



Water

Water surrounds us, sometimes in such quantities that we forget how precious it is. Water is familiar and it is mysterious. It exists as a liquid, solid, or gas. It falls from the skies and exists deep within the earth. Water can nourish us and challenge us. In this badge, experience the bliss of a clear liquid known scientifically as H₂O.

Steps

1. Have fun reflecting on your relationship with water
2. Celebrate water art—and create your own
3. Find out about water issues
4. Explore water solutions
5. Educate and inspire others with a splash

Purpose

When I've earned this badge, I'll have dived deep into water—from its scientific origins to the joy of splashing around.

“All the water
that will ever be is,
right now.”

—National Geographic, 1993

Every step has three choices. Do ONE choice to complete each step. Inspired? Do more!

STEP 1 Have fun reflecting on your relationship with water

Water is easy to take for granted. As you dive into this badge, take this opportunity to reflect on what water means to you, where it drops into your life, and what possibilities and challenges you see reflected on its sparkling (cloudy, clear, stormy) surface.

CHOICES – DO ONE:

Visit water in its natural state. Hike, swim, walk along a beach, or splash in puddles. If there's a water place you've always wanted to visit, use your outdoor and travel skills and go there. You might take a simple water tour of your hometown, noting where water splashes or spouts: fountains, puddles, drips, drops, creeks, steam, frost.

OR

Try a new water skill. Find a course in scuba diving, snorkeling, sailing, white-water rafting, water rescue, or synchronized swimming. If there's water experience you've always wanted but haven't had the necessary skills or training for, get some now.

OR

Enjoy a water activity you already know. Perhaps you already have a way you like to spend time with water—canoeing, kayaking, surfing, fishing, or tubing. Take a special Water badge trip to enjoy it, and reflect on why you love it.

Tip: If you take part in a water sport, explore whether you might coach the sport to earn your Coaching badge.



—Girl Scout Handbook, 1953

All the adventure and excitement of living afloat is open to every Mariner no matter what size of the craft she sails in.

—Mariner Scouting, 1955

More to Explore

Pretend you're a Girl Scout in 1963. If you have some boating skills, try this activity: Take part in or organize a Mariner gam. Historically, GAM was a term for a herd of whales. Whalers adopted it for their get-togethers, where they exchanged stories of their exciting adventures at sea and held competitions in various skills. Mariners hold gams for the same reasons—sociability, friendly competition, and exchange of ideas. Gams are held at waterfront facilities to accommodate both swimming and boating events. Sea Explorer Scouts (Boy Scouts) often join Mariner Scouts in holding a gam.



MARINER SCOUTS

The Mariner Scouts was a water-based program launched in 1934 for Girl Scouts who were interested in the sea, sea lore, and navigation.

The romance and adventure, the freedom and companionship of nautical life, make any trip afloat one that will never be forgotten.

—Mariner Scouting, 1955



Girl Scout Mariners swabbing the deck of St. John's Floating Hospital ship, 1951.



Mariners needed to be at least 15 years old and pass a physical examination.



Girl Scout Mariners on the rigging of the *Joseph Conrad* sailing vessel, 1935.

CAREERS TO EXPLORE

Climatologist
Civil engineer
Hydrologist
Marine scientist
Environmentalist
Geologist
Lifeguard
Coast guard
Search-and-rescue diver
Ship captain
Marina manager or harbor master
Boat designer
Coastal commissioner
Meteorologist
Marine photographer

“The formula for water is H_2O . Is the formula for an ice cube H_2O squared?”

—Lily Tomlin,
American actress

STEP 2 Celebrate water art— and create your own

Enjoy art that expresses water’s cherished place in ritual and tradition around the world—and capture your own response to the world of water.

CHOICES – DO ONE:

- Delve into water literature.** Read a fiction or nonfiction book of at least 200 pages that focuses on water, or read five poems about water. React to what you read: You might write a review or a water poem of your own, host a book club for other Ambassadors or friends to discuss it, or reflect on it while sitting by a lake or stream.

FOR MORE FUN: Find the origins (called etymology) of expressions that use water, like “in hot water,” “above water,” and “water under the bridge.”

OR

- Enjoy an exhibit or event that features water.** It might be a water sculpture, a water display (such as a community fountain), fine art, or even music that features water. (Perhaps “Water Music,” by composer George Frideric Handel.) In whatever way seems appropriate to you (a photo series, a poem), capture your experience to share with others.

OR

- Create your own water composition.** Record the sounds of water, from waterfalls and streams to water-glass chimes to running tap water. You could make a composition that’s calming to help you and others in times of stress, or a gleeful water tune for a celebration—maybe a Girl Scout ceremony. Share your composition with others.

More to Explore

Get creative with engineering. In ancient Roman culture, water factored into home designs as rainwater pools and atriums that allowed the sky to reflect upon the water. What would your fantasy water space have? A water-conserving fountain or see-through flooring with water running beneath? Sketch it, then build your design in a CAD (computer-assisted design) program to test its feasibility. Or build a musical water fountain—research a small-scale way to replicate a water fountain with music and lights.

STEP 3 Find out about water issues

Humans have always been dependent on water. Civilizations were built around rivers. Where it's dry, humans often create artificial bodies of water—reservoirs, harbors, and waterways. But our relationship with water isn't always a happy story. We also face pollution, waste, and natural disaster. Take a closer look at a water issue and share what you find out, perhaps in a presentation, art project, article, or journal.

CHOICES – DO ONE:

- Visit a water facility and explore its effectiveness.** It might be a waste-treatment plant, a drinking-water treatment plant, a managed watershed, or a desalination plant. Consider the facility's place in the community and its sustainability. How well is it working? What are its challenges—and your ideas for solutions?

Tip: Before you go, find out what these mean: “primary water treatment,” “secondary waste treatment,” and “biochemical oxygen demand.”

OR

- Investigate endangered marine life.** You could interview a marine biologist about the need to protect coral reefs for marine life and for human life. Scientists have discovered several medicines in coral reefs, from anticancer chemicals to hard skeletons that might serve as bone implants. Or you could speak to an organization about overfishing, or research the effects of oil spills or climate change on ocean life.

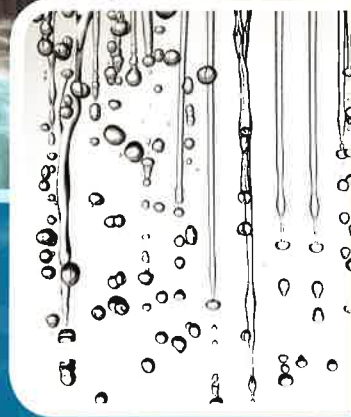
OR

- Investigate water as a hazard.** Tsunamis, tidal waves, rogue waves, and flash floods all occur naturally, sometimes at great cost to ships and cities. Read several articles or a scientific book to learn more about one or all of these hazards.

FOR MORE FUN: Find out how satellites and radar help detect and measure waves and flash floods.

More to Explore

Pretend you're a Girl Scout in 1980. Do this activity from the Eco-Action badge: Check out your local streams or waterways for pollution for a month. Take a water sample. Record signs of oil on water and the color of the water. Take a walk around your neighborhood and make a list of the things that could be washed by rainfall into nearby streams or lakes.



Water Culture

Across the globe there are beliefs and practices that involve water:

Buddhism

Water symbolizes purity, clarity, and calmness.

Christianity

Water is primarily associated with baptism.

Hinduism

All water is sacred. To be forgiven of sins, believers might bathe in a river.

Islam

Water is a gift from God and should not be sold or bought. Before each of the five daily prayers, Muslims bathe their heads and wash their hands, forearms, and feet.

Judaism

Water plays an important role in ritual cleansing practices.

Shinto

Waterfalls are regarded as sacred.

STEP 4 Explore water solutions

There are myriad water issues, to be sure. But since civilization depends on water, humans have always used their innovation and ingenuity to find, treat, gather, filter, conserve, and protect this precious resource.

CHOICES – DO ONE:

- Interview a water scientist to find out how they're helping water.

This might be:

- A hydrologist who studies water and its flow, underground water formations, and hydroelectricity.
- A civil engineer (or water resource engineer) who specializes in building and managing water treatment plants and dams, or who comes up with flood forecasting solutions.
- A climatologist who studies weather patterns and the water cycle.
- A marine scientist who investigates bodies of water, underlying geology, and organisms that live in oceans, lakes, and streams.

Choose one area that interests you and prepare a 10-question interview. Conduct your interview by phone, e-mail, or in person. Find out how the scientist became interested in their field, what they studied in school, and how they got the job! Share what you learn with others.

OR

- Explore the world of hydroelectricity—and play engineer. Dams are sustainable generators of about 20 percent of the world's electric power. If you can, tour a dam. If not, research one. How does it help the community it serves? Put on your engineer's hat and ask yourself, If I were in charge of the dam, what improvements would I make? Share your recommendations.

OR

- Design your own water innovation. Choose a water issue for which you'd like to create a solution. Your design can be for something specific, like a filter to clean water, or for something less tangible—what about a water policy or legislation you'd like to see enacted? Whatever it is, find a way to communicate your idea to others—such as a 3-D model, a draft of a bill you'd like to see, or a diagram or sketch.

Water Innovations

Rainwater Collection

There are innovations being used to preserve rainwater for needy communities all over the world. A few examples: Rainwater jars in Sri Lanka and parts of Southeast Asia, drilled wells in Yemen, and the replacement of invasive plant species (called thirsty plants) in water-deprived South Africa with other native species that don't require as much water.

Drinking Water Filters

In most developed countries, water is treated with chemicals to reduce risk from waterborne diseases. But in Bangladesh, for example, women filter drinking water through a folded sari. Throughout such developing countries, aid organizations, government health agencies, and others are distributing inexpensive personal filters, like simple textile filters.



Renewable Water Power

Underwater turbines were installed beneath New York City's East River estuary in 2006. The first commercial wave farm is off the coast of Portugal. It uses "wave snakes," linked cylindrical generators, to wriggle back and forth in the waves, creating a resistance system that could power 1,500 households.

PlayPumps

More than 700 of these water systems were installed in rural areas of South Africa and other sub-Saharan African countries. As the children spin, they pump water from a deep well below. The water flows to a storage tank where it is kept sanitary for drinking. According to the PlayPump designers, a single pump can provide enough water for a community of 2,500 people.

STEP 5 Educate and inspire others with a splash

Here's your opportunity to take everything you've learned and enjoyed and use it to help others appreciate water. If you've already shared some of your findings, do it now in a different way. This step should feel like a focused culmination of your badge work.

CHOICES – DO ONE:

Celebrate water with younger Girl Scouts. You might have a party with a water theme: Guide a water science experiment and make fun seltzers with Brownies earning their Snacks badge. You might play Marco Polo and help girls learn basic water skills. Host a special GS camp weekend, or organize an outing to a water park (a fun way to teach girls about chlorine).

OR

Share a water issue that matters to you with your community. It could be a speech or article in which you explore the issue and make an action recommendation—you could publish it in a newspaper or on a website. It might be a display or exhibit at a school, library, or place of worship.

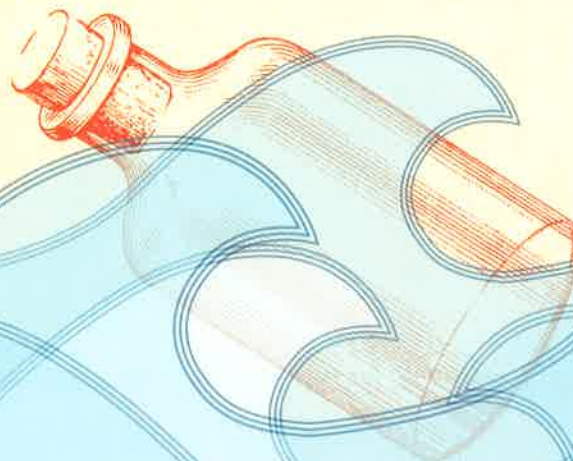
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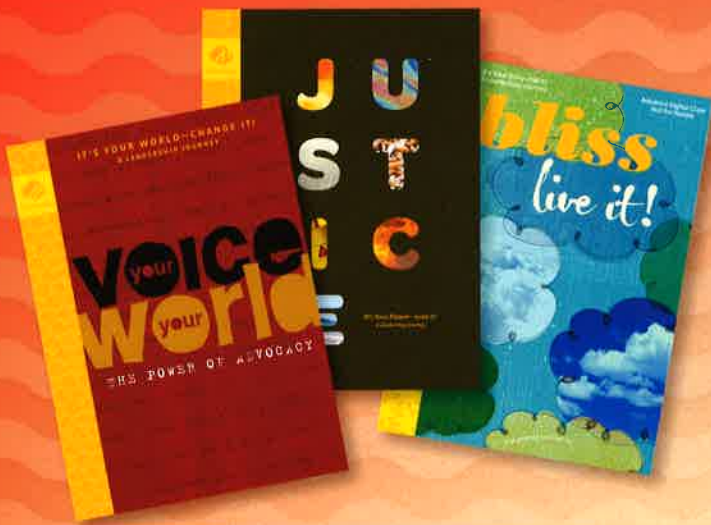
Guide a group to a water place. It could be a scavenger hunt—where does our water come from? It could be a tour of a naval base, commercial fishing boat, ferry barge, coast guard station, marine museum, or lighthouse. Wherever you go, you're the guide, and the experience is one you've crafted to share the aspects of water that are important to you.

Fun Fact

Some early studies on the flow of currents used a drift bottle to send a message asking the recipient to report where the bottle was found and when.

(Trying this at camp, in an eco-friendly way of course, might be a fun way to teach younger Girl Scouts about water science.)

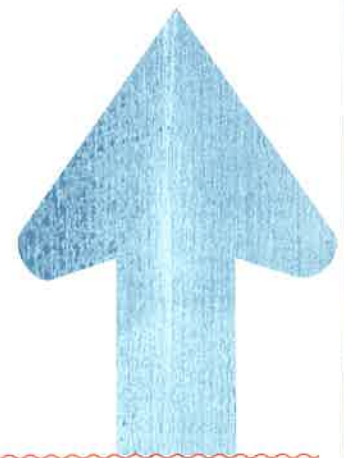




Add the Badge to Your Journeys
Your Leadership Journeys invite you to take some time away from the stresses of your routine so you can think about who you are and where you're headed. As you dive into this badge, why not plan a weekend getaway with some friends and enjoy a water-inspired retreat? You may even come up with a Take Action project idea related to protecting your favorite water source.

Now that I've earned this badge, I can give service by:

- Taking younger girls on a water appreciation tour to a local water source
- Being an advocate for water in my community or an area in need
- Suggesting careers that make a splash to friends



I'm inspired to: