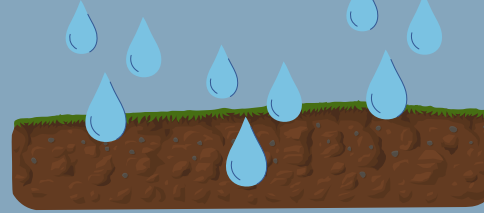


Water Table Model



Name :

Guiding question: How does water interact with the geological features around us?

Materials:

- Clear plastic box
- Course sand, at least 2-3 inches deep
- Water dropper to represent a well
- Spraybottle
- Water
- Rocks, foil, plastic, or other impermeable surfaces to represent non-porous layers

Set Up Model:

1. Pour the sand into the clear plastic box.
2. Create hills, valleys, and other physical features that mimic what you see around Santa Fe.
3. Pour some water into the system to create an underground aquifer.
4. Use the materials above to explore how water moves through this system. Record what you notice below.

Observations:

Explanation: Now that you have had a chance to engage with your model, try to connect the different parts of the model with the real world. Think back to what you observed in the arroyo. Draw and label your model and then explain your thinking.

Try to include the terms:

- Groundwater
- Water table
- Surface water
- Watershed
- Infiltration
- Runoff

Guided Exploration: Use the model to simulate some different scenarios.

Spray water onto the sand to simulate rain. Describe what happens.

Add an impermeable layer to the surface of your model. This represents an asphalt parking lot or similar surface that rain can not permeate. Spray the water again. Describe what happens.

Use a pencil or your finger to make a hole in the sand that is deep enough that the bottom fills with water. Make a second well that is deeper. Use the dropper to pump water from the deeper well. What happens to the water level in the model? What would happen to the people depending on water from the first well?



Santa Fe gets 22% of its water from wells, including the Buckman and city well fields. Some of the water that is in our deep aquifers is over 10,000 years old. If we pump more than is recharged through infiltration, what will happen to this limited resource?







Bury an impermeable layer under about an inch of sand. This represents a more dense layer of rock that does not allow water to infiltrate. Spray water on the surface. Describe what happens.

