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| Session 9 | Weathering and Erosion |

## Assessed criteria

Criteria E: AIE

**Research Question**

“How can we study erosion of rocks in the lab?”

**Background Information**

Weathering and erosion are external geological processes that act together to shape the surface of the Earth. It would be impossible to study this directly in the lab but we can **model** the process. The more accurate the model, the more relevant conclusions we can draw with the real-life processes.

Weathering is the decomposition of rocks, soils and their minerals through direct contact with the Earth's atmosphere (heat, pressure, freeze-thaw). Erosion is the displacement of solids (soil, mud, rock and other particles) usually by agents such as, wind, water, or ice by downward or down-slope movement in response to gravity or by living organisms.

Erosion is caused by the movement of eroding agents while in weathering there is no movement. Weathering is caused when rocks come in contact with atmospheric conditions but there is no movement involved of either of the components.

**Objective**

To model the physical effects of weathering and erosion in the lab.

**Materials**

Prepared “rocks” Stopwatch

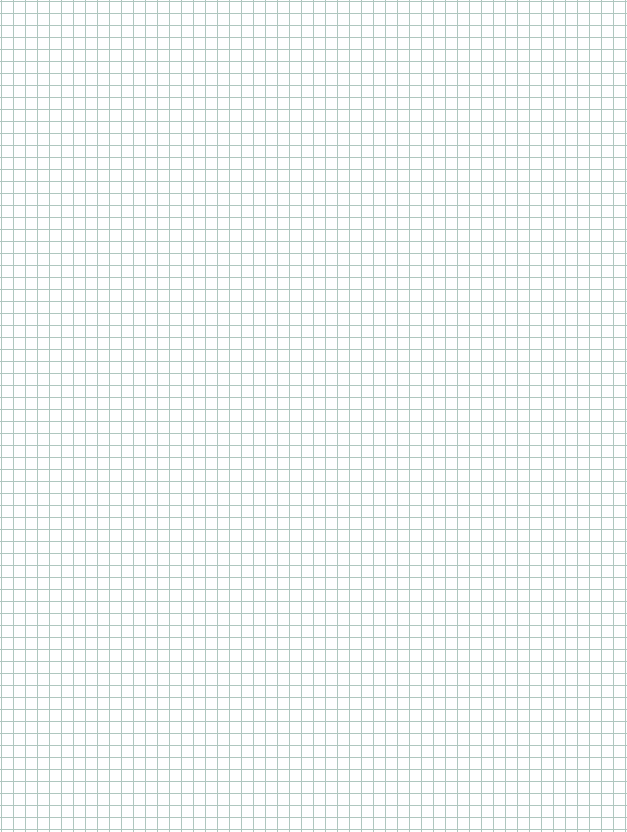
Balance Jar with lid

**Method**

1. Take 3 cubes of ‘rock’.
2. Record their individual masses.
3. Place them in the jar and securely close the lid.
4. Shake the jar and its contents vigorously for 1 minute.
5. Record the individual masses of the rocks after they have been shaken.
6. Repeat this procedure 14 times, so that you have 16 measurements in total for each rock (if they have not completely eroded).
7. Produce a graph that shows the rate of erosion for all three rocks over time.

**Results**

Table 1.



**Conclusion**

What does your graph tell you? What did you observe about your rocks as the time went on? Why did you see this change? Apply your knowledge and explain how this experiment applies to the real world.

**Evaluation**

What improvements could you make to your experiment? Suggest how to model rocks being broken down by other external geological agents e.g. water or temperature.

**References**