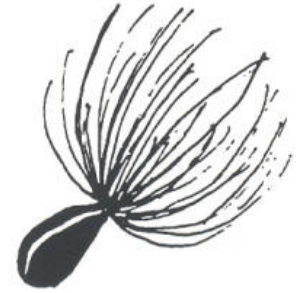


SEED SEARCH

Activity 32

AGE LEVEL = 8-10 (7-12)
DURATION = 45-70 min.
LEARNING STATION = Outdoors
RELATED ACTIVITIES = None

WHEN =



UNDERSTANDING: Seed dispersal is important for the continuation of plant species. Plants have evolved many methods for seed dispersal.

MATERIALS:

- Apples, grapes (with seeds), oranges, acorns, or other fruits with seeds
- Dry flannel leggings or masking tape
- Magnifying lenses (optional)
- Newsprint pad and marker
- Jackknife

PREPARATION: Review seed dispersal information.

LESSON:

Warm-up: In a sharing circle, show the group various fruits and nuts. Ask if they can figure out what is common among them. (They contain seeds.) Allow them to brainstorm what a seed is. Point out that seeds are a reproductive adaptation, providing food and protection for the embryonic plant. It may help to compare a seed to an egg.

Note that seeds make newborn plants from parent plants. Then ask what would happen if children stayed to live with their parents, and grandchildren and great-grandchildren did the same? (Eventually, the home could not support everyone.) Seed dispersal allows plants to distribute seeds to areas with less competition for minerals, nutrients, water and sunlight. This is important because most plants make hundreds or thousands of seeds.

Activity: Brainstorm seed dispersal methods. List them on the newsprint pad. Take the group on a walk in an area with tall grasses and shrubs, wearing leggings or masking tape to gather seeds on their legs. Take another short hike and look for other types of seeds.

Wrap-up: Examine the seeds, using the jackknife and magnifying lenses. Discuss how seeds are important to humans and brainstorm ways we use seeds for food, clothing, medicine and manufactured products. (Even things like ice cream can be traced back to seeds: ice cream to milk to cows to grass seeds.)

OPTIONS AND FURTHER EXPLORATIONS:

1. Develop a list of necessities for seed germination (water, soil, warmth, sunlight, nutrients, etc.). Use purchased seeds or ones you've collected to set up experiments and test these variables. (Plant one type of seed in several pots and vary the amount of water or sunshine each pot receives. Record findings.)
2. Glue seeds from the activity to construction paper to make a drawing.

3. Give children bean seeds and the following materials: rubber bands, toothpicks, tape, glue, balloons, cork, scissors, cotton, feathers, crayons, markers, construction paper, paper clips and plastic wrap. Have a bucket of water on hand. Challenge the group to make bean seeds that will: A) Float on water for at least five minutes. B) Attract a bird or other animal. C) Be able to be thrown two feet from the parent plant. D) Hitchhike for 10 feet on an animal or person. E) Fly at least three feet.
4. Make a meal entirely out of seeds or food products manufactured from seeds.

Dispersal Methods

1. Wind-Carried -- Very light seeds with sail-like or hairy outgrowths. For example, seeds with papery wings (pine, larch, spruce, fir, cedar, maple, ash, elm, birch, basswood, hornbeam) or balloon seeds with silky hairs (willow, sycamore, poplars, dandelion, milkweed, thistle, cattail, wild lettuce).
2. Water-Carried -- Seeds (or fruits) with air sacs or buoyant tissues (lotus, coconut, cranberry). These include some wind-carried seeds, like milkweed, that if they land on water will be carried like a raft.
3. Hitchhikers -- Seeds with spines, hooks or mucilaginous (gooey-sticky) coatings, that catch on animal fur or people's clothing (burdock, hounds' tongue, beggar's lice, cocklebur, wild barley, beard grass, trefoil, Queen Anne's lace).
4. Eaten or Carried -- Seeds either directly eaten by animals or contained within colorful fleshy fruits that are eaten and then the seeds are excreted. Directly eaten: Nuts are often gathered by small mammals and some birds and stored in caches to be eaten later. Blue jays, woodpeckers and squirrels all eat acorns. Other nuts are carried by rodents who drop them before eating them (oak, hickory, beech). Fleshy Fruits: Often very colorful, these are eaten by animals that discard the seeds, or that eat the entire fruit and excrete the seeds (black cherry, chokeberry, mountain ash, dogwood, hawthorn, raspberry, blueberry, sumac, elderberry, grapes, currants, trillium, may apple, etc.).
5. Thrown -- Seeds shoot out and away from the parent plant. Many plants produce seeds in pods that create pressure within as they dry out (violets, witch hazel [shoots up to 40 feet!]) or twist and pop off the seeds (lupine, beach pea). Others have trigger mechanisms caused by water pressure (jewelweed [touch-me-not]).