

# LESSON 3: Litter Relay

## LESSON'S CONCEPTS

- Litter can be sorted and some of it can be recycled.
- We can make choices to reduce litter and to reuse or recycle the litter we collect. This conserves natural resources.

### PURPOSE

Students will learn about the kinds of litter that can be reused or recycled.

### OVERVIEW

In this lesson students will:

- Listen to and/or read *The Great Trash Bash* by Loreen Leedy.
- Work in teams as they participate in a relay race to classify litter into categories of litter that can be reused, recycled, or sent to a landfill.

### CORRELATIONS TO CALIFORNIA'S CONTENT STANDARDS AND FRAMEWORKS AND TO BENCHMARKS FOR SCIENCE LITERACY

- Students classify litter by categories of those that can be reused, can be recycled, or sent to a landfill.
  - "Properties of materials can be observed, measured, and predicted. As a basis for understanding this concept, students know objects can be described in terms of the materials they are made of and their physical properties." (*Science Content Standards, Grades K–12; Kindergarten; Physical Sciences, Standard 1a*)
  - "An awareness of recycling, both in nature and in human societies, may play a helpful role in the development of children's thinking. Familiarity with the recycling of materials fosters the notion that matter continues to exist even though it changes from one form to another." (*Benchmarks for Science Literacy,*

page 119)

- "Students sort and classify objects." (*Mathematics Content Standards for California Public Schools, Kindergarten Through Grade Twelve, page 2*)
- Students read or listen to the reading of *The Great Trash Bash* by Loreen Leedy.
  - "Students identify the basic facts and ideas in what they have read, heard, or viewed." (*English–Language Arts Content Standards for California Public Schools, Kindergarten Through Grade Twelve, page 2*)
- Students write a story about cleaning up the school grounds.
  - "Students write brief expository descriptions of a real object, person, place, or event, using sensory details." (*English–Language Arts Content Standards for California Public Schools, Kindergarten Through Grade Twelve, page 8*)

### SCIENTIFIC THINKING PROCESSES

observing, communicating, comparing, classifying

### TIME

30 minutes to prepare for the lesson; 60 minutes to implement the lesson

### VOCABULARY

landfill, reuse, recycle

## PREPARATION

- \_\_\_ 1. Read the “Background Information for the Teacher” on page 187. For this lesson students should know which items can be recycled in their community.
- \_\_\_ 2. Make a copy of “Litter Relay Planning Sheet” for each group of students (page 188).
- \_\_\_ 3. See “Procedure, Part I,” section “A,” to determine whether additional preparation will be needed.
- \_\_\_ 4. Invite the school custodian to explain what happens to the trash collected at school.

## MATERIALS

- \_\_\_ The book, *The Great Trash Bash* by Loreen Leedy
- \_\_\_ Approximately ten pieces of clean litter saved from Lesson 1 (e.g., aluminum can, plastic container, classroom paper, newspaper, packaging, milk carton, plastic wrap) (This should be different from the litter described below.)
- \_\_\_ Newspaper on which to place the litter
- \_\_\_ Six or seven pieces of clean unsorted litter for each team of six or seven students (Each team should receive the same type of litter; for example, (1) piece of white paper; (2) piece of cardboard; (3) aluminum can; (4) plastic cup; (5) polystyrene (Styrofoam) cup or meat tray; (6) paper plate; and (7) article of clothing.)
- \_\_\_ Masking tape and markers
- \_\_\_ One container labeled “to reuse”
- \_\_\_ One container labeled “for recycling”
- \_\_\_ One container labeled “to the landfill”
- \_\_\_ Optional: The video *Kids Talkin’ Trash* (available free of charge from the California Integrated Waste Management Board)

## PRE-ACTIVITY QUESTIONS

- A. With approximately ten pieces of unsorted litter in front of the students, lead a discussion:
- Name three items in this pile that can be recycled. *Aluminum can, classroom paper, newspaper.*
  - Name two items in this pile that are reusable. *Plastic container, milk carton.*
  - When we put waste into a garbage can,

where is it taken for disposal? *To the landfill.* (Information about landfills is included in the K–3 Module, Unit 2, Lesson 1.)

- B. If available, show the video *Kids Talkin’ Trash*. Discuss with students the difference between reusing and recycling. Explain that when an item is reused, it is used as is, although it might get decorated or cut. When an item is recycled, this “old” item will be remanufactured into a new item. Therefore, after you put an item in a place where someone picks it up to be recycled, the item is taken to a manufacturing plant where the item is made into another item. It could be that a can is made into another can, but in order to do that, the original can had to be melted and reshaped into a new can. Newspaper is often recycled to make new newspaper; other paper is recycled and made into cereal boxes and other boxes; used glass is made into new glass containers, and some plastics are made into products, such as combs and plastic lumber.

## PROCEDURE

### Part I, Reading *The Great Trash Bash* by Loreen Leedy

- A. Read to students or have them read *The Great Trash Bash* by Loreen Leedy.
1. Consider using one of the following methods:
    - Read to students the book and show the illustrations. Ask students to describe what they see in each illustration.
    - Have one student read a page and show the corresponding illustration to the class. Ask a second student to describe the illustration. Other students can add to the description of the illustration. Then have a third student read the next page, and have a fourth student describe the illustration.
    - Pages could also be made into overhead transparencies (you might need to ask permission from the publisher to do this) and students can read these.

- A class set of this book can be purchased, and each student can read independently. A class discussion would follow.
2. Discuss with students:
- What is the subject and main idea of *The Great Trash Bash*? *Major Hippo decides that his town of Beaston has too much trash and encourages the town's citizens to solve the trash problem.*
  - What did the animals do in the book? *They cleaned up their town.*
  - What changes did the animals make in their everyday lives to clean up their town? *They made less trash; they bought in bulk; they bought only returnable bottles; they used bags over again; they fixed old things; they stopped littering.*
  - What did they recycle? *They recycled cans, glass, paper, and food scraps.*
  - On the last page the animals are celebrating. Why are they celebrating? *Because they cleaned up their town; they made changes in their everyday life to help solve the trash problem.*
  - What should we tell the animals about the balloons they have at the party? *Do not let them go into the air, because they can land in the ocean or on land and animals might eat them and get sick.* (This information is in Lesson 2). How else could these animals celebrate without having to use balloons? Answers will vary. Discuss acceptable answers.

## Part II, Participating in a Litter Relay Race

**Note:** For very young students, consider rearranging the game, using the entire class to work cooperatively to place litter into proper receptacles. Complete the chart “Litter Relay Planning Sheet” as a class, or skip doing the planning sheet.

- A. Form teams of six or seven students. Assign a number to each team. Make certain each team has the same amount and type of litter. That way the only variable will be how they choose to dispose of or use it. Also, make certain that there are enough pieces of litter for each team member to

run the relay at least once.

1. Provide the litter to be used in the relay, masking tape, and a marker for each team. Ask students to write their team's number on a piece of masking tape and tape it on each item.
2. Provide a copy of the “Litter Relay Planning Sheet” for each team. Ask teams to sort their litter and categorize each item according to one or two of the following:
  - Can be reused
  - Can be recycled
  - Should be taken to a landfill
3. Tell students that under the category of “can be reused,” each team must describe at least two ways the item placed in that category can be reused. Give each team ten minutes to plan its waste disposal strategy and to complete the “Litter Relay Planning Sheet.” (You might need to model how to complete this sheet by using a separate bag of trash. Consider getting older students to help younger students to complete the chart.)

**Note:** Younger students can draw or tell orally what goes on the “Litter Relay Planning Sheet.”

- B. Set up the “to reuse” container approximately 10 feet from the starting line; the “for recycling” container 20 feet from the starting line; and the container representing the landfill as far away on the playground as is reasonably possible. This setup reflects the amount of natural resources required to replace the item for each waste management option (i.e., the farther away, the more resources that are needed). (Natural resources are studied in the K-3 Module, Unit 1.)
- C. Have teams bring their lists and lead students outside to participate in the relay. Explain the rules of the game: This is a modified relay race in which only one person at a time from each team can put something in one of the containers and only one item at a time can be deposited. Each group should follow the plan that was recorded on its “Litter Relay Planning Sheet.”
- D. Call out each item (e.g., paper plate) as one student from each team grabs the item and runs to the appropriate container. As soon as the fastest student returns, call out the

next item (e.g., article of clothing). Another team member cannot run until the previous one has returned. Continue until all items have been placed in the containers. The winning team can be the one that did this the fastest, reused the most items, had the least number of items placed in the landfill, or had the most creative way to reuse items. (You can add winning criteria until each team becomes a winner.)

**Note:** Another option to this game is not to call out each item. Allow each team to select each item based on any order that the team members decide.



Students in Lynda Mooney's first-grade class at Las Palmas Elementary School participate in the litter relay.

## DISCUSSION/QUESTIONS

- A. When the last team finishes managing its litter, gather everyone together; bring the reuse, recycle, and landfill receptacles in front of the class; and conduct a follow-up discussion.
- B. Review the items in the different containers. Are the items in the reuse bin really items that are commonly reused? How often are these items really reused? Why? For example, point out that while some people occasionally reuse polystyrene (Styrofoam) cups or meat trays, they normally end up in the landfill.
- C. Ask the students what methods of waste disposal each winning team used. *A team recycled and reused materials to the greatest extent possible; a team reused the most materials; a team had the least number of materials in the landfill.*
- D. How does reusing and recycling materials conserve natural resources? *Fewer natural re-*

*sources are needed, because items are reused and recycled; so not as many new items are needed to be made from natural resources.*

## APPLICATION

**Homework Assignment:** Have students observe the litter they see on the way to and from school. Have them record what should be done with each piece (e.g., reuse, recycle, or place in a trash can).

- A. Ask students to share their homework assignments.
- B. Ask students to write a story, similar to *The Great Trash Bash*, about cleaning up the school grounds or other area close to the school. This can be done in groups or as a class, with each student writing a part of the story and illustrating it. The story should include a plan to keep an area litter free.

## EXTENSIONS

- A. Read Bill Peet's *The Wump World* as an introduction to reasons for reducing garbage.
- B. For older students: Ask them to look in their kitchen cupboards and identify all of the disposable items, such as paper napkins, plastic utensils, and paper plates. List reusable substitutes for each disposable product.

## RESOURCES

### Videos

*Kids Talkin' Trash.* Alameda County Waste Management Authority, 1995. Distributed by the California Integrated Waste Management Board (14 minutes).

Students learn how to make less garbage and protect the environment by practicing the four R's: reduce, reuse, recycle, rot.

*Recycling: It's Everybody's Job.* Washington, D.C.: National Geographic Society, 1992 (20 minutes).

For a class project, students sort through and separate family garbage to learn why recycling can be part of a solution to our solid waste problem.

### Books

*15 Simple Things Californians Can Do to Recycle.* Prepared by The EarthWorks Group and the California Department of Conservation. Berke-

ley: EarthWorks Press, 1991. Distributed by the California Department of Conservation.

Provides information on how to recycle.

Gibbons, Gail. *Recycle! A Handbook for Kids*. New York: Little, Brown and Company, 1992.

Easy-to-read style and colored illustrations explain the importance of recycling and how various materials are recycled.

Leedy, Loreen. *The Great Trash Bash*. New York: Holiday House, 1991.

A story about how the inhabitants in Beaston solved their trash problem by deciding to make less trash, fixing things, cleaning up litter, and building a recycling center.

Peet, Bill. *The Wump World*. Boston: Houghton Mifflin Company, 1970.

Pollutians from the planet of Pollutus come to

the beautiful Wump World and pollute the environment as they settle in. When the Pollutians leave, the Wump World is trashed, but slowly it will get cleaned up.

Stwertka, Eve, and Albert Stwertka. *Cleaning Up: How Trash Becomes Treasure*. Photos by Mena Dolobowsky. At Home with Science series. New York: Simon and Schuster, 1993.

Illustrated with black and white cartoons, it includes information on the problems with trash, ways to sort trash (including a description of a materials recovery facility), and the leachate from landfills. Written for upper-elementary school students but can be used as a reference by the teacher.

## BACKGROUND INFORMATION FOR THE TEACHER

Recycling is the process of taking an item and remanufacturing it into another item. Technically, recycling is different from reusing. When you reuse an item, you use it as is, although you might alter it by cutting or decorating it. When you recycle an item, this item will be remanufactured into a new item. For example, an aluminum can is melted down and reshaped into a new aluminum can. Newspaper is often recycled to make new newspaper; other paper is recycled and made into cereal boxes and other boxes; used glass is made into new glass containers; and some plastics are recycled into new items, such as hair combs and plastic lumber.

For more information on recycling, see the K-3

Module, Unit 2, lessons 2 and 4, and in the 4-6 Module, Unit 2, lessons 2, 3, and 4. Also see "Appendix B-III, Recycling."

The purpose of this lesson is to emphasize to students that some litter can be recycled. Therefore, by placing the recycling station in the relay closer than the landfill, we are emphasizing that through recycling we are saving materials and therefore conserving natural resources. We are also saving landfill space. (More information about landfills is provided in the K-3 Module, Unit 1, lessons 3 and 4, and in the 4-6 Module, Unit 2, Lesson 1. Also see "Appendix B-IV, Landfill Issues.")

# LITTER RELAY PLANNING SHEET

Names of team members: \_\_\_\_\_

Name of team recorder: \_\_\_\_\_ Team number: \_\_\_\_\_

1.	Type of litter	Reused (how)	Recycled	To landfill
2.				
3.				
4.				
5.				
6.				
7.				