

## Landscapes - Weathering

The surface of the Earth is changing shape constantly, being broken down and reshaped. This can occur through wind, ice, rain and snow. However, humans can also have an impact upon weathering too by contributing to pollution, which can lead to acid rain that can break down landforms.



## Landscapes - Rivers

River - A natural watercourse flowing towards an ocean, sea, lake or another river.

A river is part of 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.

### Human Processes

Chemical weathering is a result of pollution in the atmosphere, which is caused by human activity. Burning fossil fuels produces acid in the atmosphere, and this causes a chemical reaction with rocks. The outer layers of rocks can be worn away by acids.

### Human Features

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

### Physical Processes

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.

### Physical Features

A river begins at a source, follows a path called a course, and ends at a mouth. The water in a river runs through a channel, which is a riverbed between two banks.

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.

The term 'upstream' refers to the part of the river nearest its source and the term 'downstream' describes the part of the river near its mouth. 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 meander, creating a more direct river channel route and this in turn forms an ox-bow lake. Rivers sometimes develop deltas at their mouths. A river with its mouth in salty tidal waters will form an estuary.

**Chemical weathering** is when rocks are broken down by chemical reactions.

### Key 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  
**riverbed:** 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

### Key Vocabulary

**constantly:** always    **contributing:** adding  
**pollution:** adding something that has harmful effects  
**landforms:** natural features of the Earth's surface

## Freshwater Biome

The freshwater biome is an ecosystem made up of any body of fresh water (containing less than 1 per cent salt), such as lakes, ponds, streams and rivers. These cover approximately 20 per cent of the Earth's surface and are in various locations spread out all over the world. Most freshwater biomes consist of moving water and contain many types of fish.



### Location

There are freshwater biomes on every continent.

### Physical Features

Of all the freshwater in the world is either in the form of ice or located in an aquifer. Freshwater biomes are divided into three groups: lakes and ponds, streams and rivers, and wetlands. Smaller bodies of water, such as ditches and puddles, are also considered freshwater biomes because they help some forms of life to survive.

### Human Processes

Freshwater biomes are very important to human survival because they supply people with more than half of their drinking water.

### Diversity

There are over 700 different species of fish that live in freshwater biomes. Many animals besides fish live in freshwater biomes, including crocodiles, hippopotamus, turtles and frogs.

### Key Vocabulary

**ecosystem:** all the conditions, plants and animals that exist in a particular area

**aquifer:** an underground area of rock that absorbs and holds water

**habitats:** the places where plants and animals live

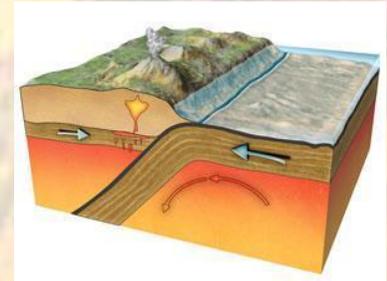
**migration:** movement from one country or area to another

## Landscapes - Mountains

A mountain is a large landform that rises above the surrounding land, usually in the form of a peak. 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.



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.

### Key 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