



Outdoor Biology Instructional Strategies

SEED DISPERSAL-ADAPTATION

BACKGROUND

Most plants produce seeds which may grow into new plants. In order to survive, these plants require such raw materials as minerals, air, and water. Energy, in the form of sunlight is required to transform these raw materials into nutrients.

A seed dropped directly underneath a plant may have difficulty growing because the older plant, in the process of insuring its own survival, deprives the new plant of sunlight or one or more of the necessary raw materials.

One of the adaptations of plants which enables species to continue is a mechanism which distributes seeds to other growing sites, some of which may be more favorable. This seed dispersal mechanism is one type of plant adaptation. An **adaptation** is any special feature of an organism that improves its chances of surviving and reproducing.

CHALLENGE

Modify dried beans or peas so that they may be dispersed by various natural forces.

MATERIALS

For the group:

Bag of dried beans or peas
(seeds of any kind will do)
Balsa wood and/or
Construction paper
Tape
Paste or glue
Rubber bands
Toothpicks
Red tempera*

Balloons*
Scissors
Pencil
Plastic bag*
Pieces of cork*
Cotton and/or feathers*
Small metal springs*
Duplicated Action Cards
Any other useful materials

**optional materials*

ACTION

1. Tell the group that not all seeds can grow where they fall and that some seeds are dispersed (carried, blown, or pushed away).
2. Distribute the Action Cards., introduce the challenge, and give everyone a bean seed to be dispersed.
3. Action Cards
 - Modify your seed to float on water at least five minutes. (Hint: air bubble, raft.
 - Modify your seed with a mechanism that will throw the seed two feet away from the parent plant. Hint: burst, split.
 - Modify your seed to attract a bird or other animal. Hint: Bright, tasty fruits with seeds inside.
 - Modify your seed to hitchhike on an animal or man for twenty feet.
 - Modify your seed to fly at least three feet.
 - Blank cards may be used to add other modifications you or the students think seeds have.
4. Provide the group with materials for modifying their seeds for dispersal. Allow time for construction of the “adaptations.”
5. When everyone is finished, call upon each person (or team) to read his card and demonstrate his dispersal invention. You may have to provide a bucket of water for testing floating seeds if a pond or stream is not available.
6. Have the students search the study site for seeds which seem to be adapted for dispersal.

WHAT DO YOU THINK?

Can you find plants that actually have features like the seed dispersal mechanism you constructed?

1. What might happen if seed dispersal mechanisms did not exist?

FOLLOW UP

Distribute duplicated SEED-GO Cards and some glue or tape. SEED-GO is played like Bingo. When someone says he has won, encourage questions from the others so the winner can explain his reasoning.

WHAT TO DO NEXT

Adaptation-Predator-Prey

Invent An Animal

Invent A Plant

SEED-GO
SEED DISPERSAL

Look carefully at the plants in your surroundings. Decide how each plant disperses seeds and glue or tape a sample of its seed in the proper box. Some seeds may be dispersed in more than one way. The first person with five seeds in a row, in any direction, wins (same as Bingo).

	Grass	Trees	Bushes	Weeds	Garden Plants
Wind					
Water					
Mechanical					
Animals					
Man					

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

ACTION CARD
SEED DISPERSAL

Modify your seed to fly at least three feet.

ACTION CARD

ACTION CARD

ACTION CARD

**ACTION CARD
SEED DISPERSAL**

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Hint: air bubble, raft.

**ACTION CARD
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Hint: burst, split.

**ACTION CARD
SEED DISPERSAL**

Modify your seed to attract a bird or other animal.

Hint: bright, tasty fruits with seeds inside.

**ACTION CARD
SEED DISPERSAL**

Modify your seed to hitchhike on an animal or man for twenty feet.