

Aquifer Activity

Summary

Students will build a model of an aquifer and test it for water flow and movement of pollution.

Main Core Tie

Science - Earth Science

[Standard 4 Objective 1](#)

Time Frame

1 class periods of 60 minutes each

Group Size

Small Groups

Materials

- Sand or pea gravel (a coarse grain works best)
- 2 beakers (250 ml or larger)
- 1/2 in. diameter clear plastic tube (plastic casings off of glass thermometers work well)
- pipet
- food coloring
- biodegradable foam packing
- graduated cylinder
- spoon
- spray bottle
- [student sheet](#)
(attached)

Student Prior Knowledge

Students should know that water cycles through ecosystems and is stored in various reservoirs. Underground reservoirs are hard for students to understand because they are invisible. Much of the water supply in Utah for cities drinking water is drawn from wells. Students may know where well sites are located in their neighborhoods, they are often housed in buildings surrounded by wire fences.

Instructional Procedures

Discuss with students the movement of water from the run-off stage, into the ground and out of the well. Ask what determines the amount of water in a well.

Show students the materials and discuss the procedures with them. You will need to be in control the time it "rains" so that students do not flood their beakers. Go through the months of the year controlling the amount of rain and the amount of well pumping. More rain or snow falls in the winter and spring months, more water is pumped out of wells in the summer and fall.

Some students will find their wells run dry, some will overflow (in Utah, this happens very rarely) Allow time for students to work. If you would like them to see how caves form, have them add a biodegradable packing peanut under the surface near the glass and add water and pump the well.

Discuss results with students.

Assessment Plan

Scoring Guide:

- 1. Students participate in activity.....4
- 2. Students collect and record data.....4
- 3. Student correctly answer analysis questions.....4

Answers:

The water is filling the spaces between the sand grains (pore space) below the water table.
The water in the well and the water table are the same level.
The well must go below the water table to collect enough water to pump.
A basement below the water table fills with water.
Pollution from the surface is washed into the ground water.
Water can dissolve and carry many substances.
People in Salt Lake need clean water to stay healthy.

- 4. Student draws thoughtful conclusion.....4

Bibliography

Lesson Design by Jordan School District Teachers and Staff.

Authors

[Utah LessonPlans](#)