

TRB 3:5 - Investigation 2 - Green Apples

Summary

Classroom activities help students understand the effect of light on the growth of seeds and plants.

Group Size

Large Groups

Materials

- a piece of batting cut into an apple shape
- pie tin
- alfalfa sprouts
- spray bottle
- two paper cups for each child
- six lima beans
- [Sprout Observation Worksheet](#) (pdf)

Additional Resources

Books:

- *Who Eats What?*
by Patricia Lauber (HarperCollins Publishers)
- *Seeds*
by Melvin Berger (Scholastic) *The Nature and Science of Seeds* by Jane Burton (Garth Stevens Publishing)
- *Outside Science Adventures*
by Melvin Berger (Scholastic) *What Shall I Grow?* by Ray Gibson (Scholastic) *How do*
- *Plants Get Food?*
by Melvin Goldish (Raintree Steck-Vaughn) *Food* by Sally Hewitt (Children's Press) *What is a Plant?* by Bobbie Kalman (Crabtree)
- *Do You Know How Plants Grow?*
by Stephen Parker (Warwick Press)
- *The Magic School Bus Gets Eaten: A Book About Food Chains*
, ISBN 0-590-48414-1
- *The Magic School Bus Gets Planted: A Book About Photosynthesis*
, ISBN 0-590-92246-7

Videos:

- *How Seeds Get Here...and There*
. MBG Videos
- *What's Inside a Seed?*
Coronet
- *All Things Plant*
VH, Catalog Number 4448
- *Magic School Bus Gets Eaten*
VH, 22023

Background for Teachers

All seeds have enough food inside to start to grow. Seedlings in light will grow green and strong. Seedlings in the dark will grow weak and yellow. Plants need light to make food. Without light, plants

will lose their color and soon die.

Intended Learning Outcomes

1. Use a Science Process and Thinking Skills
4. Communicate Effectively Using Science Language and Reasoning

Instructional Procedures

Pre-Assessment/Invitation to Learn

Show the students a large piece of white batting cut into the shape of an apple. Ask them "How can I turn this white material green?" Let the children brainstorm for answers. Next tell them that you have a very special way to change the color.

Instructional Procedures

Activity 1

Place the batting in the pie tin. Wet it all over. Sprinkle alfalfa seeds on top so that it covers the batting. Spray with spray bottle to wet the seeds. Repeat with a second batting of alfalfa seeds. Put one of the pie tins in the sunlight and the other in a dark cupboard.

Give each child a [sprout observation worksheet](#) (pdf).

Each day water the sprouts in the morning and afternoon. On the first, third, fifth, and seventh days have the children write what they observe on the observation sheet.

Activity 2

Take two paper cups and six lima beans. Fill both cups nearly to the top with soil. Put three seeds in each cup. Plant them so they are about 1 inch deep.

Add enough water to each cup to make a small puddle on top. Place one cup in a dark cupboard. Place the other in a bright sunny windowsill. Each day add a teaspoon of water to each cup. In a few days, seedlings will start to sprout in both cups.

Leave the cups where they are. Continue to water the plants in an identical manner. In a few more days, the plants in the sunlight will be big and healthy, but the plants in the closet will stop growing and die.

Extensions

Math-

Measure the length of the plants each day for a couple of weeks. Keep a record of their growth.
(*Standard IV, Objective 2*)

Science-

Have children experiment with placing seeds in different places. One pan of seeds could be placed in the refrigerator, on the counter, or near a heating vent. Predict what will happen. Check the plants daily and record your observations.

(*ILOs 1,3,4*)

Students could start seeds in bottles with dark paper placed on the bottles in different ways. As plants start to grow, they will bend toward the light in different ways. (*ILO 1*)

Homework & Family Connections

Have the children talk with their families about gardening. Perhaps they can plan a family garden together. Visit a nursery to view all the variety of seedlings that are growing. Talk about the conditions in a nursery that make growing plants so ideal.

Assessment Plan

See how well the students follow directions.

Have the students observed and recorded accurately on their worksheet?

Authors

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