

Lesson 1: Decompose This!

Grade Level:

6th Grade

Concepts Taught:

decomposition, observation, data collection, biodiversity

Activity Time(s):

1 class period for set-up and initial observations

3 weeks experiment time / observation

1 class period for follow-up and analysis

Essential Questions:

- What is decomposition?
- What conditions need to be met in order for decomposition to occur?
- What is a microorganism and what are the different types?

NC CORE/Essential Standards:

ELA Key Ideas & Details #1-3, 7; Writing standard 7; Language std 1-4; Science 6.E.2.3, 6.E.2.4, 6.L.2.1, 6.L.2.2, 6.L.2.3

Materials:

fresh leaves or grass clippings

2 plastic re-sealable bags

Soil (NOT potting soil)

water

eyedropper

magnifying glasses

Microscope

forceps

Objectives:

- Students will investigate the conditions needed for decomposition to occur.
- Students will explore and identify common microorganisms found in compost

Procedure:

1. Provide students with a small sample of fresh leaves or grass clippings to be divided into 2 plastic re-sealable bags. Have students punch 2 small holes near the top of each bag and, using an eyedropper, add a few drops of water to each bag.
2. Have the students take one of the bags and label it "No Soil." Then have them add a small amount of soil (1-2 Tbsp.) to the other bag and label that bag "Soil."
3. Set bags aside for 3 weeks, adding a few drops of water to each bag every few days or as needed. Do not allow contents to dry, but they also should not be sopping wet.
4. After the third week, have students open the bags and dump contents out onto 2 separate clean, white surfaces.
5. Using forceps and magnifying glasses have students search through each pile for microorganisms.
6. Provide students with a microscope to further analyze any microorganisms found.
7. Discuss with students the following:
 - a. **Did decomposition occur more rapidly in one of the bags? How could you explain this?**
 - b. **Were more microorganisms found in one of the bags? If so, which one?**
 - c. **Where did the microorganisms come from?**
 - d. **How would the number of microorganisms change if the bags were left for another three weeks? How can the variety of microorganisms be explained?**

Extensions/Modifications:

Repeat the above experiment, adding objects such as paper or a small piece of plastic to each bag to check the rates of decomposition of these objects

