

# Rock porosity experiment

## Education in Chemistry

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[rsc.li/EiC317-carbon-capture](http://rsc.li/EiC317-carbon-capture)

### Aim

Rank the rocks in order of their suitability for carbon capture and see if any of the samples in your school rock box is better than the basalt mentioned in the science article we will be reading.

### Introduction

Only porous rocks are useful for capturing carbon. Porous rocks contain lots of little holes. These can be seen with a hand lens but it is difficult to work out how many of these holes there are inside the middle of a rock. We can work out the porosity of a rock by weighing it, then soaking it in water (to fill up the holes) and then weighing it again to see what mass of water is gained. The more water is gained the more holes in the rock and the more porous it is.

### Apparatus

- Access to electronic balances
- Sufficient washing up bowls for soaking (one bowl between 4 pupils is fine)
- Rocks of different types, pre sorted

### Method

1. Collect one of the rocks from the groups set out by your teacher. Record its name in your table.
2. Weigh the dry rock and record its mass in your table.
3. Repeat this for each rock sample you are going to study. (Your teacher will tell you if you are sharing your results with another pair).
4. Now put all the rocks into the bowl of water and start the timer. Make sure you know which one is which!
5. While your rocks are soaking, read the science article given to you by your teacher, this tells you about carbon capture and how it could be important in tackling global warming.
6. When the timer gets to 10 minutes, take your rocks out and place them on a paper towel.
7. Weigh each rock again and record the masses in your table.
8. Now do your calculations

### Results

Rock	Dry Mass (g)	Mass after soaking (g)	Mass of water absorbed (g)	Mass of water/dry mass	Carbon capture ranking

## Conclusion

Write a conclusion for your experiment. Remember to revisit the original aim of the experiment. A really good conclusion also uses quotes from the results to support its claims.

## Analysis

1. Why could we not just use the mass of water gained to work out how porous the rock is?
2. What type of graph would be suitable for showing the results? Justify your choice.
3. What assumptions have been made in using this experiment to work out the best rock for carbon capture?