POLLUTION TIP:
A successful way to combat NPS pollution is to bring awareness to your community that storm drains lead to local waterways. Join a local storm drain stenciling effort to help home owners understand where their polluted water goes.

www.KeepitCleanPartnership.org

Unit 3: Pollution Patrol
(Special Teachers’ Guide)

Type of Activity:
In-class activity
In-class discussion

Classroom Time:
25-35 minutes

Printed Materials:
Pollution Patrol student activity sheet

Lesson Objectives:
- Learn different sources of pollution and how it enters our waterways.
- Facilitate class discussion and individual critical thinking about the ways to spot and reduce pollution.
- Understand pollution’s negative effects on the environment.
- Identify ways to protect our water resources and reduce pollution.

Activity Procedure:
There are two parts to this activity:
1. Pollution Patrol student activity sheet.
2. In-class review and discussion.

Community Responsibility:
Many things depend on healthy water, including aquatic life, animals and humans. Individuals in a community can help take responsibility to keep water clean.

Ways to reduce water pollution and protect our waterways:
- Reduce excess water runoff and water waste by watering lawns only when necessary. Do not water hard surfaces such as sidewalks and driveways. Use buckets and sponges to wash pets and cars. Keep downspouts pointed away from hard surfaces.
- Rake and bag or compost leaves and clippings or use them as mulch. (Placement of loose material over a planting area to reduce weeds, prevent erosion and maintain moisture).
- Collect all animal waste and deposit it in the garbage.
- Minimize the use of fertilizers, pesticides and herbicides and keep them off of the driveway and sidewalks.
- Keep litter and garbage off the streets and away from storm drains.
- Properly dispose of hazardous household waste, including any toxic chemicals and paint.
- Properly dispose of any automobile waste, such as oil and antifreeze. Keep the car and lawn mower tuned to minimize this pollution.
Activity Directions:
Discuss different sources of water pollution and its causes. Explain how runoff from rain, snowmelt and lawn watering can carry pollution down storm drains straight into local creeks. Discuss how things we do in our everyday lives can affect our water sources.

Distribute Pollution Patrol student activity sheet and start with Water Agent, What do you see? Have students work on their own to try to spot potential sources of water pollution. After 5 - 10 minutes of individual work, come together as a class and discuss what the students found. Point out anything they may have missed and discuss other possible sources of pollution not in the picture.

Have students work either together as a class or alone to solve the problems on the Water Agent, What would you do? side of the Pollution Patrol student activity sheet. Have the students theorize how this pollution might affect water and plant life and the people who use and drink the water. Talk about the real effects of different kinds of water pollution. Discuss how we are all responsible for protecting our water sources from pollution.

Activity Answers:
Water Agent, What do you see?

Garden/Lawn Fertilizer
Animal Waste
Soap Suds
Automobile Waste
(oil, antifreeze, etc.)
Litter
Paint
Leaves
Excess Watering of Lawns/Sidewalks

Activity Answers:
Water Agent, What would you do?

Background Information for Class Discussion:

Water Pollution

When we think of water pollution, we often think of large factories spewing out pollution from a pipe into a river, but did you know that just living in a small town and going about your day-to-day activities can create water pollution?

When we build our cities and towns, we build houses, businesses, and roads. As we “urbanize”, we disrupt the natural water cycle. More water runs off of our streets and rooftops, and less water soaks into the ground. This excess runoff can wash away dirt and collect pollutants off of streets and parking lots. This water all flows from street gutters into storm drains which go directly to local streams and lakes, pollution and all.

It’s just rain water. Everyday activities can cause pollutants in our runoff. Lawn fertilizers, pet waste, oil leaking from our cars, and litter all can pollute our streams.

Pollution and Its Impact

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<thead>
<tr>
<th>Pollution Sources</th>
<th>Impact</th>
<th>Consequences</th>
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<tbody>
<tr>
<td>Nutrients Grass Clippings/Leaves Excess or Spilled Fertilizer Animal Waste</td>
<td>Byproducts, including phosphorus and nitrogen, feed aquatic plants and create algal blooms, clogging creeks and streams. Microorganisms eat the increased organic matter and use up vital oxygen.</td>
<td>Reduction of animal habitat. Loss of available oxygen causes death of fish and other aquatic animals.</td>
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<tr>
<td>Bacteria Animal Waste Improper Sewage Disposal</td>
<td>Bacteria affects water quality and can make animals, humans and other aquatic life sick.</td>
<td>Human sickness, as well as animal sickness and death, can result.</td>
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<tr>
<td>Toxins Paint Dumping Pesticides/Herbicides and Solvent Dumping Improper Disposal or Spills of Oil and Gasoline</td>
<td>Toxins affect water quality and have unknown effects on animal and human health. Toxins are basically poisons. They can affect the neurological and biological systems of animals and humans, as well as damage or kill aquatic plants and life.</td>
<td>Can kill animal and aquatic life and affect reproductive abilities. Harms wildlife habitat.</td>
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