

Classroom Composting

AIM

To model decomposition in nature.

SCIENTIFIC PROCESSES

- question, gather data, research

OBJECTIVES

Students will be able to:

- identify what conditions are necessary for a healthy compost-bin environment;
 - describe the process of decomposition that occurs in the compost bin;
 - identify data they want to record on a composting data log;
 - discuss how matter gets recycled through composting.
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OVERVIEW

Lesson 9 introduced students to the detritus food chain. In this lesson, they continue their investigations of decomposition by setting up a worm composting bin to gain hands-on experience with the decomposition process. The action in this lesson is setting up the compost bin. While you are doing this activity, be sure to make the purpose of the activity clear — the decomposition of food scraps. The resulting compost is rich in nutrients that can help grow more plants. Emphasize that this is nature's method of recycling. If you use the food scraps from Lesson 6, remind students that they got some of their energy by eating the salad. What they didn't eat, they fed to the worms. The worms used some of the energy. What the worms didn't digest, they excreted as castings. These castings are nutrient-rich and can be added to the soil and used to grow more plants to eat in another salad. In their LiFE Logs, students write what they think will happen in the compost bin.

MATERIALS

For the teacher:

- *LiFE Tips for Classroom Composting* (p. 121) and *Compost Bin Troubleshooting* (p. 122) lesson resources
- *Setting Up the Compost Bin* lesson resource (p. 120)
- *Care and Feeding of a Compost Bin* lesson resource
- *Composting Bin Data Log* lesson resource
- *Worm Composting* teacher note

For the class:

- Compost bin (see p. 118 for details)
- Newspaper (see p. 120 for details)
- Spray bottle with water
- 1 pound red wiggler worms
- 1–2 pounds food scraps (see *LiFE Tips for Classroom Composting*, p. 121)

For each student:

- *All about Classroom Composting* student reading
- *Anatomy of a Worm* student reading
- LiFE Log

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PROCEDURE

Before You Begin

- Review *Worm Composting* teacher note.
- Review *Setting Up the Compost Bin* lesson resource.
- Make copies of the *All about Classroom Composting* and *Anatomy of a Worm* student readings to distribute to students.
- Post copies of the lesson resources *LiFE Tips for Classroom Composting, Care and Feeding of a Compost Bin*, and *Compost Bin Troubleshooting* near the worm compost bin.
- If you have not already done so, post the Module Question and the Unit 3 Question at the front of the class.

MODULE QUESTION

How does nature provide us with food?

UNIT QUESTION

How do components in nature interact with each other?



SEARCHING

1. Review the Module and Unit Questions

This lesson continues the class study of decomposition. In this lesson, students set up a compost bin to simulate decomposition in nature.

2. Research Composting and Worms

Distribute the two student readings *Classroom Composting* and *Anatomy of a Worm*. Have students read and discuss them in small groups.



EXPERIMENTING

3. Set Up Model

Refer to the *Setting Up the Compost Bin* lesson resource to review the environmental conditions, food source, and inhabitants of the class composting bin. *If we looked outside, where could we find red wiggler worms?* (piles of leaves or manure or old compost piles) *What kind of food does a red wiggler eat?* (any organic matter) *What words can we use to describe the kind of habitat where red wigglers live?* (moist, dark places with ample food) *What kind of conditions does it need to survive?* (moisture, bedding, darkness, food).

If you have not already done so, shred enough newspaper to completely fill the compost bin. Pour two to three quarts of water over the top of the paper. Mix and fluff the paper until it is all evenly wet and is about as moist as a wrung-out sponge. Invite 4–5 student volunteers to help do this. Be careful not to add more water than the newspaper can absorb. If you do, the water may come out the drainage holes in the bottom. If you're using a plastic bin with a lid, you may wish to use it as a tray to catch any water that might leak out of the bottom. Be sure the newspaper is evenly wet, then add the red wiggler worms. Lift up some newspaper on one side of the bin and gently place half the worms on this side. Repeat for the other side. Next add the food scraps to begin the decomposition process. Always place the food under the moist newspaper. As you did with the worms, lift some newspaper out of one side of the bin and add about half the food. Repeat for the other side.