

Hands-on Aquifer

Materials

- Two clear plastic cups (approximate size, 10–12 ounces)
- Sand
- Aquarium gravel
- Large container of water
- Straw or pipette
- Pen or marker



Procedure

1. Place alternating layers of sand and gravel in both plastic cups; fill about three-quarters full.
2. Slowly pour water into one of the cups. Notice what happens to the water. Does the water seem to move faster through the sand or through the gravel? Record your observations.
3. Add more water to the same cup until the water is above the sand and gravel. In the real world, water that is above the ground, like rivers and lakes, is called surface water. Below the surface, water is known as groundwater.
4. Slowly pour water into the second cup. Stop when it is 1 inch below the top of the sand and gravel. Use a pen to mark a line where the top of the water is. This line represents the water table. The area below the water table is called the saturation zone.
5. Place the straw into the second cup until it extends down below the water table. This straw represents a well.
6. Using your finger on top of the straw to close it off and to trap the water in the bottom, carefully lift the straw out. Keep your finger tightly over the straw top. (A pipette can be used in the same manner.)
7. Discard the water into the large container of water. Repeat this action four to five more times. Use the pen to mark the water table. Withdrawing water from the aquifer, as wells do, reduces the amount of water available in the aquifer.
8. Now pretend the large container of water is a rain cloud. Sprinkle a little more water into your second aquifer until the water table is about one-half inch below the first line you marked for the water table. You have just recharged your groundwater supply. That is what happens when it precipitates and water sinks into the ground.

Think about this: What will be the effect if too much water is removed from the aquifer and not enough precipitation falls to recharge the groundwater supply?
