



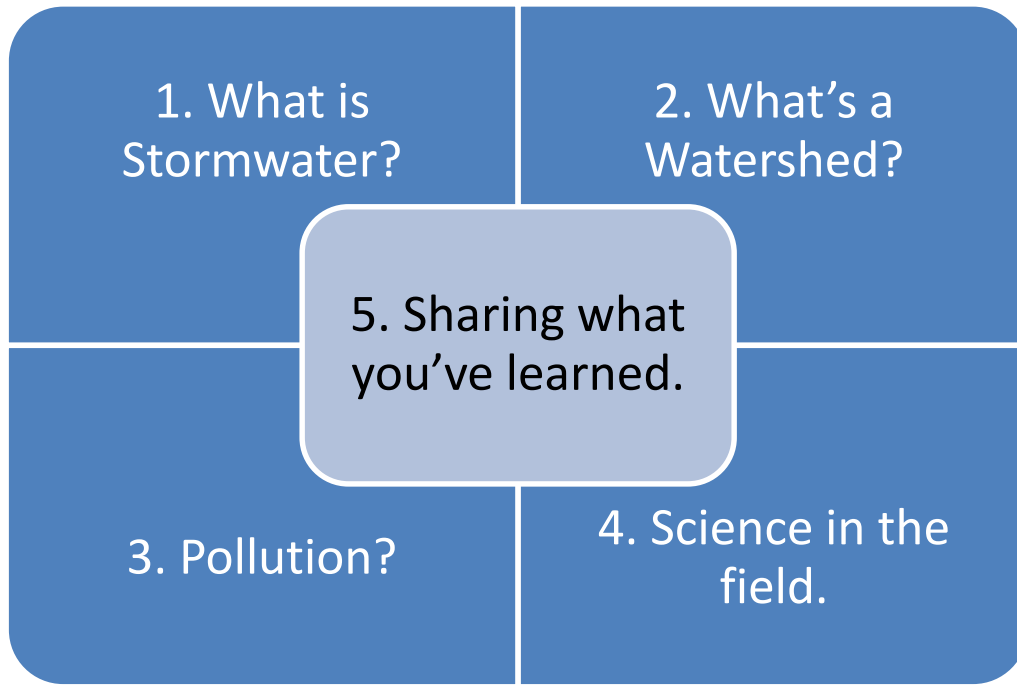
Girl Scouts are Storm Water Smart Girl Guide

Girl Scout Cadette, Senior, and Ambassador Edition

Created for the *Girl Scouts of Greater Atlanta*
By the DeKalb County Department of Roads and Drainage

The Girl Scouts are Storm Water Smart patch is here to help you learn about storm water in your community and the role you play in keeping your streams and rivers healthy and clean.

There are five steps to completing this patch:



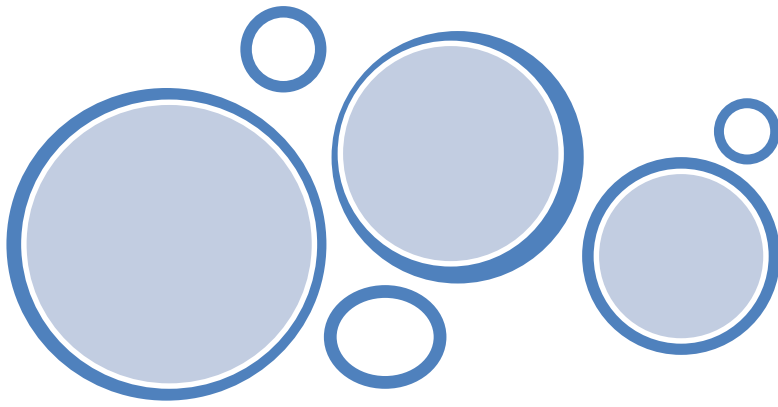
*"I will do my best to
... use resources wisely
...make the world a better
place."*

You can do steps 1-3 in any order, but should finish with steps 4 and 5.

It might be helpful to make a **Storm Water Friendly Glossary and Guidebook** to use during this patch. We've included the following words to help you get started, and lots of space for notes and sketches.

- Best Management Practice (BMP)
- Bio-Swale
- Catch Basin
- Combined Sewer System
- Detention Pond
- Dry Well
- Erosion
- Fecal Coliform Bacteria
- Hazardous Waste
- Hydrologic Unit (HUC)
- Impervious Surface
- Land Use
- Municipal Separate Storm Sewer System (MS4)
- Non-point Source Pollution
- NPDES Permit (Phase 1 and Phase 2)
- Pervious Surface
- Point Source Pollution
- Retention Pond
- Runoff
- Sedimentation
- Storm Drain
- Storm Water
- Swale
- Waste Water
- Waste Water Treatment Facility
- Water Treatment Facility
- Watershed





1. Water is everywhere, but what is Stormwater?

Choose one of the following:

Learn the difference in Water, Waste Water, and Storm Water.

Conduct research online or at a library about the differences in a Water Treatment Facility and a Wastewater Treatment Facility. Reach out to your local city or county government and ask about their NPDES permit and if they are an MS4 system, try to find out if you can interview people whose work involves these permits and systems. You should:

- Find out who is in charge of the local NPDES permit, and some of the regulations they have to meet to keep their permit.
- Find out if your area operates as a MS4 System or if your area uses a combined system.
- If they have a MS4 system, is it a Phase 1 or Phase 2?
- Ask if they can describe some of the BMP's they have in place for stormwater.
- Come up with some of your own questions based on the definitions you find for your glossary.



Learn about Storm Water features in your community. Learn about the following stormwater features, try to find as many as they can in your community. Some may be easier to find than others, and some may go by a different name. Talk about how each works and draw sketches in your guidebook; (remember to include parts that might be hard to see, like the catch basin underground).

- Storm Drain
- Catch Basin
- Swale
- Bioswale
- Dry Well
- Detention Pond
- Retention Pond

2. What is a Watershed?

Map your watershed. Map your watershed using a simple topographic map of your community. Discuss how the lines show elevation and which areas are higher or lower than others. Use highlighters or light colored markers to mark the boundaries of your watershed, and where the water exits your area. Also note on the map places you frequent, like your home, school, grocery store, etc. As well as areas of similar land use within your watershed and if areas are densely developed or the area is larger undeveloped. Does everyone in your group live in the same watershed? Discuss your findings.

Using larger maps, try to follow the path water takes out of your watershed and its journey downstream. Follow a drop of water all the way to the ocean, does their watershed lead to the Atlantic Ocean or into the Gulf of Mexico. Learn about the Hydrologic Units system used to group watersheds by size. Find out what your watershed's size is and make a table showing all the larger watersheds it is a part of on the path to the ocean.

Learn about the different types of land use in your watershed. What land uses are the most common? What types of pollution might come from those land uses? **Then do one of the following.**

Current Issues. Attend a local meeting, lecture or educational program about a local waterway, or keep track of any newspaper articles or stories you hear on the news, that are related to water quality, storm water, or water infrastructure in your area for a month. **Additionally, choose one of the following:**

Contact local professionals or officials to find out about your watershed's relation to the tri-state water wars. Is it involved, what does it mean for the future of the watershed, etc.?

Contact local professionals or officials to find out if there are any major infrastructure changes planned for the water, waste water or storm water systems in your community.



Local History. Discuss how your watershed has changed in the last 10 years, 50 years, 100 years, etc. How did the waterways near you affect the beginnings of your community? How has the stormwater been affected by the changes in your community?

Interview community members or older family members who might have seen some of these changes.

You should start the interview by teaching their interviewee about the idea of a watershed and what you know of the storm water system in your area.



3. There's more than one type of pollution?



Help a group of younger girl scouts make friends with Fred the Fish and then choose one type of pollution to learn more about. (If your group of younger girl scouts has already completed a Fred the Fish activity, there are 2 other activities included with the reference materials to offer to help with.)

Erosion and Sedimentation. Define erosion, and compare and contrast pervious surfaces with impervious surfaces. Which were there more of in your community 50 years ago? Which are there more of now? How does the amount of pervious and impervious surfaces affect erosion in your watershed? How might erosion affect the storm water system in your community? Try to find examples of impervious surfaces, pervious surfaces and erosion in your community. What was causing the erosion, is there a way to stop the erosion? Can you find where the sediment goes after it is eroded? Remember that erosion is a natural part of the weathering process and not always a bad thing! Can you find any examples of a major change in your watershed based on erosion and the buildup of sediment in a new place?

Try to find out if any BMP's related to pervious and impervious surfaces have been installed in your community. Are there pervious pavers, pervious pavement, etc. Are there any BMP's put in place to combat erosion? If yes, try to arrange a visit to the BMP with a professional who can explain how the BMP works and why it was chosen.



Be a Pooper Scooper. Pet owners who walk their dogs are responsible for any droppings their pet leaves behind. When pet waste is not picked up, it can be washed into the sewer system by rainfall or melting snow, and travel through the stormwater system into a stream. The pet waste becomes runoff and the bacteria pollute our waterways.

In some cities and counties, it is illegal for dogs to run loose without a leash. If no one is walking with a dog, who will pick up after the dog? Find out about the legal codes in your community. Develop a PSA to help your community remember to Scoop that Poop!

Hazardous Wastes. Contact your local hazardous waste recycling center and ask if you can visit for a guided tour. Keep in mind different facilities will accept different types of hazardous wastes. Before you visit, create a list of questions to ask at the facility, examples include:

- What are the hazards caused by hazardous wastes entering our waterways?
- Is there a charge to drop off hazardous wastes?
- How much is it?
- List five common hazardous wastes around your house and yard.
- What do you do with them?
- How is a hazardous waste landfill different from a regular landfill?



4. Girls Do Science!

Choose one of the following.

Arrange to “shadow” a water quality professional while they conduct a monitoring event in the field. Make sure you have some interview questions ready for them about what they are doing and why, as well as how they prepared for this job, and any special training they received in school.

Work with other Girl Scouts in your community to host a water quality monitoring event in conjunction with World Water Monitoring Day, (officially observed on September 18th each year).

If you're feeling Inspired, why not make some Stormwater Art?
Submit an entry to one of the following programs, some might have a fun prize.

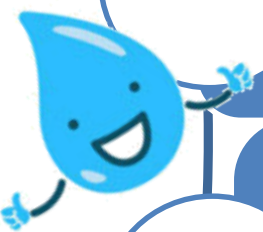
Georgia River of Words Poetry and Art contest, or submit one entry as a group.

A local contest like DeKalb County Department of Watershed's Art Calendar Contest.

One of the three contests held annually by the Metropolitan North Georgia Water Planning District.



5. Sharing your Stormwater! Choose one of the following.



Stream Clean-Up Event. Work with others in your community to hold a stream clean-up day. You'll need to decide where you will host the event, and plan where the "trash and debris" will go after the event and how they will get there.

Stream Monitoring. Adopt a stream reach near you and conduct routine monitoring, share your findings in your community. Monitoring should be conducted 4-12 times a year, depending on the type of monitoring conducted.

Storm Drain Marking. Participate in a storm drain marking project, different communities use stencils, plaques or paint. Create door hangers or pamphlets to hand out to homes or businesses near your storm drain, sharing information you think is important about storm drains.

Planting Projects. After learning about erosion, find out if there are any stream bank restoration projects occurring in your area. Participate in an ongoing project, or find a community resource that can help you identify another space in your community that would benefit from the planting of native species.

Install a BMP. Research stormwater BMP's that are in use in your community, are there any you like the most, and are there any you think are missing? Work to find a community partner location that will help you install the BMP of your choice. It is important to think long-term about who will conduct any needed maintenance and who will be responsible for the cost. You can also contact your local stormwater managing group; this might be your city or county and ask if they have any BMP's they would allow you to assist with.

Green Cleaning Event. Research "green cleaning" methods and or "green gardening" methods and create a "wheel of alternatives" to pass out in your community, to help people switch away from hazardous wastes. Be sure to include information about where to properly dispose of hazardous wastes and or how to properly store those you might have around your home. If you have a hazardous waste recycling center nearby, find out if they would be willing to let you host a drop off event for the community.

Create Your Own. Based on something you've learned from a previous activity, develop your own community service and education project. Your project should help the community learn about storm water, watersheds, and or why knowing about water quality is just as important as knowing about water conservation.

My Stormwater Glossary, Notes and Sketches

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