

Clean Storm Water Patch Program



Clean Storm Water Patch Program

Below are activities developed by the Summit County NPDES Phase II Communities' Public Involvement Public Education (PIPE) Committee for the "Clean Storm Water" Patch Program. To earn a patch, you must complete one activity from each of lists A, B and C and one additional activity of your choice for a total of **four** activities. Please complete the Activity Completion Form on the last page of the booklet and return it to your program sponsor to receive your patches.

LIST A *Tours and Programs*

Activity A1 Learn About Your Watershed.

Attend a public lecture or educational program about creeks, lakes, water quality, land use changes and the impacts on storm water, etc. (see suggestions below)

Your City or Township Parks Department or Recycling Coordinator
The Metro Parks Serving Summit County (330) 867-5511
The Summit Soil and Water Conservation District (330) 929-2871
The Cuyahoga Valley National Park 1 (800) 433-1986
Summit County Health Department (330) 923-4891

Activity A2 Stream Monitoring Training

Attend a stream monitoring training session at the Summit Soil and Water Conservation District located at 2795 Front Street in Cuyahoga Falls (330) 929-2871 or the Metro Parks Serving Summit County (330) 867-5511. Learn how to identify bugs (macro-invertebrates) that live in a stream and find out why bugs are indicators of a stream's water quality.

Activity A3 Attend a tour of a local water treatment facility

Contact one of the following facilities to schedule a tour:

1. The Akron Water Treatment Plant at 1570 Ravenna Road, Kent (330) 678-0077
2. The Barberton Water Treatment Plant (330) 848-6744
3. The Cuyahoga Falls Water Treatment Plant (330) 971-8438

Answer the following questions:

- How does water come out of our faucets and where does this water come from?
- How is this water cleaned so it is safe for drinking purposes?
- Where does the water go when it goes down the drain?
- How does this differ from the storm water in the streets?

Activity A4 Attend a tour of a local *wastewater* treatment facility

Contact one of the following to schedule a tour:

1. The Akron Wastewater Treatment Plant, 2460 Akron Peninsula Road, Akron (330) 928-1164
2. The Fishcreek Wastewater Reclamation Plant, 2910 North River Road, Stow (330) 688-6585

Answer the following questions:

- What type of water is treated at a wastewater treatment facility?
- Where does this water come from and where does it go once it's treated?
- Name some things that are not removed from the wastewater during the treatment process.
- What are combined sewers?

Activity A5 Tour a hazardous waste recycling center

Contact the Hazardous Waste Recycling Center located at 1201 Graham Road, Stow (behind Carter Jones Lumber) (330) 374-0383.

Answer the following questions:

- Why do your used Game Boy Batteries need to be taken to a hazardous waste recycling center?
- What are the hazards caused by old tires?
- Why is there a charge to take old tires here? How much is it?
- List five common hazardous wastes around your house and yard?
- What do you do with them?
- How is a hazardous waste landfill different from a regular landfill?

Activity A6 Interdisciplinary Water Pollution Activity

Fred the Fish

BY PATRICIA CHILTON-STRINGHAM AND JAN WOLANIN

Materials and Equipment: *The whole class will need:* Script pages

A pair of scissors

9 large index cards

A glue stick or some tape

A light-colored sponge

A yarn needle

A small weight (metal nut) String

A wide-mouthed jar or large beaker

Cold tap water

A pencil

5 small paper cups or baby food jars

Soil

Brown sugar ("fertilizer")

Pancake syrup or molasses ("oil")

Salt

Punched paper dots ("litter")

A medium beaker or glass jar

Detergent

Warm tap water

Red food coloring ("sewage")

Green food coloring ("toxic waste")

Focus:

Without water, life would be impossible. We use it in many ways - for drinking, bathing, recreation, farming, and manufacturing. We depend upon a continuous supply of clean water, yet each time we use it, we change it-sometimes by polluting it.

We depend upon a continuous supply of clean water, yet each time we use it, we change it-sometimes by polluting it.

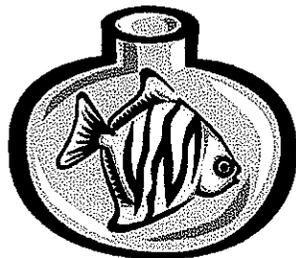
Challenge:

In what ways do we pollute water? How can we clean the water we pollute? How can we prevent water pollution?

Time: One to four 30-45 minute class periods

Procedure:

1. Copy and cut apart the nine roles from the script at the end of this activity, and attach them to the large index cards with tape or glue.
2. Cut a fish shape out of the sponge. Use the yarn needle to thread a string through the bottom of the fish, and then attach the weight so it hangs below the fish.
3. Fill the large glass jar or beaker two-thirds full with cold. Tap water. Thread another string through the top of the fish, and suspend it in the water by tying it to a pencil positioned across the mouth of the jar. Adjust the length of the string until the fish is suspended midway in the jar of water (see the figure).
4. Number the paper cups or baby food jars 1 through 5, then place soil in cup 1, brown sugar ("fertilizer") in cup 2, pancake syrup ("oil") in cup 3, salt in cup 4, and paper dots ("litter") in cup 5. Pour detergent and warm water into the medium-sized jar and set out red and green food coloring ("sewage" and "toxic waste").
5. Next, introduce Fred the Fish to the group. Tell them that he has grown up in a protected stream in a nature preserve, but he is about to leave the preserve and journey downstream. The class has been invited to share in his adventure.



Fred the Fish (cont'd)

6. Distribute the script cards, cups, food coloring, and jar of warm, sudsy water to 17 volunteers. Ask all the students in the group to number their papers from 1 to 9. As the students with script cards read, those with the appropriate ingredients should dump them into Fred's jar on cue. Every student should write down a different descriptive adjective each time they are asked, "How is Fred?"

7. After all the ingredients have been dumped in, lift Fred out of the jar, and discuss the change in his appearance and that of the water. (Someone will probably remark that Fred looks dead.)

8. Ask students to compare their lists of adjectives, and then draw cartoons depicting Fred's adventure. (See the example at the end of this activity.)

9. Do not dump the contents of the large jar down the sink. Instead, pour the contents through a strainer over a large, grassy area where natural filtration can take place. Throw away the paper dots strained from the water.

Further Challenges:

Find out where the wastewater in your home or school goes. Contact your local health department regarding septic systems or visit a wastewater treatment plant in your community.

What are some ways to dispose of Fred's polluted water? What are the environmental consequences of each alternative? (Where does water go when it is flushed down the toilet? Poured down the sink?)

References:

Chilton, Patricia. (1979). *A Fish Story*
Kalamazoo Soil Conservation District. Kalamazoo, MI.

The Authors

Patricia A. Chilton-Stringham is an Environmental Educator in Portage, MI. Janet L. Wolanin teaches science at the St. Francis School in Goshen, KY.

Fred the Fish Script Page

1. Imagine a clean river as it meanders through a protected wilderness area. In this river lives Fred the Fish. **HOW IS FRED?** Fred has lived in this stretch of the river all his life. But now he is going on an adventure and travel downstream.

2. Fred swims into farm country. He passes a freshly plowed riverbank. It begins to rain and some soil erodes into the river. (Dump soil into Fred's jar.) **HOW IS FRED?**

3. Fred nears a suburban housing development. Some fertilizer from the farms and the lawns washed into the river awhile back. (Place brown sugar in Fred's jar.) The fertilizer made the plants in the river grow very fast and thick. Eventually the river couldn't furnish them with all the nutrients they needed, and so they died and are starting to decay. Their decomposition is using up some of Fred's oxygen. **HOW IS FRED?**

4. Fred swims under a highway bridge. Some cars traveling across it are leaking oil. The rain is washing the oil into the river below. (Pour pancake syrup into Fred's jar.) **HOW IS FRED?**

5. During a recent cold spell, ice formed on the bridge. County trucks spread salt on the road to prevent accidents. The rain is now washing salty slush into the river. (Put salt in Fred's jar.) **HOW IS FRED?**

6. Fred swims past the city park. Some picnickers didn't throw their trash into the garbage can. The wind is blowing it into the river. (Sprinkle paper dots into Fred's jar.) **HOW IS FRED?**

7. Several factories are located downriver from the city. Although regulations limit the amount of pollution the factories are allowed/to dump into the river, the factory owners don't always abide by them. (Pour warm, soapy water into Fred's jar.) **HOW IS FRED?**

8. The city's wastewater treatment plant is also located along this stretch of the river. The pollution regulations aren't as strict as they should be. Also a section of the plant has broken down. (Squirt two drops of red food coloring into Fred's jar.) **HOW IS FRED?**

9. Finally, Fred swims past a hazardous waste dump located on the bank next to the river. Rusty barrels of toxic chemicals are leaking. The rain is washing these poisons into the river. (For each leaking barrel, squeeze one drop of green food coloring into Fred's jar.) **HOW IS FRED?**

Activity A7 Listen to a rhyming 'story to find out about sources of water pollution.

Away With Waste

Objectives:

*Describe some of the ways people pollute waterways.
Describe some of the effects of water pollution.*

Ages: Primary and Intermediate

Materials:

- *story on page 7.*
- *drawing paper*
- *crayons or markers*
- *construction paper (optional)*
- *stapler (optional)*
- *glue (optional)*
- *copies of page 7 (optional)*

Subjects:

Science, Language Arts, and Art

By listening to a rhyming story about water pollution in one community, your kids can discover how pollution can affect waterways. They'll also discover that the waste we wash "away" can have harmful effects later on.

Before reading the story, ask the kids to name some of the ways they use water (for drinking, bathing, brushing teeth, cleaning clothes and dishes, and so on.) Then ask them what happens to the water that drains out of their washing machines and dishwashers or washes down their sinks. (Don't worry whether the kids know the answer at this point. You'll be discussing what happens to household water with them after they hear the story.) Explain that many people never think about what happens to the water they use in their households each day. They also don't think about what happens to the water that runs off their streets and yards.

Now tell the kids you're going to read them a story about a town called "Away" and about how people in the town polluted the water in a nearby bay without realizing what was happening. Tell the kids to listen carefully to the story to find out just how the water in the bay became polluted. Also tell them to listen for the word "away." Each time they hear it they should make a "hitchhiking" motion over their shoulder with their thumb to represent something going away.

After you read the story, discuss it with the kids. Ask them if waste from Away simply disappeared. What happened to the waste? (it ended up in the bay) Then go over the verses in the first half of the story to be sure the kids understood what was happening in each one. Use the information under "Where Did It Go?" below to help with the discussion.

Afterward pass out crayons or markers and drawing paper and have the kids draw pictures of the story. They might draw the people in the town, the bay when it was polluted, or the bay when it was cleaned up again. If you're working with older kids, you might want to have them create their own picture books of the story. Pass out copies of page 7 and have the kids draw a picture to go along with each verse of the story. Then have them glue their pictures on sheets of construction paper, copy the words of each verse onto the pages, and staple the pages together.

(continued next page)

AWAY ON The Bay

This is the tale of a town called Away
A town that was built on the shore of a bay.
A town where the folks didn't think much about
What they dumped in their water day in and day out.

For one thing, a sink was an excellent place
To get rid of messes and not leave a trace.
Cleansers and cleaners and yesterday's lunch
Went away down the drain with a gurgly crunch.

At everyone's house there was laundry to do.
Day after day, how those laundry piles grew!
Load after load was washed, rinsed, and spun
And away went the water when each load was done.

On Main Street each day there were sidewalks to sweep.
The litter and dirt were swept into the street.
And then when it rained, everything washed away
Into drains in the roads that dumped into the bay.

A mill there made "stuff" for the town folks to use,
But a pipe from the mill churned out oodles of ooze.
And the ooze, well it goozed from the pipe to the bay
Where it bubbled and glubbed as it drifted away.

When the weather was warm, it was always a treat
To sail on the bay and bring picnics to eat.
But when folks were finished, they'd toss all their trash
Overboard and away with a plop and a splash.

Then folks started seeing that things weren't quite right;
The bay had become an unbearable sight.
Beaches were covered with garbage and glop
That rolled in with the waves-and the waves didn't stop.

The fish in the bay all seemed sluggish and sick,
The algae was everywhere-slimy and thick.
The birds near Away were all suffering too,
Cause the fish they were eating were covered with goo.

So a meeting was called to discuss the sick bay
And townspeople came from all parts of Away.
And during the meeting one person proclaimed,
"I know who's at fault: We *all* should be blamed."



"For years we've washed chemicals, dirt, and debris
Down our sinks, off our streets, and out pipes
so you see,
Although we all thought that our waste went away,
It all ended up going into the bay."

"Now the bay is a mess-full of trash, soap, and goop,
The water's turned green-like a bowl of pea soup.
And our wildlife is sick from the garbage and grime;
The bay needs our help, right now while there's time."

The folks were all silent-they knew it was true.
And they realized now what they all had to do.
It was time to get busy-the bay couldn't wait.
If they didn't act now, it might soon be too late.

So they signed an agreement that very same minute
To care for the bay and to stop putting in it
The stuff that had made the bay icky and ill,
Like soaps that pollute and the ooze from the mill.

They also agreed to stop dumping their trash
Overboard and away with a plop and a splash.
And all of their efforts have been a success:
Today the bay's clean and no longer a mess.

And that is the tale of the town called Away
A town where the people, to this very day,
Remember a saying that's simple and plain:
Nothing just goes away when it's washed down the drain.

Activity List B

Learning Activities



Activity B1 Learning About Your Watershed

Choose either A or B

A. Land Uses in Your Watershed. Write a summary about land uses in your watershed, ie. residential, industrial, farming, and identify the type of pollution problems that may occur because of those land uses. Discuss how each of these pollution issues could be addressed. Look at the topographic maps that are issued by the United States Geological Survey (USGS). These maps can be purchased at some map stores and commercial survey companies or try the USGS on the Internet at <http://www-oh.er.usgs.gov>. You could also visit your local county Soil and Water Conservation office.

B. Map Your Watershed. Create a watershed map of your community.

1. Where do you live? Where is your school? Are they in the same watershed?

2. What and where is the closest tributary, or river, or other body of water to your home.

Hint: some very small streams may not have a name. You may also call the EPA-Division of Surface Water for assistance.

3. What other streams or river does the stream closest to your home flow into.

4. Where does the stream begin (source)? Where does it end (mouth)?

5. Does it flow into another stream, the river or directly to Lake Erie or another body of water?

(Adults) Remind the kids that the watershed where they live is made up of all the land that drains into the nearest stream or river. So, to outline their watershed, they should be outlining the land surrounding the nearest waterway and all its tributaries that drain into it from upstream. The contours on a USGS topographical map are lines showing a constant elevation. You can look at adjacent lines to see which way is down hill to a stream or river. Everything outside the boundary of your watershed, drains towards another stream or river.

Discuss the following questions as a group.

1. What types of things do rainwater and snowmelt flow over in your area? (rooftops, sidewalks, roads, agricultural land, lawns, golf courses, etc.)
2. What kind of pollutants might rainwater or snowmelt pick up as they flow through your area? (Rainwater and snowmelt that run over streets, parking lots, fertilized yards, construction sites, and so on, often pick up toxic chemical, silt, and other pollutants. The water then flows into storm drains that empty into rivers. And water running off agricultural land often contains high amounts of animal waste, pesticides, fertilizers, dirt, and other pollutants.)
3. In what other ways might your community affect water quality? (Some industries dump pollutants directly into rivers; pollutants from overflowing sewage treatment facilities may wash directly into waterways; pollutants from landfills or dumps may leach into water supplies, etc.)

4. Which nearby communities might be affected if your community dumped untreated sewage into the nearest stream or river? (those downstream) Which communities could affect water quality in your community? (those upstream)

Activity B2 History Lesson

Write a history about a local stream in your area. Check local historical records for information. Your local library, historical society or city hall may have information about local streams or the history of your community.

Activity B3 Pollution Glossary

Define **Non-point Source Pollution** and list 10 different sources of non-point source pollution in your neighborhood or watershed. Explain how these pollutants might affect our lakes and streams. Define the following: Run Off, Ground Water, Surface Water, Sanitary Sewer, and Storm Sewer. Discuss how these terms relate to non-point source pollution.

Activity B4 Hello, Green Thumbs

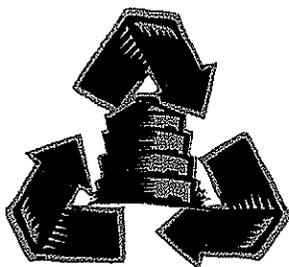
Planting vegetation on bare areas in your watershed or on bare stream banks is important in reducing erosion and pollution to streams as well as providing habitat for fish and wildlife. Using native trees and shrubs to restore these bare areas is the best way to help restore streams to their natural state. Call your local county extension service (330) 497-1611, Summit Soil and Water Conservation District (330) 929-2871, a local arboretum, or reputable landscaper to develop a list of native plants that are best suited to riparian (stream side) areas or for your neighborhood.

Activity B5 The Poison Purge

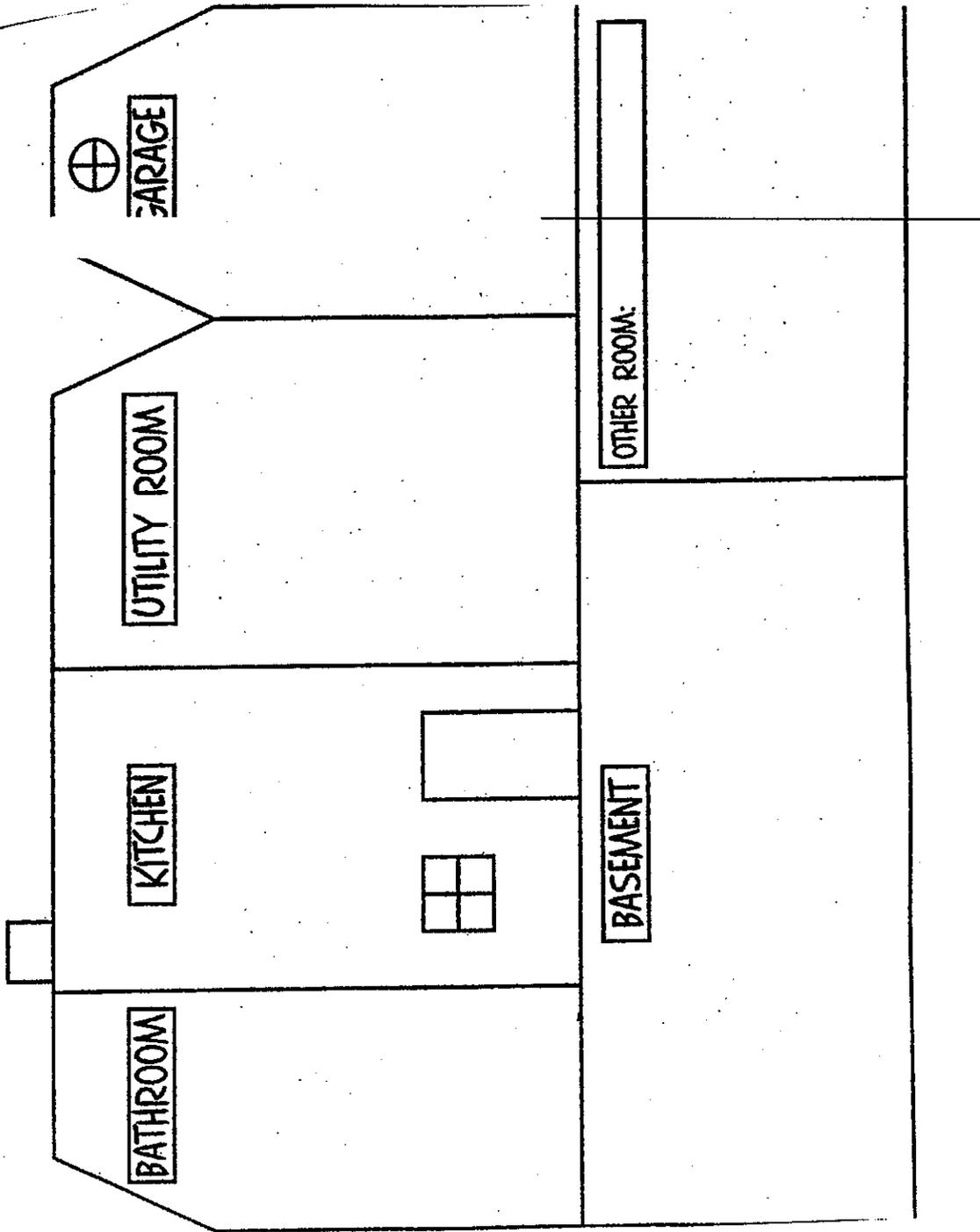
Make a list of at least 10 household hazardous wastes. Now make a list of safe, environmentally friendly alternatives. Your local library has many interesting books and magazines about the environment. Other sources of information would include environmental organizations, Ohio EPA and Ohio Department of Natural Resources. Surf the net and you will be amazed at the information you will find about household hazardous wastes and pollution prevention.

Or

Make a drawing of your home (see example on next page). List at least one household hazardous waste that might be found in each room. Discuss where you would dispose of these items and why.



CAUTION! WHAT'S WHERE IN MY HOME?



Activity B6 Community Service Project

Write down your ideas for your own community service project to educate people about non-point source pollution. Share your ideas with your community leaders, teachers and friends.

Activity B7 Erosion Woes

Define – **Soil Erosion**. Identify erosion problems in your watershed or neighborhood where soil may be carried into a storm drain, stream or lake. Suggest ways to solve these problems.

Activity B8 Water Cycle

Make a drawing or model of the Water (hydrologic) Cycle. Your school's science textbook, local library or the internet are excellent sources of information.

- Compare and contrast how grassy areas and paved surfaces influence storm (rain) water runoff.
- Describe the various pollutants that rainwater might pick up as it flows across paved surfaces (parking lots, streets, sidewalks).
- Do you see any benefits to having rainwater flow through a grassy area (before it enters a stream or storm drain) and after it leaves a parking lot? Explain.

Activity B9 Invent A Pooper Scooper

Pet owners who walk their dogs are responsible for any droppings their pet leaves behind. When pet waste is not picked up, it can be washed into the sewer system by rainfall or melting snow and travel through the sewer system to a stream. The pet waste becomes **runoff**. The bacteria in pet waste pollutes our waterways.

Also, it is illegal to allow dogs to run loose without a leash in the City of Stow. Unleashed dogs can be a safety hazard and their owners cannot be responsible for the waste their dog leaves in the neighborhood.

Invent a pooper scooper a pet owner could carry along while walking their dog. Be sure it includes a place to hold the pet waste until the owner arrives home and can dispose of it in their trash can. Draw a picture or make a model of your pooper scooper and label the parts. What is the pooper scooper made of, where would you buy it and how much would it cost? Where could you advertise your pooper scooper?



Activity B10 Water Survey

Do a water -usage survey in your home. Note all of the ways water is used. Look for any dripping faucets.

_____ cooking
_____ dish washing
_____ laundry
_____ showers and baths
_____ toilets
_____ lawn

_____ garden
_____ shrubs and trees
_____ swimming pool
_____ drinking
_____ fountains
_____ hobbies



How to Repair a Leaky Faucet:

- 1) With an adult, locate the shutoff valve for the faucet. Turn off the water.
- 2) Protect the finish of the packing nut by wrapping it with a soft cloth.
- 3) Loosen the packing nut carefully. Turn and lift out the stem assembly.
- 4) Remove the screw at the bottom of the stem assembly. Pry out the old washer. Clean out the place where it was.
- 5) Replace the worn washer with one that fits. Insert flat side down. Replace the screw.
- 6) Wipe the valve seat clean. Replace the stem assembly. Wrap the soft cloth around the packing nut again, and then carefully tighten it. Turn on the valve. Test the faucet.

Activity List C

Service Activities

Activity C1 Organize or Participate in a Stream or Neighborhood Litter Pick Up Event

Help keep wastes, trash and debris out of local streams! Litter degrades the habitat, water quality and the stream's natural beauty. Litter and debris can also cause potential problems downstream. Litter clean ups are one of the easiest stream stewardship activities.

To organize a clean up of a local stream, contact the property owners to get permission; make arrangements for disposal of debris and trash with the property owner or the local public service director; organize volunteers; get permission slips distributed and collected; secure needed supplies such as bags and gloves, which can often be donated or obtained at a nominal cost; and provide a safety training.

Make sure that all trash you remove is disposed of properly. After the clean up, many groups have a picnic to celebrate their contribution to a healthier environment.

Some volunteers choose to "Adopt-A-Spot". This simply means that a particular site is chosen and given extra care and clean ups throughout the year.

Activity C2 Storm Drain Stenciling/Marking

A common misconception is that storm drains carry storm water from streets to a treatment plant. However, the truth is that storm drains carry storm water from streets and fertilizers from our lawns directly to nearby creeks, the river, or Lake Erie. Therefore, it is crucial that wastes such as grass clippings, pet wastes, used motor oils, antifreeze, paints or litter are kept out of these drains.

Storm drain stenciling alerts people to their connection to local waterways. It also provides suggestions for the proper disposal of wastes. Storm drain stenciling is a simple way to promote the message of keeping wastes, pesticides, and litter out of storm drains to local area residents.

How is it done? Volunteers simply stencil or attach a message along side of storm drains. The message says, "Dump No Waste-Drains To Lake". After applying the message, fish shaped pieces of literature are distributed to the homes in the project area. This easy and fun project is best done in warm, dry, calm weather with teams of four or five volunteers. Some supplies are needed. Contact the Summit SWCD office at (330) 929-2871 for more information.

Activity C3 Stream Monitoring (Participation)

Take your training to the creek. Volunteer stream monitors are needed around the watershed. A volunteer monitor agrees to monitor the stream at least three times each year. This is a great way to chart the conditions of your local stream and be a watchdog of stream conditions.

Call the Summit SWCD Office (330) 929-2871 or the Metro Parks Serving Summit County (330) 867-5511, and ask for upcoming stream monitoring sessions.



Activity C4 Planting Project

Conduct or participate in a streamside planting project or sign on as a volunteer and participate in a community tree planting program (check with your local or metro park system or SWCD office).

Activity C5 Raindrop Routine

Get a group of friends together and do a skit about a raindrop's journey from cloud to stream and all the things that happen in between! Be creative and have fun.



Activity C6 Community Service Project Implementation

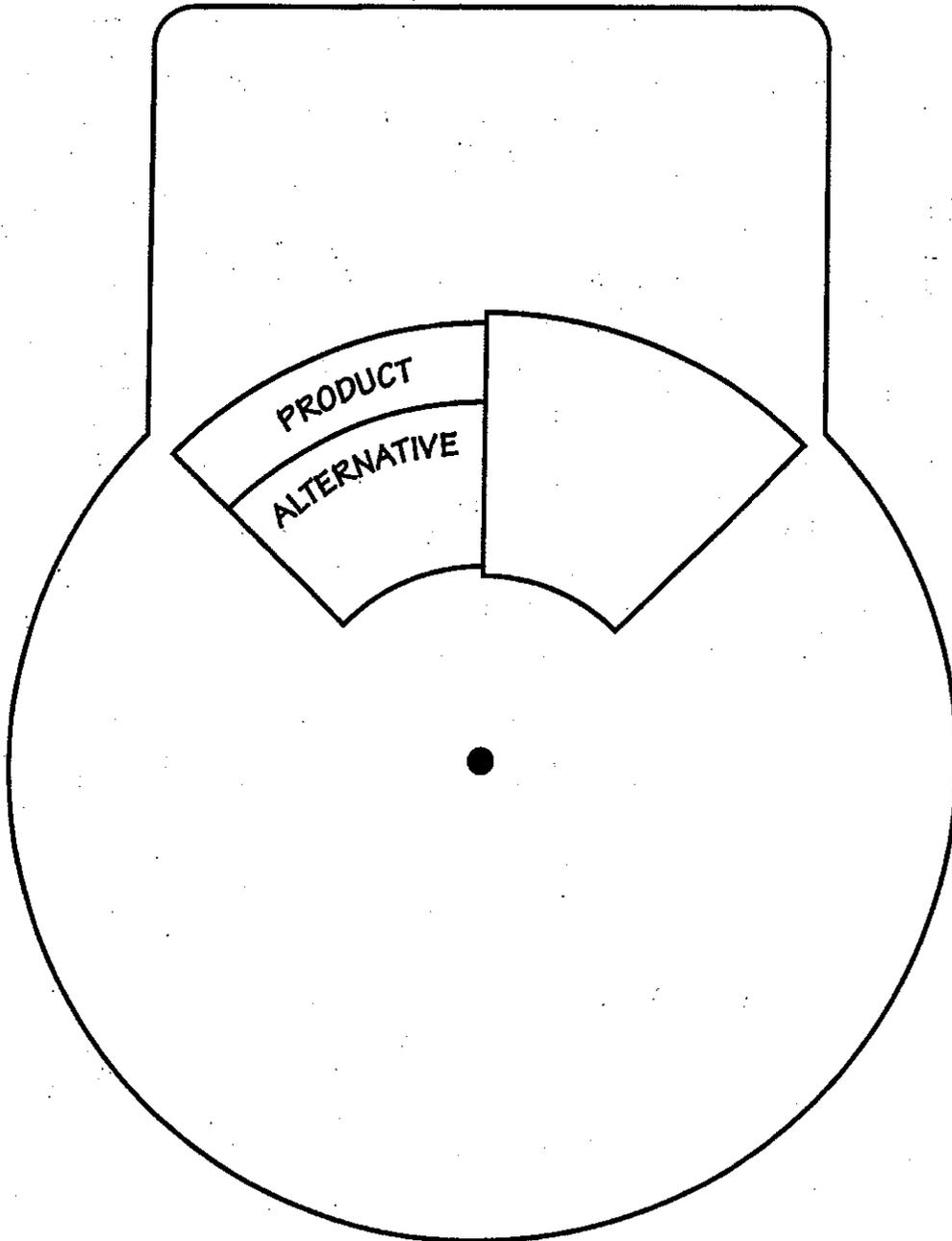
An option under List B was to develop a community service project to educate people about non-source pollution. Implement that project.

Activity C7 Green Cleaning

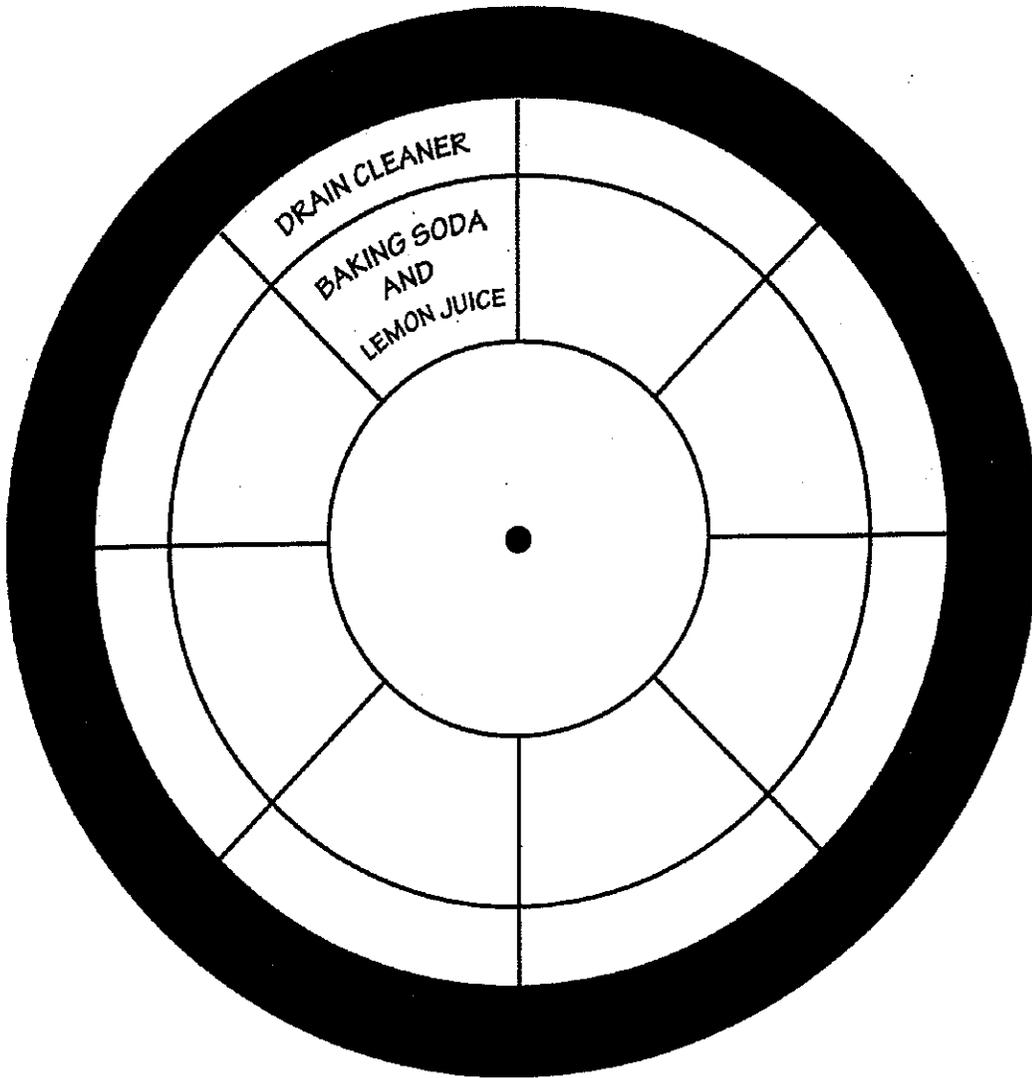
Create a green cleaning wheel that offers alternative products for cleaning their house. Prepare the wheel by reproducing both templates on card stock. Cut out the patterns. Assemble the wheel by punching out the center holes and securing with a brass fastener. The large wheel includes a sample answer. Have students use the attached handout, "Green Cleaning," or do their own research to find alternative products to complete their wheels.

Use "green" cleaning for a week. Test some alternative cleaning recipes and compare results. (For example, use baking soda to clean the sink instead of scouring powder. Try a carpet freshener made of cornstarch and cinnamon instead of a commercial product.)

SMALL WHEEL



LARGE WHEEL



Green Cleaning

Useful Hints

Hair spray removes ink. Spray stain, let stand and wash as usual.

Denture tablets clean vases. Fill vase about an inch from the top with water. Add tablets and let dissolve completely. Rinse well.

Crayons cover scratches. Rub appropriate color of crayon on scratch.

Toothpaste cleans gold. Rub gold jewelry with paste. Use brush if necessary. Rinse well.

Mayonnaise removes water spots. Spread mayonnaise on water spot. Let soak into wood. Wipe off thoroughly.

Walnuts cover scratches. Scratches on furniture can be covered by rubbing walnut or other nutmeat directly on them.

Soda water cleans carpet stains. Blot stain with soda water and sponge.

Aluminum foil removes tarnish. Fill a pan with water. Add a tbsp each of salt and baking soda and a few sheets of aluminum foil. Add silver and let mixture set for an hour or so. Tarnish goes onto foil. Rinse the silver in hot water and polish dry.

Lemon juice cleans silver. Soak silver in lemon juice. Rinse with hot water and polish dry.

Shampoo removes laundry stains. Use shampoo to remove ring around the collar.

Ground spice with cornstarch removes carpet odor. Mix spice (cinnamon, cloves, etc.) and cornstarch, wait several hours or overnight and vacuum.

Vinegar cleans windows. Mix a small amount of vinegar with 1 cup of water and spray as usual.

Lemons

Place cut lemons and water in a tarnished pan or place tarnished utensils in a pan with lemon water. Stew on low, for about an hour or so, until stains are gone.

Place slices of lemon in a pot of water or potpourri warmer with water. Simmer gently in the open pot for about 1 hour.

Rub cut lemons into a washed cutting board to eliminate food odors. Set slices of lemons around the kitchen while preparing foods.

Pour baking soda into a drain and follow with $\frac{1}{2}$ cup of lemon juice. Let the mixture stand for 15 minutes (will foam) before rinsing with hot water.

Use lemon juice as a window cleaner.

Lemon juice may be used to clean brass and copper. Add some salt for tough cleaning jobs.

Lighten wood such as butcher blocks, cutting boards, and raw table tops, by saturating a sponge with lemon juice and washing the wood. Do not rinse.

Bleach clothes by adding $\frac{1}{4}$ cup of lemon juice to the wash cycle. It can also be added to the rinse cycle.

Remove ink stains from clothes by soaking in lemon juice.

Remove mold or rust from cloth by using a paste made from salt and lemon juice.

Clean chrome with lemon juice or rub a lemon directly on the chrome.

Rinse hands with lemon juice to remove onion odor, berry stains, food coloring, etc.

Remove shampoo residue by rinsing hair with lemon juice and warm water.

Vinegar

Running vinegar through a coffee pot will clean it easily. Remember to run clear water through after the vinegar cycle.

Adding 1 cup of vinegar to the rinse cycle will brighten dark color.

Vinegar and baking soda will keep the drain and toilet bowl clean. Pour 1 cup of baking soda followed by ½ cup of vinegar, wait, then rinse with hot water.

For a clean spotless rinse for dishes, add 1 or 2 tbsp of vinegar to dish water. It also helps to cut grease.

Clean brass and copper using vinegar and lemon juice or vinegar and salt if an abrasive is needed.

Remove soap build up from shower curtains by cleaning it with a sponge saturated in vinegar. This will also help kill mold and mildew.

Scrub the butcher block with vinegar, rinse well.

Wash floor with 1 cup of vinegar added to a pail of water.

Carpet stain can be removed by mixing vinegar with water. Rub with sponge. Rinse well.

Add vinegar to the rinse water to help soften fabric and control static cling and lint.

Remove berry stains by shaking in vinegar.

A solution of half vinegar and half water when applied with a terry cloth, will remove fingerprints and other smears from appliances.

Clean and shine plant leaves of large house plants with a solution of ¼ cup white vinegar to 1 gallon cool water. Apply with a soft cotton cloth.

Pour vinegar on unwanted grass growing between cracks.

Baking Soda

Freshen up by placing baking soda in an open container in small areas, such as the refrigerator, closets, etc.

Sprinkle baking soda on the carpet to help control odors. Wait several hours or overnight. Vacuum as usual.

Baking soda and scouring pads will clean an oven without the strong fumes of commercial cleaners.

Baking soda may be used as a scouring powder for sinks, counter tops, etc.

Control cat litter box odor by sprinkling baking soda in the box.

Create spray air freshener by combining 2 tsp. of baking soda and 2 tsp. lemon juice with 2 cups of hot water. Dissolve and use in a spray bottle.

Control garbage odors by adding a sprinkle of baking soda to the trash container every time you add garbage.

Clean and deodorize the microwave with a paste of baking soda and water. Wash and rinse. Then to control odors, keep a box of baking soda inside between uses.

Baking soda and water makes a cleaning paste for stainless steel and helps rub away heel or skid marks.

Odors can be removed from clothes by soaking overnight in the rinse cycle with a box of dissolved baking soda.

Use baking soda to clean baby's things, such as toys, high chair, changing table, etc. Apply to damp sponge, wipe and rinse.

Use baking soda and water to wash off vinyl furniture and car seats.

Baking soda should be kept handy near the grill or stove, it will quickly extinguish flare ups or sparks.

Keep a box of baking soda in the cooler between uses to help eliminate odors: especially helps during the winter "down" time.

Activity Completion Form

Name of Group or Troop _____

**Participants
(Names)**

Names of Projects Completed

_____ **A** **B** **C** **Choice**

Total Number of Patches Needed _____

Group Leader Signature _____ Date _____

Address: _____

Phone: _____

Return Completed Form To: