

# 2.1 BAKING ROCKS

## Do all types of rocks hold the same amount of water?

### MATERIALS

Per small group of students:

- A variety of porous and non-porous rocks small enough to drop into a plastic cup of water: limestone, sandstone, granite, shale.
- Clear plastic cups with enough water to cover each rock sample
- Digital scale
- Access to oven (or "cook" ahead at home)
- Digital camera or overhead projection is also helpful, but not required.

### DIRECTIONS

1. The day before, cook rocks on a cookie sheet at 170°F for 1–2 hours to remove moisture or place in a drying oven overnight at 70°C.
2. Weigh each rock and record weight.
3. Drop each rock into the appropriate cup of water using the chart below. Observe closely and collect data.
4. Leave rocks for at least one hour.

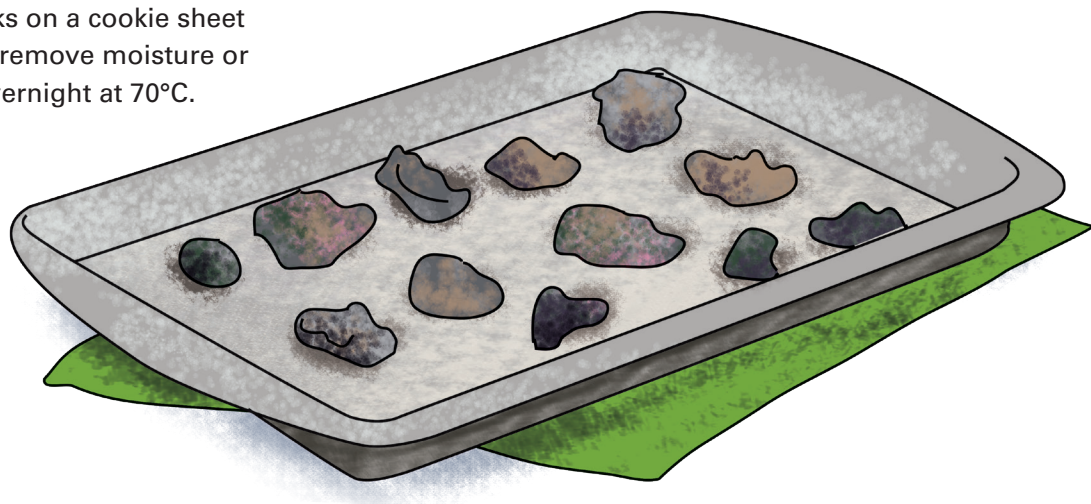
5. Remove and weigh each rock. Analyze data.

Ask the following questions:

- a. Which rock had the greatest change in weight?
- b. What might account for the change?
- c. How is this data related to permeability?
- d. How is this data related to porosity?

### REFLECTION

Rank the order of these rocks according to porosity data.



Rock	Weight before (g)	Weight after (g)	Observations	Rank
1. Shale				
2. Limestone				
3. Granite				
4. Sandstone				
5. Conglomerate				
6. Marble				