School Recycling Club SHIP

(Supporting Home Instruction Program)

Lesson Plan 6

Grade Level:	K-3
Lesson:	II—The Routes of Household Hazardous Waste - Washing Water
Source:	*Teaching Toxics*
Activity/Craft:	Cardboard Tube Coiled Snakes (https://www.allfreekidscrafts.com/Animal-Crafts-for-Kids/Curly-Coiled-Snakes)
Video Link:	Freddy the Fish Teaches About Stormwater (https://www.youtube.com/watch?v=jjPfLhJbdCo)
Game Link:	The Natural Water Cycle Game (https://www.educationsoutheastwater.com.au/resources/natural-water-cycle-game)

Lesson Matrix Grades K-3

Teaching Toxics

Lesson	Concept	Objective	Common Core Alignments		Skills
K-3 **Home Tour**	Products containing hazardous substances are commonly used in homes.	• Identify types of hazardous products • Identify place where hazardous products are found in the home	**Kindergarten** CC.RI.K.4 CC.W.K.2 CC.K.G.1	**Grade 1** CC.RI.1.6 CC.SL.1.1c CC.1.MD.4	• Analyzing • Applying mathematics concepts • Collaborating • Investigating
			Grade 2 CC.RI.2.4 CC.SL.2.3 CC.2.MD.10	**Grade 3** CC.RI.3.7 CC.SL.3.4 CC.3.MD.3	
K-3 **Warning Words**	Signal words and /or symbols identify products which contain hazardous substances.	• Recognize the signal words (“caution,” “warning,” “danger,”) and visual symbols that indicate the presence of hazardous substances in consumer products	**Kindergarten** CC.RI.K.9 CC.W.K.2 CC.K.MD.2	**Gra**de 1 CC.RI.1.6 CC.SL.1.1c CC.1.MD.1	• Applying mathematics concepts • Communicating • Evaluating • Graphing data
			Grade 2 CC.RI.2.4 CC.SL.2.2 CC.2.MD.10	**Gr**ade 3 CC.RI.3.1 CC.RI.3.4 CC.SL.3.3 CC.3.MD.3	
K-3 **Washing Water**	Household wastewater is treated by biological or chemical means so that it can be used again.	• Trace the path of water to find out what happens after something is poured down the drain	**Kindergarten** CC.RI.K.1 CC.SL.K.2 CC.W.K.3	**Gr**ade 1 CC.RI.1.2 CC.SL.1.2 CC.W.1.8	• Collaborating • Gathering information • Questioning
			Grade 2 CC.RI.2.2 CC.SL.2.2 CC.W.2.2	**Grad**e 3 CC.RI.3.1 CC.RI.3.3 CC.SL.3.2 CC.W.3.4	

Lesson	Concept	Objective	Common Core Alignments		Skills
K-3 **Household Connections**	Hazardous substances in household products can enter the environment if they are improperly used or disposed.	• Recognize how homes are connected to the environment • Trace the ways household hazardous waste enter environment	**Kindergarten** CC.RI.K.3 CC.W.K.8 CC.K.CC.6	**Gra**de 1 CC.RI.1.3 CC.SL.1.2 CC.1. MD.4	• Applying ideas to solve problems • Communicating • Graphing data • Synthesizing
			Grade 2 CC.RI.2.7 CC.SL.2.3 CC.2.MD.10	**Gra**de 3 CC.RI.3.7 CC.SL.3.1c CC.3.MD.3	
K-3 **Prevention is the Best Medicine**	Substances from the external environment enter the body through ingestion, inhalation, and absorption.	• Identify the ways in which substances enter the body • Develop awareness of the ways in which substances enter the body	**Kindergarten** CC.L.K.6 CC.RI.K.4 CC.SL.K.1	**Gr**ade 1 CC.RI.1.7 CC.SL.1.2 CC.SL.1.5	• Defining problems • Evaluating • Researching
			Grade 2 CC.RI.2.2 CC.SL.2.2 CC.SL.2.6	**G**rade 3 CC.RI.3.7 CC.SL.3.3 CC.W.3.8	
K-3 **Test the Alternatives**	Using non-toxic cleaning products is one way to reduce consumption of hazardous products.	• Introduce the concept of toxicity reduction by using non-toxic cleaners in the classroom	**Kin**dergarten CC.L.K.5.c CC.RI.K.10 CC.SL.K.4	Grade 1 CC.RI.1.1 CC.SL.1.2 CC.1.NBT.3	• Collaborating • Designing • Investigating • Using mathematics
			Grade 2 CC.RI.2.3 CC.SL.2.2 CC.2. NBT.3	**Gra**de 3 CC.RI.3.1 CC.W.3.4 CC.3.NF.1	

Lesson Matrix Grade K-3

Teaching Toxics

K-3: Washing Water

Subjects

Language Arts, Science, Drama, Dance

Skills

Collaborating, gathering information, questioning

Materials

The Magic School Bus at the Waterworks by Joanna Cole, hazardous product pictures, empty hazardous product containers

Time

Two - three class periods

Vocabulary

Bacteria, septic system, wastewater treatment facility

Related *Teaching Toxics* Activities

K - 3 All Things Are Connected
4 - 6 Getting to the Route of the Problem
4 - 6 Wading Through Water Pollution

Concept

Household wastewater is treated by biological or chemical means so that it can be used again.

Objective

Students will trace the path of water to find out what happens after something is poured down the drain, through reading The Magic School Bus at the Waterworks and performing a movement exercise.

Background *See Information Section, pages 121-124.*

Once water leaves our homes, it is cleaned so that it is available to use again. This water is cleaned by either a septic system or municipal treatment facility. Neither method is designed to treat household hazardous wastes. Septic tanks are most vulnerable to damage by household hazardous waste because hazardous substances can destroy the bacteria essential to the cleaning process. Water leaving a septic tank is released into the nearby area. Water that is treated by a municipal treatment facility is discharged into a local water source (rivers). Therefore, it is important to remember that if we pour hazardous waste down our drains, it could end up in our drinking water.

Procedures and Activities

The Magic School Bus at the Waterworks

- Read *The Magic School Bus at the Waterworks* by Joanna Cole. The story illustrates a wastewater treatment plant. If students are from a rural area which uses septic systems, point out the similarities and differences between these two types of treatment. Discuss the story and have the students write a narrative on the story and/or write some facts they have learned about the cycle of our water.

Washing Water Ballet

- Invite the class to participate in an interpretive dance of how water can be cleaned to be used again. The students will represent water being cleaned. Divide the class into three groups. Have the three groups form a circle. Demonstrate the dance for each of the groups.

Common Core Alignments

KINDERGARTEN

CC.RI.K.1
Reading Informational Text:
Key Ideas & Details

CC.SL.K.2
Speaking & Listening:
Comprehension & Collaboration

CC.W.K.3
Writing:
Text Types & Purposes

GRADE 1

CC.RI.1.2
Reading Informational Text:
Key Ideas & Details

CC.SL.1.2
Speaking & Listening:
Comprehension & Collaboration

CC.W.1.8
Writing:
Research to Build & Present Knowledge

GRADE 2

CC.RI.2.2
Reading Informational Text:
Key Ideas & Details

CC.SL.2.2
Speaking & Listening:
Comprehension & Collaboration

CC.W.2.2
Writing:
Text Types & Purposes

GRADE 3

CC.RI.3.1
Reading Informational Text:
Key Ideas & Details

CC.RI.3.3
Reading Informational Text:
Key Ideas & Details

CC.SL.3.2
Speaking & Listening:
Comprehension & Collaboration

CC.W.3.4
Writing:
Production & Distribution of Writing

Washing Water Ballet Groups

- Group I: "The water from the faucet goes swooshhhh down, down, down, the drain." (Use a hand movement representing water coming from the faucet, total body wiggle representing water going down the drain.) "Twisty, turny through the Pipes the water travels, sometimes far, sometimes near, to the wastewater treatment center or septic tank it goes." (Do a slow shoulder movement, forward and back followed by slow lower body movement, representing water traveling through pipes.) If your school has access to a cardboard barrel with the ends cut off or any other tube structure, this could represent a water pipe to crawl through.
- Group II: "Helpful bacteria munch and crunch and eat some of the things that are making the water dirty." (Make munching and crunching noises and rub belly.) "Cleaner water (AHH) can now go onward to the lakes, to the ponds and to the streams!" (marching representing water moving.)
- Group III: "The water is released into the environment again. The water from your house is back in the water cycle: (Make big hand circles going around and around.) "Once in the water cycle it could go ANYWHERE! Maybe to the stream in your favorite woods, maybe down a waterfall or maybe it will become part of a huge iceberg! Maybe the water could go back to your own house." (Stream: Make a wave movement with arms; Waterfall: Raise hands above head, trickle down with fingers and touch toes; Iceberg: Stand back up and form a body triangle by holding hands together above head and spreading legs apart.)
- Group IV: "The water now comes back to us - it is sucked (noise) back into the pipes in your house and used over again." (Make crawl swimming strokes followed by lower body movement to represent water moving through pipes.)

Next Steps:

- After completing the dance, discuss: "What do we use water for? Where does the water go after it leaves our houses? Why do you think it is important to have clean water?"
- Explain that the helpful bacteria can't clean everything (e.g.: motor oil, some types of paint) out of the water. Ask students what they think would happen if they poured something down the drain that could harm the environment?

Where Does the Water Go in Your School?

- Ask the custodian to take students on a tour of the school. Find out where the water enters and leaves. If your school has a septic tank, show students where it is located.
- Back in the classroom, show pictures or empty containers of hazardous products that can not go down the drain.

Classroom Activities

- Visit a wastewater treatment facility.
- On a large sheet of paper, create a class mural showing how water cycles through a septic or wastewater treatment facility.