

Name: _____ Date: _____



Stormwater: How Does it Flow And Where Does It Go?

www.ristormwatersolutions.org

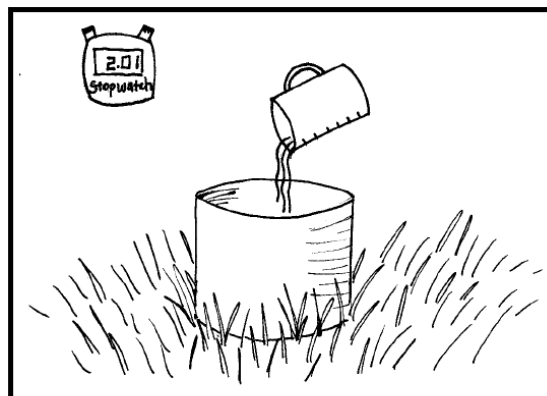
Introduction:

What happens to the water as it falls to the ground? Imagine a rainstorm in a wooded area. Grass, leaves, soil, and vegetation act like a sponge, soaking the water into the floor of the forest to become groundwater. Now imagine the same rainstorm on a road, or in a parking lot. These surfaces are solid, and water has nowhere to go. As it flows along, it gains speed and is able to pick up and carry pollutants that might be on the land.

In this activity, your group will do a percolation test on various land surfaces around your school. A percolation test measures how long it takes for water to soak into the ground. This test will help you determine whether water that falls on your schoolyard becomes groundwater, runoff, or both.

Materials:

- Metal can (or other cylinder) with two open ends
- Pitcher or empty jug for pouring water
- Beaker or measuring cup
- Stop watch
- Data chart



Sharon Friedner

Questions to think about before you begin

1. Read the introduction. Explain how a stream might be affected by a rainstorm in a paved area. How is this different from what you expect would happen in a forest?

2. Before you go outside, decide who will be responsible for each task. Be sure to switch jobs so everyone gets a chance to do everything. You will need:

- a. Timer _____
- b. Recorder _____
- c. Can Twister _____
- d. Water Pourer _____
- e. Observer _____

Part I: Percolation Tests – How does it Flow

Procedure:

1. Find various land surfaces around your schoolyard: grass, gravel, packed dirt, loose dirt, pavement, etc. Record these in your data chart.
2. Place the cylinder on a land surface. If possible, twist the percolation cylinder into the ground slightly so that water will not flow out the edges.
3. Measure an amount of water and pour it into the cylinder. Record amount of water in your data chart.
4. With a stopwatch, time how long it takes for all the water to soak into the ground. Record this in your data chart.
5. Record any other observations made at the site.
6. Repeat steps 2-5 for each land surface.

Percolation Data Chart

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Part II: Where does it go?

Locate the rain gutters attached to your school and answer these questions for each gutter:

1. What kind of land surface is under the bottom of the gutter?

2. Using your observations from your data sheet, do you think rain water would soak into the ground or run off over the land?

3. Predict where the rain would go after it leaves the gutter?

4. If you were a rain drop predict what would happen to you after you fell from the clouds and hit the roof of the building.

Locate storm drains nearby and answer these questions for each storm drain:

5. Describe the storm drain you have found near your school. What does it look like? Can you see water in it? Can you see objects other than water in it?

6. Where does the water in the drain come from?

7. What kind of materials might the water be able to pick up and carry to the storm drain during a storm?

8. Where is the water in the storm drain going?

9. Would you like to swim or play in that water? Why or why not?

Extension:

1. Imagine that your entire school yard had been paved with concrete. Write a paragraph describing what would happen when it rained.
2. Imagine that the whole state of Rhode Island, except for the streams, creeks, and rivers had been paved with concrete. Write a paragraph describing what would happen to these waterways when it rained.

