

You will answer the following questions in the FACTivity: What are the ways different seeds move away from the parent plant? What are the characteristics that enable seeds to travel from the parent plant?

Time needed:

One class period (With prework in addition)

Materials needed:

Variety of seeds

For prework, collect three or more seeds from areas around your home, schoolyard, unmowed area, or wooded area. You may also collect seeds from fruits, such as from a tomato, apple, watermelon, or pumpkin. The entire fruit may be brought in as well.

Magnifying glasses or microscopes

Rulers

Blank paper

Pencil

For extension:

Fan

One small dry bean or seed (one for each student)

Paper

Scissors

Masking tape

Glue

Tape measure

The procedure to be used to answer the question is:

Using this article as a starting point, the teacher will explain that all seeds have a way to travel from the parent tree. This is called seed dispersal. Examples include wind, water, animals (either by purposely carrying seeds, eating fruits and later defecating the seeds, or having seed burrs stick in their fur), and mechanics (such as “explosions”). Bristlecone pine seeds are winged seeds and use wind as a way to travel. (Note that some seeds use more than one dispersal mechanism.)

Your teacher will create a station for each type of seed dispersal. Place your seeds at the station you think is the right one for each seed. A magnifying glass or microscope and ruler should be available at each station. (Multiple stations for each type of seed could be established if there is enough room.)

You will then move from station to station, observing the seeds at each station. On your piece of paper, draw an example of the seeds and make notes about how the seed’s physical characteristics enable it to travel.

After all students have visited all stations, your teacher will hold a class discussion about what was discovered. How do you think each of the seeds is dispersed from the parent plant? What are the physical characteristics that make dispersal possible for each type of seed? Be sure to answer the questions posed at the beginning of this FACTivity.

Compare whatever winged seeds you collected with the photograph of the bristlecone pine seeds (figure 3 in the article). How are the seeds similar? How are they different?

FACTivity Extension

Get a dry seed or bean, a piece of paper, scissors, and have access to the tape and glue. Design a wind-dispersed seed mechanism for your seed. Be creative in your design. After the seeds have been designed, each student will drop their seed from the same height, in front of the fan. Each student will get three tries. Calculate the average distance. Determine which design traveled the farthest.

Hold a class discussion about why the seed that traveled the farthest did so. What design was used and what made it successful?



National Science Education Standards

Science as Inquiry:

Abilities Necessary To Do Scientific Inquiry;
Understanding About Scientific Inquiry

Life Science:

Structure and Function in Living Systems;
Populations and Ecosystems;
Diversity and Adaptations of Organisms;
Reproduction and Heredity

Science in Personal and Social Perspectives:

Populations, Resources, and Environments;
Natural Hazards;
Risk and Benefits

History and Nature of Science:

Science as a Human Endeavor;
Nature of Science



Teachers: If you are a trained PLT teacher, you may use Activity # 43, "Have Seeds, Will Travel," as an additional resource.

This FACTivity was adapted from Discovery Education:
<http://school.discoveryeducation.com/lessonplans/programs/scatteringseeds/>

Additional Web Resources

The High Elevation White Pine Educational Web site
<http://www.fs.fed.us/rm/higherelevationwhitepines/>

NOVA: Explore the Methuselah Grove
http://www.pbs.org/wgbh/nova/methuselah/expl_grove.html