

School Recycling Club SHIP

(Supporting Home Instruction Program)



Lesson Plan 6

- Grade Level: 4-6
- Lesson: II—The Routes of Household Hazardous Waste -
Getting to the Route of the Problem
- Source: *Teaching Toxics*
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- Activity/Craft: Printable Secret Decoder Wheel (<https://www.allfreekidscrafts.com/Learning-Activities-for-Children/Printable-Secret-Decoder-Wheel>)
- Video Link: Introduction to Wastewater Treatment (<https://www.youtube.com/watch?v=AqQLwVP7wjI>)
- Game Link: Tip Tank Game (<https://wateruseitwisely.com/tip-tank-game/>)



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

4 - 6: Getting to the Route of the Problem

Subjects

Science, Language Arts

Skills

Communicating solutions, explaining, predicting, problem solving

Materials

"Routes to the Environment" student sheet, community maps (attain from local planning or zoning board/commission), "Doing the Right Thing" matching cards

Time

One - two class periods

Vocabulary

Waste, groundwater, precipitation, septic system, wastewater treatment facility, bacteria, contamination

Related Teaching Toxics Activities

K - 3 Household Connections
4 - 6 Wading Through Water Pollution
7 - 8 Pondering Percolation

Source Adapted from

SLEUTH: Bags, Beakers and Barrels: An Action Curriculum Toward Resolving Hazardous Materials Issues



Concept

Hazardous substances enter the environment during use and/or disposal of hazardous products.

Objective

Students will learn to recognize the connection between their homes and the environment and how household hazardous waste enters the environment, using maps and diagrams.

Background

See Information Section, pages 121-124.

Household hazardous waste enters the environment in various ways. If hazardous products are discarded along with the regular trash, they will eventually end up in a landfill or an incinerator.

These facilities are not designed to treat hazardous substances and, therefore, do not have the environmental safeguards necessary to prevent pollution. Household hazardous waste can also enter the environment through the household drain, entering either septic tanks or wastewater treatment facilities. As with solid waste facilities, these types of treatment facilities are not designed to treat household hazardous waste.

Procedures and Activities

Where Do You Think Household Hazardous Waste Goes?

Working in small groups, have students write predictions of what would happen if household hazardous waste is thrown out with the trash, poured down the drain or dumped directly on the ground. Have students write a group argument paragraph to answer the question: "Knowing what you know about hazardous products, do you think it is important to treat them differently when you throw them out?" Paragraphs should contain clear reasons and relevant evidence.

Mapping Household Connections

Close to Home

- Using the Routes to the Environment sheet, have students trace the various improper disposal methods on their handout sheets, using different colored pencils for each possible entry route.

Common Core Alignments

GRADE 4

CC.L.4.6

Language:

Vocabulary Acquisition & Use

CC.RI.4.7

Reading Informational Text:

Integration of Knowledge & Ideas

CC.W.4.1

Writing:

Text Types & Purposes

GRADE 5

CC.RI.5.7

Reading Informational Text:

Integration of Knowledge & Ideas

CC.W.5.1

Writing:

Text Types & Purposes

CC.W.5.4

Writing:

Production & Distribution of

Writing

GRADE 6

CC.RI.6.7

Reading Informational Text:

Integration of Knowledge & Ideas

CC.W.6.1

Writing:

Text Types & Purposes

CC.W.6.4

Writing:

Production & Distribution of

Writing

The Big Picture

- Pass out regional maps to small groups. Students should: Highlight all the water sources close to their homes and school and trace connected sources of water. (B) Highlight any landfills in the area and surrounding water sources.

Doing the Right Thing

- Hand out the Doing the Right Thing cards to students. Half of the students will have a name of a hazardous product, the other half will have its proper disposal method. The object of the activity is to have the hazardous product find its proper disposal. Once students have matched up, have them share the proper disposal method with the class.

Water Protection Guidelines

- Based on the work they just did, have students create Water Protection Guidelines for their homes. These guidelines will show how students and their families can help keep the surrounding water free from household pollution. Divide the class into two halves - ask the first half to be creative in their expression: they can put their ideas into a poem, poster, song, etc. Ask the other half of the class to create a short audio, video, or live presentation. Afterwards, have students compare and contrast the experience of reading their classmate's poems, posters, or songs to that of viewing the videos or live performances. How was what they could see or hear when reading the Water Protection Guidelines created by their peers different from what they perceived when they listened or watched classmates present the same information? Did they retain the information better one way or the other? Discuss the most effective ways students feel they could get the word out to society about water protection.

Extensions

- Visit a wastewater treatment facility. Invite a representative from the your local septic permit office or water office to talk to your class about how the system works.

MATCHING CARDS: DOING THE RIGHT THING

Household Hazardous Waste

Proper Disposal Cards

Used Motor Oil

I am black and oozy. I was useful but now I am dirty and have many pollutants from your car's engine. I was drained from your car and need to be taken to a place where I can be recycled, maybe a gas station or the local recycling center.

Oil Based Paint

I was leftover after the theater club finished their scenery for the play. Now I'm stuck to the sides of this old can. I need to be taken to a household hazardous waste collection day. But before I go there, make sure that no one else can use me up.

Antifreeze

I have a special job in your car; I keep things from freezing. Every couple of years, I need to be drained from your car and replaced with new stuff. But wait, don't just throw me out! I can be recycled and made as good as new. Maybe your gas station can recycle me.

Household Batteries

I make your ipod and phone sing, your watch tick and your toys work. You might even call me a power house. I don't last forever, you need to replace me. When I get into the trash, I might be a problem. Check with your town to find out where batteries are collected. There are some types you can reuse, you just recharge them and they can power your toys. All of them should be brought to a local household hazardous waste collection site.

Pesticide

I seek out bugs, weeds and other critters some people don't like and get rid of them. But I can also hurt other living things and drinking water. If there's any of me leftover, I should be taken to a household hazardous waste collection day. You might not have to use me to begin with; you can use natural means to control pests.