ENGAGE   *WADDED WATERSHED*

Summary In this activity, students will use crumpled paper and markers to create model watersheds and track the flow of surface water across "land."

Learning Objectives

After completing this activity, students will be able to:

- Define and describe watersheds
- Define surface water/runoff
- Describe where runoff goes
- Define water pollution and identify and where it come from
- Describe the ways in which geography/topography influence the flow of water across land

Materials Needed

- One or more spray bottles with a MIST setting, filled with water.
- One piece of wax paper per student/group of students. Or blank paper (8.5x11'') if water is not used.
- Brown, blue, and black water-based markers (note: permanent markers will not work).

Procedure

- Tell students that a watershed is an area of water that flow into a bigger body of water (such as a river, lake, creek, or bay)
- Let students know what watershed your school is closest to, and what body(ies) of waters it flows into. (you can find your watershed by clicking on the interactive map at visit http://ncwatershednetwork.org/)
- Pass around paper and markers to each student or group of students. You might want to tell them to clear their desks and to put away any items they want to keep dry.
- Ask students to crumple their piece of paper, then loosen it so that there are both high- and low-points ("peaks" and "valleys") across it.
- Tell students that their wad of paper represents land. Ask them to use a blue marker to color the tops of the "peaks" on their land, drawing a line across each ridge

- Hypothesize. Ask students to think about, write about, and/or discuss what will happen to the colored marker when it "rains." Show students your spray bottle and ask them to consider how water will move across their land.

- Using a spray bottle on the MIST setting, create a "rainstorm" by gently spritzing students' wadded pieces of paper. There should be enough water on each piece of paper to create "runoff" drizzles that pool in paper "valleys." If wax paper is not available, students can use markers to trace where water would flow downhill and pool on their crumpled 8x11 paper, without using water.

- <u>Discuss:</u> Were students' hypotheses correct? Why or why not? How did water move across their pieces of land? What surprised them? What does this activity tell us about our watershed?

See next page for optional extension activities.

Additional Resources

Project WET Activities, https://www.projectwet.org/cleanandconserve/download-form, Healthy Natural Environments

EnviroAtlas K-12 Educational Materials https://www.epa.gov/enviroatlas/enviroatlas-educational-materials.

Waves of a Watershed, Alice Ferguson Foundation https://fergusonfoundation.org/hbf-kids-zone/ways-of-a-watershed/

Expedition Northwest, Crumple A Watershed, https://omsi.edu/sites/all/FTP/files/expeditionnw/4.E.1.Crumple.pdf

Optional Extension Activities:

1. Invite students to identify areas of their paper watersheds. <u>Lakes</u> are those valleys in which spray-bottle runoff pooled. The main pathway of water is a <u>river</u>. Small streams that feed into the river are called <u>tributaries</u>. Students can name their mountains, rivers, tributaries, and lakes, as well as their watershed as a whole.

2. Students may also use colored markers to identify areas of farmland, pavement, or residential/urban life in their watershed. Invite them consider how the movement of water varies across these surfaces. Based on their "rainstorm" observations, what surfaces might rain water pass through? How might farms or cities impact the quality of the water traveling through them? What makes water clean? What makes it dirty?

3. Using their knowledge of the cloud-to-ocean journey that water takes throughout a watershed, students can create a "raindrop passport" using paper and markers, drawing and naming their raindrop and listing the areas through which it will travel.