Seed Dispersal

Teacher Resource Guide

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What is a seed?

A seed consists of an embryonic plant surrounded by a seed coat.

Stored food provides the energy for the seed to germinate.

Seeds are how plants reproduce! Seeds germinate and grow, becoming new plants.

Seed plants (the Angiosperms) are the dominant plants on Earth!

Seeds are very diverse and vary greatly in size, shape, and function. See what different kinds of seeds you can find!

Why is seed dispersal essential?

Plants have limited mobility and rely on other factors (both biotic and abiotic) to spread their seeds.

Seed dispersal results in the highest survival rates for seeds, away from disease, predators, and competition.

Seed dispersal allows plants to colonize new areas, far from the parent plant.

Mechanisms of seed dispersal:

Wind:

Smaller seeds can float on the breeze.

(Ex: milkweed or dandelion)

Larger seeds often flutter to the ground.

(Ex: maple)

Many seeds are usually produced to maximize the number that will land in suitable locations.

Animals:

Edible seeds –

Many seeds are ingested as part of a brightly colored, sweet fruit, and later expelled by the animal in a new location.

Some seeds are cached by small mammals and birds; many will grow into plants if uneaten. (Ex: oak)

Acorns are an important food for many animals. They are often hidden (especially by squirrels!) and some may germinate.

Hitchhikers –

Seeds with hooks or teeth can latch on to passing animals, hitching a ride to a new location. (Ex: burdock)

This method can spread seeds quickly and over far distances.

Effective seed dispersal, especially by humans, is a major factor in helping invasive plant species spread rapidly.

Water:

Many aquatic and some terrestrial plants use water for seed dispersal. (Ex: water lilies)

Seeds like the coconut can be transported on ocean currents, over extremely long distances before germinating. Even to other continents!

Self-dispersal:

This method is often explosive and extremely rapid.

Seeds are generally flung away from the parent plant due to the drying of seedpods. (Ex: impatiens)

Seeds in your backyard! (For class discussion)

Try finding different kinds of seeds and guessing how they are spread!

Are seeds found all over or all clumped together?

What seeds do you see in the foods that you eat?

Activities:

Seed dispersal class activity (collection, examination, and experiment):
[Great for younger kids, involves a collection activity where students collect different types of seeds, sort them based on dispersal method, and investigate what characteristics allow for the furthest travel in wind. These activities are very hands-on and allow the entire class to explore the physical properties of seeds in seed dispersal.]

http://www.mbgnet.net/bioplants/seed.html
http://www.mbgnet.net/bioplants/downloads/seeds.pdf

An activity exploring wind dispersal, including student design:
[Similar activities, involving student collection and analysis of seeds found outside, and design of seeds to test wind dispersal. This site is more directed towards older students (grades 9-12), with detailed questions and examples.]

http://www.ecologycenter.org/tfs/lesson.php?id=13340

Other Resources:

Great pictures summarizing the various types of seed dispersal:

http://www.cas.vanderbilt.edu/bioimages/pages/fruit-seed-dispersal.htm

A good general summary of seed dispersal:

http://www.countrysideinfo.co.uk/seed_dispersl/index.htm

Photos (in order of appearance):

http://robertallen.com/blog/wp-content/uploads/2009/10/dandelion-blowing-away-300x180.jpg
http://2.bp.blogspot.com/_xQkNnGis0lY/TI_wDz_pA_I/AAAAAAAAALE/f8OpwXsLDXM/s1600/Milkweed+Seed+II.jpg
http://upload.wikimedia.org/wikipedia/commons/7/7c/Eastern_Grey_Squirrel_in_St_James%27s_Park%2C_London_-_Nov_2006_edit.jpg
http://www.ontariowildflower.com/images/common_burdock_seed.jpg
http://imagecache6.allposters.com/LRG/30/3063/DICDF00Z.jpg