Weathered rocks

Rocks do not remain the same for ever. When they are exposed to the weather – the Sun, rain and wind – they start to change. This is called weathering.

Sun and wind

Rocks in the desert become very hot during the day and they expand. At night, temperatures fall and the rocks shrink. This constant expansion and contraction causes thin layers of rock to peel away from the surface. This is a form of physical weathering. Wind can also wear away the surface of a rock.

 Freeze and thaw

Freeze-thaw weathering occurs in places where water freezes. Water trickles through cracks in the rocks, and on cold nights it freezes. Water expands as it freezes and the force of the expanding ice causes the cracks to become larger. Then the ice thaws (melts) and the water can go even further into the rock. Eventually, the rock breaks apart.

Rain and weathering

Rain simply falling on to the surface of some rocks can gradually wear away the surface. This is because rainwater is not pure water. It contains substances such as weak acids. When rainwater falls on limestone and chalk rocks, the acid reacts with the calcium carbonate and slowly wears away the surface. This is called chemical weathering.

Q and A

Q. How does a rock arch form?

A. A rock arch is formed by the process of weathering. The wind blows sand over the surface of rocks, and this wears away the softer rocks, leaving the harder rocks. One of the best-known rock arches is Delicate Arch in Utah, USA. It is made from sandstone and is one of more than 2,000 natural arches in Arches National Park.