

# Edible Aquifers

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## What is groundwater?

Groundwater is the water we drink and the water that grows our food. It is found underground in the cracks and spaces between sand and soil. These underground formations are called aquifers.

This activity is a fun and easy way to understand the geology of an aquifer. You will build your own edible aquifer and learn about confining layers, contamination, recharge, and water tables.

**Key Topics:** Aquifer, Earth science/geology, Groundwater, Wells, Contamination/pollution prevention

**Grade Level:** This activity can be adapted for many age groups

**Duration:** 20 - 30 minutes

## Objectives:

Learn about the geologic formations in an aquifer, how pollution can get into groundwater, and how pumping can cause a decline in the water table.

## Items Needed:

- Clear plastic cups
- Ice cream scoop
- Spoons
- Drinking straws
- Blue/red food coloring
- Vanilla ice cream or fruity sorbet
- Clear soda pop
- Small gummy bears, chocolate chips, crushed cookies, breakfast cereal, or crushed ice
- Variety of colored cake decoration sprinkles and sugars



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## Activity Steps:

1. Begin to construct your edible aquifer by filling a clear plastic cup 1/3 full with gummy bears, chocolate chips, or crushed ice (represents sand/gravel).
2. Add enough soda (represents water) to just cover the candy/ice.
3. Add a layer of ice cream to serve as a “confining layer” over the water-filled aquifer.
4. Then 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.
6. Add the food coloring to the soda. The food coloring represents contamination. Ask the students to come up with examples of contamination (motor oil, fertilizers, road salt, etc.).
7. 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 participants before conducting this activity to see if anyone is diabetic, lactose intolerant, or has other food allergies. Make substitutions if needed.

