

Water Protector

STEAM KIT FOR CLASSROOMS

YOU CAN BE WATER PROTECTORS!

What is in your kit?

medium sized plastic tub, clay, food coloring, watercolor paper sheets, vial of vegetable oil, plastic beaker, stampers

Additional supplies to have on hand: any available drawing materials (crayons or colored pencils or markers) and access to water for refills

This experiment pairs with the book *We Are Water Protectors* by Carole Lindstrom. Prep by reading over the experiment, follow the links to research local maps and waterways, and identify the standards for your class.

An Art Experiment in Parts

Part 1

An examination of waterways, with a discussion about where water comes from and where water ends up

You will need: *reference map (sourced with class), available drawing materials like crayons, markers, or colored pencils (not in kit), watercolor paper (from kit)*

Ideas for further research:

Learn about your area's traditional territories and Indigenous ways of honoring the water: afn.ca/honoring-water

Explore SD County waterways:

sdcwa.org/your-water/local-water-supplies/groundwater

Tasks:

1. Have your class look at a map of waterways in your area (Look up your area's waterways with this tool: mapcarta.com/W385794064)
2. Use the map as a reference and have students draw just the waterways on a sheet of watercolor paper

Part 2

Physical experimentation with what goes into the water, integrating the watercolor paper from Part 1

You will need these items from the kit:

plastic tub, plastic beaker, clay, food coloring, vial of vegetable oil

1. Prepare the tub by taking out all of the items.
2. Have students shape the clay into a land mass and place it into the plastic tub, forming a slope against one side. There should be enough room for the paper to sit beneath that on the bottom of the tub.

When you form the clay, form a steep slope against one of the smaller sides of the tub so that the runoff will reach the paper. The paper can be placed directly against the slope and in the tub basin. Notice the sediment from the clay that colors the paper.

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Where does your water come from and where does it end up?

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Part 2 Continued

You will repeat steps 3-5 several times. Conserve oil and food coloring so each paper can absorb run-off.

3. Fill the plastic beaker to about 50 ml with water and discuss what goes into the water. Add one color of food dye to represent rainwater. Then add oil to the water as runoff from roads and sewers. Use another color of food dye droplets to represent sewage and another color for garbage. The color need not look like what it represents, so any color, like orange or red even, could represent rainwater.
4. Let the elements combine naturally, without mixing or stirring. Observe how the oil and colors combine or don't combine. Is this the same in our waterways? What happens to oil from vehicles when it rains?
5. Using the plastic beaker, pour small amounts from the liquid mixture onto the slope and see what happens to the watercolor paper beneath.

Now you have an artistic outcome from water run-off! The next step is optional, depending on the class grade level.

Part 3

Using craft to discuss how waterways impact animals and other living beings (this may be more appropriate to lower levels but could be engaging for all grades)

You will need these items from the kit:
paper from previous experiment and stampers

Here students will use the paper from the previous experiment as a canvas.

1. Using the stampers, have students add patterns to their watercolor prints and discuss the impact of the waterways on other living beings. There is no right way to create a design. Students may use one stamp to create a pattern across their page or mix them up to create a scene.

NGSS Standards that fit with these STEAM activities:

K-ESS3-3, k-2-ETS1-1, 2-ESS2-3, 3-LS4-4, 4-ESS3-1, 5-LS1-1, 5-ESS2-2

CA Arts Standards for Creating and Connecting:

PK.VA:Cr1.1, K.VA:Cr1.2, 1.VA:Cr2.1, 2.VA:Cr3, 3.VA:Cr2.3, 4.VA:Cr2.3, 5.VA:Cr2.3



ELA Standards:

RI.2.1, CCSS.ELA.2.RL.3, L.3.5b, W.4.9.a-b, 5.RI.3



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