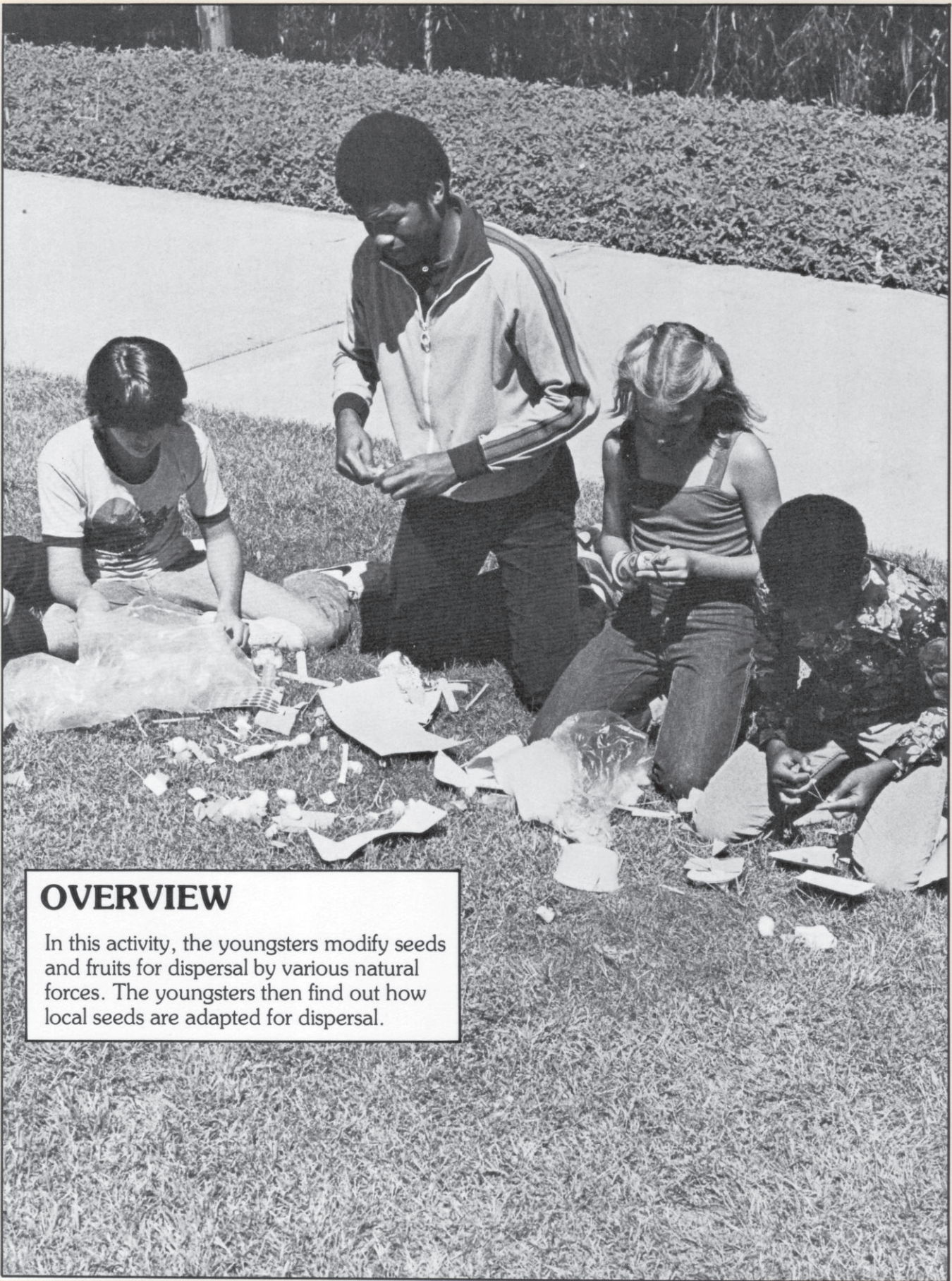


SEED DISPERSAL



OVERVIEW

In this activity, the youngsters modify seeds and fruits for dispersal by various natural forces. The youngsters then find out how local seeds are adapted for dispersal.

BIO Arts and Crafts
KEY Simulation
Adaptation

BACKGROUND



Fruits and seeds contain the genetic material to produce new plants. Many "seeds" such as dandelions, burrs, and peas are really fruits, but are commonly called seeds.

Most plants produce an abundance of seeds, but only a few usually grow into adult plants. Even fewer seeds would mature if seeds were not dispersed away from the parent plant. A seed dropped directly underneath a plant may have difficulty growing, because the parent plant, in the process of insuring its own survival, often deprives the new plant of sunlight or minerals needed for growth. Some plants even produce chemicals that prevent new plant growth in the immediate area.

Most land plants are anchored to the ground; they cannot move around to distribute their seeds. A few plants have mechanisms for scattering their seeds, but most plants simply drop their seeds.

Adaptations are features of organisms that help them to survive and reproduce. One of the adaptations enabling plants to produce new plants is a mechanism for distributing seeds and fruits to other sites with more favorable growing conditions. Exploding cucumbers, drifting dandelions, sticky foxtails, and winged maple fruits are examples of different seed or fruit dispersal mechanisms.

CHALLENGE: MODIFY DRIED BEANS OR PEAS SO THAT THEY COULD BE DISPERSED.

MATERIALS



For each youngster:

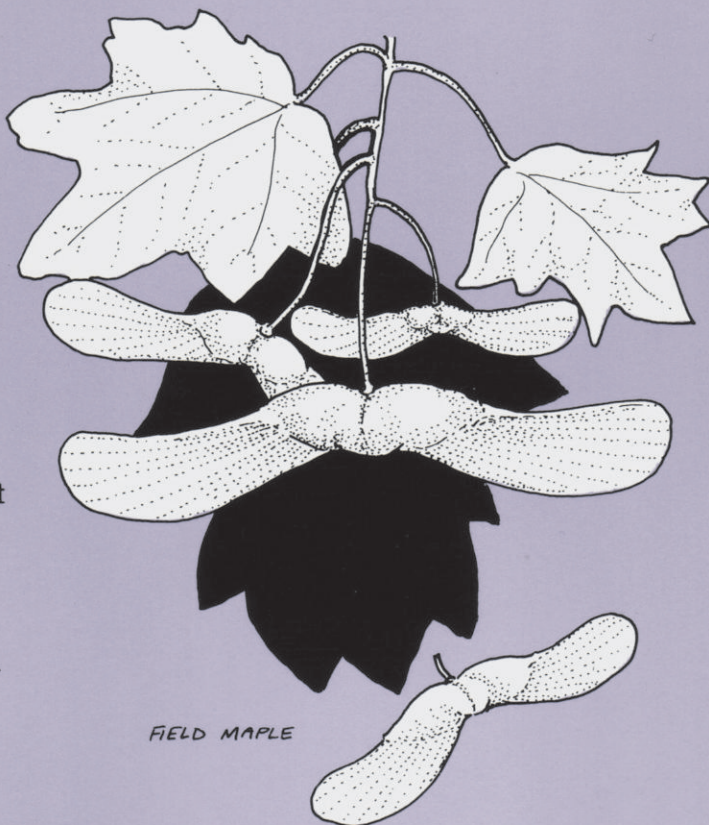
1 Action Card

For the group:

50 dried bean or pea seeds *

- 1 Seed-Dispersal Junk Box * containing:
colored paper, tape, glue, rubber bands,
cotton, popsicle sticks, ballons,
pipe cleaners, paper clips, and string
scissors *
- brightly colored felt pens *
- 1 bucket or milk carton of water (if
water is unavailable at the site)
- 1 sheet of Action Cards *
- 1 Seed-Go Card * (See "Preparation.")

* Available from Delta Education.



FIELD MAPLE

PREPARATION



Group Size. This activity is suitable for both small and large groups.

Time. Plan on thirty to fifty minutes for this activity. *Seed Dispersal* works best during the summer and fall.

Site. Select a comfortable site with a variety of seed- or fruit-producing plants and, if

possible, water nearby. A light breeze is helpful for testing certain seed modifications.

Action Cards and Seed-Go. Duplicate at least one Action Card for each student and one Seed-Go Card for each three students.



RABBIT WITH BURRS

ACTION

Modifying Seeds for Dispersal

1. Explain to the group that many seeds cannot grow right under the plant that dropped them. Many seeds have a better chance to grow if they are dispersed (rolled, blown, carried, pushed, or washed away) to new areas.
2. Tell the kids that they will change the seeds you give them so that the seeds can be dispersed in different ways.
3. Show the youngsters the materials they may use to modify their seeds to meet their Action Card challenges.

4. Give each youngster an Action Card and a seed. Tell the youngsters that they will have to demonstrate their modifications later.

5. The Action Cards are listed here for your convenience. *Do not read them to the students.*

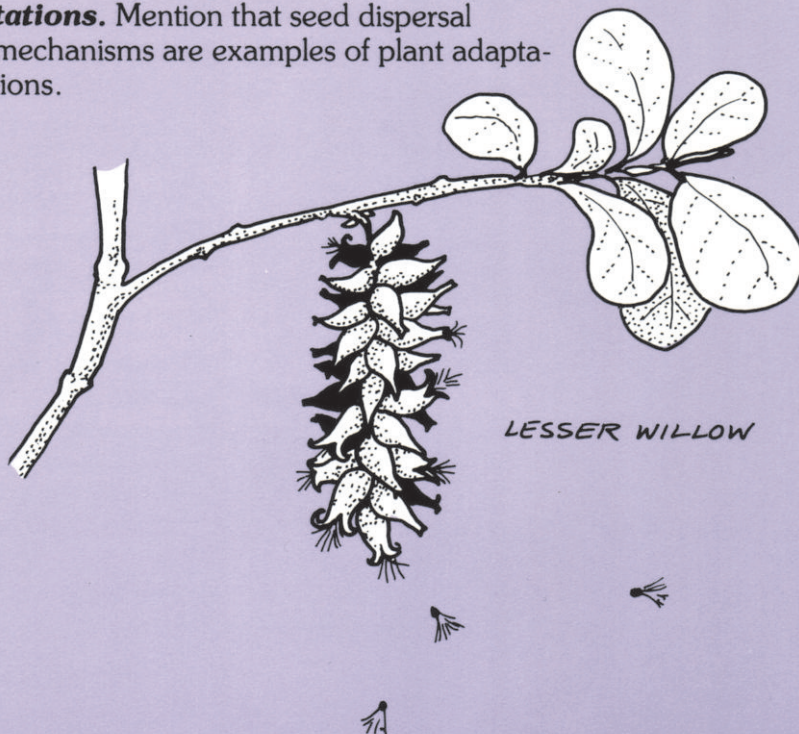
- Modify your seed or fruit to float on water for four minutes.
 - Modify your seed or fruit so it can be shot at least a meter from the parent plant. (Remember, plants don't have hands.)
 - Modify your seed or fruit to attract a bird or other animal.
 - Modify your seed or fruit to catch on an animal and be carried five meters (seven to ten walking strides).
 - Modify your seed or fruit so it will glide at least one meter away when it is dropped from a parent plant.
6. Encourage the youngsters to use twigs, leaves, and other materials from the study site to supplement the supplies you have provided. Allow sufficient time for making the modifications.
7. After everyone has modified a seed, let the youngsters take turns reading their Action Card challenges and demonstrating their seeds' dispersal mechanisms.



CHERRY

The Seed-Go Game

1. Invite the youngsters to play Seed-Go.
2. Explain that the game is similar to Bingo. Teams of three search for seeds that are dispersed in various ways. The seeds are then taped or glued in the appropriate spaces on the Seed-Go Card. To win, a team must:
 - Find and attach five different seeds that are dispersed in the same way, e.g. "Floats on water." (This gives the team a complete row of seeds.)
OR
 - Find and attach one seed for each of the five methods of dispersal. (This gives a team a complete column of seeds.)
 - Yell "SEED-GO" as soon as a row or column is filled.
3. Form teams of three, and let the teams search for their seeds.
4. When a team yells "SEED-GO," gather all the teams, and ask the winning team to show and explain their winning card. The seed placement should be acceptable to the other teams.
5. Explain that features that help organisms to survive and reproduce are called **adaptations**. Mention that seed dispersal mechanisms are examples of plant adaptations.



SEEDS FOR THOUGHT

1. What are some advantages of seeds getting away from the parent plant?
2. Plants do not usually drop all their seeds at exactly the same time. How could this staggered dropping help disperse seeds over a wider area?
3. What might happen if all seeds dropped together right underneath the parent plant?
4. How might humans and other animals help disperse seeds?

THE OLD SOCK DRAG

Wear or drag a sock through a field of weeds, or across the ground, to see which local seeds are caught and carried. Plant one of these socks and see what grows.



Seed Dispersal SEED-GO CARD



Seed-Go Instructions:

1. Form teams of three.
2. Find five different seeds that can be dispersed by *one* of the dispersal methods, or find one seed for each of the five dispersal methods (five seeds in all).
3. Glue or tape each seed in an appropriate space.
4. Yell "SEED-GO" as soon as you have taped five seeds in a row or a column.
5. Your team wins if it is the first team to fill a row or a column.

		NUMBER OF DIFFERENT SEEDS OR FRUITS				
		1	2	3	4	5
SEED DISPERSAL METHODS	CARRIED BY WIND OR GLIDES					
	FLOATS ON WATER					
	POPS OR IS SHOT OUT			FREE		
	CATCHES ON ANIMALS' FUR					
	ATTRACTS AN ANIMAL					

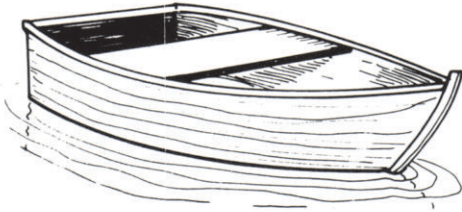
REMEMBER:

In order to win, you may have to convince others that you are correct.

Seed Dispersal Action Card



Modify your seed or fruit to float on water for four minutes.



Seed Dispersal Action Card



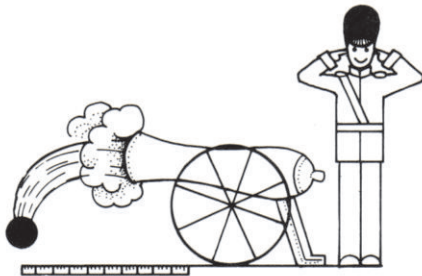
Modify your seed or fruit to catch on an animal and be carried five meters (seven to ten walking strides).



Seed Dispersal Action Card



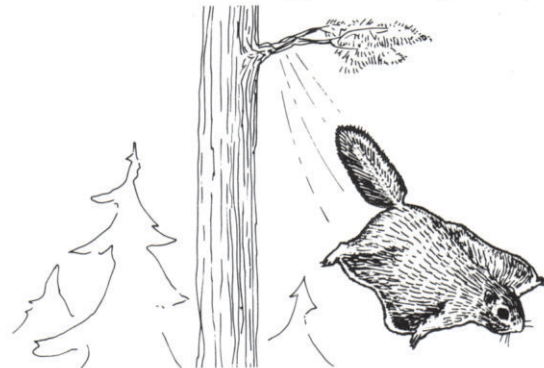
Modify your seed or fruit so it can be shot at least a meter from the parent plant. (Remember, plants don't have hands.)



Seed Dispersal Action Card



Modify your seed or fruit so it will glide at least one meter away when it is dropped from a parent plant.



Seed Dispersal Action Card



Modify your seed or fruit to attract a bird or other animal.



Seed Dispersal Action Card

