

Earthy Sundaes

Adapted from The Groundwater Foundation
and the US EPA

This activity is an interactive way to study the layers that form aquifers and show the impact that contaminated groundwater can have on wells.

Objectives-

- ✓ To teach about the geologic formations in an aquifer
- ✓ Understand how pollution can get into groundwater and how pumping can cause a decline in the water table
- ✓ Learn about: confining layers, contamination, recharge and water tables.

Estimated Time-

- ✓ 30 Minutes



Materials-

- ✓ Blue/red food coloring (or substitute with red, grape or orange soda)
- ✓ Vanilla ice cream (one 5-quart bucket yields 60 aquifers at one generous scoop per student)
- ✓ Clear soda (7-up, Sprite, etc)
- ✓ Small gummy bears, chocolate chips, crushed cookies, cereal,
- crushed ice or other material to represent sand and gravel
- ✓ Variety of colored cake decoration sprinkles and sugars
- ✓ Drinking straws
- ✓ Clear plastic cups
- ✓ Ice cream scoop
- ✓ Spoons

Background-

Introduce groundwater, using the vocabulary introduced in the *What does your Aquifer Look Like?* lesson.

Procedure-

- 1) Begin to construct your edible aquifer by filling a clear plastic cup 1/3rds full with gummy bears, chocolate chips or crushed ice (gravels and soils).
- 2) Add enough soda to just cover the candy/ice.
- 3) Add a layer of ice cream to serve as a “confining layer” over the water-filled aquifer. Discuss what a confining layer is/does.

- 4) Add more “sand/gravel” on top of the “confining layer”.
- 5) Colored sugars and sprinkles represent soils and should be sprinkled over the top to create the porous top layer (top soil).
- 6) Now add the food coloring to the soda. The food coloring represents contamination. Watch what happens when it is poured on top of the “aquifer”.
- 7) Point out that the same thing happens when contaminants are spilled on the earth’s surface.
- 8) Using a drinking straw, drill a well into the center of your aquifer.
- 9) Slowly begin to pump the well by sucking on the straw. Watch the decline in the water table.
- 10) Notice how the contaminants can get sucked into the well area and end up in the groundwater by leaking through the confining layer.
- 11) Now recharge your aquifer by adding more soda that represents a rain shower.
- 12) Review what you have learned as you enjoy eating your edible aquifer!

WARNING: Be sure to check with parents about food allergies or dietary restrictions!