Activity #2:

Investigating Pollution

Social Studies
Lesson
#3

There are many ways that water can become polluted. Natural pollution might include soil, leaves or living organisms that could be harmful. However, people cause the most serious pollution. In agricultural areas, fertilizers and pesticides may wash into streams or lakes during rainfall. In some industrial areas, harmful pollutants may be dumped into water by factories and refineries. In populated areas, treated wastewater and urban runoff may find its way into water. Sometimes these pollutants can seep into ground water that people use as a source of drinking water. With increases in population, water pollution has become a serious concern for many communities.

Objective: Students will demonstrate a knowledge of types of pollution and how pollution might affect water supplies by completing the activity, participating in class discussion and completing research reports.

NEVADA SCIENCE STANDARDS 16:8, 20:8

Time: Two or three class periods

Materials: (per group) eight one-pint jars (four with tight-fitting lids), masking tape, funnel, cotton, motor oil, vinegar, laundry detergent, soil, plastic cups or beakers

Procedure:
Follow the instructions carefully to make polluted water and observe what pollutants might do to water supplies.

1. Label two sets of jars. Number four of the jars (1, 2, 3 and 4) with masking tape. Make sure these four jars have lids that will fit tightly. Fill this set of jars half full of water. Number the other four jars (5,6,7 and 8) with masking tape and set them aside.

2. Observe the water in jar #1.
   Describe your observations in Chart A.

3. Put one tablespoon of motor oil in jar #2. Tighten the lid. Carefully shake the jar.
   Describe your observations in Chart A.

4. Put a tablespoon of vinegar in jar #3. Tighten the lid. Carefully shake the jar.
Describe your observations in Chart A.

5. Put a tablespoon of detergent in jar #4. Tighten the lid. Carefully shake the jar.
Describe your observations in Chart A.

6. Place a piece of cotton in the funnel and then add some soil. Place the funnel on empty jar #5.

7. Pour the contents of jar #1 (water only) into the funnel and let it drip through the funnel into jar #5.
Record your observations in the appropriate space in Chart B.

8. Move the funnel with the cotton and soil to empty jar #6. Pour the contents of jar #2 (oil and water) into the funnel and let it drip through the funnel into jar #6.
Observe and record your observations in Chart B.

9. Move the funnel with the cotton and soil to empty jar #7. Pour the contents of jar #3 (vinegar) into the funnel and let it drip through the funnel into jar #7.
Observe and record your observations in Chart B.

10. Move the funnel with the cotton and soil to empty jar #8. Pour the contents of jar #4 (detergent) into the funnel and let it drip through the funnel into jar #8. *Record your observations in Chart B.*

11. When finished, compare the results from Chart A and Chart B. Discuss with group members and respond to the questions below.
Prepare a report with your written responses.
Compare your results with other groups in class.

Questions:

a. If these substances were added to a real water source, how might they affect the water?

b. How might animals or people be affected?

c. Can you think of instances where materials such as these (oil, chemicals, detergents, etc.) might have been spilled or dumped and possibly endangered a water supply?

d. What measures might a community take to prevent such accidents?

e. How did your results as written in Charts A & B compare with other groups in class?

Activity #2:

Investigating Pollution - Data Sheet

Chart A: How Clear Is the Solution?
Jar #1
Jar #2
Jar #3
Jar #4

Chart B: How Clear Is the Solution?
Jar #5
Jar #6
Jar #7
Jar #8

Welcome Page Unit Planner