

Environmental Health Student Portal

Usability Test Findings & Recommendations

Presented to NLM SIS, February 9, 2012

Sandra Williams Hilfiker, MA

Stacy Robison, MPH

Sarah Pomerantz

Home Page

Home Page: Findings



Home Page: Findings

Logo doesn't
link to Portal
home page

HOME | SITE MAP | ABOUT | CONTACT US

ENVIRONMENTAL HEALTH STUDENT PORTAL

Connecting Middle School Students to Environmental Health Information

TOPICS | FOR TEACHERS | HOMEWORK HELP | EXPERIMENTS | CAREERS | NEWS

SEARCH GO

U.S. National Library of Medicine, National Specialized Information Services

What is Environmental Health?
Environmental Health is the interrelationship between human health and the environment, either natural or manmade.
[LEARN MORE](#)

Air Pollution

Chemicals

Climate Change

Water Pollution

EXPERIMENTS AND PROJECTS

HOMEWORK HELP

CAREERS IN ENVIRONMENTAL HEALTH SCIENCE

In the NEWS

For TEACHERS

TOPICS | FOR TEACHERS | HOMEWORK HELP | EXPERIMENTS | CAREERS | NEWS

Air Pollution | Chemicals | Climate Change | Water Pollution

What is Air Pollution • Indoor Air Pollution • Outdoor Air Pollution • Particulate Matter • Ozone

Right navigation
changes on
interior pages

Few used the
nav to get
interior pages

Home Page: Recommendations



Primary Topic Pages

Primary Topic Page: Findings

The screenshot shows the 'Environmental Health Student Portal' website. The header includes the National Library of Medicine logo, navigation links (HOME | SITE MAP | ABOUT | CONTACT US), and a search bar. The main navigation bar lists: TOPICS | FOR TEACHERS | HOMEWORK HELP | EXPERIMENTS | CAREERS | NEWS. The page title is 'Water Pollution'. The main content area features a large text block about water, a list of topics to explore, and a 'Did You Know?' section. The right sidebar contains a vertical navigation bar with icons and labels for: EXPLORE Water Pollution, CHEMICALS AND POLLUTANTS, DISASTERS, DRINKING WATER, WATERBORNE DISEASES AND ILLNESSES, WATER CYCLE, and WATER TREATMENT. The footer contains copyright and privacy information.

ENVIRONMENTAL HEALTH STUDENT PORTAL
Connecting Middle School Students to Environmental Health Information

HOME | SITE MAP | ABOUT | CONTACT US

TOPICS | FOR TEACHERS | HOMEWORK HELP | EXPERIMENTS | CAREERS | NEWS

SEARCH GO

EXPLORE
Water Pollution

CHEMICALS AND POLLUTANTS

DISASTERS

DRINKING WATER

WATERBORNE DISEASES AND ILLNESSES

WATER CYCLE

WATER TREATMENT

Water Pollution

> Home > Water Pollution

Water

Water is essential for survival on earth. It makes up almost two-thirds of our body weight and covers a little over two-thirds of the earth's surface. Almost all of the water is in salty seas, and we can't use it. Only about 3 percent of it is fresh, and three-quarters of that is frozen. So, only 1% of the water on earth is available for humans to use.

The familiar H_2O chemical formula shows the basic units of a water molecule: two hydrogen atoms and one oxygen atom. We describe water as a colorless, odorless, tasteless liquid. Water also comes in the form of ice in the polar ice caps, and water vapor that rises into the air from the surface of our planet.

At this Web site, you can take online tours to interesting places, play interactive games, and watch videos about water. Learn fun facts about water, how important it is to life on earth, and what you can do to protect this natural resource.

Explore these water topics:

- Chemicals and pollutants
- Disasters
- Drinking water
- Waterborne diseases and illnesses
- Water cycle

Did You Know? Unregulated discharges from point sources can result in water pollution and unsafe drinking water and can restrict activities like fishing and swimming. — National Oceanic and Atmospheric Administration (NOAA)

U.S. National Library of Medicine, National Institutes of Health, U.S. Department of Health and Human Services, Specialized Information Services

Copyright | Privacy | Freedom of Information Act | A

It was difficult for users to find the resources described in content

Topics listed, but not linked, from main content area

Right navigation bar is different from home page

"Did You Know" covers up footer on some pages

Primary Topic Page: Findings

NATIONAL LIBRARY OF MEDICINE

HOME | SITE MAP | ABOUT | CONTACT US

ENVIRONMENTAL HEALTH STUDENT PORTAL

Connecting Middle School Students to Environmental Health Information

TOPICS | FOR TEACHERS | HOMEWORK HELP | EXPERIMENTS | CAREERS | NEWS

Air Pollution | Chemicals | Climate Change | Water Pollution

SEARCH GO

TEXT SIZE +/- PRINT THIS PAGE E-MAIL US

Chemicals

> Home > Chemicals

Chemicals

There are millions of chemicals on Earth. Humans use them every day in various ways. Both natural and human-made chemicals can be hazardous to people and the planet if not handled correctly.

A chemical is a substance that has a specific composition and may interact with other substances and change form. Chemicals can enter our bodies through our skin, food and drink, and the air we breathe. The degree of harmfulness depends on how we are exposed, the amount of the chemical we are exposed to, and the length of time that we are exposed.

In this section of the Web site, explore commonly used chemicals and consider swapping them for safer options to get the job done. You can lower your health risks by recognizing toxic chemicals in your home and school and learning ways to protect yourself. Find out what scientists and public health officials are doing to limit our exposure to harmful substances.

[10+ Questions About Household Products](#)
U.S. Environmental Protection Agency

[Chemicals of Special Concern to Children's Health](#)
Minnesota Department of Health

EXPLORE Chemicals

MERCURY

LEAD

ARSENIC

VOLATILE ORGANIC COMPOUND (VOC)

PESTICIDES

Right navigation bar is different between topics

Many students struggled with unfamiliar vocabulary words

Internal scroll bar was challenging for many users

Primary Topic Page: Recommendations

ENVIRONMENTAL HEALTH STUDENT PORTAL
Connecting Middle School Students to Environmental Health Information

Search: GO

Home Air Pollution Chemicals Climate Change Water Pollution For Teachers Experiments & Projects Careers

Home > Chemicals AA Text size: Print this page

Chemicals

Introduction to Chemicals

We use chemicals every day. There are millions of different chemicals on Earth. Some chemicals can be harmful to people (and the planet!), especially if they are not handled properly.

How do chemicals enter the body?

Chemicals can enter your body through:

- Your skin
- Food and drink
- The air you breathe

You can lower your health risks by recognizing toxic (harmful) chemicals in your home and school and learning ways to protect yourself.

Learn more about chemicals

In this section of the Web site, you will learn about common chemicals that you might use in your home or school. Find out how you can replace harmful chemicals with safer options to get the job done. Explore what scientists and public health officials are doing to protect people from toxic chemicals.

Start here

[10+ Questions About Household Products](#)
(from the U.S. Environmental Protection Agency)

[Chemicals of Special Concern to Children's Health](#)
(from the Minnesota Department of Health)

HOMEWORK HELP

[Periodic Table of the Elements](#)
(From the Los Alamos National Laboratory, Chemistry Division web site)

NEWS

[US Tox21 to Begin Screening 10,000 Chemicals](#)
(12/07/2011, National Human Genome Research Institute, National Institute of Environmental Health Sciences)

U.S. National Library of Medicine,
National Institutes of Health,
U.S. Department of Health and Human Services,
Specialized Information Services

Copyright | Privacy | Freedom of Information Act | Accessibility
About | Site Map | Contact Us: tehip@tehn.nlm.nih.gov

Strong left navigation menu to explore

No internal scroll bar

Breadcrumbs and print tool are easier to see

Content looks easy-to-read; vocab words are defined

Homework Help and News are integrated into topic content

Primary Topic Content: Before and After

Chemicals

There are millions of chemicals on Earth. Humans use them every day in various ways. Both natural and human-made chemicals can be hazardous to people and the planet if not handled correctly.

A chemical is a substance that has specific properties and may interact with other substances and change form. Chemicals can enter our bodies through our skin, food and drink, and the air we breathe. The degree of harmfulness depends on how we are exposed, the amount of the chemical we are exposed to, and the length of time that we are exposed.

In this section of the Web site, explore commonly used chemicals and consider swapping them for safer options to get the job done. You can lower your health risks by recognizing toxic chemicals in your home and school and learning ways to protect yourself. Find out what scientists and public health officials are doing to limit our exposure to harmful substances.

Introduction to Chemicals

We use chemicals every day. There are millions of different chemicals on Earth. Some chemicals can be harmful to people (and the planet!), especially if they are not handled properly.

How do chemicals enter the body?

Chemicals can enter your body through:

- Your skin
- Food and drink
- The air you breathe

You can lower your health risks by recognizing toxic (harmful) chemicals in your home and school and learning ways to protect yourself.

Learn more about chemicals

In this section of the Web site, you will learn about common chemicals that you might use in your home or school. Find out how you can replace harmful chemicals with safer options to get the job done. Explore what scientists and public health officials are doing to protect people from toxic chemicals.

Primary Topic Content: Recommendations

Use Headers Strategically.

Using different styles for first and second level headers helps users quickly scan content on the page.

Try plain language strategies.

Text appears easier to read when:

- Paragraphs are short (no more than 5 lines)
- Bullets present lists of information
- Pages have plenty of white space

Improve health literacy.

Give users actionable information. Define medical or technical terms. Explain the health benefits of addressing environmental issues.

Secondary Topic Pages

Secondary Topic Page: Findings

The screenshot shows the 'ENVIRONMENTAL HEALTH STUDENT PORTAL' website. The header includes the National Library of Medicine logo, navigation links (HOME, SITE MAP, ABOUT, CONTACT US), and a search bar. The main navigation bar lists: TOPICS | FOR TEACHERS | HOMEWORK HELP | EXPERIMENTS | CAREERS | NEWS. The 'Disasters' topic is selected, showing a breadcrumb trail: > Home > Water Pollution > Disasters. The main content area features a 'Disasters' section with introductory text and a list of links to explore. A 'Did You Know?' sidebar provides additional information. A bottom navigation bar lists other topics: Chemicals and Pollutants, Disasters, Drinking Water, Waterborn Diseases & Illnesses, Water Cycle, and Water Treatment.

HOME | SITE MAP | ABOUT | CONTACT US

ENVIRONMENTAL HEALTH STUDENT PORTAL

Connecting Middle School Students to Environmental Health Information

TOPICS | FOR TEACHERS | HOMEWORK HELP | EXPERIMENTS | CAREERS | NEWS

SEARCH GO

EXPLORE Disasters

READ ABOUT IT

GAMES AND ACTIVITIES

Disasters

In the past decade, huge natural disasters around the world have made headline news. You've probably heard about hurricane Katrina in the Gulf of Mexico (2005), the Indonesian tsunami (2004), and the earthquakes in Haiti and Chile (2010). We hear about the loss of lives and property damage, but the problems don't end there.

Recovering from a natural disaster takes years. People must figure out what to do about damaged crops, fire risks, water pollution, and increased health risks to survivors. Improved preparation, storm forecasting and early-warning alerts, medical advances, and faster rescue responses certainly help. At this Web site, explore the types of natural disasters, and learn how you can prepare for and respond to them.

Explore the links to the right to:

- Watch videos about earthquakes, hurricanes, and other disasters.
- Learn how hurricanes get their names.
- Understand how storms could affect our health.
- Play the "Hurricane House" game.
- Find out which direction a hurricane spins.
- Read the "The River Rises; Disaster Twins Flood Story".
- Learn how to protect your home from disasters.

Did You Know? Floodwaters also may be contaminated by agricultural or industrial chemicals or by hazardous agents present at flooded hazardous waste sites. — Occupational Safety and Health Administration (OSHA), Department of Labor

Pools of standing or stagnant water become breeding grounds for mosquitoes, increasing the risk of encephalitis, West Nile Virus, or other mosquito-borne diseases. — Occupational Safety and Health Administration (OSHA), Department of Labor

Chemicals and Pollutants | Disasters | Drinking Water | Waterborn Diseases & Illnesses | Water Cycle | Water Treatment

U.S. National Library of Medicine, National Institutes of Health, U.S. Department of Health and Human Services, Specialized Information Services

Copyright | Privacy | Freedom of Information Act | Accessibility | Contact Us: tehip@tehl.nlm.nih.gov


Users were frustrated that these bulleted items were not linked text

Lateral navigation to other topics was missed / confusing

Right navigation menu is different from primary topic pages

"Did You Know" content was particularly challenging for readability

Secondary Topic Page: Recommendations



ENVIRONMENTAL HEALTH STUDENT PORTAL

Connecting *Middle School Students* to Environmental Health Information

Search:

[Home](#)
[Air Pollution](#)
[Chemicals](#)
[Climate Change](#)
[Water Pollution](#)
[For Teachers](#)
[Experiments & Projects](#)
[Careers](#)

[Home](#) > [Chemicals](#) > [Mercury](#)

Text size: [A](#) [A](#) [A](#)
[Print this page](#)

MERCURY

Air Pollution

Chemicals

LEAD

ARSENIC

VOLATILE ORGANIC COMPOUND (VOC)

PLASTICS

PESTICIDES

Climate Change

Water Pollution

About Mercury

Mercury (sometimes called quicksilver) is a natural metal. It looks like a shiny, silver liquid. Mercury can evaporate into a colorless gas.

Mercury is used in:

- Some types of light bulbs
- Batteries
- Paint
- Glass thermometers
- Science lab equipment

Mercury must be thrown away properly, or it can end up polluting the soil, water, and air.

Mercury is poison

Mercury is toxic to humans – especially children – and the environment. You can get sick from touching mercury, breathing in mercury fumes (gas), and drinking polluted water.

If you think you have been poisoned by mercury or if you have questions about mercury poisoning, contact the local poison control center at 1-800-222-1222.

Mercury in fish

In the United States, the most common way that people get mercury poisoning is by eating fish or shellfish that have mercury in them. The fish get mercury by swimming in polluted water.

Learn more about mercury

In this section of the Web site, learn about mercury and its toxic effects. Discover what scientists and public health officials are doing to protect people from mercury – and find out how you can protect yourself.

READ ABOUT IT

- Visit the Environmental Protection Agency's (EPA's) [Mercury Quick Finder](#) for a range of information on mercury
- Discover ways people have used [mercury through the ages](#)
- Get the latest [fish-eating advisories](#) from the EPA

[See more resources to read about mercury >](#)

HOMEWORK HELP

- Find out how scientists are studying new ways to limit our exposure
- Visit [Tox Town](#) to see where the mercury hot spots could be in your neighborhood
- Learn about the chemical properties of the [mercury atom](#)

[Get more help with your mercury homework >](#)

VIDEOS


- See what mercury looks like in the great video "Don't Mess with Mercury"

GAMES AND ACTIVITIES

- Do activities to learn more about mercury in your home, school, and community and what you can do about it

FOR TEACHERS

Mercury: An Educator's Toolkit - U.S. Environmental Protection Agency



U.S. National Library of Medicine
U.S. Department of Health and Human Services
Specialized Information Services

Copyright | Privacy | Freedom of Information Act | Accessibility | About | Site Map | Contact Us: tehp@nih.nih.gov

Navigation menu stays consistent

The collage features a central brown paper background with a 'MERCURY' title and a light bulb icon. To the left, a vertical list of environmental topics is presented with corresponding icons: Air Pollution (globe), Chemicals (flasks), MERCURY (battery), LEAD (box), ARSENIC (jar), VOLATILE ORGANIC COMPOUND (VOC) (cans), PLASTICS (bottles), PESTICIDES (spray can), Climate Change (clouds), and Water Pollution (fish). A green arrow points from the 'MERCURY' section to a detailed informational card on the right.

MERCURY

About Mercury

Mercury (sometimes called quicksilver) is a natural metal. It looks like a shiny, silver liquid. Mercury can evaporate into a colorless gas.

Mercury is used in:

- Some types of light bulbs
- Batteries
- Paint
- Glass thermometers
- Science lab equipment

Mercury must be thrown away properly, or it can end up polluting the soil, water, and air.

Mercury is poison

Mercury is toxic to humans – especially children – and the environment. You can get sick from touching mercury, breathing in mercury fumes (gas), and drinking polluted water.

If you think you have been poisoned by mercury or if you have questions about mercury poisoning, contact the local poison control center at 1-800-222-1222.

Mercury in fish

In the United States, the most common way that people get mercury poisoning is by eating fish or shellfish that have mercury in them. The fish get mercury from polluted water.

Did You Know?

Do you know what inspired the Mad Hatter character in *Alice in Wonderland*? Mercury! In old times, hat makers got "mad-hatter" syndrome, or mercury poisoning, because the mercury they used in making felt hats damaged their brains. Thankfully, we now know how dangerous exposure to mercury can be.

“Did You Know” is in main

“Did You Know”
is in main
content area

Secondary Topic Page: Recommendations

The screenshot shows the homepage of the Environmental Health Student Portal. At the top, it says "ENVIRONMENTAL HEALTH STUDENT PORTAL" and "Connecting Middle School Students to Environmental Health Information". Below this is a search bar and a navigation menu with links to Home, Air Pollution, Chemicals, Climate Change, Water Pollution, For Teachers, Experiments & Projects, and Careers. The main content area is titled "MERCURY" and features a sidebar with links to Air Pollution, Chemicals, Climate Change, and Water Pollution. The main text area includes "About Mercury", "Did You Know?", "Mercury is used in:", "Mercury is poison", "Mercury in fish", "Learn more about mercury", "READ ABOUT IT", "HOMEWORK HELP", "VIDEOS", and "GAMES AND ACTIVITIES".

For Teachers
separate from
student content

Internal scroll bar
is removed

Resources linked
directly from
topic page

"See more" link
for numerous
resources

Descriptive
text for
external links

Supplementary Pages

For Teachers: Findings

The screenshot shows the 'ENVIRONMENTAL HEALTH STUDENT PORTAL' website. The header includes the National Library of Medicine logo, navigation links (HOME, SITE MAP, ABOUT, CONTACT US), and a search bar. A secondary navigation bar lists topics: TOPICS, FOR TEACHERS, HOMEWORK HELP, EXPERIMENTS, CAREERS, NEWS. The main content area is titled 'For TEACHERS' and includes a welcome message. It features four columns of links: Water Pollution, Climate Change, Chemicals, and Air Pollution. The 'Water Pollution' column has a sub-heading 'Water Pollution' and a list of links: 'Chemicals and Pollutants', 'Drinking Water', 'Water Cycle', and 'Waterborn Diseases & Illnesses'. The 'Climate Change' column has a sub-heading 'Climate Change' and a link 'Causes: greenhouse gasses'. The 'Chemicals' column has a sub-heading 'Chemicals' and links 'Arsenic', 'Lead', 'Pesticides', and 'Volatile Organic Compounds'. The 'Air Pollution' column has a sub-heading 'Air Pollution' and links 'Indoor Air Pollution', 'Outdoor Air Pollution', 'Ozone', 'Particulate Matter', and 'What is Air Pollution'. The footer contains copyright and contact information.

Annotations:

- Anchor links were confusing for some users; only used for secondary topics** (points to the 'Water Pollution' sub-heading)
- Similar styles for different headings on the page** (points to the 'Water Pollution' sub-heading)
- Internal scroll bar was again challenging for many users** (points to the vertical scroll bar on the right side of the page)

Experiments and Projects: Findings

The screenshot shows the 'Environmental Health Student Portal' website. The header includes the National Library of Medicine logo, navigation links (HOME, SITE MAP, ABOUT, CONTACT US), and a search bar. The main content area is titled 'EXPERIMENTS AND PROJECTS' and features a list of links to various resources, including 'Bringing the Greenhouse Effect Down to Earth', 'Earth on Fire', 'What is Climate Change', 'Chemicals', 'Air Pollution', 'Indoor Air Pollution', 'Outdoor Air Pollution', and 'Particulate Matter'. A green callout box points to the header area, stating 'Page includes headers with no content'. Another green callout box points to the list of links, stating 'Users wanted more description of linked resources'. A third green callout box points to the vertical scrollbar on the right side of the page, stating 'No "back to top" links – users must use internal scroll bar'.

HOME | SITE MAP | ABOUT | CONTACT US

ENVIRONMENTAL HEALTH STUDENT PORTAL

Connecting Middle School Students to Environmental Health Information

TOPICS | FOR TEACHERS | HOMEWORK HELP | EXPERIMENTS | CAREERS | NEWS

SEARCH GO

TEXT SIZE PRINT THIS PAGE E-MAIL US

EXPERIMENTS AND PROJECTS

> Home > Experiments and Projects

[Bringing the Greenhouse Effect Down to Earth](#) - Franklin Institute (Web site - 16.40 KB)
[Earth on Fire](#) - National Aeronautics and Space Administration (Web site - 16.40 KB)
[Getting a Handle on Greenhouse Gases](#) - Pima County, Department of Environmental Quality (PDF - 34.48 KB)

What is Climate Change
[Earth on Fire](#) - National Aeronautics and Space Administration (Web site - 34.48 KB)

Chemicals

Air Pollution

Indoor Air Pollution
[Indoor Air Pollution](#) - Spokane County Air Pollution Control Authority (PDF - 263.72 KB)

Outdoor Air Pollution
[What's the Connection Between Convection and Inversion](#) - U.S. Environmental Protection Agency (PDF - 44.17 KB)

Particulate Matter
[So What's Making it Look Brown Outside?](#) - U.S. Environmental Protection Agency (PDF - 59.30 KB)

U.S. National Library of Medicine, National Institutes of Health, U.S. Department of Health and Human Services, Specialized Information Services

Copyright | Privacy | Freedom of Information Act | Accessibility | Contact Us: tehip@tehl.nlm.nih.gov

Supplementary Pages: Recommendations

The screenshot shows the 'ENVIRONMENTAL HEALTH STUDENT PORTAL' website. The header includes a search bar and navigation links: Home, Air Pollution, Chemicals, Climate Change, Water Pollution, For Teachers, Experiments & Projects, and Careers. The 'For Teachers' page is selected, displaying a welcome message and a grid of topic links. The grid includes sections for Air Pollution, Chemicals, Climate Change, and Water Pollution, each with a list of sub-topics. A detailed view of the 'Air Pollution' section is shown below the grid, featuring a lesson plan and a list of resources.

ENVIRONMENTAL HEALTH STUDENT PORTAL
Connecting Middle School Students to Environmental Health Information

Search:

Home | Air Pollution | Chemicals | Climate Change | Water Pollution | For Teachers | Experiments & Projects | Careers

Home > For Teachers

AA Text size: Print this page

Welcome teachers! Are you looking to engage your students in active learning? On this page you will find links to lesson plans from a number of reputable sources. Help your students make the connection between the environment and their health.

For TEACHERS

Air Pollution

- Indoor Air Pollution
- Outdoor Air Pollution
- Ozone
- Particulate Matter
- What is Air Pollution

Chemicals

- Arsenic
- Lead
- Pesticides
- Volatile Organic Compounds

Climate Change

- Causes: greenhouse gasses

Water Pollution

- Chemicals and Pollutants
- Drinking Water
- Water Cycle
- Waterborn Diseases & Illnesses

Air Pollution

Indoor Air Pollution

★ What You Don't Know CAN Hurt You! Part 1
Student Activity (Grade 7,8), 50-60 min
Using Internet resources to discover causes, effects and solutions to indoor air pollution.

★ What You Don't Know CAN Hurt You! Part 2
Student Activity (Grade 7,8), 45 min
Synthesize research to create a poster advocating for air better quality in schools.

Graphical, eye-catching links to page sections

Anchor links in clear grid pattern

Resources include detailed descriptions

★ There is Something in the Air - Lesson Plan (Grades 6,7,8), 20 min prep; 15 min class
Students will compare the dispersal of odors indoors and outdoors.

What is Air Pollution

- ★ Helping to Find a Solution to Air Pollution! - Pima County, Department of Environmental Quality (PDF - 16.50 KB)
- ★ Air Pollution - Education Reference Desk - Information Institute of Syracuse (Web site - 16.50 KB)

[Return to Top ^](#)

Chemicals

Arsenic

"Return to Top" links make it easy for users to navigate elsewhere on the page

Other Key Findings

Search

The 4 search results for 'acid rain' have almost identical titles and URLs

Students often expected search links to go to external sites

> Home > Search Results

About 4 results (0.34 seconds)

[Environmental Health Student Portal - Chemicals and Pollutants](http://kidsenvirohealth.nlm.nih.gov/TopicSubtopic.php?tid=004&sid...)
Play games, read a story, and learn about water. Experiment with a neighborhood water source to find out how healthy it is. Watch a video and see how ...
kidsenvirohealth.nlm.nih.gov/TopicSubtopic.php?tid=004&sid...

[Environmental Health Student Portal - Chemicals and Pollutants](http://kidsenvirohealth.nlm.nih.gov/TopicSubtopic.php?tid=004...)
Learn Healthy Environments for Children from Health Organization. Acid Rain Student Site Games and Activities U.S. Environmental Protection Agency ...
kidsenvirohealth.nlm.nih.gov/TopicSubtopic.php?tid=004...

[Environmental Health Student Portal - Chemicals and Pollutants](http://kidsenvirohealth.nlm.nih.gov/TopicSubtopic.php?tid=004...)
Impact of Climate Change and the Experimentation of San Francisco Bay ... About the Water? National Geographic. **Acid Rain** Twin Cities Public Television ...
kidsenvirohealth.nlm.nih.gov/TopicSubtopic.php?tid=004...

[Environmental Health Middle School Web site - Water Pollution](http://kidsenvirohealth.nlm.nih.gov/TopicSubtopic.php?tid=004)
Acid Rain About Water National Institute of Environmental Health Sciences. Water Q and A: Water use at home U.S. Geological Survey. What is **Acid Rain**?
kidsenvirohealth.nlm.nih.gov/TopicSubtopic.php?tid=004

1

"A lot of trial and error."
— Teacher



External Resources

- + Resources generally perceived as engaging and valuable
- + Both students and teachers wanted descriptions
- + Broken links caused frustration and were often mentioned by participants in wrap-up interviews
- + Look and feel quickly 'cue' users to whether or not a resource will be age-appropriate

External Resources

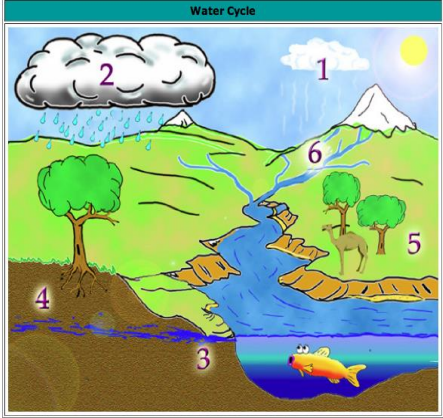
Hey, It's Your Backyard! *Individuals affect the environment*
The program for students grades 6–12 and educators that explores how

Home
For Students:
About The Program
Activities
Contact Us
Earth Police
Game
Television Program
What Can You Do?
For Teachers:
Lesson Plans
Preparation
Resources

Water, Water Everywhere
Activities *But How Much Can We Drink?*

This activity demonstrates how water is recycled from the earth into the atmosphere and back to the earth again, and how this process actually cleans or improves the quality of water. It also shows how pollutants are sometimes transported by this system and continue to pose a threat to water quality if not effectively removed.

Water Cycle



1. Water evaporates from lakes and ocean surfaces. The evaporated water forms clouds that may travel over vast distances.

VS.

United States Environmental Protection Agency Office of Water 4601 EPA 810-F-98-004 June 1998

EPA ENVIRONMENTAL EDUCATION

NON-POINT SOURCE POLLUTION

GRADE LEVEL: 4–7

BACKGROUND: This activity is designed to demonstrate to students what an average storm drain collects during a rainfall event and how the water from storm drains can impact the water quality and aquatic environments of local streams, rivers, and bays.

MATERIALS NEEDED:

"Waterway"	"Pollutants"
Aquarium	Green Food Coloring (pesticides/fertilizer)
Rectangular Box	Vegetable Oil (motor oil)
Water	Soil/Sand/Pebbles (erosion)
Watering Can	Grass Clippings (or Shredded Paper) and Twigs
Spray Bottle	Cafeteria Waste and Trash

PREPARATION: Fill the aquarium half-way with water and place it on an accessible area where it can be easily viewed by the students. Cut a hole in the bottom of the box and place the box on top of the aquarium. The box represents the storm drain and the aquarium represents the waterway that the storm water mixes into after entering the storm drain. Leave the sides of the aquarium uncovered so that the students can view its contents.

PROCEDURE:

1. Introduce this activity with a discussion of storm drains and storm drain systems and their purposes. Discuss where the water and objects that float down into a storm drain go. Have students list all of the things that they can think of that might enter a storm drain during a rain storm.
2. Assign a group of students to each pollutant. Discuss each pollutant, including its use or origin and how it could enter the storm drain.
3. Have each group of students place their pollutant into the storm drain. Use the watering can to create rain to wash the pollutant into the waterway. While washing each pollutant into the waterway, review the pollutant and its use or origin. Discuss the following questions: How does the pollutant damage the environment? Do the people who are responsible for the pollutant want to damage the environment? Why did they do what they did? How can this type of pollution be stopped?
4. After adding all of the pollutants, examine the contents of the waterway. Discuss how the waterway has changed and how viewing this change makes the students feel.

FOLLOW-UP QUESTIONS:

1. What types of the pollution are natural?

"This is much more interesting. There are words in different colors, and there are these cartoon pictures" – Student



Summary

Summary

- + Continue adding a variety of resources (videos, lesson plans, etc.) to the Portal
- + Change layout of navigational elements to help users complete tasks
- + Use plain language best practices to improve readability of original site content
- + Give more context for external resources
- + Consider tools to help teachers incorporate EH into the curriculum

Quick Hits

- + Remove “Topics” drop-down in top navigation and replace with direct links to 4 primary topics
- + Use unique page titles to improve search result display
- + Use student-friendly language for ‘*What is Environmental Health?*’ on home page
- + Use headers, bullets, and white space to make content easier to scan and more approachable

Summary on Redesign

+ Navigation

- + Home page; primary topic pages; secondary topic pages; supplementary pages

- All make good sense; all equally important and cost-effective

+ Introductory texts for primary and secondary topic pages

- + Headers, white space, bullets, plain language, no previews

- Can be involved, but should prob do, because everyone was frustrated with previews

+ Descriptive texts for internal links

- + Everyone wanted this; should be done in-house, but CMS or LMS needs to accommodate this

+ Search

- + Search results have almost identical urls; Communicate Health suggests we use unique page titles to improve search result display

- Discuss with developers whether this is feasible, given the cost (I am out of my depth)