

Factsheet: Sedimentation

Key Facts

Sedimentation is the process of deposition of a solid material from a state of suspension or solution in a fluid (usually air or water).

Sedimentation usually happens in low-lying areas such as oceans, where successive layers of sediment gradually gathers little by little.

These layers start from sands carried by rivers or blown by the wind, mud and marine sands and the remnants of dead organisms such as molluscs.

This process affecting the Earth's surface produces only small changes in the landscape during a person's lifetime, but over a period of tens of thousands or millions of years, the effect of these processes is really big.



Fossils are the remains of once living animals or plants. People have been finding fossils in rocks for thousands of years, but until quite recently they didn't understand what they were. Today we recognise that the fossils we find in rocks represent the ancestors of the animals and plants that are alive today.

> Sedimentary rocks can be made of a number of substances:

1. Pieces of other rocks and minerals, such as gravel in a river channel, sand on a beach, or mud in the ocean.
2. Minerals such as salt in a saline lake or gypsum in a shallow sea.
3. Organic materials such as remains of living things.

The sedimentation process:

Weathering

This is the interaction between the weather and the rocks

exposed at Earth's surface. The weather can break down the rock and it is the first step in making sedimentary rock.

Travel

Running water is the most effective form of moving sediment. All rivers carry large quantities of sediment toward the sea. As sediment is carried by a flowing river, it is sorted and separated according to grain size and composition.

Deposition

One of the most important factors in the formation of sedimentary rocks is the place where the sediment settles.

Compaction

This step is the change of loose pieces into solid rock. Compaction happens when the weight of overlying material, which continually gathers in a sedimentary environment, squeezes the sediment buried beneath into a tight solid.

Cementation

Cementation happens when minerals such as calcite and quartz, carried by water, seep through small holes in the layers and makes all the pieces hold together.