**Year 1 Science Knowledge Organiser** **Topic:** Animals including humans

|  |  |  |  |
| --- | --- | --- | --- |
| **Key questions:** | | | |
| * Is there a pattern to where volcanoes/earthquakes are located? Wat impacts on this?How do volcanoes and earthquakes impact on the physical and human environment? | | | |
| **Key knowledge:** | |  | |
| * The earth is made of layers: the **crust**, the **mantle** and the **core**. * The **mantle** is made of molten rock- **magma**. * Magma rises through weaknesses in the Earth’s crust. * Pressure builds which is released as an **eruption**. * 90% of volcanoes are located in the **Pacific ‘Ring of Fire’**- **oceanic crust** is forced under **continental crust**. * Three stages of volcanoes: active, dormant and extinct. | |
|  | **Key knowledge:** | | |
| * 75% of earthquakes occur in the **Pacific ‘Ring of Fire’**. * The Earth’s **crust** is broken up into **tectonic plates**. * These plates are constantly moving. * Earthquakes occur at **plate boundaries** when the plates collide or rub against each other. * Tension/ pressure builds up at these boundaries- when the plates lurch and move, **seismic waves** are sent out. | | |
| **Key vocabulary:** | | | |
| **Crust-** the thin outer layer of rock on the Earth’s surface.  **Mantle**- the layer below the crust, made of molten rock  **Magma**- molten rock in the mantle- lava when it erupts.  **Eruption**- process of magma/lava exiting the volcano  **Core**- the solid centre of the Earth that is made of metals: nickel and iron  **Tectonic plate**- the Earth’s crust is divided up into plates. These plates are constantly moving.  **Epicentre**- location of most pressure during an earthquake  **Seismograph**- instrument that measures shock waves  **Fault line-** the place where two plates meet each other.  **Tsunami**- a huge wave caused when an earthquake occurs at sea. | | | Location of most of the world’s volcanoes and earthquakes. |
| **Output:**  By the end of this topic I will have produced a non-chronological report all about volcanoes and earthquakes. I will be able to do the following:   * research information about earthquakes and volcanoes. * Turn researched notes into my own sentences. * Present information in an interesting and lively way to inform my reader. * Use sub-headings and text boxes to organise my ideas. * Draw and label diagrams. * Use lots of the vocabulary learnt above in written work and discussion. | | | |

**Year 3 Science Knowledge Organiser** **Topic:** Rocks and Soils

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Key questions:** | | | | |
| * What types of rocks are there? * How are different rocks formed? * Are the properties of rocks the same or different? What causes these? | | | | |
| **Rocks Key knowledge:** | | |  | |
| * **Sedimentary:** grainy in texture, often containing fossils. Crumble easier than other rocks. Created by compacting grains e.g sandstone. * **Igneous:** formed from cooling magma/lava. Interlocking grains with crystals e.g granite * **Metamorphic**: sedimentary or igneous rock that has been put under extreme heat and pressure to change structure e.g marble. | | |
|  | **Soil Key knowledge:** | | | |
| * Half of soil is air and water. Water is in the soil and the air is in the gaps between the particles. * Soil is made up of millions of micro-organisms, such as worms and other invertebrates that help break down matter. * Things you might find in soil: sand, small stones, decaying plants and animal matter. | | | |
| **Fossils key knowledge:** | | | |  |
| * Plant or animal dies and falls to the bottom of a lake. * Body is preserved and prevented from rotting/ decaying. * Over time, sand and mud grains are deposited over the body. * Grains turn into sedimentary rock around the remains. * Shape of body is captured in the stone. * Stone is dug up with an outline of the prehistoric animal/plant. | | | |
| **Key vocabulary:** | | | | |
| **Sandstone**- sedimentary rock made of sand  **Limestone**- sedimentary rock made from calcium deposits such as shells  **Granite**- a type of igneous rock formed below the Earth’s surface.  **Marble**- a type of metamorphic rock. Granite that has been heated and squashed turns into this.  **Fossils**- remains or impressions of a prehistoric plant or animal embedded in rock.  **Permeable**- rock with holes in that allows water through e.g sandstone  **Impermeable**- rock that does not allow water to pass through e.g granite.  **Soil-** mixture of tiny particles of rocks, plant and animal matter | | | | |
| **Output:** | | **Working like a scientist:** | | |
| **Produce a non-chronological report on rocks, soils and fossils:**   * **Research information, make notes and turn notes into my own written sentences.** * **Use diagrams and images to present information in an engaging, lively manner.** * **Use lots of topical language correctly to explain and info.** | | * **Observing rocks, fossils and soil closely using a microscope.** * **Explain and reason why they may have changed over time.** * **Identify and classify rocks according to their properties.** * **Explore how fossils are formed.** * **Explain how soil is formed after creating compost.** * **Identify similarities and differences between rocks.** * **Investigate what happens when rocks are rubbed together.** | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Key questions:** | | | |
| What influence did the Romans have on our lives today? Why did the Romans invade Britain? Why did they leave? | | | |
| **Important dates in history:** | | | |
| **54BC** | Julius Caesar leads two Roman armies to Britain, but defeated by Celts both times. | | |
| **00AD** | Christian belief that Jesus Christ was born | | |
| **AD43** | Roman Emperor Claudius orders four legions to conquer Britain | | |
| **AD48** | Romans have now conquered large parts of Britain | | |
| **AD47** | Romans force their allies- Iceni tribe of East Anglia- to give up their weapons | | |
| **AD 48** | Romans make Colchester the capital of Roman Britain. | | |
| **AD 61** | Queen Boudica leads a rebellion of the Iceni against the Romans. After burning down Colchester, London and St Albans, Boudica was eventually defeated. | | |
| **AD 100** | Most of the 8,000 miles of Roman roads in Britain are completed, allowing armies and goods to travel easily across the country. | | |
| **AD 122** | Emperor Hadrian builds a wall across the border of Scotland- the Romans could not conquer the Scots and Picts. | | |
| **AD 250 - 409** | The Picts from Scotland, the Angles, Saxons and Jutes from Germany and Scandanavia start threatening Roman lands. | | |
| **AD 410** | The end of Roman Britain. | | |
| **Key vocabulary** | | |  |
| **Latin**- language spoken and written by the Romans.  **AD**- Latin for ‘Anno Domini’= ‘in the year of our Lord’. After Jesus was born.  **BC**- ‘Before Christ’  **Aqueduct**- a system of pipes and channels used to bring water into towns.  **Centurion**-an officer commanding about 80 legionaries/ soldiers.  **Legion**- the main battle unit of the Roman army  **Celt** – people who lived in Europe and Britain who fought Romans.  **Barbarian**- a person who lived outside of the Roman Empire- seen by Romans as violent and uncivilised.  **Rebellion/revolt** – resistance against the established leaders.  **Hypocaust**-Roman central heating. Hot air from a furnace flowed through gaps in walls.  **Empire**- nations ruled over- usually conquered through war.  **Villa**-a large house in the country | | |
|  | | **Key Figures:** | |
| **Hadrian** – built a wall on the border of Scotland to keep Scots out- the only tribes not defeated by the Romans.  **Boudica**- Queen from Iceni who led revolts against the Romans.  Julius Caesar- famous Roman leader in Rome. Was assassinated.  **Claudius**- Roman emperor who conquered Britain in AD 43 with 40,000 troops and many war elephants. | |
| **Output:**  **A series of letters that include details of key and significant Roman events in Britain at the time.**   * Use layout and key features of a letter. * Write from the point of view of characters from the time period. * Include key historical facts, information and words from the time. | | | |

**Year 3 History Knowledge Organiser** **Topic:** Roman Britain