

Plants Grow Children Curriculum

LESSON 2 THE MINI- GREENHOUSE

Students learn about planting seeds and plant growth requirements. Each student gets to take home his or her own mini-greenhouse.

Grade Level

1-2

Objectives

- To learn more about plants and the planting process
- To learn that seeds grow into new plants, and that seeds contain food for the new plant
- To develop skills in answering questions and building on existing knowledge of plants
- To develop a respect for nature and the way that the plant reproduction process works

Vocabulary

plant	seed
germinate	seedlings
reproduction	growth
greenhouse	

Time

45-60 minutes

Lead Time

5-8 days to prepare demonstration materials

Activity Materials

- One small sealable plastic bag per student to make the "greenhouse"
- 3 2 1/2" peat pots/per student
- Potting mix to fill pots
- Seeds to plant in pots Suggested seeds: cherry tomato, radish, marigold, and zinnia
- Permanent ink pen
- Enough copies of seed packet instructions for each plant for each student. Copy all instructions onto

one sheet of paper.

Demonstration Materials

Tree or Plant Poster showing parts of a tree and plant parts we eat.

Seed Poster with seed packets showing the plants and their seeds in clear plastic bags to show the different types of seeds.

Variety of seeds of different shapes and sizes. Suggested seeds: peanut, walnut, pecan, coconut, sunflower, peach pit, avocado pit, lima bean, corn, dry beans.

Germinated Seeds Demonstration :

- a.) Place 4 to 5 varieties of pre-soaked seeds on flat, moist paper towels or napkins. Suggested seeds: corn, lima beans, radish, sunflower, marigold.
- b.) Place seeds and towels in a 2-gallon sealable plastic bag.
- c.) Place in a warm dark place for 2 to 3 days. Leaves will appear in 3 to 5 days.

Teaching Procedure:

1. Introduce yourself. Tell the class who you are. Explain briefly about the WSU Master Gardener Program and why you are in the classroom.
2. Tell the class they are going to learn about plant and seeds that grow into plants. Do you know that if there were no plants there would be no people? Why do we need plants? [Food for us and for the animals that become our food. Cotton for clothing. Wood for buildings, furniture, paper. Flowers, shrubs, trees for beauty. Clean air for us; plants cleanse the air and give off oxygen.]
3. What are the parts of a plant? What do they do? [Show Tree or Plant Poster]

a.) Roots hold a plant in place.

Plants need water and minerals to live and grow, roots take these from the soil and up to the rest of the plant. Some plants store food in the roots. We eat some of the roots - carrots, beets, radishes.

b.) Stems hold up the leaves, flowers, and branches of plants. Stems have little tubes to take water and food to the rest of the plant. Grass, flowers, and vines have soft stems. Trees have hard woody stems called trunks. Strawberry stems grow along the ground. Potato stems grow underground. We eat some stems, e.g. celery, asparagus, potato.

c.) Leaves enable a plant to make its own food. It uses the green part of the leaves, water from the soil, gas or carbon dioxide from the air, and the energy from sunlight to make food. Leaves make oxygen for us to breathe. We eat some leaves, e.g. spinach, lettuce, cabbage.

d.) Flowers make seeds for the plant. We eat some flowers, e.g. cauliflower, broccoli; and fruit that develops from part of the flower, e.g. apple, peach, pear, plum, grape, strawberry. We also eat some seeds, e.g. beans, peas, corn, nuts.

4. What are seeds? What do they look like? [Show Seed Poster] Name some small seeds. [strawberry, impatiens, petunia, carrots] Name some large seeds. [coconut, nuts, avocado] Name some medium seeds. [beans, peanuts, pumpkin]
5. What do seeds need to grow, sprout, or germinate)? [Show Germinated Seeds Demonstration] [Water or Moisture - the seed has food for the new plant until it grows leaves to make its own food. Most seeds germinate or start to grow in the dark, under the soil. They need light after the leaves grow and begin to make food for the plant.] [Warmth.]
6. What is a greenhouse?

A heated building with many windows and usually a clear roof, used to grow plants. The air is moist or damp to help the plants grow. We are using clear plastic as little greenhouses. Seeds are planted in the pots and will germinate or start to grow in just a few days.

Action Learning

Let's build our own greenhouses!

1. Before class soak the peat pots and then fill with moist potting mix. Place 3 pots in each bag with seeds planted in the two end pots.

2. In the class, work in small groups of 3 to 5 students. Have each student place two seeds in the middle pot, assisted by the Master Gardener and classroom teacher. Write the name of the student on the bag along with the name of the plants and the date.

3. How will you care for the little plants?
They will have enough water and air in the plastic bag greenhouses until they are about two or three inches high. Fold the top of the bag down to give the seedlings room to grow.

4. How will you care for the plants as they get bigger? They need some of the same things that we need:
a. Water - gently add water as the soil mix dries out.
b. Nutrients - they have minerals in the potting soil in the pots. After they are big enough to be planted outside, one of your parents may add

some fertilizer to the soil around them.

c. Light - many plants like lots of sunlight. While they are still small, you will see them leaning toward the light. You may have to keep turning your little greenhouses around so the plants will grow up straight and tall.
d. Air - remember, the leaves take in gas and give off the oxygen that we need in the air to breathe. The leaves need air and sunlight, as well as water and nutrients to make food for the plant.

5. When your tomato and flower plants get big enough and the soil outdoors has warmed up, your parents can help you plant them outside in the garden or into larger pots. We will give you some instructions to take home with your plants.

6. There are some things that we should look for when the seeds germinate and begin to grow. The seedling may first appear to be a small, bent, white or light green thing, like a small grass blade. As it straightens up, it may still have the seed shell or coat on the end. Notice the first leaves are rather simple compared with the next ones that grow. The second set are the "true" leaves. The little plants will lean toward the brightest light, so you may have to turn them each day. Show potted tomato and marigold plants.

7. Write each student's name on the

top of the plastic bags with permanent ink.

8. Have the Germinated Seeds Demonstration and Seed Poster available for the students to view more closely while instructors are writing names and gathering equipment prior to leaving.

9. Give each student the take-home handout, which briefly explains what the children learned, and tells the parents about WSU Cooperative Extension and its programs.

10. The mini-greenhouses could be taken home the same day, or 2 to 3 weeks later. If kept at school, have the teacher place them on the window sill. They may then observe and discuss germination, the development of both the initial leaves and true leaves, and the growth of the seedlings.

Evaluation

- Make notes of successes, problems with the unit or classes, interesting comments from the children.
- Take a camera with you if it is convenient to take pictures of the students and their activities.
- Give the teacher the evaluation form. Ask him or her to fill it out, and either give it to you then or mail it to the Extension office at the address indicated on the evaluation form.



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