

INDOORS, OUTDOORS ✿ GRADES 2-6 ✿ FALL ✿ ACTIVITY



Seed Ya Later

DESCRIPTION

Students explore seeds and learn about how they are adapted for travel. They then search around the garden or other outdoor areas for examples of seeds that travel in different ways.

OBJECTIVE

To understand how seeds' adaptations aid them in traveling away from their parent plants; and to classify seeds based on their dispersal mechanisms, or the structures that allow them to travel.

MATERIALS

- ✿ A variety of seeds that travel in different ways. Examples include:
 - **Soaring seeds:** Ash, elm, linden, maple, dandelion, milkweed, goldenrod, thistle, columbine
 - **“Velcro” seeds:** Any burr that gets stuck in your sock in a grassy field. (*Note:* A great way to collect these is to put a large old sock over your shoe, and take a walk through a meadow.)
 - **Edible seeds:** Seeds inside of fruits and nuts
 - **Floating seeds:** Palm, water lilies, coconuts
 - **Explosive Seeds:** Seeds that spring away from their parent plants, like impatiens, sweet peas, lupines, California poppies, and pansies
- ✿ 1 large sheet of paper for each pair of students
- ✿ 1 bin full of water
- ✿ magnifying glasses for all students

PREPARATION

1. Collect a variety of seeds, including at least one soaring, one “Velcro,” one edible, one floating, and one explosive variety, so that each pair will have 5-8 varieties. (*Note:* If a floating seed is difficult to find, a coconut from the grocery store or a photo of one will also work.)
2. Prepare an envelope with a variety of seeds for each pair of students, including at least one soaring, one “Velcro,” one edible, one floating, and one explosive seed.

TEACHER BACKGROUND

Seeds come in an incredible variety of shapes, sizes, and colors. Coconuts can be as heavy as 18 kilograms (40 pounds), and the seeds of snapdragons are almost like dust. Dandelion seeds float through the air, and walnuts may be carried away and buried by squirrels. For all of their differences, seeds have this in common: They all have adaptations that allow them to disperse and reestablish, ensuring the plant's survival.

During this activity, students will be classifying seeds that have been gathered from the kitchen and from plants in your area. If you collect seeds from natural areas for this lesson, please collect only a small fraction of the available seed from each species so that there are enough for the plant to continue to reproduce.

CLASS DISCUSSION

Together with a partner, make a list of all of the ways you can think of that humans travel. Make the list as long as you can! What are some of the ways humans travel? *Have students share their answers. Ask for them to share means of travel they don't think any other groups might have thought of, like dog sleds or hot-air balloons.*

Now we're going to talk about how seeds travel. A seed has a baby plant inside it, and for that baby plant to grow, it needs to land in a place where it will receive water and nutrients from the soil, and where it won't have too much competition from other plants for these basic

resources. Since a parent plant can drop thousands of seeds at a time, many seeds will need to end up at some distance from their parent plant to survive. But seeds can't walk! So how do you suppose they are able to travel away from their parent plant?

Seeds travel in a variety of ways. Some soar on the wind. Has anyone every blown a dandelion flower and watched the seeds fly away? (*demonstrate*). Some float on water (*float an example on water*). Some have little hooks that allow them to stick to the fur of animals that are passing by. These seeds fall off much later in faraway places. Has anyone ever had a seed stuck to their sock? (*show an example*). Did you know that Velcro was, in fact, invented in 1941 by a Swiss engineer named George de Mestral, who was inspired by the seeds stuck in his dog's fur after a hunting trip? He looked carefully at the hook-and-loop design of the seeds and fur, and mimicked this natural model to make Velcro!

Still other seeds travel by being stored or eaten by a bird or other animal, and then being deposited somewhere else. Has anyone ever seen a squirrel bury a nut somewhere? Or has anyone seen a bird eat a berry and then deposit it (or poop it out) in another location? Did you realize that that bird might have been planting a berry bush?

Still other plants disperse their seeds by ejecting them forcefully so that they fall well away from their parent plant. When a sweet pea pod dries in the sun, for example, it opens up in a tight spiral, pushing the seeds away. *Note: You can show students a very engaging 3-minute video of seeds dispersing at: <https://www.youtube.com/watch?v=buZV0h4vfmQ> or by searching YouTube for David Attenborough Seeds.*

Today each of you will get an envelope full of seeds. With a partner, you'll look carefully at the seeds and then classify them based on how you think they travel.

ACTION

1. Get students into teams of two.
2. Have each pair of students fold a large piece of paper in half, and then into thirds, creating six sections. Have them write the following words, one in each section: Soaring, Velcro, Edible, Floating, Explosive, and Unknown.
3. Hand each pair of students an envelope of seeds. Have them look at the seeds carefully and put each one in the box in the section of their paper where they think it belongs. They can throw the seeds in the air to see if they fly; stick them to their socks; try to float them on the water in the bin, and do further investigations. But they should not taste any of the seeds! Remind them that any given seed might travel in more than one way.
4. Ask pairs to share how they think each seed travels, and what evidence they used. Discuss as a whole class.
5. Take a walk around the garden and other outdoor environments and collect seeds. Look carefully at each one to guess how it might travel.

WRAP UP

What kinds of structures help seeds travel? Which seeds do you think are able to travel the farthest? Why? How do you think habitat impacts seed adaptations? (*In areas with a lot of water, more plants make floating seeds; in areas with high winds, more plants have seeds that can soar on the wind*).

DIGGING DEEPER

Have student pairs design their own seeds with various adaptations that would help them travel, and share with the class.