



Water

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Creating an aquifer

Name/s: _____

Follow these instructions to explore ground water and aquifers. There are questions to answer after you finish the experiment.

What you will need:

- The quantity of sand, pebbles and water required will depend on the size of the jars used.
- Two large clear glass or plastic jars
- 2 sticky labels
- Texta or marker
- Sand
- Pebbles, small stones or gravel
- Measuring scoop (does not matter what size)
- Water
- Measuring jug
- Drop sheet or newspaper to place under jars
- Video camera or phone to record the experiment

What to do:

1. Cover the surface you will be working on with a drop sheet or newspaper.
2. Stand the jars next to each other and use the sticky labels to label one as 'Jar 1' and the other as 'Jar 2'.
3. Use the measuring scoop to make alternating layers of pebbles and sand in each jar as follows:

Jar 1:

- Begin with a **thin** layer of pebbles to cover the bottom of the jar.
- Follow this with a **thick** layer of sand.
- Add another **thin** layer of pebbles.
- Keep alternating these layers until you have a total of seven layers and have finished with a **thin** layer of pebbles (see figure 1).

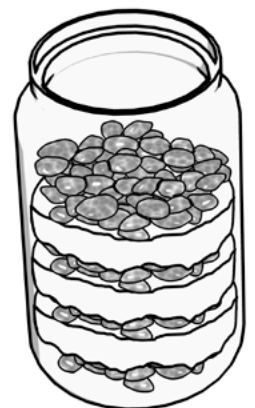


Figure 1



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Jar 2:

- Begin with a **thick** layer of pebbles.
 - Follow this with a **thin** layer of sand.
 - Add another **thick** layer of pebbles.
 - Keep alternating these layers until you have a total of seven layers and have finished with a **thick** layer of pebbles (see figure 2).
4. Place water in the measuring jug (note how much) and slowly pour it into Jar 1. You should video this process and note the amount of water added to each jar. You want to keep adding water until the sand and pebbles are completely saturated and the jar cannot hold any more water. How much water did you use? Note how quickly the water moves down through the layers.
5. Repeat step 4 for Jar 2.

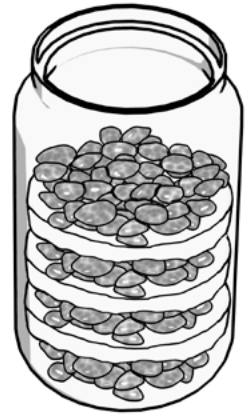


Figure 2

Answer the following questions.

How much water did you use to saturate:

Jar 1? _____

Jar 2? _____

How long did it take to saturate:

Jar 1? _____

Jar 2? _____

Why do you think there was a difference?



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What does this tell you about how the soil composition affects ground water?

What sort of soil do you have in your community?

How well do you think your soil would absorb water?

You may like to repeat this experiment with soil taken from your community.

References: <https://www.youtube.com/watch?v=0O0DQhsMXwl>