



All Year - Indoor/Outdoor | 1, 30 minute lesson +
2, 15 minutes lessons

Fruit Dissection & Decomposition

Connected Next Generation Science Standards

1-LS3-1 Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.

Featured Science and Engineering Practices

Planning and Carrying Out
Investigations

Featured Cross-Cutting Concepts Patterns

You can use any fruit (the plant part that has seeds inside it) for this lesson, but pumpkins work especially well.

The word "fruit" is used throughout this lesson but replace it with the variety you are investigating - tomatoes, pumpkins, watermelon, etc.

Overview

The Explore portion of this lesson can serve as a stand alone fruit investigation, or the entire lesson can be taught to observe fruit decomposition. This lesson includes opportunities for counting, measuring, and science investigation. Use whatever fruit is available in the garden or purchase pumpkins for a fall-themed lesson.

Students will

- Take apart and observe the different parts of a fruit
- Count seeds
- Predict how a fruit will change over time
- Describe how a fruit's texture, color, shape, and smell changes as it decomposes

Teacher Preparation

- Decide if there is enough garden fruit for the class to dissect (see material list). Purchase extra fruit if needed.
- Optional: Cut fruits in half or cut a lid into pumpkins before class

Guiding Questions - What are the parts of a fruit? What happens to fruit left outside?



Fruit Dissection & Decomposition

Materials

- Teacher - small whiteboard or chalkboard, knife, cutting board
- Newspaper or bins large enough to fit a fruit
- Fruit - either enough large fruits (squash and watermelons) for groups of 4 students or enough small fruits (tomatoes, peppers) for pairs
- Plastic baggies or cups
- Garden notebooks or worksheets and clipboards
- Pencils
- Empty garden bed
- Optional - magnifying glasses, materials to make a garden sign, air thermometer, camera

Setting

- School garden and/or classroom
- Works best in late fall so less weeds grow on the decomposing fruit

Collect old jack-o-lanterns from the school community to add to a pumpkin graveyard

Explore

- Either in the classroom or outside, tell students today we are going to investigate what is inside a fruit. Show an example of a whole fruit.
- What do you think is inside of it? Turn to a partner and describe what the inside might be like.
- Divide the class into pairs or small groups, depending on fruit size.
- If using garden fruits, remind students how to harvest fruit by using two hands and gently twisting it off the plant. Give students a few minutes to pick their fruit.
- Pass out newspaper or small plastic bins to each group. While students are laying out the paper, walk around and cut lids into pumpkins or cut the fruit in half. Try to vary how you cut the fruit in half.
- Give students at least 10 minutes to explore their fruit. While taking apart the fruit, they should notice its texture, smell, and shape. Optional - students draw or write their observations on the Fruit worksheet or in their journal under "Day 1."
- While they are dissecting the fruit, can they find the different fruit parts? Does their fruit have a **stem, skin, flesh, and seed**?
- Pass out cups or plastic bags to each group and have them collect all seeds. How many seeds are in their fruit?

Digging Deeper

- Bring the class back together and create a classroom chart of the number of seeds in each fruit. You may choose to have students practice making a simple graph.



Fruit Dissection & Decomposition

Depending on grade level, the fruit can be referred to as breaking down, decomposing, or getting eaten.

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- Brainstorm with the class the purpose of each fruit part. Seeds grow into a new plant, the skin protects the fruit, the stem connects it to the plant, and the flesh attracts animals to eat the seed.
- Collect all the fruits and cleanup. Decide if you will save the seeds to plant the next year.
- Next, tell the class that instead of throwing the fruit away, you are going to start an experiment. The fruit is going to be left on a garden bed for the season.
- What do you think would happen to the fruits if they are left outside? Write down a few student predictions.
- Place the fruit in an empty garden bed and add a garden sign labeled "Pumpkin Graveyard" or "Experiment in Progress" if available.
- Photograph the experiment and record the weather.

Making Connections

- Check on the decomposing fruit 1 to 2 weeks later. Record the weather and allow students several minutes to make and record their observations through word or drawings.
- How has the texture, smell, color, and shape of the fruit changed? Do you notice any animals near the fruit? Have a few students gently turn pieces of the fruit over.
- Repeat observations at least one more time. On the last decomposition observation day, revisit their predictions. What evidence did they find to support or disprove their prediction?
- Give students a few minutes to explore the garden space. Can they find any other plants breaking down (**decomposing**) like the fruit?