What's In your Watershed?

by Kelly Koller for Outdoor Education Collective

RECOMMENDED GRADES:	K-12
TIME NEEDED:	Flexible depending on grade level and depth; 20-60 minutes
OBJECTIVES:	Students will: • Discover the role of wetlands in watersheds

MATERIALS:	• Bins
	• Sponges (to act as wetlands)
	• 4 colors of Powdered fruit drink mix (to act as pollution)
	  ○ Human waste (litter, etc)
	  ○ Yard care chemicals
	  ○ Salt on roads and auto waste (oil, leaks) and Industrial Waste
	  ○ Exposed soil from farms and/or construction
	• Newspaper and Aluminum Foil (to form landforms)
	• Spray bottles (for "rain")
	• Helpful: printed map of your state (for connections and place-based understanding)

PREPARATION:	• Print and read the background information in the "Watershed in a Box" activity (also linked below in "Resources:") • Gather materials listed above
DIRECTIONS:	1. Use the student observation sheet to make field notes throughout experiment 2. First, have students use the newspaper and aluminum foil to design a watershed with a residential area, town, and river and anything else the student wants to include. Emphasize that water bodies are always where the elevation is lower (water collects there). The newspaper is used underneath the

	aluminum foil to provide the basic shape and represents bedrock and soil layers. The foil represents the topsoil. 3. Mark the different areas with a marker (important so that when you sprinkle human impact you can associate it with different areas). A permanent marker is helpful to prevent bleeding when the "rain" happens. 4. After verifying that students have made their watershed and that it is firm/stable (aluminum should be firmly placed) as well as marked, they can sprinkle on the human impact (see materials) 5. After the human impact is applied, students can make it rain (spray bottle). 6. After students make observations, have them clean up water and repeat the experiment, but this time with a sponge next to (or in) their body of water. The sponge represents wetlands 7. When students repeat the experiment, they should observe that the wetland (sponge) has absorbed much of the human impact. This is a model of what happens in ecosystems as well. Wetlands help mitigate pollutants from getting in bodies of water. Wetlands also help prevent flooding by being a place that allows for water levels to fluctuate.
MODIFICATIONS:	**Fully Remote** At home, students could be creative with substituting materials. Here are some suggestions: • use other containers (pail, or even a bathtub or sink) for the "box" • Use spices colored sprinkles for "pollution" that will act as run-off Students can also play this watershed game at home
	Hybrid model • Teacher can front-load this activity for students to do at home OR students can read/watch background information on watersheds at home and do the activity in person

EXTENSIONS:	Nat Geo Resource: Mapping Watersheds
LEARNING FRAMEWORK:	Attitudes: Curiosity, Empowerment Skills: Observation, Communication Knowledge: Wildlife, Changing Planet
VOCABULARY:	• Watershed • Wetland
ASSESSMENT(S):	Suggested assessments: Observation, discussion at the end. Teacher can also collect student observation sheet for assessment
RESOURCES:	• Watershed in a Box Activity by WAVS • Make a copy of this document for student observations • What's in your water? project