



Erosion Means Movement – Teacher Demonstration

Erosion is the removal and transport of materials by gravity, water, wind or animals. During this process, clast sorting usually occurs.

Clasts are the broken fragments of weathered rock

Movement of the debris caused by weathering can be caused by the pull of gravity, push of wind, water or even displacement by animals. While movement is happening the broken bits of rock rub together and become smaller and rounder. If the moving agents are wind or water, the clasts (broken bits) become sorted both by size and by density along their path. This is because, as the moving wind or water travels over the ground, friction causes it to lose speed and its carrying energy. When the rock is collected up into moving glaciers however the clasts cannot move internally and when melting occurs they are just dumped in unsorted mounds.

Erosion by Wind and Water - Teacher Demonstration

The sorting action of water can be demonstrated by finding a downpipe from the roof where the rainwater isn't collected into a tank. The energy of water flow decreases as it moves over the surface of the soil. Larger pieces of rock are found close to the pipe mouth. Medium sized pieces are dropped out next, as the slower moving water can no longer carry them.



Energy decrease



Rock size decrease



Alternatively place a pile of mixed soil and bits of rock at the top of a ramp. Lightly sprinkle with water from a watering can held about half a metre above the pile. The clast size will grade (become smaller) away from the pile as water washes them downhill.

Similarly the sorting energy of wind can be demonstrated by placing a mix of dry pebbles, sand and fine silt on a flat surface and then blowing on it with a hairdryer set at "low". This is best performed outside as dust can travel quite a distance. Perhaps the school gardener may demonstrate this with his leaf-blower and a pile of dry soil and leaves.

Students should not stand in front of the blast, as they will get dust in their eyes.



If this activity is carried out inside the classroom, lay old newspaper in a pathway away from the hairdryer as this will help collect up the sediment afterwards. Newspaper should overlap away from the hairdryer to stop paper blowing away.