

Name: _____



You will need

- 3 containers the same size and shape.
- 3 different material samples – pebbles, small rocks, larger rocks
- A measuring jug
- Water (add a few drops of food colouring to make it easier to see)
- A permanent marker



What to do

1. Use the permanent marker to mark all three containers at the same height - around halfway.
2. Fill each container with a different material sample up to the halfway mark, so each container has the same amount of material in it.
3. What do you think will happen if you pour water into the containers – will it go all the way to the bottom? Where does the water go? Which material do you think will hold the most water? Write down your predictions before trialling the experiment.
4. Use the measuring jug to pour the same amount of water into each container. Make sure you have more water than the amount of material in there but not enough to fill the container. Wait to make sure the water has filtered all the way through the materials and the bubbles have stopped.
5. Compare the water levels in the containers.



Questions

What will happen? Which material will hold the most water? Write your prediction here...

Were you correct? If not write what happened.

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What's happening?

When you fill the containers, the water works into the gaps between the pebbles and rocks, even the gaps that are too small for us to see. The water is heavier than air so it pushes the air up and out as bubbles.

The different sized materials let more or less water through, depending on how well they fit together. If more water gets into the gaps, there will be less left up the top of the container.

So the container with the lowest water level has the most porous material and the highest water level has the least porous material.



Applications

Tiny holes between and inside rocks are called pores, so the measure of how much water, gas or oil can be held in a rock is called porosity. Finding porous rocks where carbon dioxide (CO₂) can be safely stored underground is a key step for every CCS project.