Edible Aquifer

green or red food coloring  
vanilla ice cream  
club soda or sprite  
different size chocolate chips  
cake decoration sprinkles and sugars  
drinking straws  
spoons  
clear cups

1. Fill a small, clear cup about one-third of the way with your chocolate chips. This represents all of the sand, gravel, and rocks in the aquifer.

2. Cover the “gravel, sand, and rock layer” with clear soda. This is our groundwater. See how the “water” fills in the spaces around the “gravel, sand, and rock.”

3. Spread a layer of ice cream over the chips and soda. This layer of our aquifer is called the confining layer, which is usually clay or dense rock. The water is confined below this layer. Today our confining layer is going to consist of ice cream.

4. Add another layer of “gravel and sand,” chocolate chips.

5. The next layer is our porous, top layer of soil. Decorating sprinkles and some colored sugar can be used to represent this layer.

6. Add some food coloring to a small amount of soda. The coloring represents pollution. Can you think of some pollutants that can affect groundwater? Watch what happens when we pour it on the land.

7. Using your straw, drill a well (push the straw down toward the bottom of the cup) into the center of your aquifer. Slowly begin to pump the well by sucking on the straw. Watch as the water table goes down. Also, watch and see how the contaminants can get sucked into the well area and end up in the groundwater by eventually leaking through the confining layer.

8. Pretend it’s raining and recharge the aquifer by adding more soda. A real aquifer takes a lot longer to recharge, this is just an example to speed up the process and give you a little more soda to drink.

9. Now it’s time to eat up your aquifer!