St Peter's CE Primary School

Autumn 1 - Earth Topic Overview

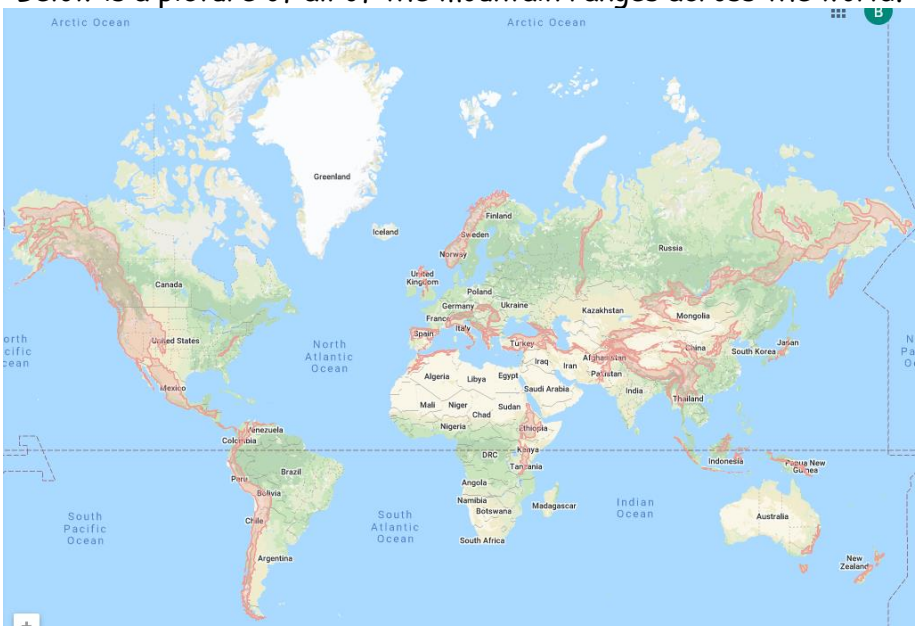
Unit Overview:
This topic fills the National Curriculum requirement to learn about human and physical geography in the form of mountains and earthquakes. The children will learn about Earth throughout each term. In the Autumn term, the children will learn about the geographical terminology associated with mountains and earthquakes, locate mountains on a world map and learn how these features are formed. In the Spring term, the children will carry our fieldwork at the Peak District and in the Summer term, the children will carry out a case study on a certain mountain. Year 3/4 will focus on Mount Everest, Year 4/5 will focus on the Alps (Mount Blanc) and Year 5/6 will focus on Grand Teton Sierra Nevada. We will also be looking at different rock types and how fossils are formed, covering four science objectives. The children will carry out a home project where they will find out about an earthquake and its impact.

Key Questions:
Autumn Term: 1. What are the geographical words associated with mountains and earthquakes? 2. Where are the mountain ranges of the World? 3. Where is (Y3/4 – Mount Everest, Y4/5 – The Alps (Mount Blanc), Y5/6 – Grand Teton Sierra Nevada)? 4. What is the structure of the Earth? 5. What are tectonic plates? 6. How is a mountain formed? 7. How does an earthquake occur? 8. How do we use fossils to learn about the past? 9. What are the different types of rock? What is physical and human geography?

Objectives covered in this unit:	
Geography (see progression in expectations document)	• I can locate places on a map. • I understand about different places • I can compare different places around the World. • I can ask geographical questions. • I can answer geographical questions. • I can use a wide range of geographical words in my work. • I can share my geographical knowledge effectively. • I can use a wide range of geographical and fieldwork skills – field sketching, measuring, direction, using/drawing maps, scale and distance, photography, recording, questionnaires.

History	n/a
Science	Working scientifically – • recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago • compare and group together different kinds of rocks on the basis of their appearance and simple physical properties • describe in simple terms how fossils are formed when things that have lived are trapped within rock • recognise that soils are made from rocks and organic matter.
Art	Own choice –
DT	Own choice –

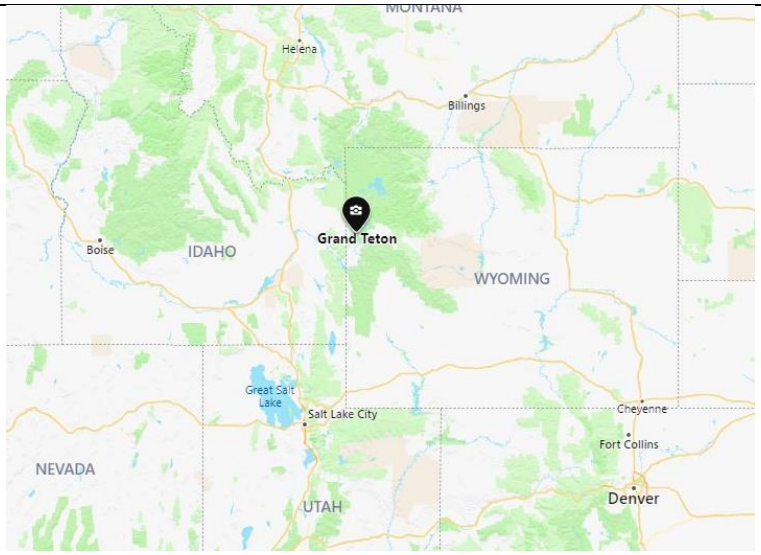
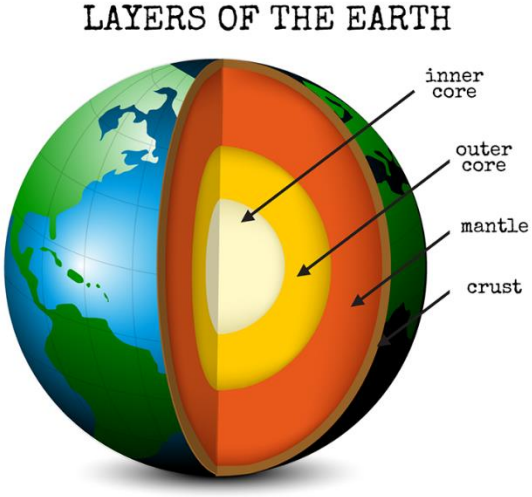
Earth
Key Knowledge

What are the geographical words associated with mountains and earthquakes?	See Vocabulary grid on the last page.
Where are the mountain ranges of the world?	Below is a picture of all of the mountain ranges across the world. 
Where is (Y3/4 – Mount Everest, Y4/5 – The Alps, Y5/6 – Grand Teton Sierra	Mount Everest is in Asia, it is located on the border between Tibet and Nepal in the Himalayas in Asia. Everest is situated in the Mahalangur Range on the Tibetan Plateau known as Qing Zang Gaoyuan. The summit is directly between Tibet and Nepal. The mountain range stretches across six countries: Nepal, China, India, Bhutan, Pakistan, and Afghanistan.

Nevada)?

The Alps are a mountain system located in south-central Europe, immediately north of the Mediterranean Sea. The Alps are the highest and most extensive mountain range system and stretch approximately 1,200 kilometres (750 mi) across eight Alpine countries (from west to east): France, Switzerland, Monaco, Italy, Liechtenstein, Austria, Germany, and Slovenia. Mont Blanc is the second-highest mountain in Europe after Mount Elbrus. It is the highest mountain in the Alps, rising 4,808 m above sea level. It is the eleventh-most prominent peak in the world. The mountain stands in a range called the Graian Alps, between the regions of Aosta Valley, Italy, and Savoie and Haute-Savoie, France. The location of the summit is on the watershed line between the valleys of Ferret and Veny in Italy and the valleys of Montjoie, and Arve in France, on the border between the two countries.

Grand Teton, at 13,775 feet (4,199 m),[1] is the highest point of the Teton Range, and the second highest peak in the U.S. state of Wyoming after Gannett Peak. The mountain is entirely within the Snake River drainage basin, which it feeds by several local creeks and glaciers. The Teton Range is a subrange of the Rocky Mountains, which extend from southern Alaska to northern New Mexico. It extends for approximately 40 miles (64 km) in a north–south direction through the U.S. state of Wyoming, east of the Idaho state line.

	
What is the structure of the Earth?	 Crust – The crust is the outer layer of the Earth. We live on its surface and parts of it are covered by oceans. It's really hard and solid, but is very thin compared to the other layers. Mantle – The mantle is a very thick layer of the Earth. It's made of hot molten rock called magma. Outer Core – It gets even hotter as you get closer to the centre of the Earth. It's so hot that the outer core is a layer of liquid, which scientists think is made of the metals iron and nickel. Inner Core – The inner core is the centre of the Earth. It's the hottest part at about 6,000°C, but there's so much pressure that it's solid, not liquid. It's a big, super-hot, solid ball of iron and nickel.
What are tectonic plates?	The Earth's surface seems nice and solid under our feet, but actually it's constantly moving. The thin crust that we live on is split up into pieces which 'float' on the mantle. The pieces are called tectonic plates. Waves of heat from the hot mantle make the plates move. Tectonic plates move at a very, very slow pace (just a few centimetres a year). The Atlantic plate underneath the USA moves away from Europe at around the same speed that your finger nails grow. The world has changed shape a lot over time.

How is a mountain formed?	
How does an earthquake occur?	Earthquakes are usually found at plate boundaries (where two plates meet). Plate boundaries aren't all the same. You can get conservative, destructive and constructive plate boundaries. Conservative plate boundaries are where two plates slowly slide past each other in opposite directions. The edges of the plates are uneven, so when they slide past each other they can get a bit stuck. This causes pressure to build up. When the pressure is released suddenly it causes an earthquake. Destructive plate boundaries are where two plates move towards each other. When an oceanic plate (a plate that's mostly under the sea) meets a continental plate (a plate that's mostly under land), the oceanic plate is forced under the continental one. The place where this happens is called a subduction zone. The oceanic plate melts as it's forced downwards. This causes magma to rise up to the surface where it breaks through to form volcanoes. Earthquakes can also happen here as the two plates catch on each other. Constructive plate boundaries are plates that move apart and the gap between them gets filled with magma. The magma cools when it reaches the surface and forms a new crust. Then it all happens again as the plates keep moving. Sometimes the magma can rise up to form volcanoes. Earthquakes can happen at these plate boundaries too.
How do we use fossils to learn about the past?	Fossils are shapes of dead animals and plants that lived millions of years ago made in rock. Usually when something dies it is eaten or decays and disappears. However, when an animal or plant dies it can get covered over and over millions of years, become a fossil. People who study fossils are called palaeontologists. **How is a fossil made?** When a plant or animals dies, their body sinks into mud or is buried by sand. This usually happens on the sea bed. Being buried preserves it from rotting or being eaten by other animals. Whist it is underground, water and minerals seep into the bones and where the bones and body used to be and make a hard shape. This is squashed under more layers of sand, mud and eventually rock over many, millions of years. Much later it is found as the rock in which it is encases becomes unearthed. **How does a fossil tell us about the past?** They can tell us how an organism died, usually by rapid burial during a catastrophe. By examining the characteristics of the fossil, we can infer their original size, shape, diet and even behaviour. They can also show us how the Earth has changed. Over millions of years the Earth's surface shifts and changes. For example, rocks that once formed the seafloor might be forced up to form a mountain range. This means that you can sometimes find the fossils of sea creatures at the peak of a mountain. https://www.bbc.co.uk/bitesize/topics/z9bbkqt/articles/z2ym2p3 https://www.bbc.co.uk/bitesize/topics/z9bbkqt/articles/z22g7p3

What are the different types of rock?

Key Vocabulary	
igneous rock	Rock that has been formed from magma or lava.
sedimentary rock	Rock that has been formed by layers of sediment being pressed down hard and sticking together. You can see the layers of sediment in the rock.
metamorphic rock	Rock that started out as igneous or sedimentary rock but changed due to being exposed to extreme heat or pressure.
magma	Molten rock that remains underground.
lava	Molten rock that comes out of the ground is called lava.
sediment	Natural solid material that is moved and dropped off in a new place by water or wind, e.g. sand.
permeable	Allows liquids to pass through it.
impermeable	Does not allow liquids to pass through it.

What is a rock?

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Earth Vocabulary

Vocabulary				
Tier 1	Mining Capital city Mineral	Continent		Mountain Valley Height Slope Climate
Tier 2	Agriculture Erosion Tectonic plate Continental plate Oceanic plate Economic Activity Industry	Fertiliser Fossil fuel Bog Contours Lava	Natural resources Settlement Crust Earthquake	Range Contour Foot Summit Snow line Tree line Outcrop Face Ridge Peak Plateau
Tier 3	Conservative plate boundary Constructive plate boundary Destructive plate boundary	Epi centre Fold mountain Focus Magma Magma chamber Mantle Aftershock Altitude	Fore shock Geothermal energy	Inner core Outer core Richter scale Subduction zone