

Make a splash!

Thousands of young people have already helped take care of water.

You can adopt a stream like this school club did. Students wanted to protect living things in a stream. They cleaned up the stream and made places for salmon to lay eggs. They figured out how to keep dirt from getting into the stream. Kids planted trees on the shore, built stairs to the water, and made signs to tell visitors to stay on the trails. Those fish in Washington sure are lucky!

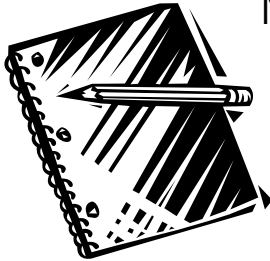
Hundreds of kids worked together to help teach about water. Each group studied one water issue. They explained what they learned in a display. Groups made their display fun for people to see. Then, groups put their displays together to make a big exhibit. Over one million people will see the exhibit while they shop or work.

A special class of 4th, 5th, and 6th graders wanted to protect the ocean. They asked local water experts for help. The experts helped them do many different things. The students made a map of water in their community. They checked water near the coast and studied oil pollution. Then, the students wrote a pamphlet to ask boaters to "stop dumping trash overboard." Stay tuned — those Alabama kids have lots more ideas of things to do!

YOU and your group can organize your own project. The young people in these stories used this Action Guide for help. Check it out! **GET ORGANIZED!**

Get organized!

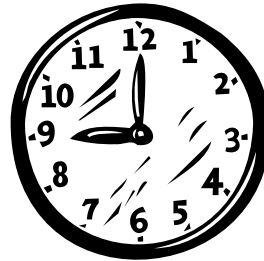
You can make a difference for your community and for planet Earth. Your ideas, energy, creativity and hard work can help. This *Action Guide* will help your group choose and organize a service project. Here are some tips to get you started. Let's get going!



Make a project notebook

You can make your own notebook or buy one. There are model pages at the back of the *Action Guide* to photocopy if you want to make your own.

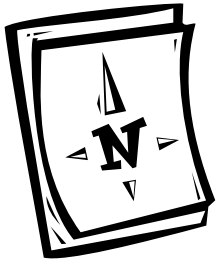
Decorate your notebook any way you like. Use your notebook to keep notes, names, and phone numbers as you go.



Plan your time

This guide gives you eight project steps. A timeline will help you figure out how much time you'll need for each step.

Look through the book with your leader. Fill in the estimated starting dates for each activity.



Collect maps

To really understand your watershed, you will need to study a topographic map. Your leader can help you find one for your area. You might also

want a town map and photos taken from the air.



Get help from an expert


Experts from many groups are ready to help you do your best job. Ask your leader or teacher to help you find the right person for your project. See the back cover of the *Action Guide* to learn more about how experts can help.







Your Timeline



Estimated starting date	Step
_____	1
_____	2
_____	3
_____	4
_____	5
_____	6
_____	7
_____	8



Why is water so important?

Did you know that you are mostly water? Two-thirds of your body is made up of water. You probably drink  six to eight cups of water, milk, fruit juice, or soda each day. Animals and plants are almost all water too. So we don't just use water, we **are** water.

Three quarters of the earth is covered  with water, and although most of it can't be used by people, plants or animals, water makes life on earth possible. You depend on water for drinking, cleaning, growing and processing food, growing cotton for cloth, swimming, fishing,  boating, cooking, putting out fires and generating  electricity through hydropower dams. Try to think of one item or action that doesn't involve water in some way!

Water also connects us to the rest of the natural world – plant and  animal communities depend on water in many of the same ways: for food, water and shelter. Since every drop is used again and again, water is the ultimate in recycling. It's important to protect this precious resource because we share it with all other living things, past, present and future.

Unfortunately, people have not always used water wisely. We've over-used it to carry away our waste. We've put hazardous  materials in or on the ground where they seep into groundwater. We've often used more water than we need. Yet we can improve our water resource by conserving water at  home, cleaning waste from industries and cities before it returns to rivers or lakes, and preventing pollutants from homes and farms from washing into waterways with the rain. Some communities have already begun to help!

One of the ways we can have a big effect on improving our water quality now and protecting it from future pollution is changing the small ways that people affect water. What you do in your community, or in your  house, yard, road, park, business, school or farm or ranch can conserve water and improve its quality. You've started to make a difference by picking up this  book. Keep going to learn what you can do to Give Water a Hand!



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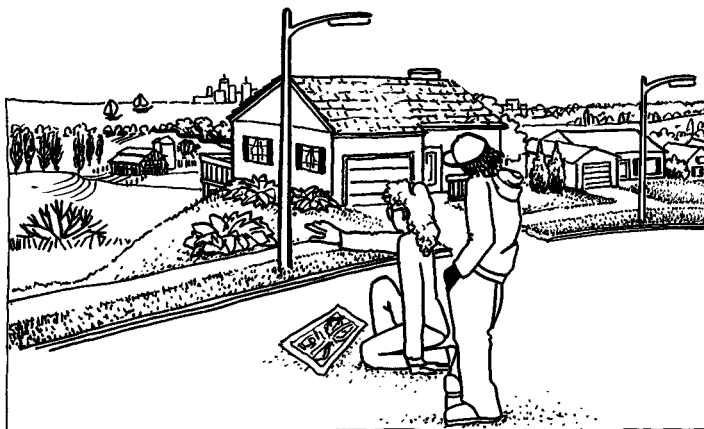
you are here

1: Focus on water

To keep water clean or to make sure there is plenty to drink, we need to understand where water comes from, how it flows and how it's used at home, in schools, on farms or ranches, and in the community. In other words, it's time to get to know your watershed!

What to do

A Go outside and survey your surroundings. You can start anywhere — at your home, school, farm, or even downtown. Go to the highest point you can see within easy walking distance. If possible, go to the highest point in your community.



B Look over the land and the way the ground slopes down from this high point. If it rained, where would water flow? You're looking at a watershed or several watersheds. That is the area of land where all water drains, or "sheds" to the same body of water.

Walk around this area. Look for the following things in your watershed. Make a list of what you see in your notebook.

In my site, water flows to:

- low points
- gutters
- storm drains
- ditches
- lakes/streams/rivers/ponds
- culverts
- _____

On its way, it passes:

- bare soil
- vegetation (grass/trees/shrubs)
- wells
- streets
- shopping centers
- parking lots
- industry
- school
- houses
- litter
- farms
- animals
- _____

If anybody in your group likes to draw, sketch a picture of this view of your watershed. Or have a camera to document all you do from the start. In step 3, we'll coach you on how to draw a map of your watershed.



POWER WORDS

C Does anything you see look like a possible water concern?

- For example, is there bare soil; is there erosion with soil washing into waterways?

Can you find places where water has been carefully protected?

- For example, is grass planted on paths to keep soil from washing away?

Use your notebook to write down things you like and things that don't look right or you want to question later. If you aren't sure which things are helpful or problems, just record what you do see for now. In the next step, we'll be looking for ways to help water.

D Brainstorm a list of the ways you can affect water. Be sure to think of activities inside and outside. See how many ideas you can come up with. Two examples are: watering the grass and having a school car wash. Have someone write down the activities you come up with in your notebook.

- What activities use water?
- What activities create waste water?
- What kinds of fun do you have with water?
- What do you already do to conserve or protect water?

E Use the Power Words for any words that are new for you. Answer the Notebook Questions below.

Conserve Using natural resources, such as water, in a way that doesn't harm them or use them up.

Groundwater Water found in the ground in cracks and spaces between rocks and soil particles.

Hazardous materials Materials that can cause harm to people or the environment.

Pollution An undesirable change in air, water or land that can cause harm to human health, animals or plants. Hazardous chemicals and animal waste, for example, can be pollutants.

Water quality "Quality" means how good or bad something is. Water must be good quality, with very few pollutants, before we can drink it safely.

Watershed An area of land where all water drains, or "sheds," to the same river, reservoir or other body of water.

Before next time...

★ To get ready for your next meeting, you need to choose a site to begin your investigations. There's a checklist for each site:

- School — in the school building, on school grounds, and in camps (page 9)
- Home — in and around houses and apartment buildings (page 17)
- Community — around the community, in parks and in partnership with businesses (page 25)
- Farm/Ranch — at the homestead and on the farm or ranch (page 32)

If you're not sure what site to focus on, look over the questions in the four Checklists (pages 9–39) to get an idea of the concerns you might find at each site.

★ Make enough copies of the Checklist for your site to share with the group.

List at least 10 ways you personally use water. For each, list how you might reduce or improve your use.

List how people affect water in good and bad ways.



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YOU
agree
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2: Research needs

In the last activity, you looked at your watershed and noted some features. You began to think about ways you use water. Now it's time to investigate.

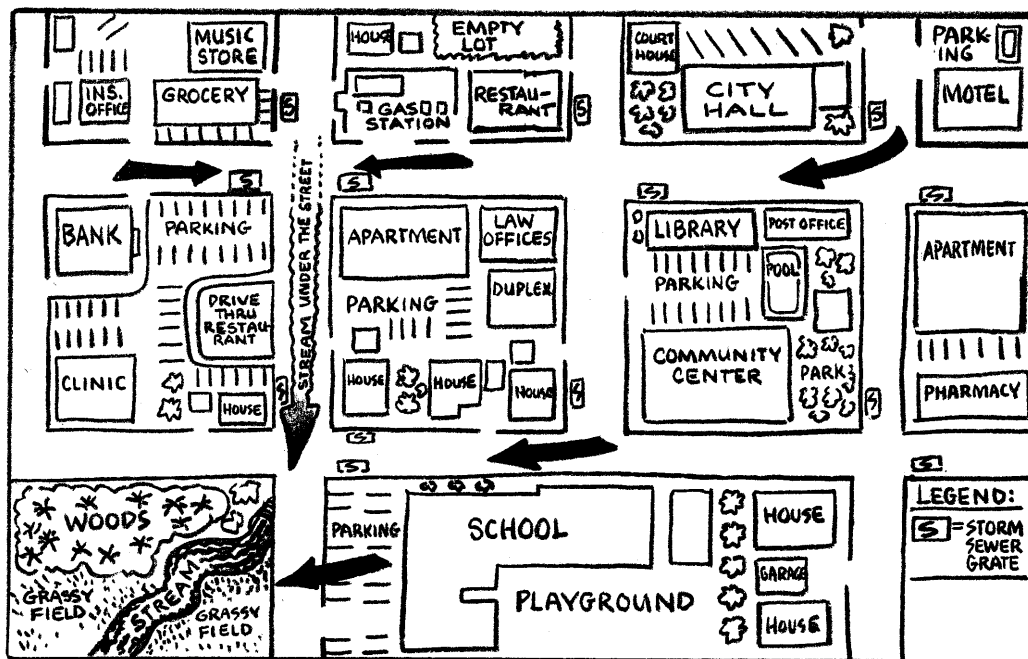
Find out where people are protecting water and where the real problems are. Your group will use a Site Map and a Checklist to help you identify specific water problems, and determine which ones need your action. You'll find out what is already being done and what still needs to be done to protect the watershed and conserve water. This will help focus your work on a *real* need so your time is well spent.

What to do

A To do this activity, you need to choose a site for your project and make copies of the Checklist you'll need (see Before next time..., page 5). You'll find the Checklists on pages 9-39.

B Make a Site Map, like the one below.

Site maps can make problems easier to understand. Ask the landlord, farmer or other person in charge for a drawing of the site, blueprints or a floor plan. If nothing like that is available, draw your own Site Map. If you're focusing on an inside project, **be sure to label all places water is used** and make note of where the water meter is. If you're working outside, include things like trees, fields, parking lots, buildings, downspouts, storm sewers, or anything else you observe on the site.




The arrows indicate the direction the water flows when it rains.



C Go over the Checklist and the instructions at the top of the Checklist with your group leader. Decide who will answer which questions. You may want to work as a group or break into teams to find the answers.

You can use your Site Map to help you find places to get answers. Some questions on the Checklist will be simple to answer. Which items on the Checklist can you do something about? Which require you to work with someone else? You may need to ask for help or permission from the person in charge, such as the custodian, farmer or landlord.

D Complete the Checklist as follows. If you think it will be helpful, look in the Skills Bank (page 63) for tips on taking notes.

 **19** Does your community have a policy for buying materials with recycled content?

Looking Good! We need more information. Priority 1 **2** 3

What we found out... We have a policy for buying recycled paper for city use.....

.....

We need more info about... Purchasing park benches made from recycled plastic....



How to complete the checklist

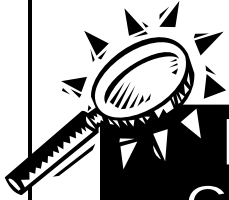
- Looking good!** Check here if you or the person in charge has already taken positive steps. Go to the next question.
- What we found out.** If you were able to fix the problem right away, write down what you did and go to the next question. If there seems to be a problem, write down what is (or isn't) happening.
- We need more info on** Write here if you can't answer the question or if you need more information. If possible, explain what information you need to find out.
- Priority** If you've found a potential concern, decide how important the problem is and circle the appropriate number. The person in charge may want to help you with this.

1 = Very Important 2 = Kind of Important 3 = Not Very Important

Be sure to think over why you think it is or isn't very important. You may need to explain this to other group members.

E When you're done, meet again with the group to share what you found. Mark the water conservation and pollution prevention concerns you identified on the Site Map. Are there any concerns that affect water quality beyond the edge of the Site Map? If so, you'll look at them more closely when you create a Watershed Map in Activity 3.

F Use the **Power words** to help with new vocabulary. Answer the notebook questions.



Look for these checklist

These tiny icons indicate why each question is important to ask:



Water conservation



Water quality in our environment



Drinking water quality



Educating about water

Before next time...



Bring all your maps, a sheet of clear plastic as big as your biggest map (from art stores or office supply stores), a piece of cardboard as big as your map, thumb tacks, dry erase markers, tissues and pencils.



Your group can make a bigger difference if you team up with a local expert. Invite him or her to come next time to help and advise your group as you map your watershed. (See the back cover of this Guide if you don't yet have an expert to help you understand your site.)

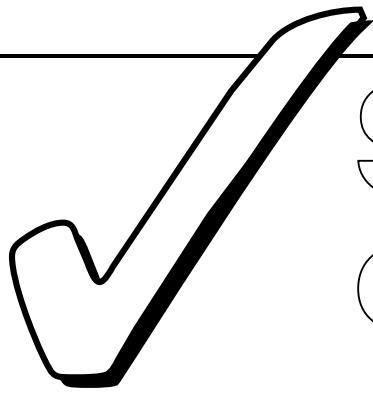
How do you or the person in charge of your site keep track of how much water is used? Is there a water meter?

What is the top priority need for water conservation or pollution prevention at your site? Why?

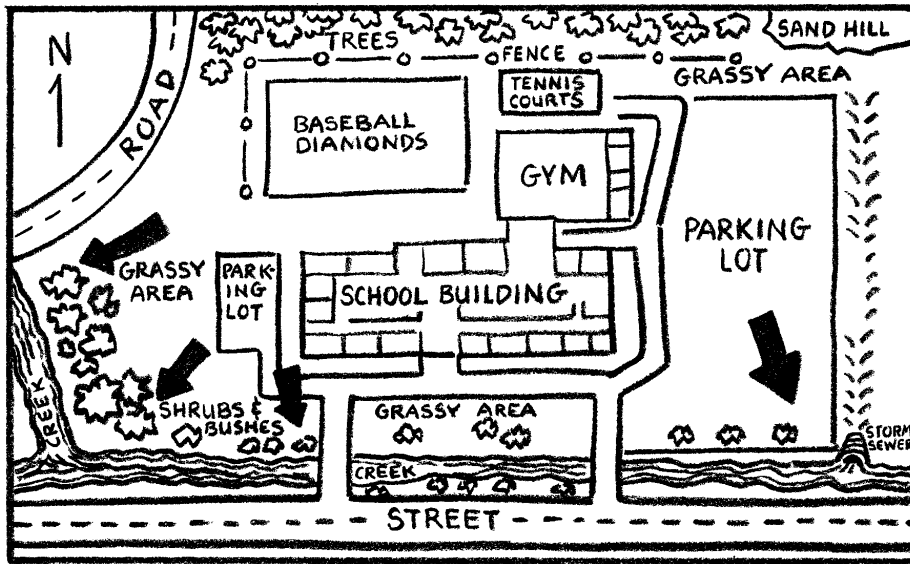
What is the most important thing you have learned about water so far?

The next 31 pages are
Checklists. The 3rd activity
begins on page 40.






School site checklist



When the questions below refer to "you," we mean you, other students, teachers, custodians, and other school staff, or whoever is responsible for the action.

You may need to ask someone in charge, like the principal, to get something changed. Make sure you have permission from your school principal before you begin. He or she will give final approval for any projects. You may also want to talk to the school custodians. They keep the school clean, safe and in running order and have information you might need. If you want to change how something is done in your school, the custodians and principal can be a big help.


 **I** When you clean up after science, art or cooking class, do you turn off the faucet while you wash counters, dishes and equipment, and turn it back on to rinse?

Looking Good! We need more information. Priority 1 2 3

What we found out

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We need more info about

 **2** When you wash your hands, do you turn off the water while you soap up?

Looking Good! We need more information. Priority 1 2 3

What we found out

We need more info about


 **3** Does the school dispose of hazardous wastes at a hazardous waste disposal facility?

Hazardous wastes include used engine oil, leftover pesticides, building repair and strong cleaning products, and some used art, shop and science materials.

Looking Good! We need more information. Priority 1 2 3

What we found out


We need more info about

 **4** Do students and staff use water-based paints that don't need hazardous materials, such as turpentine and paint thinner, for clean-up?

Looking Good! We need more information. Priority 1 2 3

What we found out

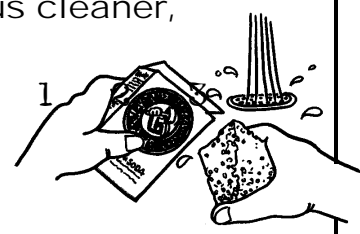
We need more info about

 **5** Do students and staff use non-hazardous cleaning products when possible, such as baking soda, vinegar, citrus cleaner, soap flakes and a little elbow grease?

Looking Good! We need more information. Priority 1

What we found out

We need more info about



Water quality in our environment

Round and round: we use the same water over and over again.

So what happens when we pollute water? We may contaminate our water supply — that same supply we share with other humans, animals and plants. Pollutants can enter the water supply through everyday activities — grass clippings washing down the storm sewer, hazardous materials from a painting project being poured into the sink, leftover car oil being dumped on the driveway. These won't disappear and they cost a lot to remove — if they can be removed! They can contaminate the water supply. The best solution to pollution is to keep it out of water in the first place. Give Water A Hand — keep it clean!



Water conservation

Fact Water is the most common substance found on Earth.

Fact The amount of water on Earth hasn't changed since the Earth was formed, almost 5 billion years ago.

So why conserve water? There is not always enough clean, fresh water for drinking, growing food, making things, and having fun. That means we need to use less or get it from somewhere else. Taking water from one place and moving it to another place changes the environment for plants and animals, and often causes arguments between people. Using lots of water increases the amount of wastewater going to treatment plants and septic tanks. And using water takes lots of energy — to clean, pump, distribute and heat it. You can save about 4 gallons of water a day (and save money) by just turning off the water while your brushing your teeth. Give Water A Hand — use it wisely!



6 Does your school recycle?

- Looking Good!
 We need more information.

Priority 1 2 3

What we found out.....

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We need more info about.....

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7 Are school grounds planted with trees, shrubs and grasses that are adapted to your climate so that they do not need any extra water? (This is sometimes called "Xeriscaping," pronounced zeer-is-cape-ing.)

- Looking Good! We need more information. Priority 1 2 3

What we found out

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We need more info about



8 Does your school have a water-efficient watering plan for the school grounds (one that doesn't waste water)?



- Does that staff person in charge of the school grounds use a rain gauge to determine whether the grass needs to be watered? If there is one inch or more of rain per week, the grass is probably getting enough water.
- Do the maintenance staff water early in the morning or in the evening so that water doesn't evaporate quickly?
- Do they use efficient watering devices such as soaker hoses and sprinklers which spray drops near the ground?



- Looking Good! We need more information. Priority 1 2 3

What we found out

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We need more info about



9 If you hold car washes at school, do you use water conserving practices?

- Do you use buckets of water rather than a hose?
- Do you wash cars in a grassy area so that the water does not run into storm sewers? (Use non-hazardous cleaners and use care not to over-saturate soil or tear up grass from car tires.)

Looking Good! We need more information. Priority **1** **2** **3**

What we found out

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We need more info about



10 Does rainwater flow from the school parking lot into a grassy area or does it flow into a storm drain or stream?

Water flow into a grassy area may reduce the amount of watering that needs to be done in that area and keeps parking lot contaminants from going directly into the water supply.

Looking Good! We need more information. Priority **1** **2** **3**

What we found out

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We need more info about



11 Are grass clippings swept off the sidewalks and parking lots for composting so that they do not wash into storm sewers?

Looking Good! We need more information. Priority **1** **2** **3**

What we found out

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We need more info about

Educating about water

You've been learning a lot about water and how to conserve and protect it. You have probably also learned about water by reading books and magazines, watching television, going on field trips or just sitting next to a stream and observing what happens.

Many people don't know what they can do to protect and conserve water, so it's important to educate them. Action is one way people learn about water issues. There are many ways to educate through action, such as planning community water festivals, making posters, and putting on plays. Education doesn't happen just in the classroom. Give Water a Hand — Spread the word!



12 Does runoff which might contain contaminants such as pesticides and fertilizers reach streams or ponds?

- Test a sample of runoff water immediately after a rainfall begins to see if you find nitrates. Compare these results to tap water. High levels of nitrates can cause health problems and may indicate that there are other contaminants. Contact your County Extension Agent or local department of public health for help.
- If there is a pond, check to see if it might actually be a stormwater detention basin designed to catch this type of runoff.



Looking Good! We need more information. Priority 1 2 3

What we found out.....

We need more info about.....

13 Does the maintenance staff use only the amount of fertilizers needed on the school grounds?

- Do they test the soil before applying the fertilizers?
- Do they use organic fertilizers such as compost, biosolids or manure?

Looking Good! We need more information. Priority 1 2 3

What we found out.....

We need more info about.....

14 Does the maintenance staff spread sand rather than salt on ice-covered sidewalks in the winter?

- Commercial salt can harm plants, grass, trees, and animals, and nearby waterbodies.
- If they are required to use salt, do they use the minimum amount necessary?

Looking Good! We need more information. Priority 1 2 3

What we found out.....

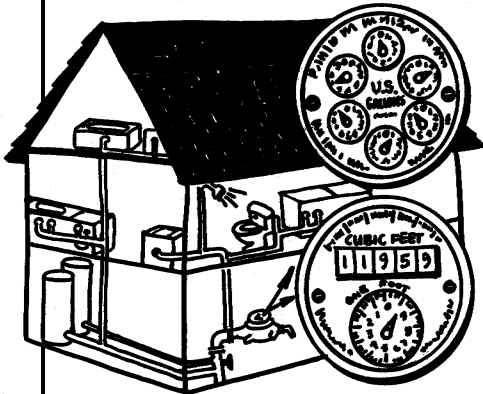
We need more info about.....

 **Drinking water**

Do you know where your drinking water comes from and how it gets to you? Americans drink more than 1 billion glasses of water a day! Most of us take it for granted that we can turn on the faucet and get clean, clear, fresh water. And it's practically free. You can refill an 8 ounce glass of water about 15,000 times for the same cost as a six-pack of soda! For most people, water treatment facilities provide this safe drinking water. But your actions contribute to conserving this vital, precious resource and keeping it pollution free. Give Water a Hand — It's ours to drink!



 **15** Do the faucets in your bathrooms, showers or drinking fountains have leaks or dripping water?



Take a walk through your school and check all the faucets. Take a water meter reading at the end of the school day. (If your school gets water from a well, you may not have a water meter.) Check with the janitors to make sure that no one will be using the building that night and using water. First thing the next morning, before anyone else arrives at school, check the meter again. If the readings are different, you probably have leaks somewhere.

Looking Good! We need more information.


Priority 1 2 3

What we found out

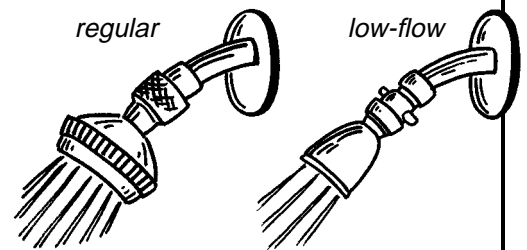
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We need more info about

 **16** Does your school have low flow faucets and shower heads in the bathrooms and locker rooms?

Use a gallon bucket and a stopwatch to time the amount of water used per minute. Turn on the shower or faucet to a normal flow. Start the stopwatch when you begin to catch water in the bucket. When the bucket is full, stop the stopwatch. Empty the bucket and do it again until you reach 1 minute on the stopwatch. If the result is more than 2 gallons for the faucet or 2.5 gallons for the shower, your faucets and showers use too much water.




Looking Good! We need more information.

Priority 1 2 3

What we found out

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We need more info about

 **17** Is the flush valve on the toilets adjusted so that you use the least amount of water possible? You may need to ask a custodian for help answering this one.


Looking Good! We need more information.

Priority 1 2 3

What we found out

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We need more info about

 **18** Does your school cafeteria have an efficient dish washing system?


- Do the kitchen staff run the dishwashers only when they are full?
- When washing dishes by hand, do they turn the water off in between rinsing batches of dishes?

Looking Good! We need more information. Priority 1 2 3

What we found out.....

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We need more info about.....

 **19** Does your school celebrate Earth Day, National Wildlife Week, Arbor Day, National Drinking Water Week, Wetlands Month, National Beach Clean-up Day or other environmental holidays?

Looking Good! We need more information. Priority 1 2 3

What we found out.....

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We need more info about.....

 **20** Is environmental education taught at your school?


- Are environmental topics covered in your classes?
- Are specific units on water issues included?
- Are there environmental or fishing clubs, or activities such as Adopt-A-Stream?
- Do you have a school nature area where you do experiments and study nature?

Looking Good! We need more information. Priority 1 2 3

What we found out.....

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We need more info about.....

 **21** Does your school test the drinking water for lead, bacteria or other contaminants?

- Do they test at least once a year? Do they keep records of these tests?
- Are the levels of contaminants within safe ranges? Contact your local or state department of public health to find out the maximum safe levels.

Looking Good! We need more information. Priority 1 2 3

What we found out.....

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We need more info about.....