

Pollution Plume

Skill: Language Art, Science, Social Studies

Objectives

Students will:

- demonstrate, discuss, observe, and describe the process of a contaminate leaching through the soil to the groundwater supply, creating what is called a "pollution plume."

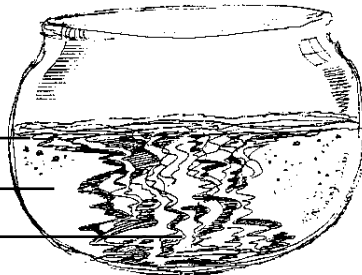
Background

Once pollutants leach into groundwater they move in what is called a "pollution plume," - fanning out as they flow with the groundwater. Pollutants that were dumped on the land years ago may just now be reaching our wells and contaminating our water. Chemical products we use around the house (oil, paint) and pour into the soil today may show up as polluted water years in the future.

Procedure

- With the hand shovel, fill the jar 2/3 full of sand.
- Place a 1/4 inch layer of soil on top of the sand.
- Squirt a pipette full of oil or paint into the soil near the edge of the jar.
- Repeat this three more times.
- Put the cap on top of the jar.

Pollution plume demonstration



Observe what happens over the length of a day.

Soil
Sand
Oil or Paint

Discussion and Evaluation

1. What happened within the first few minutes after you squirted the contaminant into the soil? *It began to seep through the soil*

After an hour? *It began to seep through the sand*

After a day? *It spread down to the bottom of the jar*

2. What would happen if you dumped a whole can of oil or paint in you backyard?

It would seep down into the soil and contaminate the groundwater.

3. Why do you think it difficult to clean up polluted groundwater?

The pollution plume moves slowly, and it takes a long time for it to pass through the system and be diluted and flushed out.

Vocabulary

- pollutants
- pollution plume

Materials

- Large, clear jar with a cap
- Pipette
- Sand
- Soil
- Paint or oil
- Small hand shovel

P.A.S.S.

4th Grade

- Read 1.1, 3.1b
- Write 1.6
- Oral 3.2
- Process 1.1, 3.1,3, 4.4, 5.4
- Social Studies 1.1, 2.1

5th Grade

- Read 1.1a, 3.1b
- Write 1.3
- Oral 3.2
- Process 1.1, 3.1,3, 4.4, 5.4
- Life 2.2
- Social Studies 1.1, 7.1,2

6th Grade

- Read 1.1a, 3.1b
- Write 2.7
- Oral 1.2
- Process 1.1, 3.1,5, 4.4, 5.4
- Earth 5.2
- Social Studies 1.2

Class Extension

Call your local Soil & Water Conservation District Office or Health Department to determine what areas in your locality may have contaminated groundwater. Have students identify these areas on a map and determine what may have caused the contamination.



Pollution Plume

Record of Observations

Student Activity Page

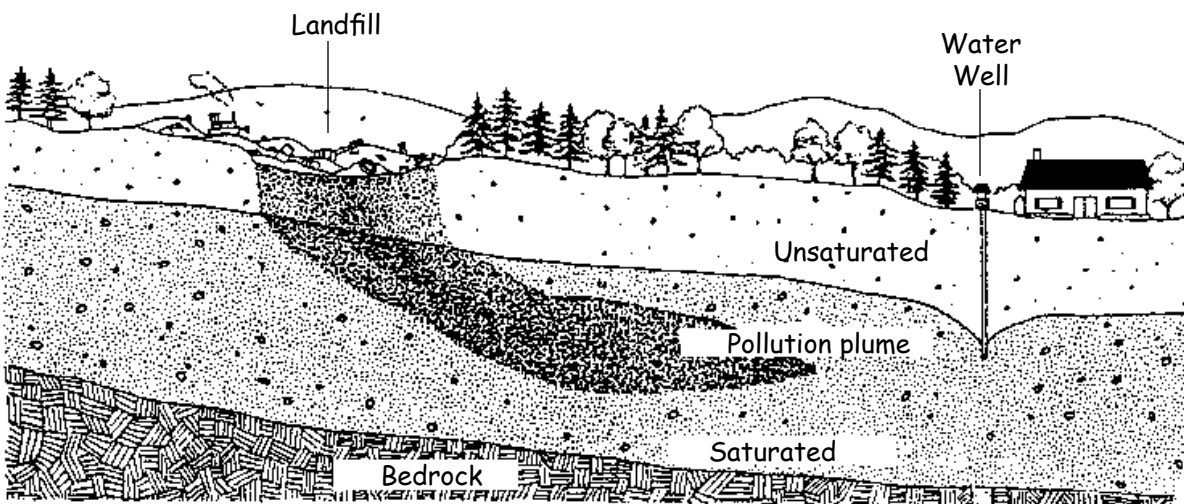
1. What happened within the first few minutes after you squirted the oil or paint into the soil?

After an hour? _____

After a day? _____

2. What would happen if you dumped a whole can of oil or paint in your backyard? _____

3. Why do you think it is difficult to clean up polluted groundwater? _____



Pollution plume moving towards water well

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