Lesson 2

ROCKS ON THE MOVE

Learning intentions

1. To know that weathered rock can be moved away from its source. This is called 'erosion'.
2. To be able to describe some different ways in which weathered rock can be moved naturally.
3. To know some effects of erosion, such as shaping rivers and making beaches, cliffs and sand dunes.

Resources

- Cup of clean sand
- Erosion photographs (DE 2.1)
- Internet access of online game, if required
- Summary sheet of main processes of erosion (DE 2.2)

Introduction

Begin by revising what we learnt in the previous lesson on weathering. Outline the main ways in which rocks can be weathered and eroded (i.e. broken down and worn away) **by water, ice, wind or by plants and animals**.

Today we are going to learn about what can happen to those very small bits of broken down rock and how they can be moved to different places. This is called 'erosion'.

A grain of sand

Look at a single (or few!) grains of sand on a desk. Ask these questions:

1. How many different ways could this grain of sand be picked up (eroded) and moved (transported) around the classroom? Accept any answer, such as:
   - A person could pick it up, move it to a different place and put it down;
   - You could move it along with your finger;
   - You could tilt the table;
   - You could blow the grain with your mouth or straw;
   - You could wash it along with a cup of water.
2. How many ways could grains be eroded and moved naturally outside? By moving water, in rivers/streams or in the sea; by wind; by moving ice (glacier); by falling down from where they are (gravity).

Lesson 2 *continued*

ROCKS ON THE MOVE

3. After accepting the children's ideas, inform them that there are four main ways that grains (weathered pieces of rock) are eroded and moved naturally:
    - Water (moved by rain, in rivers, by ocean waves)
    - Wind (grains carried away in the wind)
    - Ice movement (picked up and moved along by slow-moving glaciers)
    - Gravity (falling down from a height, e.g. landslide)

In 2013, more sediment (grains of weathered rock) was moved by humans than by all the rivers in the world.

Development

Photograph carousel

Explain that they are now going to look at some photographs (DE 2.1)where erosion is taking place. Place the photographs around the classroom and divide the pupils into small groups (2–3 per group). Ask each group to move around the photographs in turn, decide which method of erosion is taking place and write their idea around the outside of the photograph. You may wish for each group to use a different colour pen for easy identification.

Give each group a copy of the summary sheet of the main processes of erosion.

Photograph Answers

1. Landslide (scree)—**gravity**
2. Sand dunes—**wind**
3. Erosion and deposition on a meandering river—**water (rivers)**
4. Storm surge—**water (ocean waves)**
5. Beach erosion—**water (ocean waves)**
6. Glacial erosion—**ice (very slow moving-glacier)**

Hold a feedback session with pupils giving reasons for their choices with the teacher confirming the main process of erosion taking place in each photograph.

Plenary

Play the online game to consolidate learning about erosion processes. This short game shows how landforms can be created by erosion and also brings in the importance of time – how long it takes for different types of erosion to take place.

http://www.kineticcity.com/mindgames/warper/

Lesson 2 *continued*

ROCKS ON THE MOVE

Assessment for learning

Thumb Tool activity for each of the learning intentions and success criteria.

This simple activity can be used to assess how confident your pupils feel about each of the learning intentions for this lesson.

- Thumbs up if they are very confident that they understand the learning intention
- Thumbs sideways if they have some understanding of the learning intention but some more work might be needed.
- Thumbs down if they feel they don't really understand the learning intention.