

Landscapes: weathering



Quick summary



The Earth's surface is **constantly** being broken down and reshaped. It is affected by many factors, most notably the weather, which includes wind, ice, rain and snow. Humans also can affect weathering by **contributing** to the **pollution** that may cause **landforms** to break down, like acid rain. Over time, this weathering can make huge changes to the landscape of the Earth.



Physical processes

Physical processes shape landforms. After a winter of frosts, rain and snow there is often damage to roads, pathways and natural landforms. This is called weathering – where rocks and minerals are broken down by the elements of nature into smaller pieces. A landform is any natural surface feature of the Earth. Landforms include things like mountains and hills, valleys and canyons. They are formed and then change over time.

There are two types of weathering: mechanical weathering and chemical weathering. Mechanical weathering is when rocks are broken down by physical agents such as ice, wind or water. An example of mechanical weathering is freeze-thaw weathering. Over time, water can get into a rock and, as it freezes, the water expands and breaks the rock into pieces. Chemical weathering is when rocks are broken down by chemical reactions.



Human processes

Chemical weathering is usually as a result of pollution in the atmosphere, caused by humans. Burning fossil fuels produces acid in the atmosphere, which causes a chemical reaction with rocks. The outer layers of rocks can be worn away by acids. This can also be seen on statues that are sometimes destroyed by chemical weathering.



Vocabulary

constantly: always

contributing: adding

pollution: adding something that has harmful effects

landforms: natural features of the Earth's surface



Location



Physical features



Human features



Diversity



Physical processes



Human processes



Techniques



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Landscapes: rivers



Quick summary



A river is a natural **watercourse** flowing towards an ocean, sea, lake or another river. In some cases, a river flows into the ground and becomes dry at the end of its course without reaching another body of water. A river is part of a physical process called the water cycle. Rivers carry rainwater from hills downhill to other rivers, lakes or the ocean. Rivers and streams often join together before they reach the mouth of the river. The smaller rivers and streams are called **tributaries**. Stream, creek, brook, rivulet, rill, beck and burn are all names for small rivers. The five longest rivers in the world are: Nile, Amazon, Yangtze, Mississippi and Yenisei.



Physical features

A river begins at a **source** (or more often several sources), follows a path called a course, and ends at a **mouth**. The water in a river runs through a **channel**, which is a **river bed** between two banks. In larger rivers there is often also a floodplain shaped by floodwaters escaping the channel. Rivers flow down mountains and through valleys.

The term 'upstream' refers to the part of the river nearest its source. Likewise, the term 'downstream' describes the part of the river near its mouth. The term 'left bank' refers to the left bank in the direction of flow, and 'right bank' to the right.

Rivers carve a V-shaped channel. In the middle **reaches**, where a river flows over flatter land, **meanders** may form. Sometimes the river will cut off a loop, shortening the channel and forming an ox-bow lake. Rivers sometimes develop **deltas** at their mouths. A river with its mouth in saline tidal waters will form an **estuary**.

Most but not all rivers flow on the surface. Subterranean rivers flow underground in caves or caverns.



Human features

Rivers are difficult and dangerous to cross. Cities and towns often develop where there are bridges to cross a river.



Vocabulary

watercourse: a channel of flowing water

tributaries: smaller streams that join a river

source: the start of a river

mouth: the end of a river

channel: the course of a river

river bed: the bottom of a river

reaches: parts of a river

meanders: bends in a river

deltas: where a river splits and spreads out into several branches before entering the sea

estuary: the part of a river that meets the sea



Location



Physical features



Human features



Diversity



Physical processes



Human processes



Techniques



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Landscapes: mountains



Quick summary



A mountain is a large **landform** that rises above the surrounding land, usually in the form of a peak. A mountain is generally steeper than a hill but there is no one definition of the difference between a hill and a mountain. The official UK government's definition of a mountain is a summit of 600 metres (1,969 feet) or higher. A few mountains are isolated **summits**, but most occur in **mountain ranges**. High mountains produce colder climates than at sea level. These colder climates affect the types of plants and animals living on the mountain. The highest mountain on Earth is Mount Everest in the Himalayas of Asia, whose summit is 8,850 metres (29,035 feet) above sea level.



Physical processes

Physical processes shape landforms. The Earth's crust is split up into sections, like the cracked shell of an egg. The sections of the Earth's crust are called tectonic plates, and they float on hot **magma** or molten rock. There are three main types of mountains: **volcanic**, **fold** and **block**. All three types are formed from **plate tectonics**: when portions of the Earth's crust move, crumple and dive.

Volcanoes are formed when a plate is pushed below another plate, which melts the rock and forms magma. When the **magma** reaches the surface, it often builds a volcanic mountain. One of the world's most famous volcanoes is Mount Vesuvius in southern Italy. Its most famous eruption took place in 79 CE and covered the city of Pompeii in ash.

Fold mountains occur when two plates collide. They push upwards, folding the rock into mountain peaks. Some of the most famous fold mountains are the Himalayas in Asia.

Block mountains are caused when plates move past each other. When rocks on one plate are higher than the other, this can form a mountain. Some of the most famous block mountains are the Sierra Nevada mountains that run from California to Nevada in the USA.



Vocabulary

landform: natural feature of the Earth's surface

summits: the tops of mountains

mountain ranges: series of mountains

magma: molten rock that is formed in very hot conditions inside the Earth

plate tectonics: the movements of portions of the Earth's crust.



Location



Physical features



Human features



Diversity



Physical processes



Human processes



Techniques