

Aquifer in a Cup

Objective

This activity is designed to help you understand the cycle of water groundwater in the earth. Groundwater is water found underground in the spaces and cracks between soil, sand and gravel.

Materials Needed

- 2 clear cups
- Sand
- Gravel (or aquarium rock)
- Pitcher of water

Procedure

1. Fill both cups with layers of sand and gravel to about 3/4 from the top of each cup. Remember that in nature, **aquifers** consist of layers of sand, gravel and rock.

2. Pour water very slowly into one of the cups. Watch how the water fills the spaces between the particles of sand and gravel. Note if the water appears to move faster through the sand or faster through the gravel.

Continue to fill this cup with water to the top (above the top of the sand and gravel). Water that is located above ground, like rivers and lakes, is called **surface water**. Water below the ground's surface is called **groundwater**.

3. Slowly pour water into the second cup until the water line is about one inch below the top of the sand/gravel. Look closely at this line created by the water. This line is called the **water table**. Water below the water table is called the **saturation zone**.

5. Now pretend that your pitcher of water is a large rain cloud and pour more water into your second aquifer until the water table is about half an inch below the surface of the gravel/sand. Your groundwater supply has just been **recharged**. This is what happens when it rains or snows and water **infiltrates** (or sinks) into the ground.

Variation

Use colored water or powdered drink mix to represent a source of water contamination. Sprinkle or pour the contaminant on the top a cup filled with gravel and water. Sprinkle water (rain) on top of the gravel. Observe and discuss what happens.

Conclusion

You should learn that groundwater is water found underground in the cracks and spaces in soil, sand and gravel. Also understand that groundwater is stored in--and moves through--layers of sand and gravel. This geologic formation of sand and gravel which stores groundwater is called an aquifer. Aquifers get more water when they are recharged by rain and snow.

Activity Source

[The Groundwater Gazette](#), published by The Groundwater Foundation