



Vocabulary

- Germinate: when a seed or bulb puts forth shoots
- Harvest: to gather ripened crops
- Organic: food grown without synthetic pesticides or chemical fertilizers
- Produce: agricultural products, i.e. vegetables and fruits
- Recycle: to re-use an item
- Shoots: new growth from a plant or seed

At the end of this lesson, students will be able to:

- Connect vegetables with their plants and seeds
- Explain recycling & re-use
- Connect soil health, plant health, and their own health
- Monitor plant health and growth

National Education Standards:

- NSTA National Science Education Standards
 - [LS1.B: Growth and Development of Organisms](#)
 - [LS1.A: Structure and Function](#)

What you'll find in this packet:

- Step-by-step Activity guide
- Pre- and Post-Activity discussion ideas
- Background information on planting kitchen scraps
- Chart to monitor plant growth

What you'll need:

- Potatoes with eyes (green or pink sprouts)
- Soil
- Compost
- Planters (large enough for planting 6-8" deep in soil)
- Chart (provided)

Teacher Preparation:

- Grow a potato plant to use for demonstration purposes
- Cut up sprouted potatoes into pieces with 1 or 2 eyes each or purchase seed potatoes
 - Lay cut potato pieces in sunny window for a few days to suberize (allow a callus to form so that soft potato material does not rot upon planting)



Pre-Activity Questions:

- Show students the potato plant. Have them guess what kind of plant it is.
- Ask how potatoes grow. How can you plant a potato?
- Show students the potato eyes. Do you eat potatoes like this?
- What can you do with kitchen scraps or old produce?

Activity Procedure:

- Divide students into groups. Provide each group with seedling potatoes, two planting containers, compost, and soil. Have students label each planter, one with "Soil" and one with "Compost."
- Instruct students to fill one planter with only soil & the other with a combination of soil and compost (about 50/50).
- Have students plant one or two seed potatoes in each planter (depending on size of container) 6-8 inches deep.
- Water and set in sunny place in classroom.
- As the potatoes grow, continue to add soil or compost mix; leave 4-6 inches of the sprouts uncovered. Continue to add soil as needed until it reaches top of container.
- Have groups rotate which group member tends to and monitors the growth of the groups' potatoes. Have each group enter their plant monitoring findings into the growth chart. (Chart provided.)
- Harvest after the tops of the plant start to yellow and wilt—about 70 days, depending on type of potato.

Post-Activity Discussion:

- Have groups present a summary of the data they have compiled in the growth chart to the class.
- Which potato do you think will be healthier: the one in the soil-only container or the one in the compost-soil combination? Why?
- Which container will produce more potatoes? Which has the denser growth of leaves?
- What other vegetables can you re-grow from scraps & seeds? (See resource below)



There are a number of plants that can be re-grown from seemingly spent kitchen scraps. Please note that not every type of produce will work and that some are easier to regrow than others. Seeds from cucumbers, yellow squash, and zucchini are a few of the store-bought vegetables that you will most likely not be able to regrow from your kitchen scraps. These vegetables are usually harvested before their seeds have matured.

Plants you can try to grow from kitchen scraps

- Green Onions/ Scallions (shoots with roots)
- Lettuce (base of lettuce)
- Celery (base of stalks)
- Garlic (bulbs/cloves)
- Potato (tuber with eyes)
- Pineapple (top of fruit with leaves)
- Avocado (seed)
- Citrus (seeds)
- Tomato (seeds)
- Peppers (seeds)
- Ginger Root (rhizome)
- Lemongrass (stem with roots)
- Sweet Potato (tuber with sprouts)
- Apple (seeds)

Scallions/Green Onions

- Place the root (white) end in a small amount of water (approximately ½" up the base).
- New shoots will grow – harvest when ready.
- Change water several times a week.

Lettuce & Celery

- Place the bottom/root end (1" plus) in water reaching approximately ½" up the stalk. Change water every few days.
- After 7 days, place the root ½" deep in soil and wait for new shoots to appear (or you can keep it in the water if you prefer).
- Harvest when ready or wait for a whole new head or stalks to appear.

Garlic

- Plant cloves about 1-2" deep in soil with the neck (slender part) at the top.
- Plant garlic outdoors in the fall and harvest in the summer.

Tomato

- Clean and remove the seeds; let soak in water for a few days.
- Plant the seeds ¼" deep in potting soil and water as needed.

Peppers

- Remove, clean, and let the seeds dry.
- Plant the seeds ¼" deep in potting soil and water as needed.

Citrus

- Cut open the fruit and find the seeds; keep them moist and do not let them dry out. Plant the seeds ¼" to ½" deep in potting soil.
- Water as needed.
- It will take several weeks for the seeds to germinate and years for the plant to produce fruit.

Pineapple

- Take the top portion with leaves and let it dry for a few days (it is best to remove as much of the fleshy part as possible).
- Plant in a well-drained mix and water when dry. It will take 2 to 3 years before the pineapple flowers and produces fruit. Pineapples must be in tropical climates if they are planted outside. They are not hardy in the D.C. area.

Avocado

- Clean the pit and insert 4 toothpicks into the sides of the pit. Suspend the pit in a glass or jar filled with water so that it covers about half of the pit. Change the water every few days.
- It will take several weeks for the pit to germinate.



Soil Only	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9
Time									
Weather									
Height									
Color									
Is soil dry or wet?									

Compost & Soil	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9
Time									
Weather									
Height									
Color									
Is soil dry or wet?									