

## 4-6 MODULE

# Unit 4: Proper Management of Household Hazardous Waste *Overview*

### UNIT 4'S CONCEPTS

- Individuals who are thoughtful and cautious in managing materials, including household hazardous wastes, will help reduce contamination in the home and community making them cleaner and safer places in which to live.
- “People need to exercise judgment, care, and planning in disposing materials.” (*Science Framework*, page 125)

The five lessons in this unit are described in the outline that follows.

#### LESSON 1: HAZARDOUS PRODUCTS IN YOUR HOUSE

**Lesson’s concept:** The average home contains numerous products that are potentially hazardous if stored or used improperly.

In Lesson 1 students will:

- Read and analyze labels on empty household products and complete a chart related to such issues in the classroom and at home.
- Identify words that mean that products are hazardous and use a chart to categorize hazardous substances.
- Design brochures about ways to use safely household products which may be hazardous.

#### LESSON 2: NO HOUSEHOLD HAZARDOUS WASTES IN A LANDFILL

**Lesson’s concepts:**

- People, through their expectations, lifestyle choices, and personal use of resources and products, create varying amounts of waste, some of which may be hazardous.
- Household hazardous wastes should not be placed in the garbage. Household hazardous wastes that are placed illegally in garbage cans end up in a landfill and could potentially cause environmental and health

problems (e.g., leachate polluting groundwater) associated with burying hazardous waste in landfills.

In Lesson 2 students will:

- Listen to a simulated letter from a garbage collector to learn why household hazardous wastes should not be placed in the garbage.
- Use models of landfills that they constructed in a previous unit or make new model landfills to design demonstrations on how household hazardous wastes affect the groundwater; and/or conduct experiments on leachate.
- Observe how water picks up pollutants in a landfill model, which they will create in a bottle.
- Sing a song about landfills and write a letter to the garbage collector describing what they did and what they learned in this lesson.
- Research, write about, and report to the class information about a local landfill and its connection to their community’s water system.

#### LESSON 3: THE CONSEQUENCES OF IMPROPER MANAGEMENT OF HOUSEHOLD HAZARDOUS WASTE

**Lesson’s concept:** Any disposal of used motor oil and other household hazardous wastes can harm the environment and people.

In Lesson 3 students will:

- Observe a demonstration of simulated used motor oil poured on soil and water.

- Listen to the story *Someday a Tree* by Eve Bunting and conclude that disposing of household hazardous waste on the ground pollutes the environment and can kill trees and other plants.
- Trace the path that rainwater would take from the school grounds to a storm drain and find out what local body of water the storm drain feeds into.
- Predict where household hazardous waste could end up if it were disposed of on the ground.
- Complete a chart to identify the damaging effects of the improper disposal of hazardous household waste.

#### **LESSON 4: PROPER MANAGEMENT OF HOUSEHOLD HAZARDOUS WASTE**

##### **Lesson's concepts:**

- Household hazardous waste must be carefully separated from other wastes and taken to a household hazardous waste collection facility.
- Used motor oil must be taken to a used oil collection center.

In Lesson 4 students will:

- Visit the school bus yard and interview a mechanic to find out what happens to used motor oil and used motor oil filters from school buses.
- Find out where in their community used motor oil can be recycled.
- Listen to a speaker describe the proper way to manage household hazardous waste.
- Determine that by recycling used motor oil and other recyclable household hazardous wastes, natural resources are conserved and the environment is protected from pollution caused by the improper disposal of wastes.

#### **LESSON 5: PROMOTING PROPER MANAGEMENT OF HOUSEHOLD HAZARDOUS WASTE**

**Lesson's concept:** Education and publicity can help encourage people to manage properly their household hazardous waste.

Students select one of the following projects to complete to teach others what they have learned about household hazardous waste:

- Design posters to inform students and other community members that the only way that household hazardous wastes can be managed properly is to take them to a household hazardous waste collection facility or event in their community.
- Compile a list of facts about used motor oil or other household hazardous waste and design a community display.
- Make hanging signs for door handles with reminders to recycle used motor oil, used motor oil filters, used antifreeze, and paint.
- Make a coloring book for younger students on the importance of avoiding household hazardous products or of managing waste properly.
- Write a letter to parents or guardians to inform them about household hazardous waste.
- Write a jingle about the proper management of household hazardous waste.

#### **Required Book to Implement Unit 4**

- **For Lesson 3:**

Bunting, Eve. *Someday a Tree*. New York: Clarion Books, 1993.

#### **PROJECTS**

Projects provide experiences in service learning and project-based learning to students and allow them to apply what they have learned in the classroom. The following describe projects that address this unit on the proper management of household hazardous waste. Teachers are encouraged to select one of these projects to implement or to have their students develop one of their own. If students implement an applicable project, they and their teachers are encouraged to send a description of the project to the California Integrated Waste Management Board's Office of Integrated Education, MS-14A, P.O. Box 4025, Sacramento, CA 95812-4025.

- **Project 1:** If a landfill is located within the drainage area of your community, students obtain samples of water from nearby creeks, streams, and reservoirs. They can test the water samples for various pollutants. Students can also go on a field trip and visually evaluate the stream or other bodies of water. They

can observe how clear the water is, whether aquatic insects live there, and whether fish and other wildlife are present. This can indicate the health of the stream or reservoir. See the “Resources” section for curricular guides to help you with this project. (Lesson 2)

- **Project 2:** Students stencil storm drains to let people know where the water ends up. For example: “No Dumping, Flows to Willow Creek” or “No Dumping, Flows to Ocean.” (Lesson 3)

**Note:** Lesson 5 focuses on students conducting a project. A list of projects are provided in that lesson.

## Other Project

### *El Verano Elementary, El Verano, Sonoma Valley Unified School District<sup>1</sup>*

*Mr. Neubacher’s fifth-grade class, concerned about the use of insecticides in their community, brought in a natural insect remover—bats. The students built bat boxes and donated them to local vintners and private homes to increase the bat population.*

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<sup>1</sup>“Jiminy Cricket’s 1997–98 Environmentality Winners.” The Walt Disney Company, Inc., and the State of California’s Environmental Education Interagency Network.

# NOTES