

The Rotten Pile

Lesson Description

In this lesson, students are introduced to the concepts of recycling, decomposition and composting. They examine rotten fruit or vegetables to learn more about decomposition and understand how we can enrich soil by recycling nutrients from food. Students also explore outside to find examples of things that are decomposing. There is an optional activity to examine a compost pile and take the temperature of the compost pile.

- Time required: 60 minutes
- Location of lesson: Classroom and garden

Learning Objectives

- Be introduced to the concepts of recycling, decomposition, and composting.
- Recognize how decomposition relates to food cycles and the garden.
- Identify ways that we can add nutrients to soil.

Materials and Preparation

- Rotten fruits or vegetables – at least 2 pieces to show the class
- Fresh fruit or vegetables (use the same type of produce as the rotten ones) – at least 2 pieces to show the class
- Crayons or markers – at least 3 per student
- Brown paper bags – 1 for each group of 3 students
- Spoons or trowels – 1 for each group of 3 students
- Supplies for optional Compost Measurements activity:
 - Thermometers – 1 for each group of 3 students
- 📖 **Rotten Food**
- 📖 **Measuring Our Compost Pile**
- 🖐️ **Pictures of Compost** – printed out
- Prepared vegetable snack of the week – 1 for each student
- Water to drink during the Class Warm-up – water dispenser in the classroom and 1 cup or a water bottle for each student

Class Warm-up: Champion Cheer and Veggie Taste Test (5-10 minutes)

- Give each student a cup of water or ensure that they have a filled water bottle in front of them.
- Give each student the prepared veggie snack of the day.
- Lead the students in enthusiastically reciting the 📖 **Champion Cheer**.

- At the end of the cheer, drink water and eat the veggie snack together.
- Have students complete their  **Taste Test Observations** about the vegetable snack of the week.

Review of Last Lesson (2-3 minutes)

- Review the evaluation questions from last week's lesson. Evaluation questions from all lessons are listed at the end of the workbook .

Class Discussion (15 minutes)

What are some items that we throw away at school and at home? What is in the trash right now? As students list items, write them on the board. To facilitate the next part of the discussion, make sure these items are included on the list: food waste (e.g., peels from fruits/veggies; lunch food that wasn't eaten), paper scraps, plastic bottles and containers, glass bottles, metal pieces, wood, yard/garden waste (e.g., leaves; weeds; grass clippings).

Let's talk about what happens to all of these things that we throw away. Much of what we throw away can be recycled. Write the word 'recycle' on the board. Let's say that word together: recycle. Recycle means turning items from the trash into something new. Things like metals, glass, paper and some plastics can be recycled and used for other purposes. Circle these items on the list on the board as you talk about them.

Much of what we throw away can decompose. Write the word 'decompose' on the board. Let's say that word together: decompose. This means the items break down and decay (or rot). Things like food waste, paper scraps and yard waste can all decompose. Circle these items on the list on the board as you talk about them. What kinds of things do NOT decompose? (Answer: metal, glass, plastic)

Did you know that materials that decompose can actually help the soil in our garden? This is called composting. Write the word 'compost' on the board. Let's say that word together: compost. Compost is a mixture of decomposed items that is used to help our soil. Compost comes from a natural process of decay (or rotting) and re-birth. It is nature's way of recycling.

Show the pictures of compost piles from the  **Pictures of Compost** teacher resource. If you have a compost pile in your garden, refer to that during this discussion.

Today we are going to examine some rotten food and learn how that can be part of compost for our garden soil. We are also going to explore items outside to find things that are breaking down or rotting.

Activities (30 minutes)

-  **"Rotten Food" (15 minutes):** Students observe and draw the differences between rotten fruit and fresh fruit to understand the process of decomposition.
 1. Pass our crayons or markers to each student.

2. Direct students to the workbook pages  **Rotten Food**.
 3. Show the students the pieces of fresh fruit or vegetables. Then show them the pieces of rotten fruit or vegetables.
 - a. *Is this piece of fruit/vegetable alive?*
 - b. *What is happening to it?*
 - c. *What will it look like in another week?*
 - d. *What happens when something rots?*
 4. Have students draw pictures of the fresh and rotten items in their workbook.
 5. Have students write their answer to question # 3 in their workbook. (What do you think the fruit will look like in two months?)
 6. *Remember the word ‘decompose’ that we learned earlier? This rotten food is an example of food decomposing. This happens to all of our food waste over time. After food gets rotten, there are still nutrients in the food that can help our soil. Our food can go back into the soil to make it healthier!*
 7. *Let’s look again at pictures of compost. Show the  **Pictures of Compost** and refer to the compost pile in the garden if you have one. This rotten food can go into a compost pile so that it can be put back in our garden soil to make it healthier.*
- **“Exploring the Garden” (15 minutes):** Students work in groups to find items in the garden at different stages of decomposition.
 1. Divide the class into groups of 3-4 students each.
 2. Give each group a brown paper bag and a spoon or trowel.
 3. Have students go out to the garden and look for things that are breaking down or rotting. These could be things that were once alive (e.g., plants, bugs), or things that were never alive (e.g., sticks, leaves, rocks, sand, small chunks of concrete). Encourage them to look carefully in the soil and the compost pile (if there is one) during this exploration.
 4. Gather the groups back together and have them show what they found.
 - a. *What did you collect?*
 - b. *Was it ever alive?*
 - c. *How is it breaking down?*
 - d. *What is it becoming?*
 - e. *What happens to leaves and plants when they fall to the ground?*
(Answer: they decompose and become part of the soil)
 -  **Optional Activity if a Compost Pile is Available: “Compost Measurements” (10 minutes):** Students work in groups to examine the compost pile and take the temperature of the compost pile.

1. Divide the class into groups of 3-4 students each. Give each group a thermometer.
2. Refer the students to  **Measuring Our Compost Pile** in their workbooks.
3. Invite the students to come close to the compost pile and examine what is in the pile.
4. *What do you see in this compost pile?*
5. *Compost piles are piles of rotting vegetables, fruit, leaves and grass. Over time the pile starts to break down and becomes hot. When it becomes hot, this means it is starting to break down the materials that were put into the compost. Once those materials are broken down, we can put the compost in our garden so the soil will have more nutrients.*
6. *Let's see how hot this compost pile is.* Have each group put their thermometer into the pile and measure the temperature.
7. Have students complete entries in their workbooks.
8. Have students continue taking the temperature weekly to see changes over time.

Evaluation Questions (5 minutes)

1. *What does decompose mean?* (Answer: break down or rot)
2. *What does rotting food do for our soil?* (Answer: it provides nutrients)
3. *What is compost?* (Answer: a mixture of decomposed items that is used to help our soil)
4. *What can you find that is decomposing in the soil?* (Answer: leaves, sticks, bugs, etc.)
5. *How much water should you drink every day?* (Answer: at least 6 cups of water a day)
6. *How many fruits and vegetables should you eat every day?* (Answer: at least 5 fruits and vegetables a day)
7. *Does gardening connect you to your culture and help you learn new words in your language?* (Answer: yes)

Preparation for Future Lessons – Reminder for the Instructor

- Review the materials and preparation needed for the next lesson.
- Remember that an Elder guest instructor is needed for these Spring lessons: lesson 1 (Eating a Rainbow), lesson 4 (Water and Precipitation), and lesson 9 (Plant Parts: Identifying Parts of a Flower).

Notes
