

Composting in the Classroom

Extensions/Modifications:

1. Students can share their diaries with the class, and diaries can be hung in the classroom from the ceiling or a string so that both sides are visible.
2. Students can examine live worms obtained at a bait shop or dug from the ground. Have students measure the length of their worm and identify their parts.
 - Can you find eyes, ears, nose, or a mouth? Why or why not? Worms do not have eyes. Instead, they have special cells near their head that can sense light.
 - Worms do not have noses. That might be why they eat just about anything.
 - Worms do not have ears. In order for them to detect danger and to help them move, worms have tiny hairs called setae all over their body.
 - When a predator such as a bird walks over them, the tiny hairs can sense the vibrations as the bird walks, and they are sometimes able to get away.
 - Worms do have mouths that are covered by a flap of skin that looks like a big upper lip.

Have students visit <http://www.urbanext.uiuc.edu/worms/index.html> to learn more about worms and their life histories.

Lesson 6: Building a Mini Composter

Grade Level:

3rd Grade

Concepts Taught:

Composting, time lapse

Essential Questions:

- How long does it take for compost to decompose, or rot?
- What items decomposed the fastest? The slowest?

NC Core/Essential Standards:

Science Objective 3.L.2.2

Materials:

Two emptied and cleaned water bottles (one for mini composter, one for mini landfill)
soil (can be dug from school grounds or potting soil)

Objective: Students will conclude that composting is a way to recycle plant and animal material

Procedure:

1. Explain to students that they will be able to view composting in the classroom on a small scale. Show students the materials collected.
2. Using scissors and following the diagram, cut off the top two inches (below the mouth) of the bottle. Save this portion for later. It will be used in step 6.
3. In the bottom of the bottle, place 1" of soil. Do not compact the soil.
4. Place the food scraps on top of the soil and cover with another 1" of soil.
5. Using scissors carefully poke 5-7 air holes in the top (cut off) portion of the bottle.
6. Use the masking tape to secure the two sections of the bottle, being careful not to cover the air holes with the tape.
7. Place the bottle in a sunny place that is not too hot or too



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Materials Continued...

a handful of food scraps such as orange peels or lettuce leaves chopped into small pieces,
ruler
scissor
masking tape

Procedure Continued...

cold.

8. Over the next 1-2 weeks, shake the bottle once daily to mix the soil and food scraps, being careful not to spill the contents. This represents the turning that would ordinarily occur in a backyard compost pile and allows air and moisture to circulate through the soil and scraps.

9. Discuss with students what they observe each week. Is the food decomposing? Why or why not?

a. What would happen if the bottle were not shaken?

b. What would happen if there were no air holes in the bottle?

Why was the soil added?

Extensions/Modifications:

Build a mini-landfill with students. Follow steps 1 and 2 above.

1. In the bottom of the bottle, place 2" of soil. Compact the soil by pressing it down into the bottom of the bottle.
2. Place the same amount and type of food as in the mini-composter and repeat step 2. Do not make air holes in the top portion.
3. Tape the top back onto the bottle. Place the bottle in a dark place in the room or cover the sides with a dark material such as construction paper or black plastic.
4. After a few weeks, ask students what they expect to happen. Remind them that the mini-landfill was not shaken, had no light, and had no air holes.
5. Remove the tape from the bottle and examine contents. Did the material decompose as much as the material in the mini-composter? (It should not.) This is what happens when food scraps are thrown away instead of composted. Rather than breaking down as compost will do, food scraps in the landfill decompose very slowly and will not be used again.