

There's *What* in My Watershed?

Standards of Learning

Science: 3.6, 3.9, 3.10, 4.5, 4.9, 6.5, 6.7, LS.12

Objective

The students will:

- ◆ define “watershed” and identify the effect of runoff on watersheds.
- ◆ identify ways to prevent pollution.

Materials

- ◆ white computer paper
- ◆ washable markers
- ◆ spray bottles with water

Background Knowledge

Sometimes the ground is too wet to soak up more water. So when it rains or snow melts, the water moves until it meets or creates a stream. The area of land that drains the water into the stream is called a watershed. The Chesapeake Bay watershed covers approximately half of Virginia's land area.

Watershed pollution is caused by point source as well as non-point source pollution. Point source pollution is when you know exactly where the pollution entered the water system, such as when motor oil goes down a storm drain. Non-point source pollution is when the pollutant enters the water system over a large area, such as when heavy rains wash grass fertilizer, soil, and trash from a neighborhood into the river.

Farmers work to reduce water pollution several ways, as good management of natural resources increases the value and productivity of their land. Conservation tillage allows the farmer to dramatically reduce soil erosion as well as the amount of pesticides used. Additionally, farmers may leave buffer zones around their crops and use cover crops to reduce the movement of pollutants. Finally, farmers avoid spraying their crops before a heavy rain.

Procedure

1. Ask students to describe what happens when we get a lot of rain. Point out that the water must go somewhere, and when the ground has absorbed all that it can, the water then runs into drains and or streams.
2. Define the term “watershed.” Point out that they just because they might not live alongside a river does not mean that they are not part of a watershed.
3. Take a piece of white computer paper and draw several medium sized dots on it using a washable marker. Tell students that the dots represent pollution
4. Have students brainstorm and give examples of pollution as well as its different sources. Define point source and non-point source pollution and give examples of each.
5. Tightly crumble the paper into a ball.
6. Unfold the paper and lay on a table or desk. Point out that the paper now resembles the Earth's terrain, with hills, ridges, and valleys.
7. Use a water spray bottle to spray the paper to simulate rain.
8. Ask students to describe their observations.
9. Debrief by discussing how watersheds were created where the water ran together and eventually pooled. Additionally, discuss how the ink bled into the water. Explain that this is similar to what happens when rain washes away soil, trash, and chemicals.
10. Divide students into small groups; assign each group a different topic, such as farms, factories, and homes. Have each group research ways that their segment of the population can reduce water pollution. Have them present their findings in the form of a public service announcement.

References

Lesson adapted from Illinois Agriculture in the Classroom.

