



Playdough Watershed Pollution

What happens in a watershed stays in a watershed- that's right we all live downstream. Students learn about the unique plants and animals of the Great Basin and how pollution in a watershed can affect their survival.

Utah Core Standards

1.4.2 Living things change and depend upon their environment to satisfy their basic needs.

2.4.1.b Develop, communicate, and justify an explanation as to why a habitat is or is not suitable for a specific organism.

2.4.2.c Develop, communicate, and justify an explanation as to why a habitat is or is not suitable for a specific organism.

2.2.1 Classify living and nonliving things in an environment.

Next Gen Science Standards

2-ESS2-1 Developing and using technology has impacts on the natural world.

2-LS4-1 Make observations of plants and animals to compare the diversity of life in different habitats.

3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.

Time

- 20 min. pre-activity background information
- 20 min. activity

Materials in your box

- 4 spray bottles
- Rainbow sugar sprinkles
- Previously made play-dough watershed models that have dried

Videos

Please visit <http://www.greatbasinobservatory.org/lesson-plans/playdough-watershed-pollution> for supporting videos for this lesson plan.



Do ahead

- Have a few teaspoons of sprinkles ready in containers for each student group.

Pre-activity Background Information

- Remind students about their Great Basin watersheds (the model they made, and the one they live in).
- Ask students to name some special plants and animals that live in this ecosystem and watershed.
- Share with students the PowerPoint through slide #3, showing them the 3 pictures of different types of pollution. Ask what the students notice about each picture. Do not comment on the student's answers.
- Then show the 3 pictures all side by side. Ask the students what the pictures have in common. When someone brings up pollution, or litter, ask "can someone explain what that word means?"
 - **Pollution-** when gases, smoke, chemicals or trash are introduced into the environment in large doses that makes it harmful for humans, animals and plants.
 - **Littering-** throwing your garbage somewhere instead of putting it in a trash can.
- Ask students to think about how pollution may move through a watershed and how pollution may affect plants and animals in a watershed. Tell them, we will now use our models from the last activity to find out!

Activity Directions

- Place students back into their groups from the previous lessons.
- Give each student their dry models from the previous activity (Great Basin Watershed).
- Place the sprinkles and a spray bottle with water at each group.
- Tell students to put 5 rainbow sprinkles at the top of their previously flattened mountain. Ask students what these sprinkles can represent? Pollution! What kind of pollution could the sprinkles represent? (Litter, plastic pollution, chemical pollution, soil pollution, air pollution, etc.)



Activity Directions Continued

- Explain that they will add more rain to their models by misting the models. Have students Think-Pair-Share what they predict will happen to their models when the water rains on the pollution.
- Have students take turns adding precipitation to their models by misting their model.
- Students should see the sprinkles dissolve and the color spread with the water into the watershed.
- Discusses how the pollution from the mountain travels to affects the landforms, specifically the rivers and lakes.
 - The pollution from the mountain was carried through rivers and streams into the lakes.
 - Could it also be in the soil? Can it affect the animals and plants in the rivers and lakes, and also on land?
- Use the rest of the PowerPoint slides #5-12 to learn about plants and animals in the Great Basin ecosystem. Use the notes to discuss a few pollution scenarios for the plants and animals.
- End with a few ideas of how students can help reduce pollution in their cities.
 - Pick up litter and throw it away or recycle it.
 - Reduce, reuse and recycle as often as you can.
 - Be careful what you pour on the grass or in your yard.
 - Turn off lights when they are not needed and walk or ride a bicycle instead of taking a car, electricity and cars cause air pollution.