

Composting: A Great, Rotten Idea



Contact Information

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Grades

7-8

Objectives

To have students investigate the pros and cons of composting

Materials

Rotting log, grass clippings, leaves or food scraps, microscope of hand lens

Vocabulary

Decomposition, biodegradable, fungi, bacteria

Background

When we mention "recycling," we often think of recycling glass bottles, aluminum cans, and newspaper. But another 30% of the household garbage we throw out also can be recycled. These recyclables are food scraps, leaves, grass clippings and other biodegradable organic wastes. Composting can recycle organic waste. Simply stated, composting creates optimal conditions for decomposition to occur. Decomposition is the biochemical process by which bacteria, fungi and other microscopic organisms break organic "wastes" into nutrients that can be used by plants and animals. Decomposition occurs in nature whenever a leaf falls to the ground or an animal dies. The results of decomposition in a compost pile is a nutrient-rich humus that is excellent for improving soil quality and plant growth

Procedure

1. Define: recyclable, biodegradable. List items that are recyclable and/or biodegradable. Discuss:
 - Are there recyclable materials that aren't biodegradable? (e.g., aluminum.)
 - Are there biodegradable materials that aren't recyclable? (e.g. food scraps).

2. Feel, smell, and look at the rotting log, grass clippings, leaves or food scraps. What words would you use to describe these materials? List these words. Do the words have positive and/or negative connotations? Why?
3. Explain what is happening to the rotting material. Discuss:
 - What is the natural process that breaks biodegradable material into particles that can be used again by plants and animals? (*decomposition*)
 - What organisms assist in this decomposition process? (*fungi, bacteria, earthworms, springtails, mites, etc.*) Take a look under a microscope to find out what you cannot see with the naked eye.
 - What will your rotting material finally become? (*humus*)
4. Imagine a world where decomposition doesn't take place. Discuss:
 - What would happen to organic materials like dead animals, leaves or sewage?
 - Could plants and animals survive if decomposition didn't occur? Why or why not?
 - Is decomposition important? Why?
5. List items you throw away that are biodegradable. Discuss:
 - How might you and your family recycle these materials?
 - What is composting?
 - Why do you think people compost household organic wastes?
6. What are some benefits of composting household food and yard wastes? For example:
 - doesn't require the purchase of expensive plastic bags often used for disposing household and yard wastes.

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- saves the cost of transporting wastes to and handling wastes at the landfill or incinerator.
 - reduces pollution from landfill (leachate and methane gas) or incinerator.
 - creates nutrient-rich humus you can use to improve the texture of your yard and garden soil; saves money you might spend on mulch.
7. What are some possible problems with composting? What suggestions do you have for solving the problems? For example:
- It's too much work. (*Mowing the lawn and washing the car are work, too, but we choose to do these activities because they're satisfying - so is composting! And composting has a positive impact on the environment, which can make us feel good.*)
 - You'd have to run outside every time you eat an apple or peel a potato. (*Just place the scraps into a plastic container with a lid. Keep the container in or under the kitchen sink, then take the waste to the compost pile whenever the container is full.*)
 - There's not enough space. (*Share a compost pile with neighbors, and encourage the town to collect and compost yard wastes from people who don't have enough space for a compost pile of their own.*)