



# Rivers and Mountains



**Year: Six**  
**Term: Spring and Summer**



## Prior knowledge for teachers

The children will be able to retrieve and recall information about rocks and volcanic activity from the Year 3 geography and science curriculum. This knowledge will be built upon when learning how mountains form. Children will also be able to build on the Year 4 science curriculum (water cycle) and be able to discuss how land use and settlements change near a river (Year 4, River Nile).

In this topic, Year 6 will be exploring the geographical patterns and processes of rivers and mountains. They will be able to identify and locate key rivers and mountain ranges in a European country and the UK and discuss the similarities and differences between them. As part of this topic, children will investigate how a river changes from the source to the mouth and analyse the data collected. They will be able to confidently use digital mapping to give detailed descriptions of a location and its features.

## Key vocabulary

- **Cambrian Mountains** - The Cambrian Mountains are a series of mountain ranges in Wales.
- **Channel** - The body of water, with a bed and banks.
- **Confluence** - The meeting of two tributaries.
- **Course** - The direction and journey that a river takes.
- **Current** - The flow of water in a certain direction.
- **Delta** - A landform caused by rivers dropping sediment as it leaves the mouth.
- **Elevation** - Height above a given level, usually sea-level
- **Flood plain** - The low, flat land around a river, which is prone to flooding.
- **Fold mountain** - Fold mountains are created where two or more of Earth's tectonic plates are pushed together
- **Landform** - Mountains, hills, plateaus, and plains are the four major types of landforms. Minor landforms include buttes, canyons, valleys, and basins.
- **Meander** – A winding curve or bend in a river.
- **Mountain range** - A series of mountains or mountain ridges closely related in position and direction.
- **Mouth** - Where a river meets a sea, ocean or lake.
- **Rhine River** – A major European river and the longest river in Germany.
- **Ridge** - A long, narrow top of a mountain or hill.
- **River** - A large flow of water that crosses land, heading towards the ocean, fed by converging tributaries.

## Key vocabulary continued

- **River basin** - An area of land drained by a river and its tributaries.
- **River banks** - The sides of the river channel.
- **River bed** - The base of the river channel.
- **River Severn** - The longest river in Great Britain at a length of 220 miles.
- **Severn Estuary** - Tidal mouth of the River Severn, where the tide meets the stream.
- **Source** - Where a river begins or originates.
- **Summit** – The highest point of a hill or mountain.
- **The Alps** –The highest mountain range in Europe.
- **Tributaries** - A smaller river or stream that flows into a larger river.
- **Valley** – A low area of land between hills or mountains, often with a river running through it.

## Year 6 – Rivers and Mountains

Geography - Know that geography is the study of places and the relationships between people and their environments

**Question – Explain and justify how and why a river changes from the source to mouth.**

**Fieldwork – River study/ geology– Carding Mill Valley Shropshire  
Shrewsbury – River Severn – Flood defences**

	Key geography knowledge	Key geography skills
<p>Week 1</p> <p>(Retrieval for Mountains)</p>	<ul style="list-style-type: none"> <li>● Know that topography is <b>the study of the land surface</b>. topography refers to mountains, valleys, rivers, or craters on the surface.</li> <li>● Know Ben Nevis – highest mountain in the UK - 1,345 metres.</li> <li>● Know that some of the United Kingdoms mountain ranges are Pennines, Lake District, Dartmoor. These are not as large or high as others found in Europe.</li> <li>● Know The Alps is the biggest mountain range in Europe.</li> </ul> <p><b><u>Year 3 retrieval - structure of the earth</u></b></p> <ul style="list-style-type: none"> <li>● Know the structure of the Earth - crust, mantle, outer core and inner core (see the diagram below)</li> <li>● Know that the crust is a layer of rock on the surface of the Earth</li> <li>● Know that the mantle forms about half of the inside of the Earth and is a layer of rock underneath the crust</li> <li>● Know that the upper mantle is hard but there is magma (liquid rock) beneath</li> <li>● Know that the core is mostly made of iron, which is in the centre of the Earth</li> <li>● Know that temperatures at the core can reach 5500°C</li> <li>● Know that the crust and upper mantle of the earth are divided into large tectonic plates that ‘float’ on the liquid rock beneath (see diagram below)</li> <li>● Know that a fault is a crack in the surface of the Earth</li> <li>● Know that some volcanoes are even tall enough to be classed as mountains</li> </ul>	<p><b><u>To locate places</u></b></p> <ul style="list-style-type: none"> <li>● I can locate the position of some rivers and mountains across a region of Europe and the UK and land-use patterns associated with them over time.</li> </ul> <p><b><u>To understand places and the geographical patterns and processes</u></b></p> <ul style="list-style-type: none"> <li>● I can understand the geographical similarities and differences between a region of the <b>UK</b> and a region within <b>Europe (rivers/mountains)</b>.</li> <li>● I can describe and understand key aspects of physical geography: rivers and mountains and understand <b>how</b> and <b>why</b> these might change.</li> </ul>
<p>Week 2</p>	<ul style="list-style-type: none"> <li>● Know that a mountain is a landform that rises prominently above its surroundings. It is generally distinguished by steep slopes, a relatively confined summit, and considerable height</li> <li>● Use the following terms to describe mountains, and identify on photographs and diagrams:             <ul style="list-style-type: none"> <li>- altitude/elevation: height above a given level, usually sea-level</li> <li>- base: the lowest part of a mountain</li> <li>- hill: a raised area of land, not as high as a mountain</li> <li>- peak/pinnacle/summit: the top of a hill or mountain</li> <li>- plateau: a area of fairly level high ground</li> <li>- range: a series of hills or mountains in a line, connected by high ground</li> <li>- ridge: a long, narrow top of a mountain or hill</li> <li>- slope: the inclined surface that forms the side of a hill or mountain</li> <li>- valley: a low area of land between hills or mountains, often with a river running through it</li> </ul> </li> </ul>	<p><b><u>To organise and communicate geographically</u></b></p> <ul style="list-style-type: none"> <li>● I can collect, analyse and present quantitative data in charts and graphs.</li> <li>● I can use a range of fieldwork techniques to collect data and analyse and present my findings.</li> <li>● I can use a range of geographical resources (including digital mapping) to give detailed</li> </ul>

<p>Week 3</p>	<ul style="list-style-type: none"> <li>● Know that the height of mountains is measured as the height above sea-level</li> <li>● Know that the biggest mountain range in Europe is the Alps.</li> <li>● Locate this mountain range on a world map – map showing the elevation of Europe.</li>   <li>● Alps are located in Central Europe, the Alps stretch across the countries of France, Italy, Germany, Austria, Slovenia, Switzerland, and Liechtenstein. As with nearby mountain chains, the Alps are very important as they contribute much of what is left of the original forest cover of central and southern Europe. Some of the last forests in Europe of an almost natural state are found in this ecoregion.</li> <li>● The Alps Mountain range was formed millions of years ago during collisions between the Eurasian and the African tectonic plates. This collision generated huge pressure resulting in the upliftment of the sedimentary rocks thereby creating the characteristic Alps mountain folds.</li> <li>● The Alps are the source of many of Europe’s major rivers, such as the Rhône, <b>Rhine</b>, Po, and numerous tributaries of the Danube. Thus, waters from the Alps ultimately reach the North, Mediterranean, Adriatic, and Black seas.</li> </ul>	<p>descriptions and opinions of the characteristic features of a location.</p>
<p>Week 4 (Retrieval - rivers)</p>	<ul style="list-style-type: none"> <li>● Know the River Severn is the longest river in the UK</li> <li>● Know that the longest river in the world is the River Nile.</li> <li>● Know that rivers can flood and human features are sometimes put in to prevent this – this can cause secondary affects.</li> <li>● Know that the start of the river is the source.</li> <li>● Know that where the river enters the sea and deposits silt is called a delta (River Nile).</li> <li>● Know that when the sea meets the river this is called an estuary.</li> </ul> <p><b><u>Year 4 Science - water cycle</u></b></p> <ul style="list-style-type: none"> <li>● Know that when liquids turn into gases, this is called evaporation and that the reverse process is called condensation</li> <li>● Know that when a solid turns into a gas without passing through the liquid state, this is called sublimation</li> <li>● Know that the melting point of water is 0° C and that the boiling point of water is 100° C</li> <li>● Know that water flows around our world in a continuous process called the <u>water cycle</u>.</li> <li>● Know that, along with evaporation, water on the Earth’s surface moves to the air in a process called transpiration in which water turns into water vapour (gas) on the surface of leaves on plants</li> <li>● Know that rain condenses in clouds and falls to earth as rain, snow or hail in a process called precipitation</li> <li>● Know that water flows across the land in rivers and streams in a process called surface run-off and under the ground as groundwater</li> </ul>	

<p>Week 5</p>	<p><b>Rivers of Europe – Locate – Rhine</b></p> <ul style="list-style-type: none"> <li>● Source – Swiss alps. Flows</li> <li>● The Rhine flows through Switzerland, Germany, Austria, Liechtenstein, Germany, and the Netherlands.</li> <li>● In the <b>Alps</b> of eastern Switzerland, two mountain streams run together to form the Rhine.</li> <li>● The Rhine is one of the world’s most economically important rivers.</li> <li>● Hydroelectric stations in Switzerland use the river’s water to produce electric power.</li> <li>● The flow of the Rhine has been changed to ease the flow of traffic.</li> <li>● Passing from Germany into the Netherlands, the river breaks up into a number of wide branches to form a <b>delta</b> region. At Rotterdam the river reaches the North Sea, a part of the Atlantic Ocean.</li> </ul> <p><a href="https://kids.britannica.com/kids/article/Rhine-River/346200">https://kids.britannica.com/kids/article/Rhine-River/346200</a>  <a href="http://www.primaryhomeworkhelp.co.uk/rivers/rhine.htm">http://www.primaryhomeworkhelp.co.uk/rivers/rhine.htm</a></p>	
<p>Week 6</p>	<p><b>Rivers of the UK – River Severn</b></p> <ul style="list-style-type: none"> <li>● Locate the source and estuary of the river.</li> <li>● Know the major towns and cities the River Severn flows through.</li> <li>● Famous for its tidal bore, is Britain's longest river.</li> <li>● It flows for 220 miles from its source in the Welsh Cambrian mountains before finally emptying into the sea in the Bristol Channel.</li> <li>● The estuary forms a physical boundary between England and Wales and the river meanders in and out of the English counties of Shropshire, Worcestershire and Gloucestershire.</li> <li>● The River Severn linked the coal and iron fields of the Midlands with the Bristol Channel - Ironbridge and Coalville. By the end of the 17th century, the river had become the 2nd busiest in Europe!</li> <li>● For many centuries, Bridgnorth was an extremely busy river port, exporting clothes, wool and beer (the town made its own brew called Cave beer, stored in the local caves). Commercial traffic declined with the advent of the railways in the 19th century and today, river traffic mainly consists of people enjoying the water on <u>pleasure boats</u>. Canoeing, fishing, walking and boating are all popular activities, particularly between Bridgnorth and Bewdley.</li> </ul>	
<p>Week 7</p>	<p><b>Compare the Rhine (European) to the River Severn (UK)</b></p> <p><b>Focus on:</b>  Length – countries it passes through  Economy/trade  Renewable energy  Mouth of the river (delta/estuary)</p> <p><a href="https://kids.britannica.com/kids/article/Rhine-River/346200">https://kids.britannica.com/kids/article/Rhine-River/346200</a></p>	

Week 8	<p><b>River features</b></p> <ul style="list-style-type: none"> <li>• <b>Know three parts to a river. Upper course, middle course, and lower course.</b></li> <li>• <b>Upper Course:</b> Fast flowing, narrow channel, steep sides, steep valleys, with interlocking spurs. <ul style="list-style-type: none"> <li>• <b>Features</b> -Waterfalls, rapids, gorges.</li> </ul> </li> <li>• <b>The Middle Course:</b> Slower flowing, wider channel, less steep sides, wider valley. <ul style="list-style-type: none"> <li>○ <b>Features</b> - Meanders/loops, tributaries, confluences.</li> </ul> </li> <li>• <b>The Lower Course:</b> Slower flowing, deep, wide channel, less steep sides, wider valley.</li> <li>• <b>Features</b> - Flood plains, levees, delta, estuary.</li> </ul>	
Week 9/10	<p><b>Processes - Erosion/Deposition - see these features on trip</b></p> <ul style="list-style-type: none"> <li>• Know that rivers do not travel in a straight line</li> <li>• They have to avoid obstacles as they flow downhill.</li> <li>• People have altered river courses over time.</li> <li>• Know that Erosion and deposition can change the shape of a river.</li> <li>• Know how meanders and ox bow lakes form.</li> </ul> <p>Label a diagram, explain what is happening at each point and how an oxbow lake may form. Identify these features on an OS map. Where are the meanders in the river?</p>	
Week 10/11	<p><b>Field work – Carding Mill Valley – Shropshire – National trust</b></p> <p><b>Question – Explain and describe how a river changes from the source to mouth.</b></p> <p><b>Complete in all three courses of a stream:</b></p> <ul style="list-style-type: none"> <li>• Measure the width and depth of the stream.</li> <li>• Measure the speed of the water (<b>velocity</b>)</li> <li>• Take pictures and sketch drawings of any features present in each course.</li> <li>• Identify places of erosion and deposition.</li> </ul> <p>Fieldwork write up – What did they find out about the three courses of the river? Create graphs/tables containing data.</p>	
Week 12	<p><b>Flooding</b></p> <ul style="list-style-type: none"> <li>• Know that parts; the upper course, middle course and lower course.</li> <li>• Know that precipitation occurs these things happen: <ul style="list-style-type: none"> <li>- The water evaporates</li> <li>- The water is taken up by trees and plants</li> <li>- The water infiltrates the soil</li> <li>- Surface runoff flows into tributaries</li> <li>- Know that if heavy rainfall occurs or if the rainfall is prolonged (precipitation over several days, weeks or months) the following will occur: <ul style="list-style-type: none"> <li>- The ground will become saturated and unable to absorb any more water</li> <li>- There will be increased surface runoff into tributaries</li> </ul> </li> </ul> </li> </ul> <p>Tributaries will, consequently, contain a greater volume of water</p> <ul style="list-style-type: none"> <li>- This water will eventually feed into the main river channel in the middle course</li> </ul>	

	<ul style="list-style-type: none"><li>● Know that though the rainfall may have stopped, the water level in the river will continue to rise. This is because it takes time for the water to flow from the tributaries in the upper course to the main river in the middle course. The water in the river can continue to rise for many days.</li><li>● Know this will then flood the surrounding land. This land is called the flood plain. So, flooding occurs when the discharge of a river is too great for its channel to hold; the water will simply flow over the top of river bank and cause flooding. This is a particular problem in the middle course of a river because the land is relatively flat and the water can spread long distances.</li><li>● Know where the River Severn usually floods and that the councils and environmental agency manage the flood defences.</li><li>● Know how this affects the land use in the area.</li><li>● Know the types of flood defences used in these areas. How has this changed over time?</li></ul>	
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