

# Watershed Investigation Walk

Adapted from "Rainy-Day Hike" from the *Project Wet, Curriculum & Activity Guide*, by the Western Regional Environmental Education Council, 4014 Chatham Lane, Houston, Texas 77027, pages 186-189.

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## Watershed Investigation Walk

In this activity, students create a map of the schoolyard, make predictions about how water will flow in the schoolyard, make observations about runoff, and draw conclusions about nonpoint source pollution.

**Objectives:** Use maps to identify the watershed of your school (see [watershed address lesson](#)).

Draw a water feature map of the school grounds.

Gather evidence and draw conclusions about impacts on the local watershed that originates on the school grounds.

**Materials:** Maps of the local community and maps showing the surrounding topography, streams and water features

Paper, pencil, clipboards, plastic wrap

Rain gear

Measuring tape, compass

### Preparation:

1. Learn how to read map legends and discuss the kinds of information that can be obtained from the map.
2. Use the scale on the map to find distances of important features. Decide on a scale to be used for drawing a map of the school grounds.
3. Identify water features on the map and some that may not be represented. (for example, ground water). Discuss different kinds of ground cover (grass, trees, unmown areas, bare earth, flower beds, etc.) the buildings and structures, paved areas, compacted soil areas, play grounds, playing fields; and all water features, such as ponds, streams, wetlands and grass swales.
4. Make predictions about where the water will flow from the school yard.
5. Divide the school yard into sections and assign groups to each section.
6. Discuss the features (anything that affects water flow) that should be included in a water feature map and how they should be represented. Create a legend for your map.

## Activity

### ***Part 1: Fair Weather Hike (do this on a dry day)***

Use a compass to find direction and indicate North on the paper.

1. **Look** in all directions for landmarks such as tall buildings and parking lots and for features in the landscape such as hills, swales, and valleys. These will give you clues as to where the water will run in a rainfall event.
2. **Label** all of the porous and nonporous features on the map such different kinds of ground cover, plants and trees, buildings and structures, paved areas, compacted soil areas, play grounds, playing fields; and all water features.
3. **Predict** where the water that falls on roofs of buildings will flow. Use a pencil to **label** the location of water spouts with a "w."
4. **Label** your map with a "W" all water features, streams, ditches, ponds, fountains, etc.
5. Predict where you think water will and **draw an arrow** to show the direction on the map. Mark these with arrows on your map.
6. Predict where you think water may form temporary puddles and **draw a circle** on the map.
7. Inspect the area for possible sources of point and nonpoint pollution (don't forget to think about the roofs of the buildings in your area) that could contaminate the water on your school grounds. Hint: oil on parking lots, litter, garbage dumpsters, soil particles, animal and bird waste. **Mark your map with a "P"** all sources of pollution.

#### **Back in the classroom:**

Assemble the map sections and post them on the walls. Share information and predictions.

***What kinds of features will influence the direction and speed of water?*** Discuss how to verify predictions on a rainy day and prepare maps to be waterproofed.

### ***Part 2: Rainy Day Hike***

1. On your maps, **draw arrows with a blue pen or highlighter** to indicate the directions and patterns of all flowing water. Note all obstacles to the flowing water.
2. **Draw circles** to indicate where ever water is standing.
3. **Observe** the slopes, erosion trails, cracks in sidewalks areas where there is no apparent runoff, the speed of water over different surfaces, etc.
4. Draw conclusions: How does the water affect the surface of the school grounds, for example does it carry litter, water plants, cause erosion?
5. Observe the down spouts on buildings. What happens to water flowing off buildings?

**Back in the classroom:**

1. Summarize and compare your findings with your predictions. How accurate were you?
2. Examining the local maps, what is the likely course of runoff from the school grounds? What is the nearest stream or water body and into what body of water does it flow?
3. Does the water from the school yard contribute to the pollution load of the receiving stream? Is this important? Why?
4. List the location and contaminant in the table below.
5. Do activities on the school yard positively or negatively contribute? How?

Location	Contaminant

**Follow up and Reflection:**

1. Does your school yard incorporate any treatments for retaining and cleaning water surface water? You may want to invite the building and grounds manager or your Soil and Water District agent to give you more information.
2. If the school yard is contributing to erosion or other forms of pollution, you may want to develop a plan to slow down, divert or capture the water. Improvements such as planting trees and flowers or building a "rain garden" or cleaning up litter will improve water quality.
3. You can learn how to measure the slope of different parts of your school yard. Slopes can be classified as level, gentle, moderate or steep. How does steepness of slope affect rates of water flow, erosion and sediment load?