

# The Science of Groundwater

Observe how different types of rock store water

Try dripping water on your sedimentary rocks with Pippi Pipette. Observe whether the rocks absorb the drops of water and count the drops that soak in.

## Sandstone

This rock absorbed Many drops of water.  
Is sandstone a good reservoir rock or cap rock?  
Describe why or why not.

*Sandstone would be a good reservoir rock for holding groundwater because it quickly soaks up water. Drops of water absorb into the rock. Water can soak in because the grains in the rock large enough to create empty space for water to soak into.*

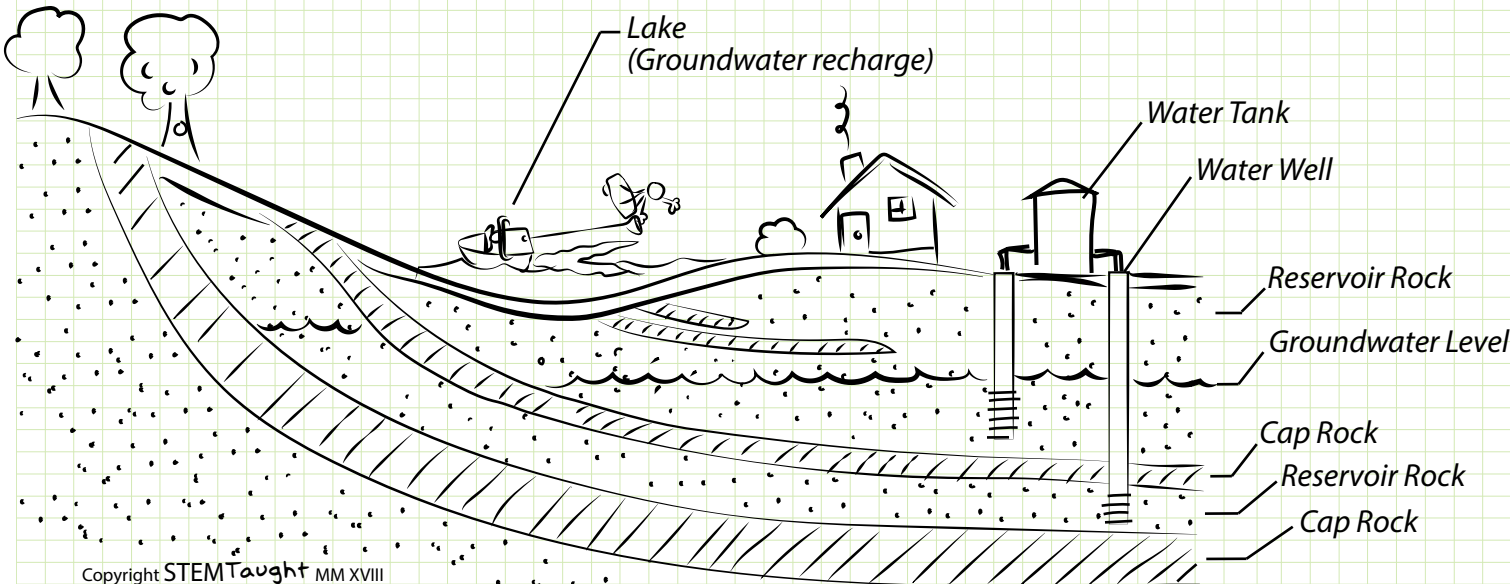


## Shale

This rock absorbed 0 drops of water.  
Is shale a good reservoir rock or cap rock?  
Describe why or why not.

*Shale would be a good cap rock because it does not soak up any water. Drops of water just pool on top of the rock. It creates a seal for water because the grains in the rock are very tiny. There is no empty space between the grains for water to soak into.*

Note: Rocks that can take in water make good groundwater reservoirs. Rocks that do not take in water make good caps for those reservoirs to keep the water escaping or evaporating.



Name:

**Teacher's Edition**

The surface tension of water allows it to cling around the sediment and rocks that store it. Surface tension causes some water to remain permanently in groundwater reservoirs.

## Try this:

You can see the effect of water's surface tension if you try to balance many drops of water on a single penny.

## Penny Experiment

How many drops of water can you balance on a penny?

*Number of drops will vary. The point of this is to see how the surface tension of water causes a pool of water to well up above the penny.* **45 drops**

## How much water can a rock hold?

There are many different kinds of rocks and sediment in the earth and each stores ground water differently. How much water a rock type can hold is determined by the amount of void space between the grains that make up that rock or sediment. The size and shape of the grains determines how much space there is that can be filled with water. Rocks with large grains can have a lot of void space between them which makes them good groundwater reservoir rocks. Although tiny grains can be impenetrable to water, they are useful too. These rocks act like barriers and can be good to help contain groundwater.