

# BIOLOGY OF PLANTS

## HOW SEEDS GET HERE...AND THERE Activities

### SEED COLLECTION

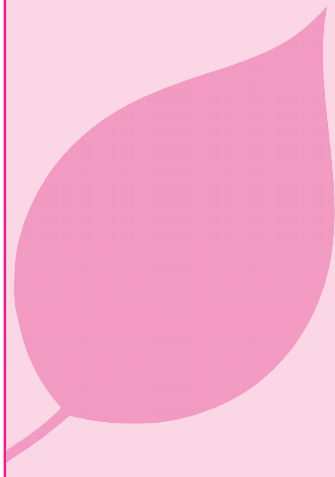
Students will assemble a set of seeds from a variety of plants for use in other activities.

#### Materials:

1. Paper bags for collecting
2. Small squares of paper or stick-on notes
3. Pencils

#### Procedure:

1. This activity is best for late spring and early fall. Look for seeds two to four weeks after periods in which many plants have flowered. If there is a park or a weedy lot near your school, the class may do this as a group. Take a small paper bag for each child.
2. Before you go, set guidelines to protect the plants you will see: Any seed on the ground or in a puddle may be collected. Seeds from plants which are still flowering should be left behind. Leave some seeds on each plant. Ask for help if the seeds are too high to reach without climbing.
3. If students know the name of the plant from which the seeds are taken, have them write it on a note sheet to keep with their seed. If not, have them sketch the plant or write a few notes on how the plant looks (tall grass, tree with big leaves with many parts, bush with skinny long leaves). This may help identify the seeds later.
4. If there is no appropriate place to look together, encourage your students to collect seeds near their home over a period of ten to fourteen days. Remind them that there may be seeds in weedy lots or cracks in the sidewalk as well as in yards. Encourage them to make notes on where they find the seeds.
5. Set up a display in the classroom of all the seeds. Use them for the later activities.



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### THE SEED SORT

Students will examine seeds and predict the means of dispersal used by them. Students will test some of their predictions.

#### Materials:

1. Wind-borne seeds (maple, cottonwood, dandelion, milkweed, thistle, linden, elm, ash, goldenrod, clematis, cattails, pussy willow, etc.)
2. Seeds that float (coconut, milkweed, pussy willow, etc.)
3. Seeds that stick to animals (broad-leaved plantain, cockleburs, tick seeds, burdock, etc.)
4. Seeds that are eaten (acorns, dogwood, elderberry, seeds of fleshy fruit, etc.)
5. Other seeds you find
6. Small fan
7. Towels or washcloths
8. Basin of water

#### Procedure:

1. Set up a display of the seeds. Divide them into sets which contain some from each dispersal method. Number each seed sample.
2. With the class, make a list of the ways in which seeds disperse.
3. Have students work in groups to examine a set of seeds. Ask each group to record a description of the seed (flat, winged, hairy, heavy, thorny, etc.) and their prediction of the way it travels from one place to another (wind, water, sticks, eaten, other).
4. Ask the students how they could find out which of these methods the seeds actually use. Conduct the tests they suggest. Some possible tests:

Dispersal method:	Test:
Wind-borne	Drop seed near a fan. Does it blow or fall?
Sticks to animals	Place seed on a terry cloth towel. Does it stick?
Eaten by animals	Watch the plant where the seeds are found to see whether any animals eat the seeds.
Floaters	Drop the seed in water. Does it float?

5. For those which do not behave as predicted, students may try a second test.

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### THE SEED CHASE

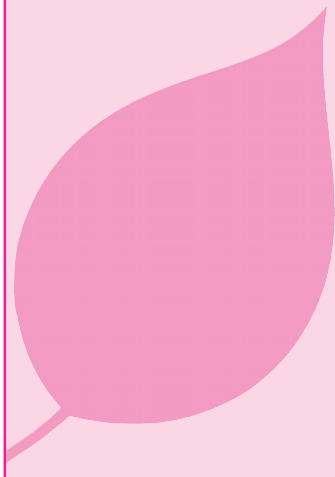
Students investigate which seed structures give seeds the ability to soar the furthest.

#### Materials:

1. Wind-borne seeds such as maple, ash, elm, clematis, cattail, thistle, pussy willow
2. Other obviously NOT wind-borne seeds such as acorns, tickseed, dog wood
3. Standing fan, or a windy day
4. 4" x 6" cards for labelling endpoints
5. Markers
6. Measuring tape (25')

#### Procedure:

1. Remind the students that many seeds travel on the wind. Explain that you will have a seed chase today. Each student may select one seed to test against all the others. Encourage students to pick the seed they think will travel the furthest.
2. Select an open traffic-free area to hold your chase. Clearly mark the starting line.
3. Have students work in pairs. Have one student toss a seed into the air. Have the partner follow the seed and put a label with the child's name on it on the ground where the seed falls. Collect the seed to use in discussion later. Repeat until all students have participated.
4. Older children: Measure the distance from the starting point to the landing point. Compare distances.  
Younger children: Walk together to the three or four labels that are furthest from the starting line.
5. Compare the seeds which travelled furthest to those which travelled the shortest distance. Are they similar? What shapes and parts help seeds travel on the wind?




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### BUILD A SEED

Students will apply what they have learned about seed dispersal to create seeds with structures that suit them for dispersal in several ways.

#### Materials:

1. Pictures of seeds that travel by water, air, sticking to animals, and being eaten
  2. Empty soda cans, egg cartons, spools, other containers
  3. Cardboard, construction paper, cellophane
  4. Wax paper, plastic bags, scraps of nylon, other water-resistant material
  5. Pipe cleaners, straws, toothpicks
  6. Glue
  7. Scissors
  8. String
  9. Balloons
  10. Magnets, beads
  11. 5" x 8" cards
  12. Markers
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#### Procedure:

1. List 8–10 imaginary or real means of dispersal for seeds. Write each on a card. Make duplicate sets of cards as needed. You might include seeds that:
  - tumble over the ground*
  - pop out of a hole in the plant*
  - dig themselves into the ground*
  - are carried by cars or bicycles*
  - keep the new plant dry*
  - are carried by fish*
2. Talk with students about the ways we can tell how a seed moves from place to place. Use pictures or actual seeds to remind them that wind-borne seeds are light and stream lined or parachute-like; seeds that animals eat usually have a fleshy fruit around them.
3. Then challenge them to make their own seed. Give each child a card describing the way their seed travels. Encourage them to use any of the materials which have been set out. Allow 30–45 minutes for seed-making.