

School Recycling Club SHIP

(Supporting Home Instruction Program)



Lesson Plan 4

Grade Level: 4-6

Lesson: I—What is Household Hazardous Waste?
Hazardous Homes?

Source: *Teaching Toxics*

Activity/Craft: Green Cleaning Tips PDF

Video Link: Scott the Recycling Guy-HHW (<https://www.youtube.com/watch?v=B53oSGacs1M>)

Game Link: EPA The Case of the Broken Loop (<https://www.epa.gov/sites/production/files/2015-09/documents/4-6.pdf>)

Earth Day Link: Spring Boots (<https://www.crayola.com/free-coloring-pages/print/spring-boots-coloring-page/>)



Lesson Matrix Grades 4-6

Teaching Toxics

Lesson	Concept	Objective	Common Core Alignments	Skills
4-6 Hazardous Homes?	Products containing hazardous substances are commonly found in the home.	<ul style="list-style-type: none"> Become aware of the hazardous products in the home Conduct a home inventory of hazardous products 	Grade 4 CC.RI.4.1 CC.SL.4.1 CC.4.MD.4	<ul style="list-style-type: none"> Engaging in collaborative conversations Gathering data Interviewing Predicting
			Grade 6 CC.RI.6.1 CC.W.6.4 CC.6.SP.2	
4-6 Looking at Labels	Certain information must appear on hazardous product labels.	<ul style="list-style-type: none"> Identify a hazardous product by examining product labels 	Grade 4 CC.L.4.6 CC.RI.4.2 CC.W.4.4	<ul style="list-style-type: none"> Analyzing Designing Engaging in collaborative work Observing
			Grade 6 CC.RI.6.3 CC.SL.6.1 CC.W.6.4	
4-6 Getting to the Route of the Problem	Hazardous substances enter the environment during use and/or disposal of hazardous products.	<ul style="list-style-type: none"> Recognize the connection between home and environment Learn how household hazardous waste enters the environment 	Grade 4 CC.L.4.6 CC.RI.4.7 CC.W.4.1	<ul style="list-style-type: none"> Communicating solutions Explaining Predicting Problem solving
			Grade 6 CC.RI.6.7 CC.W.6.1 CC.W.6.4	
4-6 Wading Through Water Pollution	Chemical contamination is the most difficult type of water pollution to treat.	<ul style="list-style-type: none"> Determine the type of water pollution most difficult to treat 	Grade 4 CC.SL.4.1 CC.SL.4.4 CC.W.4.1 CC.4.MD.1	<ul style="list-style-type: none"> Carrying out investigation Evaluating Problem solving Using mathematics
			Grade 6 CC.L.6.6 CC.SL.6.4 CC.W.6.1 CC.6.SP.2	

Lesson	Concept	Objective	Common Core Alignments	Skills
4-6 Accidents Don't Have to Happen	Accidental exposure to hazardous household products can be prevented.	<ul style="list-style-type: none"> Identify methods to prevent accidental exposure to hazardous products 	Grade 4 CC.L.4.6 CC.RI.4.2 CC.SL.4.4 CC.W.4.7	<ul style="list-style-type: none"> Applying ideas to solve problems Evaluating Observing Recognizing patterns
			Grade 5 CC.L.5.6 CC.RI.5.2 CC.SL.5.4 CC.W.5.7	
4-6 How Dinosaurs Help Us Drive Our Cars	Motor oil is composed of a limited natural resource. To conserve natural resources and prevent pollution, used motor oil should be recycled.	<ul style="list-style-type: none"> Understand the sequence of events that occur to produce motor oil for cars Become familiar with recycling motor oil 	Grade 4 CC.L.4.3 CC.RI.4.1 CC.W.4.2 CC.W.4.4	<ul style="list-style-type: none"> Carrying out investigation Collaborating Communicating solutions Observing
			Grade 5 CC.L.5.3 CC.RI.5.1 CC.W.5.2 CC.W.5.4	
4-6 The Tomato HornWorm Blues	There are viable, nontoxic alternatives to using pesticides.	<ul style="list-style-type: none"> Become familiar with the alternatives to pesticides 	Grade 4 CC.RI.4.6 CC.RL.4.10 CC.SL.4.6 CC.W.4.3 CC.W.4.8	<ul style="list-style-type: none"> Analyzing Inventing Problem solving Sharing research and writing
			Grade 5 CC.RI.5.6 CC.RL.5.10 CC.SL.5.6 CC.W.5.3 CC.W.5.7	
			Grade 6 CC.L.6.6 CC.RI.6.2 CC.SL.6.4 CC.W.6.8	
			Grade 6 CC.L.6.1 CC.RI.6.1 CC.W.6.2 CC.W.6.4	
			Grade 6 CC.RI.6.7 CC.RL.6.10 CC.SL.6.6 CC.W.6.3 CC.W.6.8	

Lesson Matrix Grade 4-6

Teaching Toxics

Checklist of Things To Do

Hazardous Homes?

- ✓ Send home the Parental Notification Letter.
- ✓ Call your local poison control, recycling organization or state environmental agencies to find out if they provide hazard stickers for shelf labeling.
- ✓ Prepare the Category and Paragraph Cards. Each small group will receive one envelope containing four Category Cards and eight Paragraph Cards.

Looking at Labels

- ✓ Collect (or assign students to collect) hazardous product advertisements from housekeeping magazines, sale and department store flyers from hardware and paint stores.
- ✓ Collect empty hazardous product containers.
- ✓ Obtain Mr. Yuk stickers from local Poison Center.
- ✓ For students unfamiliar with advertising techniques, allow for additional 20 minutes for discussion.

Getting to the Route of the Problem

- ✓ Enlarge the Routes to the Environment map.
- ✓ Obtain community maps from your town's planning or zoning board.
- ✓ Photocopy and cut out the Doing the Right Thing Matching Cards. Shuffle the cards and place in an envelope (prepare one set of cards per small group.)

Wading Through Water Pollution

- ✓ Prepare polluted water for each small group by placing all the pollutants listed in the Materials Section in a quart jar, half filled with water.
- ✓ Assemble clean up equipment and put in wash basin (one set of equipment per group).

Accidents Don't Have to Happen

- ✓ Obtain a video recorder to tape the role plays.

How Dinosaurs Help Us Drive Our Cars

- ✓ You may want to get a sample of clean motor oil and dirty motor oil for a teacher demonstration.
- ✓ Photocopy and cut out the Life History of Motor Oil Cards and Motor Oil Recycling Cards.

The Tomato Hornworm Blues

- ✓ Make puppets for puppet show by enlarging the drawings and attaching to sticks.

4-6: Hazardous Homes?

Subjects

Science, Social Studies, Practical Skills (Consumer Education)

Skills

Engaging in collaborative conversations, gathering data, interviewing, predicting

Materials

Category Cards, hazardous characteristics paragraphs, parental notification letter, household hazardous product inventory sheet, shelf labeling stickers (if available, or make your own)

Time

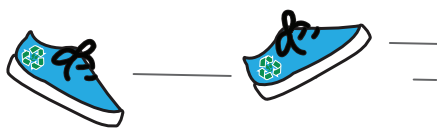
Two class periods, homework

Vocabulary

Inventory, hazardous, corrosive, toxic, flammable, reactive, consumers

Related Teaching Toxics Activities

- K - 3 Home Tour
- K - 3 Warning Words
- 4 - 6 Looking at Labels
- 7 - 8 What's Hazardous?



Concept

Products containing hazardous substances are commonly found in the home.

Objective

Students will become aware of what hazardous products are used in their home, by conducting a home inventory.

Background

See Information Section, pages 120, 127-139

Almost every home in the United States holds a variety of products which contain hazardous chemicals. These products are hazardous because they are toxic, flammable, reactive or corrosive. One way to classify products is by their dominant hazardous characteristic (NOTE: ALL PRODUCTS USED ARE ALSO TOXIC.)

Toxic Pet Flea Collar Shoe Polish Wood Preservative Antifreeze	Flammable Motor Oil Aerosol Cans Fingernail Polish and Remover Gasoline
Reactive Bleach Cleaners	Corrosive Toilet Bowl Cleaner Oven Cleaner Batteries (car and household) Drain Openers Pool Chemicals

Another way to categorize hazardous products is by how they are used. Their use falls into five categories: pesticides, paint and related products, cleaners, automotive products and miscellaneous. The Federal Hazardous Substances Act was passed to increase consumer awareness about hazardous products and less toxic alternatives. The Consumer Product Safety Commission oversees standards regarding what is defined as 'toxic.' Toxic is defined as something that can cause immediate personal injury or illness if it is inhaled, swallowed or absorbed through the skin or long term chronic conditions such as cancer, birth defects, or neurotoxicity. However, it should be noted that just because something is 'nontoxic' it doesn't mean that it is safe, as 'nontoxic' has no legal definition.

Common Core Alignments

GRADE 4

CC.RI.4.1

Reading Informational Text:
Key Ideas & Details

CC.SL.4.1

Speaking & Listening:
Comprehension & Collaboration

CC.4.MD.4

Mathematics:
Measurement & Data

GRADE 5

CC.L.5.6

Language:
Vocabulary Acquisition & Use

CC.RI.5.1

Reading Informational Text:
Key Ideas & Details

CC.5.MD.2

Mathematics:
Measurement & Data

GRADE 6

CC.RI.6.1

Reading Informational Text:
Key Ideas and Details

CC.W.6.4

Writing:
Production & Distribution of
Writing

CC.6.SP.2

Mathematics:
Statistics & Probability

Procedures and Activities

What's Hazardous?

- List the five categories of how hazardous products are used on the blackboard (e.g.: pesticides, paint and related products; cleaners, automotive products and miscellaneous: batteries, nail polish remover, shoe polish, etc.). Using these categories, brainstorm a list of all hazardous products used in the home. Discuss what makes these products hazardous (they are toxic, flammable, corrosive and/or reactive).

Sorting It Out

- Divide students into small groups. Each group will receive an envelope, in which there are four Category Cards (toxic, flammable, corrosive and reactive) and eight Paragraph Cards describing different examples of hazardous products with these characteristics. Students must sort the paragraphs according to what hazardous characteristic is being represented.

Hazardous Products Home Inventory

- Have students predict how many and what types of hazardous products are in their homes. Where in the house do they think they will find hazardous products?
- Challenge students to conduct a home inventory to see if their predictions are accurate. Under adult supervision, have students inventory three different rooms in their homes (e.g.: bathroom, kitchen, garage) and complete the Household Hazardous Product Inventory for each room.
- Have students ask their parents what hazardous products they used when they were growing up.
- Once the inventories are complete, assign students to work in cooperative groups to compare their home inventory lists. Students should design a way to organize their data (create a bar graph, pie chart, calculate percentages, etc.). What conclusions can they draw?
- Have student groups present their ideas and findings. Discuss the meanings of words students may have found on labels and any reactions or feelings students had while completing the assignment. Ask: "What did you learn that was new? Did any of your results surprise you? Did your parents use the same types of products when they were young? What has changed? What has remained the same?"

Category Cards

Paragraph Card 1
(Cut Out Each Card)

Paragraph Card 2
(Cut Out Each Card)

TOXIC

The Smiths feed their cat on the kitchen counter. The cat is a messy eater and often spills his food. Ants soon found the cat food and were crawling all over the place. Bug spray was used to get rid of the ants on the kitchen counter. Some bug spray went into the cat's food dish. The next time the cat ate, he became very sick because he ate food coated with bug spray.

Dad was changing the antifreeze in his car. He left the open container in the driveway. Fido, the family dog, lapped up some of the antifreeze. Fido became very sick and had to be taken to the vet.

FLAMMABLE

A turpentine can was left open in the garage. The room smelled like turpentine because of the turpentine fumes. Someone lit a match to start a fire in the wood stove. Sparks from the match met the turpentine fumes and a fire started.

A spray can of furniture polish was placed on top of the wood stove. The spray can exploded and caught on fire.

REACTIVE

A teacher poured an old chemical down the drain. The teacher did not know that this chemical changed violently when mixed with water. An explosion happened when the chemical mixed with water.

Sue decided that her cleaner was not strong enough. She mixed two cleaners together because she wanted to make a better cleaner. The two cleaners mixed together and changed, forming dangerous fumes.

CORROSIVE

Road salt is used on the roads to melt ice and snow. The road salt gets on cars and causes them to become rusty.

Fernando was cleaning the oven with oven cleaner. The directions said to use gloves, but he did not want to. Fernando got some of the oven cleaner on his hands. The oven cleaner burned his hands.

Sample Letter to Send Home

Dear Family,

Your child is learning about household hazardous waste. The class is discussing the following:

- How to recognize hazardous products
- The importance of proper disposal (e.g.: keeping this waste separate from regular trash, not pouring these substances down the drain, not dumping them on ground)
- The importance of using and storing hazardous products safely
- Products we can use that do not have hazardous ingredients

As part of this unit, students are surveying their homes to see what hazardous products are commonly used. Your child has been instructed to complete this inventory with your supervision.

Please sign the Inventory Sheet after you and your child have completed the assignment. Thank you for your help.

Hazardous Products Hunt

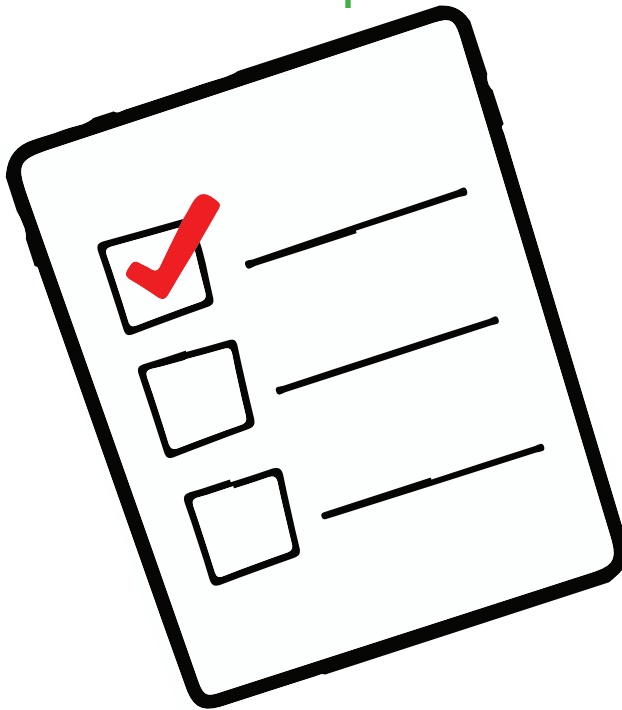
- Explain the Federal Hazardous Substances Act for hazardous products. Show students what the label looks like. What types of stores do students think would have the Reduce Toxic Use stickers?
- For homework, have students go on a hazardous product hunt in their community stores to look for stickers. Students should record the total number of stores they visited and how many stores were using the stickers.



Extensions

- Invite a community business that generates hazardous waste to speak to your class. How do they manage their hazardous materials and waste? What problems are they faced with? What solutions have they found?

- Brainstorm a list of hazardous household products that were probably not used in the past. Ask students to interview elderly persons (70+ years old) to find out what role hazardous products had in their lives in the past. Students could ask their elderly interviewee if they remember what their parents used. After interviews are complete, discuss: How have household chores changed over the years? How have the products we use for these chores changed? Ask students to describe how their interviewees felt about the hazardous products that are used today. How would the students explain the difference between convenience and necessity?



Green Cleaning Tips (From School News You Can Use, May 2015)

Spring is a great time to open windows, put up screens and generally get your house in order. Here are just a couple of easy and inexpensive cleaning tips using common household items. We got our ideas from [WMUR Channel 9](#), who got them from Distractify.com – talk about recycling ideas!

Microwave lemons in water to clean microwave

If your microwave is filled with gunk from food explosions, put lemon slices into a cup of water and put it in the microwave until the water starts to boil. Once the water is boiling, turn off the microwave and let it steam for a few minutes before removing. You will now be able to easily wipe away and remove the food buildup inside. (Source: Distractify)



Squeegee pet hair

If you live with a pet there's a good chance their hair is everywhere. Clean your couches, or rugs by taking a rubber squeegee and running it across the fabric. You will be shocked by the amount of pet hair you remove. (Source: Distractify)



Sanitize your sponge

You can sanitize your kitchen sponge by placing it in the microwave when it is wet for 2 minutes on high. (Source: Distractify)
(You might want to do this BEFORE tip #1 above!)



For all 30 spring cleaning tips, go to: [30 Spring cleaning hacks](#)