

Activity R1: Investigating erosion

In this activity sugar cubes and boiled sweets are used as analogies for softer (usually sedimentary) and harder (igneous) rocks. The aim is to determine the effect of erosion on hard and soft rocks and compare how the different materials erode. It demonstrates how such rocks are eroded in an environment such as a river where they are pounded and knocked together as they are moved along by the river current. Working in 3 groups would be ideal.

Equipment:

Sugar cubes

Hard boiled sweets (pineapple chunks are best as they are cubed).

Camera

Stopwatch (optional)

For each group - 3 small containers (e.g. sweet tins, biscuit tins, sturdy screw-top or clip-top plastic containers)

Coloured paper

Method:

1) Place 10 sugar cubes in the first container, 10 boiled sweets in the second and a mixture of 5 sugar cubes and 5 sweets in the third container.

2) Save two examples of a sugar cube and a boiled sweet for comparison after the activity.

3) For a fair test each container needs shaking for the same amount of time or number of shakes. First decide whether to time with a stopwatch or count the shakes so that each group does the same. (Counting is popular as all the group members can join in)

4) Shake the first container for the agreed length of time or number of shakes. (Suggest at least shake 10 times)

5) Remove the lid of the container and tip the contents onto a sheet of coloured paper to observe the contents and note any changes. Pupils should compare the contents with the sugar cubes and boiled sweets kept for comparison and record:

- whether or not any cubes have changed shape or broken
- how the cubes have been eroded (e.g. did they splinter or become rounded?)

6) Shake the second container for the agreed length of time or number of shakes and then repeat step 5 for this container.

7) Shake the third container for the agreed length of time or number of shakes and then repeat step 5 for this container.

8) Compare the results and work out which materials eroded most easily and whether or not there was a difference in the way the materials eroded in the third container.

Final note: It is a good idea to take a photograph at each stage of this activity to aid later discussion and comparison.