

YEAR 4: AUTUMN 1 – OCEAN EXPLORERS: DESTINATION EUROPE

GEOGRAPHY:

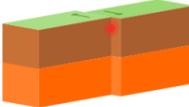
LOCATIONAL KNOWLEDGE - RECALL AND NAME:

The 7 continents:	Europe	Asia	Africa	Oceania	North America	South America	Antarctica					
The 5 Oceans:	Pacific Ocean		Arctic Ocean	Atlantic Ocean	Indian Ocean		Southern Ocean					
The 2 poles/circles:	North Pole/ Arctic Circle			South Pole/ Antarctic Circle								
The lines of latitude and hemispheres:	The Equator		The Tropic of Cancer		The Tropic of Capricorn		Northern Hemisphere Southern Hemisphere					
The major countries of Europe and their capital cities	UK <small>Eng/Wal/Sco/NI Lon/Car/Edi/Bel</small>	Ireland Dublin	France Paris	Spain Madrid	Germany Berlin	Italy Rome	Sweden Stockholm	Norway Oslo	Finland Helsinki	Belgium Brussels	Russia Moscow	Greece Athens
		Poland Warsaw	Switzerland Bern	Netherlands Amsterdam	Turkey Ankara	Denmark Copenhagen	Portugal Lisbon	Ukraine Kiev	Austria Vienna	Bulgaria Sofia	Croatia Zagreb	Hungary Budapest
Major mountain ranges of the World	Himalayas, Asia		Andes, South America		Alps, Europe		Rockies, North America		Kilimanjaro, Africa		Snowdonia, UK	
Major volcanoes of the World	Mt Vesuvius, Italy		Mt. Krakatoa, Indonesia		Mt. St. Helens, USA		Mt. Eyjafjallajökull, Iceland		Mt. Etna, Italy		Mauna Loa, Hawaii	

LOCATIONAL KNOWLEDGE – USE RESOURCES TO LOCATE:

Globe:	The 7 continents	The 5 Oceans	Major seas	2 poles	The Equator	The Tropics
Atlas: <small>(4 point grid reference)</small>	Specified countries within Europe and their capital cities		Italy and its major cities	Major rivers, seas, mountains and volcanoes of Europe (Physical)		Major man-made areas of interest of Europe (Human)
Map (Campania): <small>(6 point grid reference)</small>	Towns and villages of Naples		Heritage sites of Naples	Human (man-made) features of interest in Naples		Physical (natural) features of interest in Naples
Compass:	Use N, NE, E, SE, S, SW, W, NW to give and follow simple directions to reach a chosen destination in close range.					

UNDERSTAND, DESCRIBE AND EXPLAIN:

Physical Geography: Understanding the physical change/impact to land terrain over time: The formation of mountains & volcanoes	Mountain	Earth's crust	Tectonic Plate	Plate boundary	Fold mountain	Fault-block mountain	Volcanic mountain
	Earth's core	Earth's mantle	Earth's crust	Molten rock	Magma/Lava	Convection currents	Converging plates
	Volcano	Erupt/ion	Active	Dormant	Igneous rock	Minerals	Fertile land
Learning links: Geography: Y6: Earthquakes Earth's crust/ Tectonic plates/ Plate boundaries/ Fault lines	<p>A mountain is a geological landform that rises above the surrounding land. Typically, a mountain will rise at least 1,000 feet above sea level. The tallest mountain in the world, Mount Everest in the Himalayas, rises above sea level by 29,036 feet (8,848m). Small mountains (below 1,000 feet) are usually called hills.</p> <p>Mountains are most often formed by movement of the tectonic plates in the Earth's crust. Great mountain ranges, like the Himalayas, often form along the boundaries of these plates. Tectonic plates move very slowly. It can take millions and millions of years for mountains to form.</p> <p>The Earth's surface – the crust – is not one smooth unbroken covering. Rather it is made of different sections called plates (like a cracked egg shell). There are eight major plates: Eurasian, Pacific, IndoAustralian, Antarctic, Nazca, North American, South American and African.</p> <p>The Earth's plates are constantly moving; on average, this movement is between 1 and 10 cm per year. Convection currents in the mantle cause the tectonic plates to move. The mantle is made of molten rock (magma). As the magma moves, so do the plates above.</p> <p>Occasionally, two plates move closer to each other, or converge; this creates intense pressure, causing the plates to buckle and form a mountain. Fold mountains, fault-block mountains and dome mountains are generally formed within the main body of the plate (central). Volcanic mountains are generally formed on the plate boundaries.</p>						
Learning links: Science: Y3: Rocks Magma/Molten/Igneous/ Minerals	<p>FOLD MOUNTAINS: are the most common type of mountain. As two plates move towards each other they buckle and the crust pushes upwards, forming a mountain. Fold mountains are generally formed between 40-50 million years ago, which is geologically-speaking, young. They are often high with steep faces. Examples of fold mountains include The Himalayas, The Andes, The Rockies and The Alps.</p> <p>FAULT-BLOCK MOUNTAINS: are formed when two plates move towards each other. Rather than the crust folding under the pressure of the moving plates, it cracks along lines of weakness called fault lines. The crust then breaks into blocks, some of which are pushed upwards to form mountains or downwards to form valleys. An example of a fault block mountain range is the Sierra Nevada in Eastern California, USA.</p> <p>DOMES MOUNTAINS: are the result of a great amount of molten rock (magma) pushing its way up under the Earth's crust. Without actually erupting onto the surface, the magma pushes up the crust which then bulges upwards. Eventually, the magma cools and forms hardened rock. An example of a dome mountain range is the Black Hills in South Dakota, USA.</p> <p>VOLCANIC MOUNTAINS: are formed when molten rock (magma), deep within the earth, erupts and piles upon the surface. Magma is called lava when it breaks through the earth's crust. When the ash and lava cools, it builds a cone of rock upon the crust. Over long periods of time and multiple eruptions, rock and lava pile up, layer on top of layer to form a mountain. Examples of volcanic mountains are Mt. Vesuvius in Naples, Italy, Mt. Etna in Sicily, Italy and Mt. St. Helens in Washington, USA</p>						
	<p>Destructive Plate Boundaries:</p> <p>At a destructive plate boundary (also called convergent boundaries) two plates move towards another. One plate is then pushed underneath the other. (It is the heavier plate that is forced beneath the lighter plate). The point at which one plate is forced beneath the other is called the subduction zone. The plate then melts to become molten rock (magma). The magma then forces its way up to the plate boundary to form a volcano. Example: Eurasian plate and Pacific plate where over 400 volcanoes are formed – most underwater.</p> 	<p>Constructive Plate Boundaries:</p> <p>Constructive plate boundaries (also called divergent boundaries) move apart from each other. As they move apart, molten rock (magma) rises from the mantle, then cools and hardens to form new rock. Example: Eurasian plate and North American plate (Iceland)</p> 	<p>Transform Plate Boundaries:</p> <p>At transform plate boundaries two plates move past each other. Friction (rubbing) may cause them to stick, but when they eventually become unstuck, often with a violent jolt, an earthquake results.</p> 				

UNDERSTAND, DESCRIBE AND EXPLAIN:

Human Geography: Comparing human civilisations in various landforms, climates and terrains	Economy	Tourism	Trade	Agriculture	Transport	Types of settlement	Impact	Population	Climate																																																	
	Land-use	Terrain	Landform	Vegetation	Fertile soil	Minerals	Geothermal energy	Sustainability																																																		
	<p>There are 500 active volcanoes in the world and, on average, 25 volcanoes erupt every year. Some active volcanoes are erupting lava, ash and toxic gases on a continual basis. However, 600 million people live on, or near to, active volcanoes: that is one in ten of the world's population.</p> <p>The question remains: Why?</p> <p>People choose to live near volcanoes because they consider the advantages outweigh the disadvantages. Most volcanoes are safe for long periods of time in between eruptions and volcanoes that erupt frequently are usually considered, by the people who live nearby, as being predictable.</p> <p style="text-align: center;">THE ADVANTAGES: AGRICULTURE, MINERALS, SUSTAINABLE ENERGY AND TOURISM</p> <p>FERTILE SOIL THAT IS GOOD FOR AGRICULTURE/FARMING: <i>Volcanic rocks</i> are rich in minerals. However, before these minerals are available to plants, the rocks need thousands of years to become weathered/eroded and broken down and form rich soil - some of the best on Earth.</p> <p>In the foothills of Mount Etna, Sicily, the fertile volcanic soils support more than 90 vineyards. In Naples, Italy, in an area that surrounds Mount Vesuvius, the soil is rich because of two large eruptions 35,000 years and 12,000 years ago. The area is intensively cultivated/farmed and produces a wide variety of vegetation such as grapes, citrus trees, herbs, tomatoes and flowers.</p> <p>THE PRESENCE OF MINERALS: <i>Sulphur</i> is used to make a wide range of products and can be extracted from the vents of active volcanoes.</p> <p>Furthermore, magma rising deep from inside the earth contains a large range of precious metals and minerals. Tin, lead, copper, gold, silver and diamonds can all be found in volcanic rocks (Igneous). The world's largest diamond mine, the Jubilee diamond mine is located in northern Russia.</p> <p>GEOHERMAL ENERGY TO PRODUCE ELECTRICITY: '<i>Geo</i>' means 'of the earth' and '<i>thermal</i>' means 'heat'. Therefore, Geothermal energy is the heat that naturally occurs underground in volcanic areas. In many cases, this geothermal energy is evident in the form of hot springs and geysers (fountains of hot water that shoot out intermittently from a spring). In other cases, this hot water is stored deep underground and is used in power plants to make electricity. The heat from underground water is used to drive turbines and to produce electricity. Iceland has 5 geothermal plants supplying about 20% of the country's energy supply and 85% of all heating and hot water to the country.</p> <p>Geothermal energy is a sustainable energy source as the heat from the earth will not be exhausted. In addition, geothermal energy releases less carbon dioxide into the atmosphere than burning fossil fuels to produce electricity. Unlike solar power or wind turbines, geothermal power plants are unaffected by changing weather conditions. It is also cheap compared to other energy methods.</p> <p>TOURISM - VOLCANOES ATTRACT MILLIONS OF VISITORS EVERY YEAR: Whether they are active, dormant or extinct, volcanoes make for popular tourist attractions and attract millions of visitors every year. The Hawaiian Islands, home of many volcanoes, attract approximately 8 million visitors each year. Tourism is Hawaii's biggest employer and earns the island approximately \$14 billion dollars per year. 3 million tourists visit the Yellowstone National Park, Wyoming, USA each year to see the 300 active geysers in Yellowstone. The geyser named, 'Old Faithful' erupts the most regularly (between 14 - 125minutes between eruptions). Each normally lasts around 5 minutes.</p> <p style="text-align: center;">THE DISADVANTAGES: DANGER FROM UNPREDICTABLE ERUPTIONS – LAVA, ASH AND GASES</p> <p>LAVA: Everything in the path of advancing lava will be surrounded, buried or ignited. Lava can reach temperatures of 1000°C. Many homes are destroyed because, even if the lava flow misses them directly, the intense heat in its vicinity can set everything on fire. Lava moves quickly at the peak (top) of a volcano. At lower lying areas, it travels relatively slowly (between 1km and 10km per hour). At this speed, lava can be out run. However, deaths still occur when people choose to watch the lava flows and then find that their escape routes have been cut off.</p> <p>POISONOUS GAS: <i>Volcanoes</i> can emit large quantities of gas on a regular, sometimes constant, basis. The volume of gas expands as it leaves the volcano and can rise tens of kilometres into the atmosphere and spread great distances. Different volcanoes have gases in different quantities. However, the 3 main gases are water vapour, carbon dioxide and sulphur dioxide.</p> <p>Carbon dioxide is heavier than air, so the gas may flow into low-lying areas in great concentrations which can be lethal.</p> <p>Sulphur dioxide has a pungent 'bad egg' odour. It can irritate the eyes, nose, throat and skin and can cause permanent lung damage.</p> <p>ASH: Ash can bury vegetation and soil and can choke people. Falling ash can also turn daylight into complete darkness. While we often think of ash as soft and fluffy, volcanic ash is hard and abrasive; it does not dissolve in water, can be corrosive and can even conduct electricity when wet.</p>																																																									
<p>Learning links:</p> <p>Geography:</p> <p>Y3: Tourism Land-use/Tourism/ Settlement/Economy</p> <p>Y5: Rainforest Land-use/Agriculture/ Fertile soil</p> <p>Y6: USA Tourism/Economy/ Trade</p>																																																										
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FIELDWORK IN THE LOCAL AREA – OBSERVE, MEASURE, RECORD AND PRESENT:

Traffic survey: Report the traffic conditions of surrounding roads	Ask questions/find problems and plan ways of finding answers or solutions	Design a survey format to collect answers systematically and accurately	Represent the data and find answers (tables, graphs)	Present the findings to others and how this impacts the local area	Plan for action – what would support change?
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