

Seedlings



In the Seedlings activity, we look carefully at the littlest trees in the forest. Like saplings, seedlings have a lot to teach us about the future form and function of our woods. By collecting data on seedlings, we gain an understanding of how bigger trees are distributing their seeds and what challenges these littlest trees are encountering as they establish a new generation.

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.

Seedlings are defined in this activity based on species and height. For hardwood species, seedlings are greater than 12in tall and less than 4.5in tall.

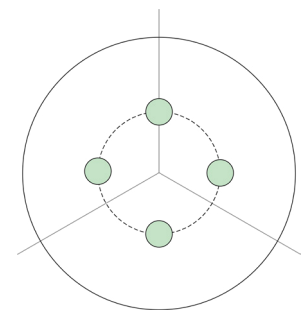
(Hint: hardwoods have broad leaves that fall off in autumn). For softwood species, seedlings are greater than 6in tall and less than 4.5 ft tall *(Hint: softwoods have needle leaves that stay green through the winter).* Tricky complication: any tree that is taller than 4.5in AND has a **DBH** less than 1in is also classified as a seedling because its diameter is too small for it to be a sapling.

Unlike the 1/10 acre and 1/50 acre plots, there are four 1/1000 acre FERN plots rather than just one. *Why do you think we have multiple smaller plots? Why would we collect seedlings data in four small plots rather than just one bigger plot?*

Like the Saplings activity, we will tally the number of seedlings in **size classes** for each species. Unlike the Saplings activity, here we use size classes determined by height rather than **DBH**. *Why do you think we lump similarly sized seedlings together based on their height instead of their diameter at breast height? Hint: What is diameter at breast height, again?* Talk to your classmates about it.

What You'll Need

- measuring stick (6in, 12in, 24in, & 54in denoted)
- Forest Trees of Maine book
- compass
- field notebook
- data sheet
- measuring tape



This activity happens in the 1/1000 acre FERN plots

Procedure:

1. Start in the northern most 1/1000 plot *Hint: use your compass!* Use sticks you find on the ground to divide the plot into four equal sections. They don't have to be perfect, they're just to help you count!

2. Use your measuring pole to find a tree that falls within the definition of seedling for this activity. Remember that for hardwoods, seedlings are greater than 12in tall and less than 54in tall; for softwood species, seedlings are greater than 6in tall and less than 54in tall. Use your Forest Trees of Maine book to identify the species and add it to your data sheet. Measure the height of this seedling and make one tally mark in the **size class** it falls into. **Size classes** are listed on your data sheet and below. *Hint: you shouldn't have any hardwoods in category 1.*

Category 1: 6 inches - 11.9 inches tall

Category 2: 12 inches - 23.9 inches tall

Category 3: 24 inches - 53.9 inches tall

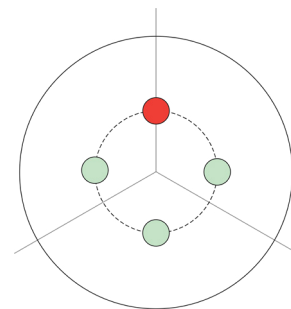
Category 4: 54in+ *and* DBH is less than 1in

3. Move through each quadrant of the plot tallying all seedlings. Be sure to add a new row for each new species.

4. Repeat steps 1 - 3 for the east, west, and south 1/1000 acre plots.

5. 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!*)

6. Once the data is verified, share your findings with Maine TREE and the FERN network for analysis.



Start in the northern most 1/1000 acre plot



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.