



Cadette Community Cleanup for Water Quality Activity Plan

Purpose: When girls complete these activities, they'll know about water quality and scarcity issues as well as pollution prevention and conservation methods.

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 "Cadette Planning Guide," 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 "Cadette Planning Guide," 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

- You will need computers with internet access to complete this activity plan. One computer for every 2–3 girls is best. Here are some tips for finding computers to use:
 - Check with the local school, library or community center. Be sure to ask about rules for computer use at their location and respect others who need to use the computers. If you are planning a snack, check with the employees on where an acceptable location to eat the snack would be.
 - If you have or can move to a location with wireless internet, ask parents if they have laptops the girls can use.
- Parents will need to sign the internet safety pledge as well as the girls. Parents can do this as girls come in, you can send the pledge home with the girls at an earlier meeting, or you can email the sheet to parents prior to the meeting. The pledge can be found in the *Cadette Girls' Guide to Girl Scouting* or online at <http://gsrv.gs/1DIm2OJ>.
- 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

- National Geographic Water Footprint Calculator: <http://gsrv.gs/1EllesT>

Getting Started

Time Allotment: 15 minutes

Materials Needed:

- Scratch paper
- Writing utensils
- Watch or timer
- Optional: Candy or small prize for game
- 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. Play the water game below:
 - Hand out writing utensils and scratch paper to all girls. Give the girls 3 minutes to write down as many methods they can think of for protecting and conserving water. When time is up, have girls read their lists aloud. If more than one person has the same answer, everyone with the answer should cross that item off. Once everyone has read their answers, girl should give themselves one point for each answer that is not crossed off. Optional: give candy or a small prize to the girl or girls with the most points.

Activity #1: Blooming Algae

Time Allotment: 10 minutes

Prep Needed:

- Gather materials and supplies.
- Collect water from a lake or river.

Materials Needed:

1. Small clear jars or containers (two per girl)
2. Water from a local lake or river
3. Fertilizer with a high phosphorus content
4. Labels
5. Writing utensils

Steps:

1. Give girls background on the community cleanup project:

Normally, when leaves fall on the ground, they biodegrade and the nutrients, mainly phosphorous, are absorbed into the soil. This helps fertilize new plants and trees to help them grow. However, soil and grass have been steadily replaced with buildings, pavement, and other non-porous substances that don't absorb the nutrients. What happens to leaves when they fall on a roof or concrete? These

leaves wash into storm drains, lakes, rivers and streams. Rather than fertilizing the soil, chemicals created by the breakdown of leaves pollute the waterways and feed algae that can kill fish and other wildlife.

2. Explain that the girls are going to test the effects of phosphorus on local water.
3. Give each girl two jars or containers. The girls should put water in each of the jars then add fertilizer to **one** of their two jars. They should then close and label their jars.
4. When girls go home, they should put the jars in the sun on a window sill. What do they think will happen and why? What would happen if a fish was living in the jar?
5. Have girls monitor their jars for two weeks. Share the results at your next meeting!

Activity #2: Designing a Rain Garden

Time Allotment: 20 minutes

Prep Needed:

- For this activity, you will need access to computers (2-3 girls per computer) with internet access.
- If the girls and parents have not signed the Internet Safety Pledge, ensure that they do prior to the meeting.

Materials Needed:

- Computers with internet access (one per 2-3 girls)

Steps:

1. Ask girls what other things they could do to help with this problem in addition to leaf cleanup? Take a few answers. Rain gardens are one way to help clean and store excess water. Why do you think this is? Runoff from parking lots, buildings and even hardened soil runs off into the garden. The roots and soil absorb the water and clean out pollutants like phosphorus.
2. Have the girls split into groups of two or three. Each group should have a computer. Assign each group a question to research online. If you have more groups than questions, you can assign more than one group the same question and compare what they came up with. Give girls 5-10 minutes to research their question. If a group finishes early, they can search for rain garden pictures that they like.
 - Where should you place a rain garden? How can you determine where to place a garden for a specific area?
 - How big should a rain garden be? What shape should it be? Are there other design features a rain garden should have?
 - What kind of plants should be in a rain garden? What specific kinds of plants could you plant in a garden in your area?
 - How do you test an area to determine if it a good rain garden location? How do you prepare a site for planting?
3. When girls are finished researching, have them share what they found with the other groups.
4. If girls are interested in rain gardens, they can continue their research and garden planning for a community service or take action project at a later date.

Activity #3: What's Your Water Footprint?

Time Allotment: 15 minutes

Prep Needed:

- For this activity, you will need access to computers (2-3 girls per computer) with internet access.
- If the girls and parents have not signed the Internet Safety Pledge, ensure that they do prior to the meeting.

Materials Needed:

- Computers with internet access (one per 2-3 girls)

Steps:

1. Ask girls if anyone can explain what a water footprint is? When we calculate our water use, we generally only look at our direct water use (drinking, bathing, laundry, dishes, etc.); however we often

don't think about water that we use indirectly. For example: if you have a hamburger for dinner, it takes water to grow the wheat for the bun and the tomatoes for the ketchup, it also takes water to raise the cow and grow the plants the cow eats, and it consumes water to process and ship all the ingredients. In fact, it takes on average, about 10 gallons of water to make one hamburger! The amount of water you use directly and indirectly is called your water footprint.

2. Explain to the girls that they're going to take a quiz that helps them calculate their basic water footprint. Have girls go online to <http://gsrv.gs/1EllesT> and take the water footprint quiz. They can do this for each person in the group or estimate together as a group depending on the number of computers and time available.

Activity #4: Snack Chat

Time Allotment: 15 minutes

Steps:

1. While enjoying snack, here are some things for girls to discuss:
 - Could we create a rain garden as a service project? Where would be a good place to put it? Where could we find more resources and information?
 - What ways did you learn to conserve water that you didn't think of before? Do you think there are ways to reduce your water consumption that weren't on the quiz?
 - Did you find any pictures of rain gardens that you would like to share?

Wrapping Up

Time Allotment: 15 minutes

Materials Needed:

- Scratch paper
- Writing utensils
- Optional: Candy or a small prize

Steps:

1. Repeat the game the girls played at the beginning of the meeting. Were any ideas brought up that weren't mentioned the first time they played?
2. 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.
3. One girl school 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 girl who started, she says "Goodbye Sister Girl Scouts" and the girls unwrap and face outward instead of inward.
4. Optional: Have girls make promise to do one thing to conserve/protect water after their hand has been squeezed and before they pass the squeeze along.

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.
 - Visit a local water treatment plant and learn about what they do.
 - Visit a local botanical garden to learn more about rain gardens.
- 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@girlscoutsv.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:

- .Preparing an algae bloom experiment
- Learning about rain gardens
- Calculating our water footprint
- Brainstorming ways to protect water

Continue the fun at home:

- Participate in the community clean-up with your girl.
- Help your girl place and observe her algae experiment.
- Work as a family to determine what you can do to decrease your household water footprint.
- Research rain gardens with your girl to determine if your yard would be a good place for one.
- 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://www.monitorwater.org>.

Thank you for bringing your Cadette to Girl Scouts!