

Classroom Garbage Audit

Name: _____

Date: _____

	Compostable Organic Waste	Recyclable Materials	Landfill or Garbage Dump
Examples			
Weight			
Percentage of Total Waste			
What amount would accumulate in a school year? (multiply total for one day by 200; or multiply total for one week by 40)			

Follow up Questions:

- How much garbage could be eliminated if the school introduced a composting and recycling program? (multiply the one year totals by the number of classes in the school)

- It is estimated that each backyard composter diverts approximately 250Kg of organic waste from landfills annually:

- If there are 5,000 households in your community, how much is saved from landfill? _____

- If there are 50,000? _____

- If there are 500,000? _____

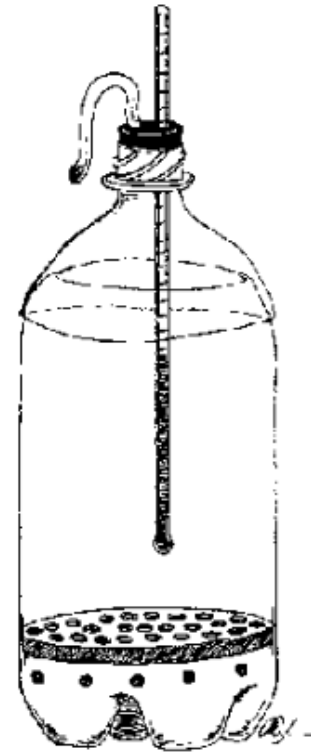
Building a Pop Bottle Composter

Purpose

To build a pop bottle composter that can be used a tool for composting research.

Materials

- two 2-Liter pop bottles
- one small container (ex. Plastic cup), about 5 cm high that fits in the bottom of the pop bottle
- one Styrofoam plate
- drill or nail for making holes
- duct tape or clear packing tape
- utility knife or sharp scissors
- insulating material (ex. Foam rubber or Styrofoam peanuts)
- fine-meshed screen or fabric large enough to cover top of pop bottle and air holes in the bottom half
- thermometer that will fit into the top of the pop bottle and be long enough to reach down into the center of the compost
- food scraps such as vegetable and fruit scraps, pulverized egg shells, coffee grounds, and tea bags. Avoid meat, dairy products, bread and baked goods, and oily foods because they create foul odors and attract flies and rodents
- bulking agents such as wood shavings or 1-2cm pieces of paper egg cartons, cardboard, or wood



Procedure

1. Using a utility knife or sharp-pointed scissors, cut the top off one of the pop bottles just below the shoulder, and the other one just above the shoulder. You now have a top that fits snugly over the bottom of the other.
2. Place a small container upside down in the bottom of the pop bottle. This will form the stand to support the Styrofoam tray with the compost.
3. To make the Styrofoam tray, trace a circle the diameter of the pop bottle on a Styrofoam plate and cut it out, forming a tray that fits snugly inside the bottle. Use a nail to punch holes through the Styrofoam for aeration.
4. Assemble the bottom of your composter by placing the stand into the bottle, then resting the Styrofoam tray on top of it.

5. Make a mark on your bottle to indicate where the Styrofoam sits. Above this point is where the compost will be, and below it is where you want to make air holes.
6. Make air holes in the side of the pop bottle in the area below the mark that you made. You can either do this with a drill, or by carefully heating a nail and using it to melt holes through the plastic. Avoid making holes in the very bottom of the bottle because leachate (liquid) will be produced in the process.
7. Reassemble the composter pieces, making sure that you have provided sufficient air holes to allow air to enter the bottle and flow up through the stand and the Styrofoam circle.
8. Choose a bulking agent (see the table for possibilities) and cut or chop into roughly 1-2 cm pieces. Soak in water until thoroughly moist and then drain off excess water.

Bulking Agents	Food for the Microbes
Wood shavings	Lettuce scraps
Small wood chips	Carrot peelings
Newspaper strips	Apple cores
Pieces of paper egg cartons	Egg shells
Chopped straw	Banana peels
	Weeds
	Grass clippings

9. Mix roughly equal amounts of bulking agent (to provide air flow) and food scraps (provide food for the microbes) and then fill your pop bottle composter with the mixture. Remember that you want air to be able to move easily through the compost, so keep the mixture light and fluffy and do not pack it down.
10. Put the top pop bottle piece back on and seal it in place with tape.
11. Cover the top hole with a piece of screen or nylon, using a rubber band to hold it in place.
12. If you want to eliminate the possibility of flies becoming a problem, you can cover all the air holes with a piece of nylon stocking or other fine mesh fabric.
13. Insulate the pop bottle composter, making sure not to block ventilation holes.
14. Now you are ready to watch the compost at work! You can chart the daily process of your compost by taking temperature readings, inserting a thermometer down into the compost through the top of the pop bottle. Using temperature charts you can compare variables such as the types of compostable materials, moisture levels, amounts of air flow, and insulation systems.
15. Put your name on your composter and then place in the fume hood or other location indicated by your teacher.

