

Objective

To teach about the geologic formations in an aquifer, how pollution can get into groundwater and how pumping can cause a decline in the water table. Background This activity is a fun and easy way to understand the geology of an aquifer. You will build your own edible aquifer, learn about confining layers, contamination, recharge and water tables.

Duration

20 minutes

Materials Needed

- 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 pop (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



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Activity Steps

1. Review [What is groundwater?](#) and [Groundwater Vocabulary](#) terms.
2. Begin to construct your edible aquifer by filling a clear plastic cup 1/3 full with gummy bears, chocolate chips, or crushed ice (represents gravels and soils)
3. Add enough soda to just cover the candy/ice.
4. Add a layer of ice cream to serve as a "confining layer" over the water-filled aquifer. Discuss what a confining layer is/does.
5. Then add more "sand/gravel" on top of the "confining layer."
6. Colored sugars and sprinkles represent soils and should be sprinkled over the top to create the porous top layer (top soil).
7. Now add the food coloring to the soda. The food coloring represents contamination. Watch what happens when it is poured on the top of the "aquifer." 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 which represents a rain shower.
12. Review what you have learned as you enjoy eating your edible aquifer.

Warning: Check with your students before conducting this activity to see if anyone is diabetic or lactose intolerant. Make substitutions if needed.

Activity Source

Edible Earth Parfaits was adapted from "Making A Bigger Splash," co-published by The Groundwater Foundation and the US EPA, Region VII. If you are interested in more activities based on environmental issues, see our [Online Catalog](#) or contact The Groundwater Foundation at 1-800-858-4844.

UGA Resources

The UGA College of Agricultural and Environmental Sciences Water Resources Team provides a variety of research-based publications and information about water:

<https://site.extension.uga.edu/water/>.

