

Backyard Botany

(a la Dr. Don Lawrence)

Topics:

Botany
Observation skills
Seed structure and dispersal

Materials:

Electric fan
Magnifying glass
Trowel
Measuring tape
Notebook
Pencil
Plant guide:
<http://plants.usda.gov>

Levels: K-12

Next Generation

Science Standards:

Plants & Environment
(Grade K, Life Science 1-1, Grade 2, Life Science 2-1)
Plant structures (Grade 4, Life Science 1-1)
Science and Engineering practices (K-12)

By Kristan Hutchison
Inian Island Institute
Creative Commons
2015

Try botany the same way Don Lawrence first did as a young boy, by taking a close look at some weeds in your own neighborhood.

The common dandelion has at least one thing in common with *Dryas drummondii* and fireweed; all three have fluffy seeds that ride the wind, allowing the plants to be among the first to colonize ground bared by glaciers, fire or construction. We usually walk by dandelion without noticing, but one of the most important skills of a scientist is the ability to stop and observe. That's the skill we will practice in this lesson. We won't tell you what you're looking for because we don't want to bias the data: "If I tell you what I see, you won't see what you see."

Dandelion dispersal

Find a dandelion in the white, puffball phase. Drop a few of the seeds without wind and watch how they fall. Then try using a fan to see how the seeds float on the air. Try to copy the movement with your own body. What words would you use to describe the dance of the dandelion seeds? If you can find other fluffy seeds, such as thistles, compare how they move. Why do the seeds move that way?

Look at the seeds under a magnifying glass. What do you notice? What about the dandelion seed helps it float? Look very closely at the pointed end. What about the shape helps the seeds land and stick to the ground? Draw the seed in your notebook really big. Drawing or writing about things helps scientists notice and remember. What do you see that you didn't see before?

Digging deeper

Use the trowel to dig down alongside the dandelion root, until you can pull the entire root out. Where does the root go? How long is it, what shape? Do you think that dandelion spread through their roots, like fireweed?

Taking it Further: Plant succession

Look for an area where the ground has been untended for a long time so that many "weeds" have taken hold. This might be a vacant lot or roadside. Measure out a square area of 1 meter on each side. You can mark it temporarily with string, rocks or just by inscribing a line in the dirt. Note the soil, sun and water conditions for that spot. Try to identify all the kinds of plants inside the area you've marked. Does one plant dominate or is it a mix? Based on what you see, how do you think these plants got there and how do they spread? Do you have a guess at how long it's been since that area was disturbed?