



Brownie Community Cleanup for Water Quality Activity Plan

Purpose: When girls complete these activities, they'll know about water quality and pollution prevention.

Planning Guides Link: Outdoor Awareness & Environmental Stewardship, and STEM

Fun Patch Link: Planet Saver

Activity Plan Length: 1.5 hours

Involve Family and Friends: Participation from family and friends can enrich your troop's Girl Scout experience, both for the girls and for you. Use the suggestions below to make it easier for you to connect with additional support.

- Before the meeting
 - Send a note to families to find those with interest or expertise in the topic. Ask them to lead or support a specific activity/activities, or to lead the meeting.
 - Offer this activity plan as a starting place; point out that they may choose alternative activities using the Customize It! section as a guide. For example: If an activity plan directs girls to sit outside and observe animal habitats, you may choose to go to the zoo and learn about animal habitats there, instead.
- At home:
 - Encourage families to ask questions about their girls' badge activities. Some examples that work for any badge include: *What did you learn? What surprised you? What does it make you think of trying next?*
- Throughout the Year:
 - Suggest to the girls and their families ways that they may share or display their Girl Scout accomplishments. Possibilities include a bulletin board, a scrapbook, a special memories box or family sharing time.

Girls Take the Lead: Include girl leadership through long-term planning, short-term meeting prep and specific activities at meetings.

- Long-Term Planning
 - If you use "Plan Your Brownie Year," share this with the girls at the start of the year. Have them ask friends and family to help out with specific meetings or activities. Let the girls brainstorm ways to make the plans on their own, such as thinking of related field trip activities. If a girl has experience with a field trip, ask her to be assistant tour guide.
 - If you are adapting the "Plan Your Brownie Year," get the girls' input on which badges to choose. Offer just a few choices in each category or timeframe to make decisions easier. Every girl should have at least one badge or journey she's excited about.
- Short-Term Planning
 - Ask a family to help lead a badge. Make sure they have access to activity plans and any resources you might have. Keep additional requested materials to a minimum.
 - Choose two helpers to stay after a meeting for 15 minutes. Give them each an activity to introduce and either instruct or help guide at the next meeting.
 - Before a meeting, ask everyone to vote on some aspect of the activity: draw posters or perform skits, open with a song or game, etc.

- Use a rotating list of helper tasks, called a kaper chart to share responsibilities. Examples include acting as emcee of the meeting, leading an opening game, bringing a snack next meeting or taking attendance.
- At the Meeting
 - During the opening, have 1-2 girls share their answers to a get-to-know-you question.
 - Have girls fulfill their kaper chart responsibilities.
 - Try to find something in each activity that you can let girls decide or manage.

Tips and Tools

- Check out ways to stay safe using Safety-Wise at <http://gsrv.gs/safetywise>.
- Ensure that your activities are accessible to everyone. Ask in advance if any special accommodations need to be made. If you have questions regarding specific adaptations, please contact River Valleys at 800-845-0787.

Resources

- Alternative water activities can be found at: <http://gsrv.gs/1Mi4oTk>

Getting Started

Time Allotment: 15 minutes

Materials Needed:

- Optional: Girl Scout Promise and Law printed out on poster board

Steps:

1. Welcome everyone to the meeting.
2. Recite the Girl Scout Promise and Law. Use repeat-after-me or say it as a group if girls know it by heart.

Girl Scout Promise	Girl Scout Law
<i>On my honor, I will try:</i> To serve God and my country, To help people at all times, And to live by the Girl Scout Law.	<i>I will do my best to be</i> honest and fair, friendly and helpful, considerate and caring, courageous and strong, and responsible for what I say and do, <i>and to</i> respect myself and others, respect authority, use resources wisely, make the world a better place, and be a sister to every Girl Scout.

3. Sing the Brownie Smile Song. Use repeat-after-me or sing as a group if girls know it by heart.

The Brownie Smile Song
I've got something in my pocket It belongs across my face I keep it very close at hand In a most convenient place I'm sure you wouldn't guess it If you guessed a long, long while So I'll take it out and put it on It's a great big Brownie Smile!

Activity #1: How Much Water Do You Use?

Time Allotment: 20 minutes

Source: Groundwater Foundation (<http://www.groundwater.org/>)

Prep Needed:

- Gather materials and supplies.

Materials Needed:

- Writing utensils
- Copies of How Much Water Do You Use? Worksheet for each girl

Steps:

1. Have girls fill in their own chart to record the amount of water you use every day. Use the list provided for the amount of water used during different activities.
2. Discuss ways to conserve water during the day, week and month.

Activity #2: There's No New Water!

Time Allotment: 15 minutes

Source: Groundwater Foundation (<http://www.groundwater.org/>)

Prep Needed:

- Gather materials and supplies.

Materials Needed:

- Large bucket
- Large, clear jar labeled “freshwater”
- Cup labeled “groundwater”
- Cup labeled “rivers and lakes”
- Tablespoon
- Optional: eyedropper

Steps:

1. Fill the empty bucket with five gallons of water. This represents all the water on Earth including the water that is contained in the atmosphere, glaciers, ice caps, lakes, rivers, oceans, groundwater and streams.
2. Ask for girls to help you take out 25 tablespoons of water from the bucket and place it in the large, clear jar labeled “freshwater.” This represents all the freshwater on Earth (water contained in the air, glaciers, rivers, ponds, lakes, and groundwater). All the remaining water in the bucket represents all the salt water on Earth.
3. Next, ask for girls to help you take out eight tablespoons from the freshwater supply and place it in the cup labeled “groundwater.” This represents all the groundwater on Earth.
4. Take out one tenth of a tablespoon (or about 25 drops with an eyedropper) out of the freshwater supply and pour it in a small jar labeled “rivers and lakes.” This water represents all the water in rivers and lakes on Earth. All the water contained in groundwater, rivers and lakes from the world’s “freshwater” has been removed. The “freshwater” container now represents all the water contained in the atmosphere (clouds, rain, snow, etc.) and all the water on the planet that is frozen (polar ice caps and glaciers).
5. Discuss the amount of water in each container:
 - Would it be easy to collect a cloud or wait for it to rain in order to get a drink?
 - Is it easy to chip away a chunk of ice, then melt it in order to get a drink?
 - Is it easy to drink water from the ocean?
 - Why is it important to help protect and conserve the freshwater available for drinking?

Activity #3: Edible Aquifers

Time Allotment: 25 minutes

Source: Groundwater Foundation (<http://www.groundwater.org/>)

Prep Needed:

- Gather materials and supplies.

Materials Needed:

- Clear plastic cups (1 per girl)
- Ice cream scoop
- Spoons
- Drinking straws
- Blue/red food coloring
- Vanilla ice cream or fruity sorbet
- Clear soda pop
- Small gummy bears, chocolate chips, crushed cookies, breakfast cereal, or crushed ice
- Variety of colored cake decoration sprinkles and sugars

Steps:

Note: Check with girls and parents before conducting this activity to see if anyone is diabetic or lactose intolerant. Make substitutions if needed.

For a demonstration, watch <http://gsrv.gs/1ID6r1U>.

Explain to the girls that groundwater is the water found underground in the cracks and spaces in soil, sand and rock. It is stored in and moves slowly through geologic formations of soil, sand and rocks called aquifers. Real aquifers are typically made up of gravel, sand, sandstone or fractured rock, like limestone. Water can move through these materials because they have large connected spaces that make them permeable (see illustration at end of activity plan). Today's snack is to make an edible aquifer!

1. Begin to construct your edible aquifer by filling a clear plastic cup 1/3 full with gummy bears, chocolate chips, or crushed ice (represents sand/gravel)
2. Add enough soda (represents water) to just cover the candy/ice.
3. Add a layer of ice cream to serve as a "confining layer" over the water-filled aquifer.
4. Then add more "sand/gravel" on top of the confining layer.
5. Colored sugars and sprinkles represent soils and should be sprinkled over the top to create the porous top layer.
6. Now add the food coloring to the soda. The food coloring represents contamination.
7. Watch what happens when it is poured on the top of the aquifer. Point out that the same thing happens when contaminants are spilled on the earth's surface.
8. Using a drinking straw, drill a well into the center of your aquifer.
9. Slowly begin to pump the well by sucking on the straw. Watch the decline in the water table.
10. Notice how the contaminants can get sucked into the well area and end up in the groundwater by leaking through the confining layer.
11. Now recharge your aquifer by adding more soda, which represents a rain shower.
12. Review what girls have learned as they enjoy eating their edible aquifer:
 - What types of things can pollute our water?
 - Why do we need to conserve water and prevent pollution?
 - What activities do you enjoy doing in water?
 - Have you ever done a community cleanup? What did you do?

Wrapping Up

Time Allotment: 15 minutes

Materials Needed:

- Optional: Make New Friends printed on poster board

Steps:

1. Instruct girls to get into a Friendship Circle. Have girls stand in a circle and cross their right arms over their left, holding hands with the person on each side of them.
2. Sing "Make New Friends."

Make New Friends		
Verse One	Verse Two	Verse Three
Make new friends, but keep the old. One is silver, the other is gold.	A circle is round, it has no end. That's how long, I will be your friend.	You have one hand, I have the other. Put them together, We have each other.

3. After the song, ask everyone to be quiet.
4. One of today's Badge Buddies should start the friendship squeeze by gently squeezing her neighbor's hand with her right hand. Then, that girl squeezes with her right hand. One by one, each girl passes the squeeze until it travels around the circle. When the squeeze returns to the Badge Buddy who started, she says "Goodbye Sister Girl Scouts" and the girls unwrap and face outward instead of inward.
5. Optional: Have girls make a wish after their hand has been squeezed and before they pass the squeeze along. Girls can also put their right foot out into the circle when they receive the friendship squeeze, so that everyone can see it travel along the circle.

More to Explore

- Field Trip Ideas
 - Visit a local or state park and talk to the rangers or Parks and Recreation staff about how they work to protect our water.
- Speaker Ideas
 - Invite a Department of Natural Resources employee to talk about taking care of water and other natural resources.
 - Talk to someone at your local watershed. Find yours at <http://www.mnwatershed.org>.

Suggestions

Do you have any suggestions to improve this activity plan? Do you have ideas for other possible badge-earning activities? Please email troopsupport@girlscoutsrv.org.

Family Follow-Up Email

Use the email below as a template to let families know what girls did at the meeting today. Feel free to add information, including:

- When and where you will be meeting next
- What activities you will do at the next meeting
- Family help or assistance that is needed
- Supplies or materials that girls will need to bring to the next meeting
- Reminders about important dates and upcoming activities

Hello Girl Scout Families:

We had a wonderful time today learning about water quality and conservation as we prepare to participate in the community clean-up.

We had fun:

- Discovering how much water we use.
- Exploring the Earth's water sources and the importance of conservation.
- Creating our own edible aquifer and learning about water pollution.

Continue the fun at home:

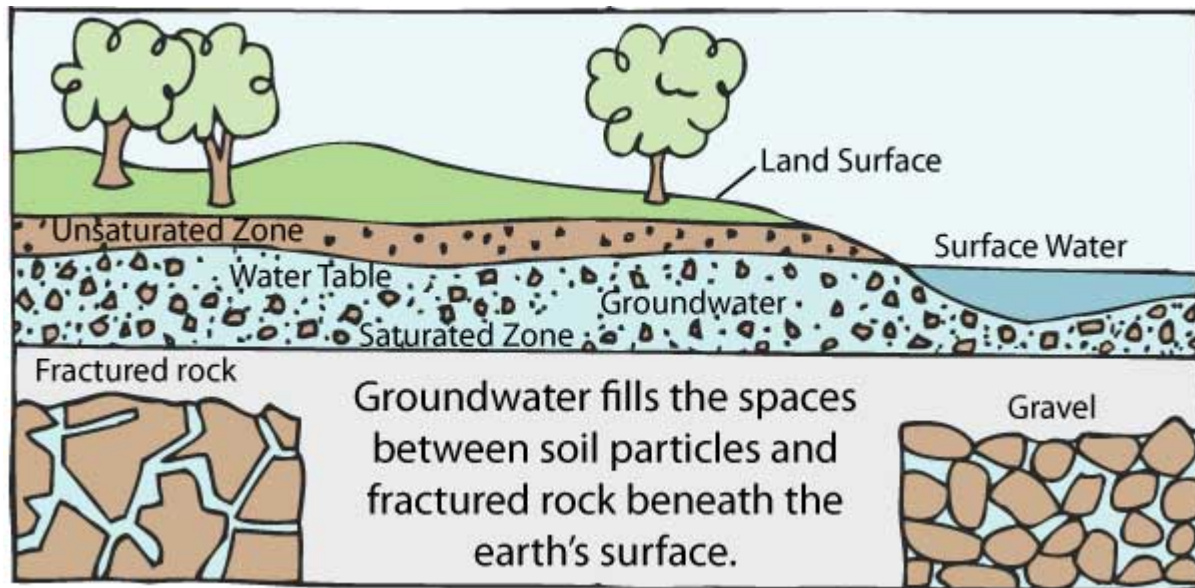
- Explore rivers, lakes and streams in your community. Pick up trash near these areas with your girl.
- Look for ways around the house that you and your girl can conserve water. Try fixing a leaky faucet, turning off the water when brushing teeth, taking a shower instead of a bath, and monitor the use of the hose.
- Participate in activities to celebrate World Water Day on March 22 by visiting <http://gsrv.gs/1Tlbf9>
- Participate in activities to celebrate World Water Monitoring Day on September 18 by visiting <http://gsrv.gs/1UAPkDm>

Thank you for bringing your Brownie to Girl Scouts!

What is Groundwater?

Groundwater is used for drinking water by more than 50 percent of the people in the United States, including almost everyone who lives in rural areas. The largest use for groundwater is to irrigate crops.

Groundwater is the water found underground in the cracks and spaces in soil, sand and rock. It is stored in and moves slowly through geologic formations of soil, sand and rocks called aquifers. The area where water fills the aquifer is called the saturated zone (or saturation zone). The top of this zone is called the water table. The water table may be located only a foot below the ground's surface or it can sit hundreds of feet down.



Source: <http://www.groundwater.org/get-informed/basics/whatis.html>

How Much Water Do you Use?

Fill in a box for every five gallons of water used in your day. Some water use activities and the amount of water used are listed below. At the end of the day count how many boxes are filled.

BRUSHING YOUR TEETH
(leave the tap running)
2 gallons
Fill in 1/2 of one box

BRUSHING YOUR TEETH
(turn the tap off)
1/2 gallon
Make a small dot in one box

FLUSHING THE TOILET
3-5 gallons
Fill in 1 box

TAKING A BATH
35 gallons of water
Fill in 7 boxes

FIVE-MINUTE SHOWER
25 gallons
Fill in 5 boxes

HAND-WASHING DISHES
20 gallons
Fill in 4 boxes

RUNNING THE DISHWASHER
15 gallons
Fill in 3 boxes

RUNNING THE WASHING MACHINE
40 gallons
Fill in 8 boxes

Can you reduce the amount of water you use?

Try to fill in fewer boxes tomorrow.

