

Protecting Vermont Rivers, Lakes & Wetlands through

Service Learning Opportunities

For 12th - 3rd Graders

💧 **What is a service learning project?**

Service learning projects give students the opportunity to accomplish something useful for their community while learning about their local natural and cultural resources. The benefits to service learning projects are long lasting for all parties involved. The service learning projects listed here combine academics with a meaningful, local river, lake or wetland project.

💧 **Examples of Service Learning Projects**

1. Storm drain stenciling.
2. Designing and constructing access paths to a pond, lake, river or stream to minimize shoreline erosion from over-trampled banks.
3. Assisting the local town road crews on a variety of projects, including “beaver deceivers,” culvert repair, or bank stabilization.
4. Planting native tree and shrub species along waterways to improve the vegetative buffer strip.
5. Assisting a local lake or pond association with a watershed survey.
6. Designing an Aquatic Nuisance Species spread prevention plan for your town.
7. Making a nature trail through a wetlands.
8. Organizing a community effort to walk or float along and clean-up local waterways.
9. Monitoring local waters.

Why Stencil Storm Drains ...because it works!

Stenciling next to storm drains alerts others to the fate of runoff water and the pollution carried with it from lawns and streets. The stenciled message is highly visible. And when it is time to refresh the stencil, this service-learning activity reaches a whole new set of students and yields another opportunity to spread the message of pollution prevention.

In Burlington, Vermont, many people unknowingly believe all the storm drains connect to the city's treatment system, and assume the treatment plant was built to handle storm-water (run-off) as well as regular sewer water. Unfortunately, this case is not true. Many of the drains flow directly to the lake and are especially in need of stencils with pollution prevention messages. Any toxins, as well as household products such as fertilizers and soap from driveway car-washing, drain directly into Lake Champlain. Students' stencils remind Burlington residents that not all drains connect to the treatment plant, and that they need to take responsibility for what goes down them. In the process of teaching their neighbors, students will take on the role of watershed stewards.

Stenciling will not solve all water pollution problems alone, but it is a practical, positive, easy first step toward public education and involvement and support for local watershed, storm water pollution prevention. This service-learning effort will ensure Burlington with a fresh look and message to help protect Lake Champlain.



Edmunds School 5th and 6th graders from Burlington, Vermont help keep Lake Champlain CLEAN with Storm Drain Graffiti!

For more information on stenciling methods and materials, contact Vermont Project WET, a K-12th grade educational program sponsored by the Vermont Water Quality Division.

Vermont Project WET Program, VTDEC-Water Quality Division, 103 South Main St.
Waterbury, VT 05671-0408, Tel. 802-241-3777, www.vtwaterquality.org

Instructions for Storm Drain Stenciling

Materials

All students get: *Data Sheet: Where does the Run Off Stew Come From?*

Getting There:

Map of Storm Drain Locations

Student *Scavenger Hunt Sheet*

Stenciling Flyers for Public (kids can make these or get a copy through Project WET)

Prep work:

Orange Safety Vests

Safety Cones

Broom

Garbage Bags

The Stenciling:

Stencils

Tape

Cardboard Box (to shield against drifting overspray)

Spray Paint

The Clean-Up:

Newspaper

Paper Towels

Methods

1. Pick up solid waste, noting the contents on the survey form. Use broom to sweep dirt away from drain so paint will stay on the pavement.
2. Position stencil next to (not over) the storm drain inlet where message will be most visible. Avoid areas where dirt and leaves will collect and cover the message. Also, consider applying the stencil to a cube along the storm drain if that area would be visible and accessible.
3. Before spraying put in place the large cardboard box shield to prevent drifting paint overspray (especially near parked cars).
4. Spray paint the message, taking care the paint doesn't go down the drain. Two light coats are better than a thick single coat that puddles around the letters. Stenciled messages last for approximately two years on a paved surface.
5. While some team members are stenciling, have others visit with any local residents or businesses to hand out the storm drain flyer, which explains about the stenciling activity and how everyone can prevent pollution to Lake Champlain.

Student Roles of Responsibility

1. **All students**, working in pairs, get a Data Sheet: "Where does the run-off stew come from?" They should write their names on this form and be prepared to turn it in at the end.
2. **One "Public Relations Guy:"** give the PR student the Stenciling Flyers to hand-out to any interested public, like neighbors, or business owners, etc. that explain what the problems associated with stormwater runoff are and how to prevent these problems.
3. **Two "Scavenger Hunters:"** assign two students the task of recording the types and numbers of various solid waste trash along the way and at the storm drains. Give them a Scavenger Hunt Sheet for each drain your group stencils and have them work with the "Garbage Collector."
4. **One "Garbage Collector:"** give one student the job of picking up and carrying the solid waste trash (this guy should work with and trade-off with the "Scavenger Hunters"); this person gets the one garbage bag.
5. **Two "Cone Controllers:"** These students will carry the orange cones and place them around the drain site to keep cars back from the work area.
5. **One "Sweeper:"** hand out the whisk broom, and assign one student the task of cleaning up the area around the drain in preparation of stenciling.
6. **Two "Stencil and Box Shield Hands:"** give the stencil and the box shield to two students to carry to, and place on the storm drain in preparation of stenciling.
7. **Three "Spray Painters:"** Give out the spray paint cans and have students carry them. One student can spray paint the top words, one the fish, and one the lower words.
8. **One Person "Clean Up Crew:"** give this student the paper towels and a plastic bag to carry to the drains. Assign one student to lift up and remove the stencil, (ahhhh, nice job everyone) and then wipe down with paper towels and place in plastic bag to transport to next drain (give bag with stencil back to the "Stencil Hand.")

Team Leader, please feel free to double up jobs and/or rotate rolls after completing a stencil job, just make sure all students are "happy" and know what they are suppose to be doing!

Data Sheet:

Where Does the Run-Off Stew Come From?

Date:		School:
Team Name:		
Students Names		
City location(s) of Drains Stenciled:		
Souces of Storm Water Pollution		
Other (list)		

Scavenger Hunt Sheet

Date:		City:
Team Name:		# of People:
City location(s) of Drains Stenciled:		
Litter Items Found (mark one check for each occurrence) TOTAL COUNT		
Cigarette butts		
Cigarette packs		
Fast food containers		
Cans		
Bottles		
leaves		
Plastic bags		
Paper		
Other (list)		

Project WET ACTIVITIES for STORM DRAIN STENCILING

UPPER ELEMENTARY - GRADES 3-5

WATERSHED / STORM WATER

Branching Out (p. 129) Construct a Watershed Model

Incredible Journey (p.161) Game of movement of water through the water cycle

Rainy-Day Hike (p. 186) Explore the school yard and it's effect on the watershed

Capture, Store, Release (p 133) Wetlands contribution to the watershed

NON-POINT POLLUTION (Polluted Runoff)

A-maze-ing Water (p. 219) Negotiate a maze to investigate non-point pollution and storm water

Sum of the Parts (p. 267) Demonstrate how everyone contributes a little to non-point source pollution on a river

MIDDLE SCHOOL AND HIGH SCHOOL - GRADES 6-12

WATERSHED / STORM WATER

Color Me a Watershed (p 223) Analyze maps to recognize how population growth cause changes in watershed and storm water runoff

NON-POINT POLLUTION (Polluted Runoff)

Sum of the Parts (p. 267) Demonstrate how everyone contributes a little to non-point source pollution on a river

WATER QUALITY

Macroinvertebrate Mayhem (p. 322) Show how macroinvertebrate populations indicate water quality using a game of tag

Reaching Your Limits (p. 344) Limbo to learn basic water quality concepts

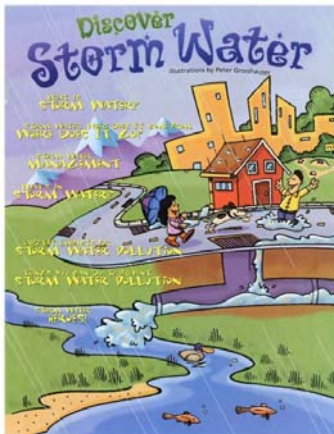
Poison Pump (p. 93) Solve a mystery re: water quality and human health

GROUND WATER (Your drinking water?)

Get the Ground Water Picture (p. 136) Create an "earth window" to investigate ground water systems

Pucker Effect (p. 338) Simulate ground water testing to discover the source of contamination

Grave Mistake (p. 311) Analyze data to solve a ground water mystery



Kids in Discovery Series: Storm Water Booklet

Pull on your rain boots and try to imagine what your town would be like without storm drains. Readers can calculate runoff on permeable and impermeable surfaces, follow the maze of point and nonpoint source pollution, and apply best management practices.

