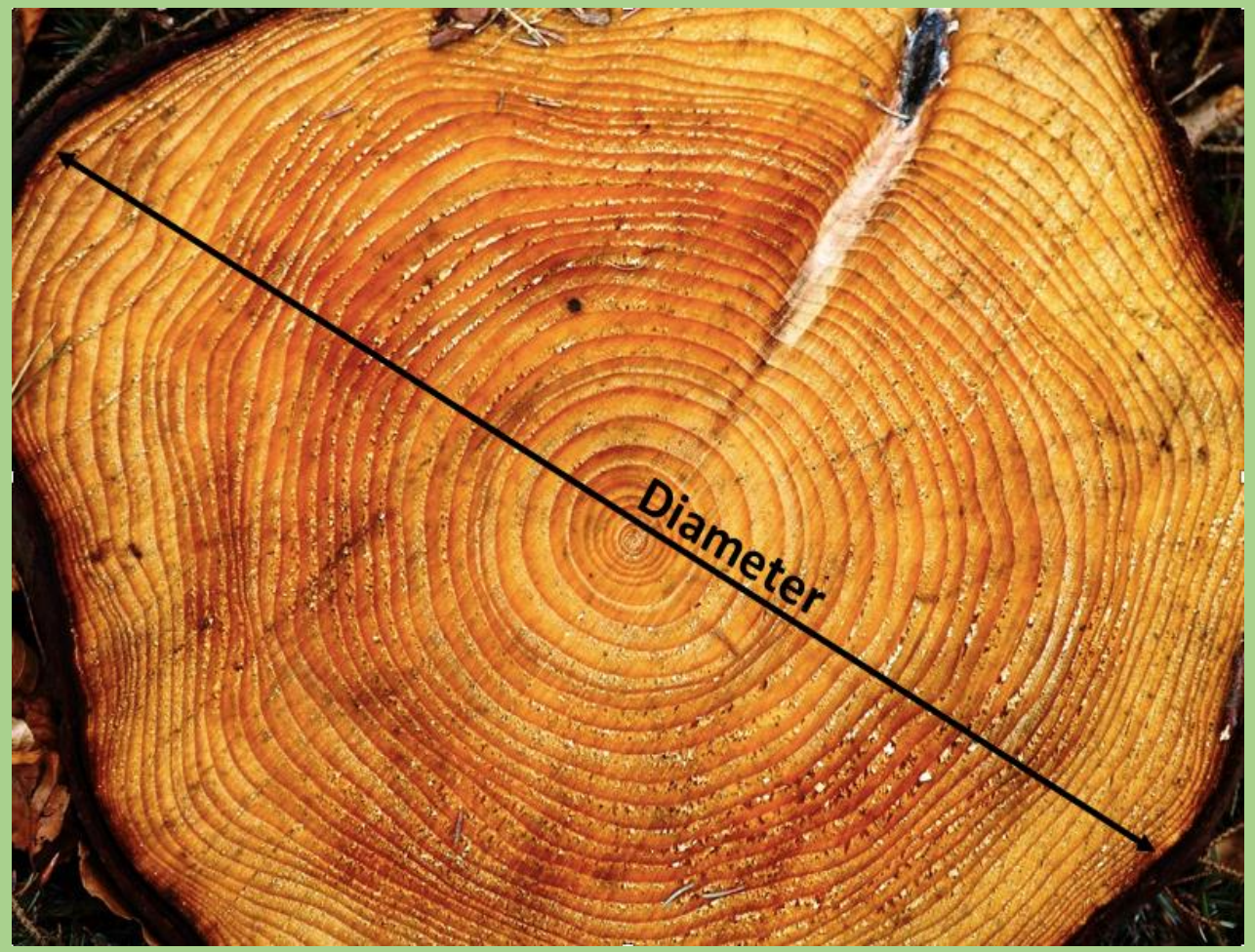
This activity requires only three things:

1) A tree, which you have identified using one of the ID tools.

2) A measuring tape at least 120 inches long, or a long piece of string.

3) A friend who can offer an extra pair of hands (or a little brother or sister if needed)

Width or Height?



Trees grow from the center out, each year adding a layer to their trunk. You can see those growth rings when the tree has been cut. So when scientists figure out the age of the tree, they don't look at height, but at the width or **diameter** of the trunk. But not all species grow at the same rate, which is why it's important first to know what type of tree you are measuring.

Step 1: Measure the Circumference

We can't cut the tree to find its diameter, but we can find its **circumference** (distance around the trunk).

Place the end of the tape measure at your starting point, about 4 ½ feet above the base of the tree. Wrap it all the way around the circumference of the tree, until you reach the starting point. If the tree is large, you will need two people, one to hold each end. Make sure the measuring tape is pulled as tightly as possible. Now you have your circumference in inches.

Step 2: Calculating Diameter

Now, remember it's the diameter of the tree that is important when estimating its age. To find the diameter, take the circumference, and divide it by 3.14. Yes, you are welcome to use a calculator! Here is the formula:

$$Diameter\ (d) = Circumference\ (c) \div 3.14\ (pi)$$

For example:

If your Tree has a circumference of 31.5 inches, you divide that by 3.14 (*pi)* and you get a diameter of 10.03 inches. Round that to the nearest whole number and you have diameter = 10 inches!

d = 31.5" ÷ 3.14
which means d = 10.03"

Step 3: And Finally…. The Age of Your Tree

Now that you have calculated your tree's diameter, use the chart at the link here your tree's approximate age.

Find the column with your closest diameter. For instance if your diameter was 33 inches, then go to the column marked 35 inches. Now move down the column until you reach the row of your tree species. So as in the example below, if your tree was the American elm, then your tree's estimated age is 77 years!

	Tree diameter (DBH) in inches									
Species	5"	10"	15"	20"	25"	30"	35"	40"	45"	50"
	Estimated tree age in years									
American elm (4)		27	38	48	58	67	77	86	95	104