Teacher's Notes
DOWN THE HILL .... YOUR WATERSHED

What is a Watershed?
Local streams empty into larger streams, rivers, or lakes, which may empty into a larger river, which empties into the Great Lakes, which empty into the Ocean. Your local watershed is your ecological address. It includes all the land (farms, hills, towns, cities) around the waterways near your home.
You are a part of a watershed. This means that everything you do can effect nearby surface water and groundwater in both good and bad ways. The watershed is a geographical community, which includes all the humans, animals and plants who live in it as well as non-living residents such as rocks and soil.

Why are watersheds important?
Watersheds provide water for drinking, irrigation and industrial purposes. Many people also enjoy and use water bodies for their beauty and recreation. Wildlife need a healthy watershed for food, shelter and survival.

Watershed and me
Most of us drink water from our local watershed – from a nearby well, lake or river. It may come directly from a private well or indirectly through a municipal water department. The water department draws water from a nearby source, cleans it, then pipes it to homes, schools and businesses. After it is used, water goes down the drain, through the sewer to a wastewater treatment plant or to a private septic tank. Approximately 57% of Canadians are served by wastewater treatment plants, which treat discharged domestic water before expelling it back into a local water supply.

What are some concerns about my watershed?
Water quality problems are a major concern in a watershed and can result from a wide variety of activities. Pollution can occur from factories or wastewater treatment plants that discharge into a waterway. This is an example of POINT SOURCE POLLUTION. Another major type of water pollution is called NON POINT SOURCE POLLUTION. It is harder to identify. Measure and regulate because it consists of pollutants that are in runoff pesticides, herbicides, failing septic systems, parking lots, construction sites, irrigation systems and drainage systems.

How can I protect my watershed?
We are a part of our watershed. This means we as individuals can also cause point source pollution and non point source pollution., effecting nearby water. Animals, plants, and humans all depend on the watershed. By polluting is, we are harming ourselves, and everything around us. Preventing and conservation are the key. Learn about your watershed, where your water supply comes from and where it goes to after use. Speak to your municipal water service or Ministry of Natural Resources for more information. They will be able to inform you about your watershed.

Down the Hill

Overview of Activity:
Students create a simple watershed model, discovering hills, rivers and lakes from a bird's eye view. They add rain to the model and describe water's flow pattern. This activity can be used to introduce topics of water pollution.

Learning Objectives:
- Describe water drainage patterns.
- Discover the geographic interrelations of different landscapes.
- Explain how pollution might enter rivers and lakes.

Activity 1 Materials Needed: • 2 cups of flour (250 ml) • 1 cup of salt (125 ml) • 2 cups of hotwater (250 ml) • 2 tablespoon of cooking oil (15 ml) • 4 teaspoons of cream of tartar (10 ml) • Mix ingredients until a ball forms • Note: Makes 1 batch of salt dough • • Procedures: • Students form into small groups. Have each group construct a simple watershed relief map. •	• Use Diagram 1 or relief globe or a topographic map as a reference. • Use salt dough in a large pan (25 cm x 35 cm x 5 cm deep) • Bring 2 valleys together to form one large "Y" down the pan. Make a depression along the "Y" valleys. This depression is the riverbed. Dough at the bottom of the "Y" should be lower (shallower) than the top end. Make a very flat depression at the bottom of the "Y" this will be the lake. • Allow the model to dry. Have students paint their models appropriately.

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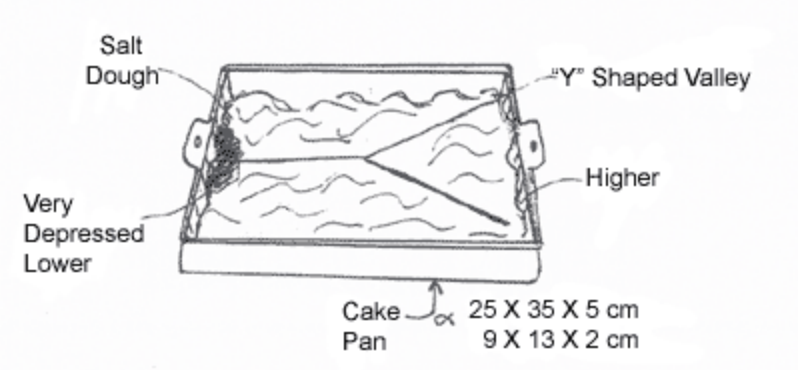
DIAGRAM 1: Salt Dough Relief Model



Where a River Flows

Overview of Activity:
Students learn about landforms, water flow patterns and discovering how pollution enters a water system.

Activity 2: Materials Needed: • Salt dough relief Watershed" model • • rocedures: • xplain that water runs down hill. River water comes from water that has drained off the surrounding ground and water comes from underground. • ave students sprinkle rain their model and observe the path of water as it runs through the model. • here does it collect?	• xplain that areas where water has collected becomes bodies of water (lakes, ponds, streams, rivers, etc.) • et the rain continue until the pan begins to fill. Explain that if water has no way to be carried off, then flooding occurs. Flooding also occurs when water cannot be carried off quickly enough.

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Pollution in Your Watershed

Activity 3: Materials Needed: • alt Dough Watershed Relief Model • ackages of powdered Kool-Aid • cup of coloured (polluted) water • • rocedures: • prinkle Kool-Aid on the Salt Dough Relief Model. These are chemicals that come from products that we use daily.	• prinkle water on the model (rain) to demonstrate runoff. Discuss how pollutants enter and are carried by water. • iscuss point source pollution and non point source pollution. Simulate these by pouring coloured water into the river at one point in the model (point source) and by raining coloured water (non-point source).

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Conclusion:

Students observe and identify physical features on simple watershed models. They describe water flow directions, discover interactive relationships between water, land forms and pollutant transport.