



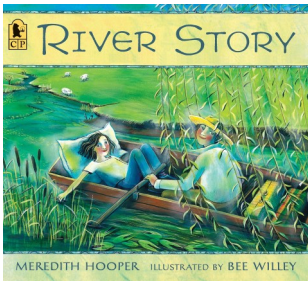
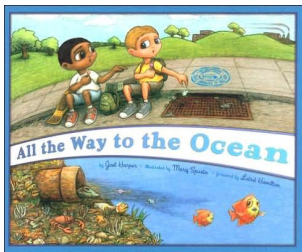
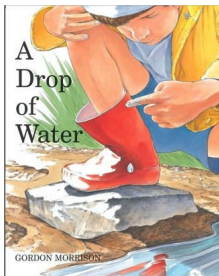
SWIFTlet

Soil and Water Information for Teachers: lessons on environmental themes



PESKY POLLUTION

LITERACY CONNECTIONS



Franklin Soil and Water Conservation District
Creating Conservation Solutions for Over 70 Years

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Water is an essential resource for all life. Although we can turn on the faucet to get the water we need, plants and animals depend on rain to supply them with much needed water. When precipitation falls, some of the rain soaks into the ground to water the plants, while the rest runs across the land eventually flowing into a river, pond or lake. The area of land that drains to a particular body of water is called a **watershed**. The watershed is named for the stream, river, or lake that collects the water. Smaller watersheds drain into larger ones and eventually carry water to the oceans. A watershed is a rich source of biological diversity for animal species and provides water for drinking, recreation and agriculture. It's important to remember that we all live in a watershed and have a responsibility to protect the natural resources within it.

Some precipitation travels over impervious surfaces including roofs, driveways, roads and parking lots. Along the way, this water picks up litter, chemicals and excess nutrients. This **stormwater** may flow directly into local streams and rivers as "runoff" or into storm drains, where it is directed through a series of underground pipes to the nearest stream, river, lake or pond. Either way, it's important to remember that what we put on our land could end up in our waterways.



Pollution is something added to the environment that is harmful. Water pollution can be man-made (litter or pesticides), natural (soil from erosion) or solar heat from the removal of streamside trees. Pollution can also be categorized as "**point source**" or "**nonpoint source**." Point source pollution can be traced to a specific source such as a factory or a wastewater treatment plant. Nonpoint source pollution is much harder to trace as there are multiple possible sources, including homes, streets, parking lots, businesses and farms.

All plants and animals (including humans) depend on the environment for their basic needs of food, water, shelter, air and space. Organisms can live only where these needs are met. When the environment around them changes in a way that reduces abundant and healthy resources, there could be a localized loss of that organism. It is important to remember that our impact on the environment can be either positive or negative, and that negative consequences may be unintentional and unanticipated.



Only Rain Should Go Down the Drain

Storm drains are connected to rivers and streams, not the sewer system!

PESKY POLLUTION

WITNESSING WATER QUALITY ISSUES

Let's learn about the sources of water pollution using a *Freddie the Fish* activity.

In this story, Freddie the Fish swims downstream, passing a variety of land uses and meeting many different neighbors along his journey.

Supplies:

- * **Freddie the Fish activity guide**
- * Bowl of water
- * Fishing lure or a sponge in the shape of a fish
- * Different household items such as cocoa powder, salt, Jell-o powder, maple syrup and raisins or chocolate chips to represent the pollutants



Procedures:

- * Follow the script of the *Freddie the Fish* activity
- * Children can take turns reading the Freddie portion and sprinkling the appropriate "pollutants" into the water.

Freddie the Fish Follow Up Questions

- * Do you think Freddie is very happy or healthy in his stream now? If not, why not?
- * Did anyone purposely pollute the river?
(Important to note that most pollution is not intentional)
- * What do you think is one of the worst pollution problems in Ohio's rivers?
(It is soil, because of the number of sources of soil erosion and the harm soil can cause to aquatic habitats and the animals living within)

ADDITIONAL RESOURCES

Freddy the Fish Teaches About Stormwater

Berenstain Bears & the Coughing Catfish video

Discover Water by Project WET

USGS Water Science School

Utah State University Extension Water Quality Kids Page

GIVE IT A TRY

Only Rain Goes Down the Drain

Take a walk in your neighborhood to locate and count the number of storm drains nearby. Do you notice possible pollutants near those storm drains? Brainstorm ideas to prevent pollutants from getting down these storm drains in your neighborhood.

QUESTIONS TO EXTEND LEARNING

1. What are some possible ways to slow down or stop soil movement (erosion) due to rain and wind?
2. Do you think washing the car at home could be a source of pollution? If so, where could you wash the car besides the driveway?
3. Can you think of other possible solutions to pollution problems in your neighborhood or community?



While on a walk outside pick up some things you find on the ground, both natural items and litter. Using these objects, create fish or other animal shapes.

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