

This activity shows how water is stored in an aquifer, how ground water can become contaminated, and how this contaminations ends up in our drinking water.

Questions to think about before:

- Where does our water come from?
- Where does our water go?
- What is it called when we don't have a lot of water?
- What is the difference between ground water and surface water?
- What is an aquifer?
- What does an aquifer look like?
- What can affect an aquifer?
- What is contamination?
- What are harmful chemicals?

What you'll need:

- Approximately a foot long clear plastic container, 12x8x8
- Modeling clay
- White sand
- Small rocks
- Straw
- Spray Bottle
- Green Felt
- Cocoa
- Food coloring
- Pipette
- Water bucket and cup
- Scotch tape

What to do:

1. Tape the straw in a corner of the container, leaving $\frac{1}{8}$ inch from the bottom, with the straw top above the top of the bucket.
2. Pour a layer of white sand about an inch deep in the bottom.
3. Pour water in the sand enough to wet it completely, but not enough that there is standing water. See how the water is absorbed into the sand.
4. Flatten the clay and spread it to half of the container, pressing the clay to three sides of the container (the half being hamburger style, not hot dog)
5. This will represent your confining layer. Pour a small amount of water on the clay to show how the water stands.
6. Add rocks all over the sand and clay, making a hill above the clay on one side, a valley above the clay on the other. Make sure that the sand and clay is completely covered.
7. Fill the aquifer with water until the water is about an inch away from the top of the hill. Observe how the water stores around the rocks.
8. Place the piece of green felt on top of the hill, representing a lawn or crop field. If it needs to be stabilized, use a little piece of clay to fasten it to the sides of the container.

Aquifer Project - from EPA

9. Sprinkle some cocoa on top of the hill to represent the chemicals from lawn chemicals or pesticides/fertilizer.
10. Use pipette to put some food coloring in the water and watch how it spreads to the surface water, under the confining layer, and into the aquifer below.
11. Fill the spray bottle with water and make it rain over the cocoa on the hill. Water will run off the hill and into your surface water. It will seep through your lawn and down into your ground water.
12. Remove the top of the spray bottle and insert the stem into the straw.
13. Pull water up from the aquifer.
14. Is it clear? If it were properly treated, would you drink it?

Questions to think about after:

- What else can you think of that can contaminate our water?
- Who is responsible for contamination?
- What can we do to help conserve water?
- What can we do to help conserve the environment?