

## **DESCRIPTION**

Young Jeffrey sees how garbage is part of the life cycle and later plants a "reverse garden" to determine which things decay. Kate emphasizes the value of recycling and shows how to make new paper from old.

## **ACADEMIC STANDARDS**

Subject Area: Science

- Standard: Understands the cycling of matter and flow of energy through the living environment
  - Benchmark: Knows how matter is recycled within ecosystems (e.g., matter is transferred from one organism to another repeatedly, and between organisms and their physical environment; the total amount of matter remains constant, even though its form and location change) (See Instructional Goals #1, #2, and #3)

Subject Area: Geography

- Standard: Understands the changes that occur in the meaning, use, distribution and importance of resources
  - Benchmark: Knows advantages and disadvantages of recycling and reusing different types of materials (See Instructional Goals #4 and #5)

## **INSTRUCTIONAL GOALS**

1. To explain how waste decays.
2. To show how a compost heap works.
3. To illustrate the cycle of growth and decay called the *life cycle*.
4. To demonstrate a papermaking activity.
5. To show a reverse garden and emphasize the need for recycling.

## **VOCABULARY**

1. waste
2. garbage
3. dump
4. bury
5. decay
6. compost heap
7. soil creatures
8. nutrients
9. fertilizer
10. life cycle
11. plastic
12. recycle
13. pollute
14. reverse garden

## BEFORE SHOWING

1. Discuss how paper is made.
2. Empty a small garbage bag or can in front of the class. Sort the garbage items into various categories. Hypothesize what will happen to the garbage after it is thrown away.

## AFTER SHOWING

### Discussion Items and Questions

1. What do cities usually do with the garbage they collect?
2. What happens to buried garbage?
3. Explain what *decay* means.
4. What kinds of things should go in a compost heap? Why is the compost heap stirred and kept moist?
5. Discuss what kinds of things decay quickly and what kinds decay slowly or not at all.
6. Why are soil creatures important? What do the soil creatures eat?
7. What do soil creatures leave behind? Why are nutrients important?
8. Give two reasons it is important to recycle plastic, metal, and glass.
9. What are the problems with burning garbage?

### Applications and Activities

1. Prepare a chart depicting the life cycle of the growth and decay of a plant.
2. Give each student a paper bag and a plastic bag. Collect and save all personal garbage for one day. Using gloves, sort the garbage for composting, recycling, and throwing away. Evaluate the results.
3. Study composting.
  - a. Find out if the local community has composting opportunities. Visit a composting site to observe the process.
  - b. Set up a compost bin at the school for lunch waste. Make a compost heap using the school waste plus waste from the school grounds.
  - c. Debate the value of composting.
4. Collect and sort items to recycle. Take the items to a recycling center. Make posters to encourage recycling.
5. Investigate waste options in the local community.
  - a. Invite a representative from the community's solid waste management office to speak to the class.
  - b. Interview a local garbage collector.
  - c. Visit a landfill or trash-burning facility.
6. Make a reverse garden to study decay.
  - a. Generate a list of items for the reverse garden. Choose and locate the items.
  - b. Record predictions of what each item will look like in 30 days.
  - c. Plant the reverse garden. Water each hole. Mark each buried item.
  - d. Water the garden every day. After 30 days, dig up the items.
  - e. Compare the results to the predictions. Discuss the results. Draw conclusions from the results and generalize for all waste products. Share the findings.
7. Make paper as shown in the video.
  - a. Tear paper into small pieces and soak them in warm water for about 30 minutes.
  - b. While the paper pieces are soaking, put a piece of screening in an embroidery hoop.

- c. Fill a blender half-full of warm water. Add a handful of soaked paper. Run the blender on medium speed to cut up the paper into pulp.
- d. Put the pulp in a small tub of water and mix it with hands.
- e. Place the screening hoop in the bottom of the pulp tub. Slowly lift it the screening straight up out of the water.
- f. Turn the screen upside down onto a cloth and blot it with a sponge. Lift the screen off carefully. Let the new paper dry.
- g. After the paper is dry, carefully lift it off of the cloth. The paper is ready to use.

## **RELATED RESOURCES**

### **Captioned Media Program**

- Dying and Decay #3233
- Garbage Tale: An Environmental Adventure #2477
- Protecting Our Environment: Recycle #2515
- Pulp and Paper #3164
- Paper #2097
- Keeping Your Community Clean #3365

### **World Wide Web**

The following Web sites complement the contents of this guide; they were selected by professionals who have experience in teaching deaf and hard of hearing students. Every effort was made to select accurate, educationally relevant, and “kid-safe” sites. However, teachers should preview them before use. The U.S. Department of Education, the National Association of the Deaf, and the Captioned Media Program do not endorse the sites and are not responsible for their content.

- RECYCLE CITY <http://www.epa.gov/kids/recyclecity.htm>

This is a terrific site for elementary-age students. It has a cartoon-style map the users click on to move around and gain information about garbage and recycling. Includes teacher ideas and a game.

- SCI4KIDS: HEY! DON'T THROW THAT OUT! <http://www.ars.usda.gov/is/kids/soil/story3/trash.htm>

Sci4Kids presents information on a wide range of science topics. This is one long page with information on composting, recycling, and reusing done in a very catchy fashion. Teachers' ideas, too.

- GREEN GENERATION <http://www.aber.ac.uk/~grewwww/RecycHome.html>

This Web page provides information about waste, recycling, papermaking, and composting. This site presents only an environmentalist's viewpoint on waste.

# WASTE



**#3531**

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OPEN-CAPTIONED  
FILMS FOR THE HUMANITIES  
1994  
Grade Levels: 3-6  
10 minutes



**PLEASE RETURN LESSON GUIDE  
WITH VIDEO**

**Lesson guide also available  
online at *www.cfv.org***

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