

SPIRIT OF THE WATER

ELECTIVE ADVENTURE



SNAPSHOT OF ADVENTURE



Water is an important force in our lives. It can be as gentle as a spring sun-shower or as powerful as a hurricane. All living things need water to live, but we use water for more than just survival. In this Adventure, you will learn where the water you use comes from and how to conserve it.

REQUIREMENTS

1. Discover where the water in your home comes from.
2. Discuss how water can become polluted.
3. Share some ways you can conserve water in your home.
4. Discover how water in your community is treated to become safe to drink.



• **Elective Adventure**
• **Scan for this Elective Adventure**

REQUIREMENT 1

Discover where the water in your home comes from.



All the water we use in our homes is from either a groundwater source such as a well, or from a surface water source such as a river, lake, or reservoir. With help from an adult, find out where the drinking water in your community comes from.

Your den may decide to plan a trip to a local water treatment plant or have someone who works there visit your den meeting.



Date

Adult's Signature

REQUIREMENT 2

Discuss how water can become polluted.

Most communities have a way to get clean drinking water. Water comes from lakes, rivers, or wells tapped into an underground water source called an aquifer. The water is filtered, and then it travels through a maze of pipes to your faucet. Human activity pollutes water. Water is polluted when it becomes spoiled by chemicals, waste, trash, or other particles. Polluted water can become harmful to people, fish, and animals that need fresh water to survive.

Here are some of the sources of water pollution:

- ▶ Hazardous chemicals
- ▶ Soaps and detergents
- ▶ Trash and litter
- ▶ Fertilizers and pesticides



WATER POLLUTION DEMONSTRATION

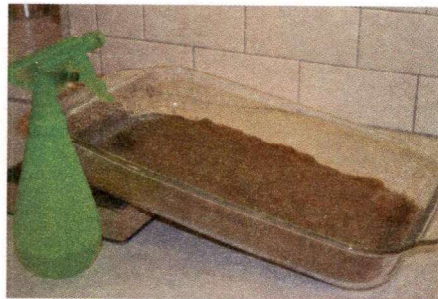
This activity will show you how quickly pollution can spread through groundwater.

Materials:

- ▶ Clear glass loaf pan or baking pan
- ▶ Powdered drink mix (red or purple in color)
- ▶ Sand
- ▶ Spray bottle filled with water
- ▶ Book or small block of wood

Instructions

1. Make a small pile of powdered drink mix in one end of the clear glass pan.
2. Sprinkle sand over the rest of the pan.
3. Place the end of the pan with the powdered drink mixes on top of the book or wood block so the pan is tilted.
4. Using the spray bottle of water, wet the sand. (Make sure it's really wet.) Let it sit for a few minutes, and then wet it again.
5. Carefully lift up the pan and look underneath it. What is happening?



As you can see, the water is carrying the powdered drink mix through the pan. Pollutants spread through our sources of water the same way. They can travel a long distance and can damage drinking water miles from where the pollution starts.



Date

Adult's Signature

REQUIREMENT 3

Share some ways you can conserve water in your home.

Water is very important to our survival and the survival of our planet. It is up to all of us to help conserve it, not waste it. For this requirement, you will have to explain how you can save water in your home.

First, think about the ways your family uses water to do the following activities:

- ▶ Brushing teeth
- ▶ Bathing
- ▶ Washing dishes
- ▶ Watering the grass or plants
- ▶ Cooking food

Next, look at your family's current water bill or find out how many gallons the average household in your community uses in a month. Find a gallon-size container to help you picture the amounts.

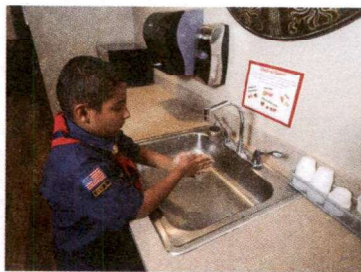
How many gallons of water per month does your family use? How could you use less water?

For example:

- ▶ Turn off the tap while you brush your teeth. Turn it back on to rinse your mouth. You could save up to 8 gallons of water a day and 200 gallons each month. That's enough to fill a large fish tank.



- Take five-minute showers.
Short showers use much less water than filling a bathtub.



- Make sure you turn off the faucet completely each time you use it, and fix faucet leaks. A little drip can waste hundreds of gallons of water.

- Water your yard early in the morning or in the evening, so that the water does not evaporate quickly in the heat of the day. Check to see if your community has other rules or restrictions on watering lawns.



- Wash your bike or your family's car with a bucket of water. If you use a hose, do not let it run the whole time.



Date

Adult's Signature

REQUIREMENT 4

Discover how water in your community is treated to become safe to drink.

Public drinking water systems use different water treatment methods to provide safe drinking water for their communities. Public water systems often use a series of water treatment steps that include coagulation (co-ag-u-la-tion), flocculation, sedimentation, filtration, and disinfection.

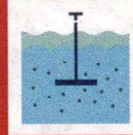
Coagulation and flocculation are ways to make the things you don't want to drink easier to filter out by getting them to stick to each other using chemistry.

Sedimentation is a process that separates solids that are in the water.

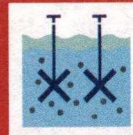
Filtration is when the water passes through a series of filters that have smaller and smaller holes. One of the filters has holes so small that just about the only thing that can pass through it is clean water.

Lastly, the clean water is treated one last time with safe chemicals that keep the water clean as it travels from the treatment plant to your home.

COAGULATION



FLOCCULATION



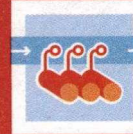
SEDIMENTATION



FILTRATION



DISINFECTION



Date

Adult's Signature