

# Arbor Day 2023

## Help us Find Superhero Trees in the Village of Martin's Additions

You and your family can participate in the superhero tree hunt in your own yard, on your street, or on your own walk through the Village. You will need:

1. long tape measure (inches and centimeters, if available)
2. calculator
3. paper and pencil/pen to record measurements
4. tree identification tool/resource (see below)

Two helpful tree identification resources are:

- “Seek” is a free app that helps identify living things around you. It is kid-friendly, as it doesn’t require registration. (It was developed by the creators of iNaturalist, California Academy of Sciences and National Geographic.):  
[https://www.inaturalist.org/pages/seek\\_app](https://www.inaturalist.org/pages/seek_app)
- A printable guide of Maryland broadleaf trees published by the Maryland Department of Natural Resources:  
[https://dnr.maryland.gov/wildlife/Documents/TreeGuide\\_Common-Broadleaf.pdf](https://dnr.maryland.gov/wildlife/Documents/TreeGuide_Common-Broadleaf.pdf)

With these tools, you are ready for a superhero tree hunt. Focus on identifying the largest trees you see, using “Seek” or the Maryland Tree Guide.

Once you have identified a large tree, your task is to answer 3 questions about it:

- How old is the tree?
- How tall is the tree?
- How much oxygen does the tree produce every day?

## How old is the tree?

To determine the tree's age, follow these steps:

STEP 1: Measure the tree circumference in inches about 4.5 feet above ground level.

STEP 2: Calculate the diameter: Diameter = circumference  $\div$  3.14 (pi)

STEP 3: Multiply the diameter in inches by the appropriate **growth factor** (see below) to determine the estimated age of your tree.

**This table provides the growth factor of 18 trees common to Maryland:**

Tree Species	Growth Factor	Tree Species	Growth Factor
Red Maple	4.5	White Oak	5.0
Silver Maple	3.0	Red Oak	4.0
Sugar Maple	5.0	Pin Oak	3.0
River Birch	3.5	Linden or Basswood	3.0
White Birch	5.0	American Elm	4.0
Shagbark Hickory	7.5	Ironwood	7.0
Green Ash	4.0	Cottonwood	2.0
Black Walnut	4.5	Dogwood	7.0
Black Cherry	5.0	Redbud	7.0

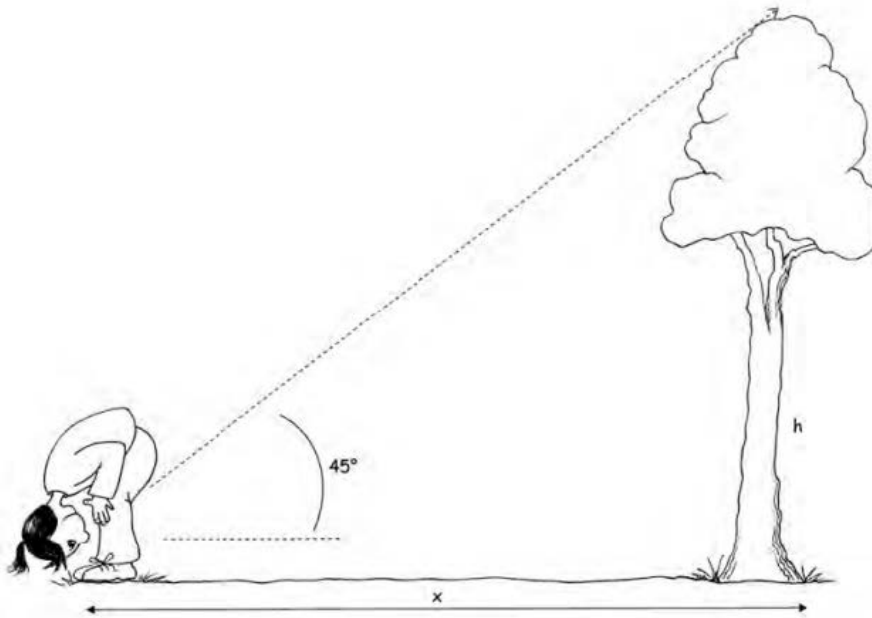
To learn the tree's age, complete the following equation:

$$\text{DIAMETER IN INCHES} \times \text{GROWTH FACTOR} = \text{TREE AGE}$$

## How tall is the tree?

Before tools were developed to measure the heights of trees, Native Americans used triangles to identify trees that were tall enough for building support beams or to make a boat.

To estimate a tree's height using triangles, walk far enough from the tree to find a place where you are just able to see to top of the tree when you bend over and look through your legs.



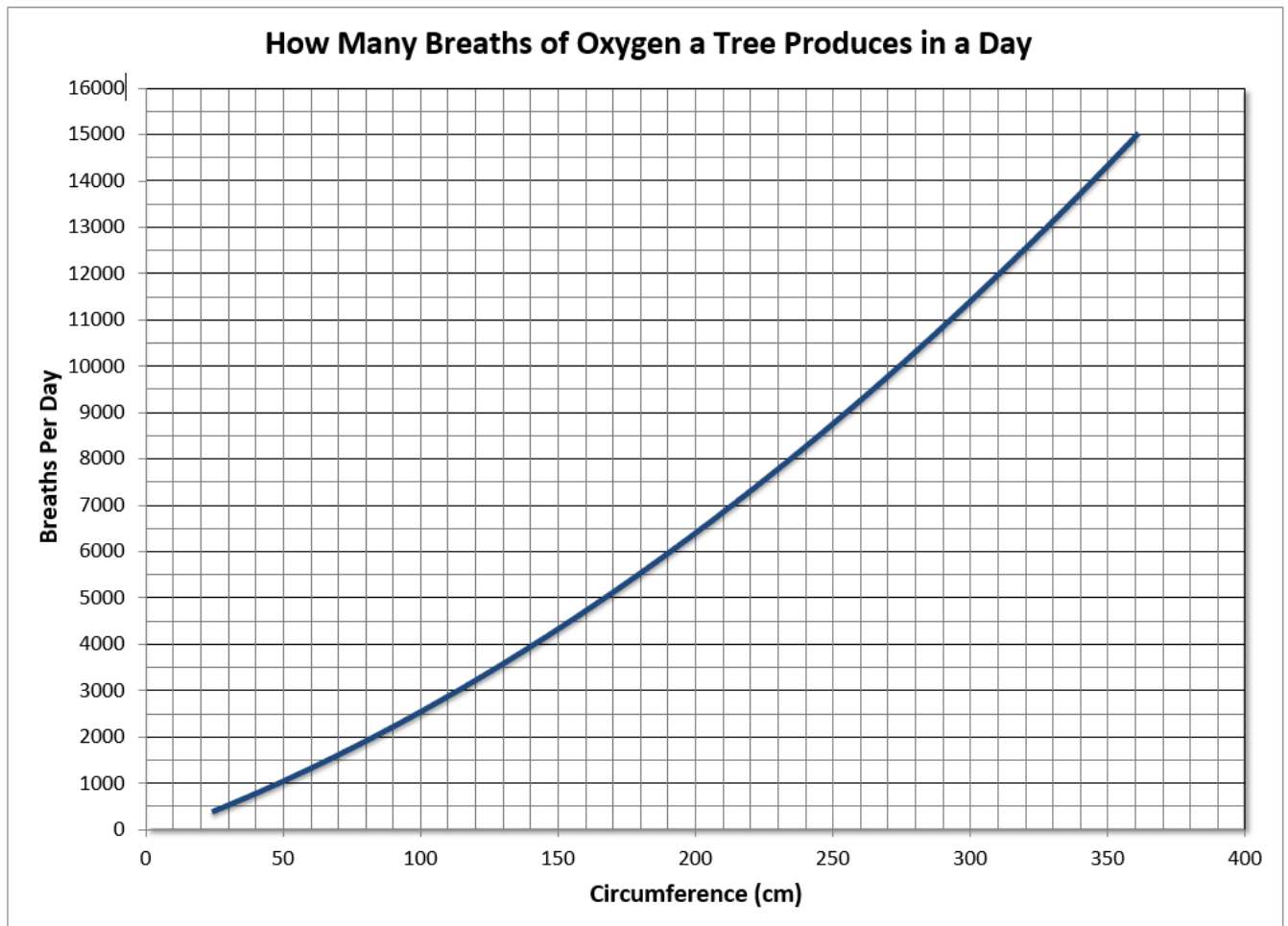
The angle that is formed when you look through your legs approximately 45-degrees. The angle between the tree trunk and the ground is close to a 90-degree angle.

The height of the tree and the distance from the tree to the person is about equal. Therefore, knowing the distance to the tree gives you a good idea about the height of the tree.

## How much oxygen does the tree produce every day?

Now that you know the diameter of the tree, you can also estimate how much oxygen or “tree breaths” the tree produces each day.

Here is a graph that shows you how many tree breaths of oxygen a tree produces in a day, based on its circumference in centimeters:



We invite any of our VMA Superhero tree hunters to draw their chosen trees. We would like to collect drawings of VMA Superhero trees and the addresses where they can be found in the Village. If you would like to share your drawing, please send it to [avm@martinsadditions.org](mailto:avm@martinsadditions.org) by Friday, April 28. We look forward to sharing the drawings in our Weekly Wrap-Up with the community. Thank you for participating and Happy Arbor Day!

Many thanks to DC's Urban Adventure Squad ([www.urbanadventuresquad.org](http://www.urbanadventuresquad.org)) for the how-to's and inspiration for these exercises.