UNIVERSITY OF MINNESOTA

K-12 Education

Garden in a Glove

Adapted by
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Objective: To help students understand seed germination

Introduction: Have you ever wanted to see what happens to a seed when you plant it in the soil? When we plant seeds they sprout. We call that germination. When we plant the seeds in the soil we cannot see the embryo push out of the seed coat and we cannot observe the root system. This activity will allow the observation of this germination and provide a good view of the plant's root system.

Input and Activities:

1. Read the book "Tops and Bottoms" by Janet Stevens ISBN 0-15-292851-0. Discuss the book with the students focusing on the various parts of plants that we eat.
2. Explain to the students that they will be growing a variety of plants in a glove allowing them to observe the germination of these plants.
3. Discuss the five different seeds you have chosen to provide for this activity, and what part of that particular plant is consumed. (I use the following seeds: radish /root, lettuce/leaf, tomato/fruit, pumpkin/fruit, and basil/leaf and because herbs are so interesting. Provide the variety of seeds you wish to use. You may want to include seeds of a plant where the stem is consumed.)
4. Give each student a clear plastic glove instructing them to write their name on the top edge with a permanent marker and labeling each finger with one of the seeds that will be used. (I usually don't put the pumpkin seed in the thumb because it may dry out before it germinates.)
5. Wet five cotton balls. Wring out, (3 flat squeezes) they do not have to be soaking wet.
6. Place correct number of seeds on a small paper plate and pick up with moistened cotton ball.
7. Put cotton ball with seeds attached into matching labeled finger of the glove.
   Hint—You may have to use a pencil to get the cotton ball all the way to the tips of the glove fingers. Also for a large seeds such as the pumpkin use only two seeds. Once one seed has germinated remove the other as there is only adequate moisture to support one seed. Using two seeds initially will better assure that germination will take place.
8. Tape to windows, chalkboard, or wall – as appropriate, clothes lines can be put under chalk tray and clothespins can hold gloves on it. If used at home, magnet can hold glove to refrigerator.
9. Depending on what seeds you use, seeds will probably germinate in 3 to 5 days.
10. The cotton balls should stay moist enough through the germination of the seeds. If one appears dry you can add a little moisture to the glove.
11. Transplant after 1 ½ to 2 weeks. Cut bottom of glove's fingers and transplant cotton ball and small plants. Transplant into almost any medium, such as soil or sphagnum moss.
12. After growing to full size, plants can be made into a salad if vegetable/salad seeds were used.

Closure – Review: Discuss the activity. Make some predictions about when the seeds might germinate. Talk about some inquiry investigations that could be done with this activity such as placing the glove in various locations with different light and temperature, using a variety of liquids to moisten the cotton ball, testing geotropism, etc.

Materials Needed:

Clear plastic gloves (I purchase them from our local deli. Be sure they are see through so students can observe germination.)
Permanent markers
Small paper plates
Cotton balls
Five different kinds of seeds
Water
Tape (I use 3M blue painters tape – it doesn't leave a glue residue)

EXTENSION IDEAS

- Have students keep a journal of the changes day to day.
- Have students graph their results.
- Experiment with different variables; type of glove, light, temperature, liquid used on cotton ball, etc.
- Have students calculate percent of germination.
- Have student research plants used in the colonies. What crops did the Indians help the settlers grow?
- Have students review information on the seed packet for growing habits of plants. What zones does Minnesota fall in?
- Have students discuss the crops grown in Minnesota today. How has transportation changed the variety of foods available to consumers?
- Discuss the life cycle of plants from seed to mature plant.
- Have students research uses of the seeds (vegetables) that they have germinated and write and present findings to class.
- Keep records of the classroom and outdoor temperature. Is there an optimum temperature for germination?
- Discuss the nutrients necessary for plants to grow.

Partnering:

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