



EDIBLE AQUIFER

Aquifer Adventure
Celebrating Groundwater,
Portland's Buried Treasure



Objective

Edible aquifer is a fun and easy way to learn about groundwater. Groundwater is water that is found underground in layers of rocks, sand, and gravel called aquifers. Through building your own edible aquifer, you will learn about aquifers, confining layers, wells, and recharge.

Duration: Twenty to thirty minutes

Age level: This activity can be adapted for many age groups.

Materials

- Crushed chocolate chip cookies
- Breakfast cereal such as Cocoa Puffs or Kix
- Crushed ice
- Vanilla ice cream
- Clear soda
- Blue food coloring
- Rainbow, green, and brown sprinkles
- Clear plastic cups
- Ice cream scoop
- Spatula and large spoons
- Straws
- Paper towels

Activity steps

1. Build **rock layers**: Fill 1/3 of a plastic cup with crushed ice to represent rock material, then add a small scoop of cereal and crushed cookies to represent gravel and sand.
2. Add **groundwater**: Cover the rock, gravel, and sand layers with clear soda, representing groundwater, and observe as the liquid fills the pore spaces between rock materials.
3. Create a **confining layer**: Using a spatula, spread ice cream over the "rocks" and soda, creating a layer that completely covers the width of the cup. In an aquifer, a confining layer is usually clay or dense rock.
4. Add an **upper rock layer**: Add another ice, cookie, or cereal layer on top of the confining layer.
5. Add a **layer of soil and plants** using the different colored sprinkles.
6. Add **groundwater** for the top layer: Add the food coloring to the soda and watch what happens when it is poured on the top of the aquifer. See how well the confining layer of ice cream separates each aquifer.
7. Drill a **well**: Push a straw to the bottom of the cup, and pump the "well" by slowly sucking on the straw. Watch the water level go down.
8. **Recharge** your aquifer by adding more soda which represents a rain shower.
9. **Review** what you observed as you enjoy eating your edible aquifer.

