DIY Watershed

LESSON SUMMARY

In this activity, students will make a watershed model to show how water flows in a watershed. They will use their watershed model to model nonpoint source pollution.

LESSON OBJECTIVE(S)

- Students will create a watershed model.
- Students will use their model to show nonpoint source pollution.

FOCUS QUESTION(S)

How does water flow in a watershed?
How does pollution enter waterways in a watershed?

LEARNING TARGET (I CAN STATEMENT)

I can create a watershed model and use it to model nonpoint source pollution.

STANDARDS ADDRESSED

AR: 5-ESS2-1, 5-ESS3-1, 6-ESS2-4, 6-ESS3-3
MS: E.5.10.1
TN: 4.ESS3.1, 4.ESS2.1, GEO.ESS2.12

MATERIALS

- Container to build model in (examples: rimmed baking sheet, casserole dish, plastic storage container)
- Material for surface terrain (examples: aluminum foil, plastic shopping bags, plastic drop cloth)
- Material for subsurface terrain (examples: balled up paper, cups, containers)
- Washable markers
- Spray bottle
- Material for pollution (examples: cocoa, cinnamon, Kool-Aid® powder, cookie sprinkles, oatmeal)
- Optional: toy houses and animals

PROCEDURES

1. Have students put the material they have for their subsurface terrain in the container they are using to contain their model.
2. Have students take their surface material and drape it over their subsurface terrain. Push down in between the subsurface terrain to help create hills and valleys.
3. Explain to students that they have created topography on their model. Ask them to think about topography around where they live.
4. Have students use makers to draw where they think rivers and creeks might form on their model. Have them discuss within their group where they predict the water will go on their model and why.
5. Have students take turns creating precipitation using the spray bottle. Have them discuss within their group how their prediction compared to their observations.

6. Now have students model nonpoint source pollution. Discuss with students the common types of pollution: fertilizers, dirt, pesticides, petroleum products, animal waste, litter (feel free to add more)
7. Let students sprinkle their pollution on their model and then have it rain again. Have them make observations on where the pollution ended up in their model.

CLOSURE

Lead a class discussion on what they observed from their model. Potential questions to ask:

- How did their predictions align to their observations?
- Did all the pollution end up in the water ways? What do you think happens to it?
- What are some ways to help prevent nonpoint source pollution?
- How do we clean up the pollution that is already in the water?
- What are some ways to educate people on nonpoint source pollution?