

Saplings



The Saplings activity collects data on the middle size trees, the “teenagers” of the FERN plot. Saplings serve an important role, providing food and shelter to forest creatures and impacting microclimate on the forest floor. Saplings also tell a story about the future of the forest. What the forest becomes when the overstory is harvested or ages out depends on what saplings are waiting below, ready to grow into overstory positions.

Before you Start:

Take a few minutes to walk around your FERN plot. Work with your classmates to find the boundaries of the 1/10 acre plot and the embedded 1/50 acre and 1/1000 acre plots.

What do you notice about the forest around you?

What do you wonder?

Use your field notebook to record your thoughts. Make note of the date, the weather, and any other information you think might impact how you move through the activity today. One important key to data management is keeping good notes on what is going on around you while you’re collecting your data. These factors impact how you do your work, and can give you helpful clues down the road if you notice that something might have gone wrong.

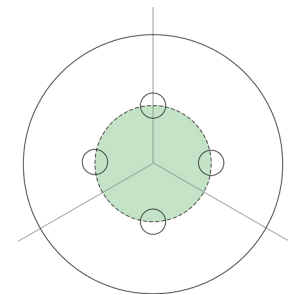
Saplings are defined in this activity as trees that have a **diameter at breast height (DBH)** between 1 inch and 4.9 inches AND is at least 4.5 feet tall. *Hint: use your 4.5 foot stick to help you figure out if a tree is tall enough to count as a sapling!*

This activity takes place in the 1/50 acre FERN plot. *Why do you think we collect sapling data at this scale and not at the larger 1/10 acre scale or smaller 1/1000 acre scale?* Talk to your classmates about it!

Through the saplings activity we will tally the number of saplings in each **size class** for each species. If you have already completed the Overstory activity, you will notice that this is a different method than the one we used when collecting data on bigger trees. *Why do you think we use size classes when collecting FERN data on saplings? Why don't we use size classes when collecting data on overstory trees?* Talk to your classmates about it.

What You'll Need

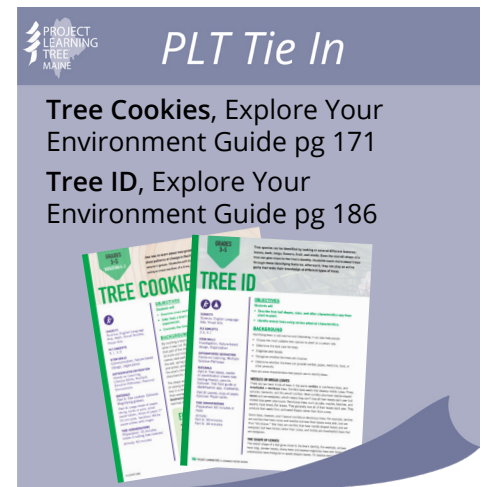
- 4.5-foot stick
- compass
- data sheet
- diameter tape
- Forest Trees of Maine book
- field notebook
- measuring tape



This activity happens in the 1/50 acre FERN plot

Procedure:

1. Stand at plot center and face north (*hint: use your compass!*). The sapling that is closest to directly in front of you is the tree you should record first (*saplings are defined as trees with a DBH between 1 inches and 4.9 inches AND that are at least 4.5 feet tall*).
2. Record the species of this first tree (your Forest Trees of Maine book can help you figure out the tree species). Measure the **DBH** of this sapling and make one tally mark in the **size class** it falls into. Be sure to mark the **size class** box associated with the correct species. **Size classes** are listed on your data sheet and below:
 - 1-inch category: 1.0in - 1.9in DBH
 - 2-inch category: 2.0in - 2.9in DBH
 - 3-inch category: 3.0in - 3.9in DBH
 - 4-inch category: 4.0in - 4.9in DBH
3. Move through the plot in a clockwise direction to collect data on each sapling. For each sapling, determine the species and then assess if you have already found saplings of that species in the plot. If you have, record the size class of the new sapling in the associated row. If you have not, add a row for the new species and then record the size classification of the sapling. Saplings closer to plot center should be recorded before saplings further on the edge.
4. Return to your classroom and check the accuracy of your data. If the plot has been measured before, compare the measurements you just took with the previous measurements to make sure they make sense (*trees should not change species or shrink!*)
5. Once the data is verified, share your findings with Maine TREE and the FERN network for analysis.



Definitions:

Diameter at breast height: often shortened to **DBH**, this is a standardized height used to maintain consistency in reporting the diameter of trees. The diameter of a trunk is not consistent from the ground to the crown. Thanks to this rule, we know that changes we see in diameter across years are due to growth, not measuring different parts of the tree. DBH is defined as the point on the trunk that is 4.5 ft up from the ground measured from the downhill side of the tree. This is where you should take your diameter measurement (*hint: use your measuring tape!*)

Size class: Size classes are categories foresters use to lump tree size measurements into groups of similarly sized trees instead of recording the exact measurements for every tree. By lumping similarly sized trees together, we can more quickly notice patterns of similarity and difference across the forest.