

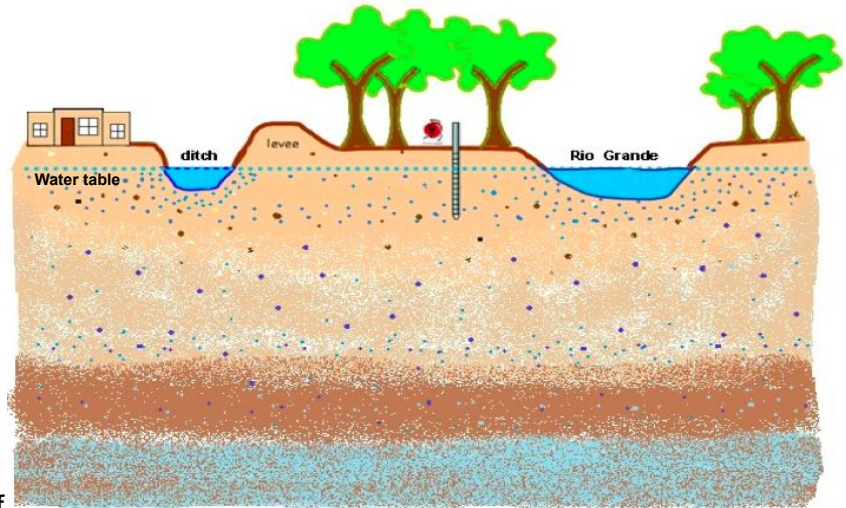
BEMP Groundwater Monitoring



Each month, BEMP checks how deep the water in the ground below us is. Why would we do that? What uses underground water? Plants, like native cottonwood trees, use **groundwater** to survive and need to have enough water to grow. We (humans!) also use this water for drinking or to grow our food. By monitoring groundwater, we can learn more about the health of our bosque, Rio Grande, and ecosystems we call home. **Check out this activity to learn more about groundwater!** (This activity was adapted from The Chaos and the Cutter's lesson "Simple Science: Groundwater" and The Groundwater Foundation's "Aquifer in a cup")

Create your own aquifer:

1. Find a tall, large, clear container that you and your family doesn't mind having sand and rocks in.
2. To make the **aquifer** (the layer of sand and rocks underground that holds water), fill the container with alternating sand and rocks (**sediment**).
3. Fill the container with water, until it is an inch away from the top of the rocks and soil. This is called the **water table**.
4. Add a bit more water and pretend it is raining. What happens to the water table? This is how water enters the aquifer!
5. Keep adding water until it has reached the top of the sediment. The water above the sediment is called **surface water**.



Take it to the next level!

Here are some things you can do to learn more about how plants and people use groundwater:

The Rio Grande cottonwood, a native tree in the bosque, needs their roots in or near the water table. The roots of a cottonwood go about 3 meters (300 centimeters or about 10 feet) underground. Each month, BEMP measures the groundwater throughout the bosque. **Using the provided BEMP data, answer the following questions:**

1. BEMP measures the groundwater in the winter, and the water is 350 cm away from the surface. Are the roots of the cottonwoods able to reach the water? What might happen to the cottonwood trees?
1. BEMP measures the groundwater in the spring, and the water is 100 cm away from the surface. Are the roots of the cottonwoods able to reach the water? What would happen to the cottonwood trees?

What happens when you remove water from your aquifer? Use a clean soap or lotion pump to remove water from the system. Why do we pump water from the ground? How would this affect the plants that need the water?

What happens if a pollutant like motor oil gets washed into the aquifer? Add a few drops of food coloring to your aquifer. How does it spread? Does it take a long time to get to the bottom of your model? What can you do to prevent the spread of pollutants into the aquifer?