SUMMER TERM CURRICULUM **Main Focus: Science** **Title:**		
NC Requirements for SCIENCE	**Knowledge**	**Skills**
Earth and Space Pupils should be taught to: • describe the movement of the Earth, and other planets, relative to the Sun in the solar system • describe the movement of the Moon relative to the Earth • describe the Sun, Earth and Moon as approximately spherical bodies • use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	**Hopscotch Planets Song** **Revision** **Y1- Summer Term –** seasonal change and weather Y3 – Summer Term - light **Order of planets from the sun**: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune. **Know the phases of the moon** (new moon, waxing crescent, first quarter, waxing gibbous, full moon, waning gibbous, last quarter, waning crescent) The moon is a natural satellite, orbits the Earth every 27 days. The moon reflects the light of the Sun (is not a light source) The sun illuminates the side of the moon facing it. Depending on where it is in its orbit around the earth, it will *appear* to have a different shape. At points in the orbit it will have a different name too; new, full, waxing or waning. To know that Earth's rotation causes **night and day**, and that the earth rotates anti-clockwise, east to west. It takes 24 hours to complete a full rotation and 365 ¼ days to rotate the sun. The Sun is a star at the centre of our solar system, the Milky Way. The diameter of the Sun is 1.4 million km. The sun provides light, heat and energy. **Space Terms** Things we need to survive – Oxygen, Atmosphere, Gravity, Nutrients Key calendar information - 12 months in a year 365.25 days a year 24 hours a day **Famous Astronauts**- Tim Peake Helen Sharman Buzz Aldrin Neil Armstrong Valentina Tereashkova Yuri Alekseyevich Garagin **Key vocabulary** **Dwarf planet–** A celestial body that looks like a small planet. **Rotate–** Moving around an axis or centre point **Orbit–** Curved path of a celestial object. **Star–** A huge ball of gas held together by gravity. **Axis–** An imaginary line about which something rotates **Celestial body–** Other natural planets/asteroids outside Earth's atmosphere **Sphere–** 3D Shape (in a ball shape) **Eclipse–** The obscuring of light from a light source e.g. the Sun **Satellite–** An artificial object that orbits around a planet. **Solar–** Of the sun **Atmosphere-** The atmosphere of Earth is the layer of gases, commonly known as air, that surrounds the planet Earth and is retained by Earth's gravity. **Gravity–** the force that attracts a body towards the centre of the earth, or towards any other physical body having mass.	INVESTIGATIONS Compare the time of day at different places on the Earth using internet links and direct communication Create and explore simple shadow clocks and sundials WORKING SCIENTIFICALLY · Can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. · Can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. · Can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. · Can use tests results to make predictions to set up further comparative and fair tests. · Can report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other

	Waxing / Waning moon - As the New moon begins its orbit and we see more and more of the moon, this is called Waxing. After the moon gets to its Full phase, we start to see less and less of the moon. This is called Waning. Gravity is the force by which a planet or other body draws objects toward its centre. The force of gravity keeps all of the planets in orbit around the sun. Why do you land on the ground when you jump up instead of floating off into space? Why do things fall down when you throw them or drop them? The answer is gravity: an invisible force that pulls objects toward each other. Earth's gravity is what keeps you on the ground and what makes things fall. **Famous Scientists** **Isaac Newton**– Discovered universal gravitation **Galileo Galilei–** Using telescopes, he discovered many new moons and planets. **Stephen Hawkins–** British physicist and expert on black holes. He worked on cosmology and the structure of the Universe. **Satellites** – history of, first satellites - October 4, 1957, when the Soviet Union successfully launched **Sputnik** I. The world's first artificial satellite was about the size of a beach ball, weighed only 83.6 kg and took about 98 minutes to orbit the Earth on its elliptical path. How we see earth from space - Cameras in space tell stories of life on Earth from a brand new perspective, revealing new discoveries, incredible colours and patterns, and just how fast it is changing.	

NC requirements HISTORY	**Knowledge**	**Skills**
The impact of Volcanoes – 1: The Destruction of Pompeii Extending from Y4 knowledge - Learn about the Roman Empire and its impact on Britain To know and understand significant aspects of the history of the wider world: the nature of ancient civilisations. Regularly address and sometimes devise historically valid questions. Understand how knowledge of the past is constructed from a range of sources. Construct informed responses by selecting and organising relevant historical information	Revision and Links Y2-Summer Term - Romans Y4- Autumn Term - Romans **Pompeii** was a Roman city. ... On 24 August, 79 AD, a volcano called Mount Vesuvius erupted and **destroyed** the city and its people, killing 2,000 of them. The town was excavated 1,600 years later and the remains of many items, buildings and people were found in a 'petrified' state (as they were at the time of the eruption). **Pompeii** is now considered one of the world's most important historical sites because of the way the volcanic ash preserved the city and its people. **Key facts about Pompeii** • **The 79AD eruption of Mount Vesuvius was the first time the volcano had erupted for 1,800 years.** The people of Pompeii didn't know what a volcano was. • The initial 'mushroom' cloud that shot out from the volcano as a column reached over 20 miles into the air. • It has been estimated that the pyroclastic flow (molten and ash) from Vesuvius may have moved down the mountain as fast as 450 miles per hour. • The pyroclastic flow was estimated to be as hot as 1,830°F or 999°C. • Mount Vesuvius is thought to be one of the most dangerous volcanoes in the world and is the only active volcano on the mainland of Europe. • The 79AD eruption lasted more than 24 hours. • The eruption happened the day after the religious festival of Vulcan, who was the Roman god of fire.	I can devise my own questions about the past I can ese the appropriate historical terms – era, civilisation, impact, development, ancient, modern, archaeological discoveries I can construct informed responses by selecting and organising relevant historical information into a form that communicates what they have learned about the destruction of Pompeii I can give some reasons for and show understanding that different versions of what happened in Pompeii may exist. I can use a wide range of sources to understand how knowledge of the past is constructed. I can select and organise relevant historical information

2: More recent Volcanic eruptions and their impact on the World. **Events in recent history:** To know about and understand the significance of events / people.	• Pompeii was rediscovered in 1748 when builders were constructing a palace for King Charles III. • **Pompeii is a UNESCO Heritage Site**, which means it is protected and preserved. • Mount Vesuvius erupted most recently in 1944, but it wasn't as powerful as in 79AD. It has a history of having a catastrophic eruption every 2,000 years or so... and it is almost 2,000 years since 79AD... Today Pompeii is a tourist destination where **you can walk through the streets of what was once the first-century Roman city of Pompeii**. • We know so much about the destruction of Pompeii thanks to letters written by a man called Pliny the Younger, who witnessed the eruption. He also spoke to survivors and asked them about their experiences. • Pompeii wasn't the only settlement destroyed by Mount Vesuvius's eruption in 79AD. Herculanium and Torre Annunziata were also destroyed. • It is thought that of 20,000 inhabitants of Pompeii and 5,000 inhabitants of nearby Herculanium, around 16,000 people died in the destruction of Pompeii. These people didn't evacuate immediately after the volcano erupted and then became caught by the toxic clouds of volcanic ash and dust and the pyroclastic flow. • No-one tried to re-build Pompeii after the eruption, as was usual after a natural disaster, because the city had been buried in over 14 feet of ash and the damage was too great. • The ash that buried the city and its people preserved everything where it was at the time of the disaster. This helps historians to understand a bit more about Roman life as it is a bit like having a snap-shot of the city in 79AD. Archaeologists found cavities or holes around the skeletons of some of the people they found in Pompeii. These holes where were the bodies of these people had once been and by pouring plaster into them, casts of the people have been formed. These casts can be found dotted around Pompeii, showing where these people were when they were hit by the pyroclastic flow. • The type of eruption from Mount Vesuvius is now known as a Plinian eruption (after Pliny the younger's description of it). This means that a tall column of extremely hot gases, ash and magma shoots strait up into the sky. A Plinian eruption doesn't commonly include a lava flow, but is a pyroclastic flow which contains hot steam, rock, ash and dust. There are currently 45 volcanoes with ongoing eruptions. https://volcano.si.edu/gvp_currenteruptions.cfm Study the impact of the eruption for the first time since 1821 of the Eyjafjallajoekull volcano, Eastern Volcanic Zone in southern Iceland. The spread of the ash cloud at 20-30,000ft raised concerns for air safety, forcing at least 12 countries to restrict or halt flights in their airspace in April 2010. A plume of volcanic ash was at times ejected several kilometres into the atmosphere by this eruption. 100,000 flights were cancelled. The people of Iceland who lived close to Eyjafjallajökull had it a lot worse. They had to deal with ash dumped on farmland, which ruined crops and polluted their water sources, plus a flood caused by meltwater from the ice sheet that covered the volcano. The flood meant that 800 people had to be evacuated from their homes. **<u>The Space Race</u>** **1957** - Russia (USSR) launched Sputnik 1 which became the first satellite into orbit around Earth. This ushered It also started Space Race between the Russians and the United States. **1957** - Russian dog Laika became the **first animal** in orbit. **1961 -** Russian cosmonaut Yuri Gagarin became the **first human** in space and the first human to orbit the Earth. **1963** - Russian cosmonaut Valentina Tereshkova became the **first woman** in space. . **1969** - The Apollo 11 spacecraft landed on the Moon and Neil Armstrong became the **first man to walk on the**	**Skills vocabulary** Deduction Inference Organising Information Chronology Comparison Observation Discussion Research Reflection Interpretation Questioning – historically valid Perceptive questions Investigate Forming conclusions Making links Historical perspective Judgement

	Moon. **1973** - The United States launched its first space station called Skylab. **1975** - The Apollo-Soyuz Test Project became the **first multinational manned space mission**. The Space Race between Russia and the U.S. came to an end. **1976** - Viking 1 successfully **landed on Mars**. It sent back pictures and scientific data for the next six years. **1981** - The United States launched the **first Space Shuttle**, Columbia. **1983** - Sally Ride became the **first American woman** in space. **1986** - The Mir became the **first consistently inhabited space station**. It remained in orbit until 2001. **1990** - The Hubble Space Telescope was carried into orbit by a Space Shuttle. **1998** - The International Space Station was launched into space.	I can use a wide range of sources to understand how knowledge of the past is constructed. Consider how this is easier for more recent historical events. I can select and organise relevant historical information I can identify historically significant people and events from the past.

NC requirements GEOGRAPHY	**Knowledge**	**Skills**
Human and physical geography describe and understand key aspects of: physical geography; mountains, volcanoes and earthquakes.	Revision and Links Y2 Spring Term – Oceans and Continents Y4 Spring Term -South America New Learning Three main places where volcanoes originate: • Hot spots, • **Divergent plate boundaries** (such as rifts and mid-ocean ridges), • Convergent plate boundaries (subduction zones) Tectonic plates are pieces of the rocky outer layer of the Earth known as the crust. These plates are constantly moving, and volcanoes, earthquakes and sometimes mountains are found at the plate boundaries. Volcanoes and earthquakes can have devastating impacts upon people who live near by. It is really important that people understand the risks associated with living in earthquake zones, and building settlements close to volcanoes.	• ra

Volcanoes are **formed** when magma from within the Earth's upper mantle works its way to the surface. At the surface, it erupts to **form** lava flows and ash deposits. Over time as the **volcano** continues to erupt, it will get bigger and bigger.
There are 3 types of volcano - Dormant, active and extinct
Tsunami – volcano or earthquake under the sea.
Why there aren't volcanos in UK? The reason why we haven't had any **volcanoes** for about 60 million years in **Britain** is that we are now in a tectonically quiet part of the world. Most **volcanoes** occur near the edges of the Earth's tectonic plates but **Britain** is now a long way from such geologically active areas.

Key vocabulary

Dormant
Active
Extinct
Tsunami
Crust
Mantle
Outer core
Inner core
Shield volcano
Plate boundary
Magma
Lava
Epicentre
Magnitude
Erupt
Pumice - a unique volcanic rock (igneous) that can float in water.

Volcanic islands occur in ocean basins (such as the Hawaiian Islands) or on or near ocean ridges (e.g., St. Paul Rocks and Ascension Island in the Atlantic Ocean) They are large volcanoes erupted on the seafloor whose tops have emerged above sea level.

The Ring of Fire is a major area in the basin of the Pacific Ocean where many earthquakes and volcanic eruptions occur. In a large 40,000 km horseshoe shape, it is associated with a nearly continuous series of oceanic trenches, volcanic arcs, and volcanic belts and plate movements. It has 452 volcanoes.

Most famous volcanoes that need to be located on a map

- Ojos de Salado, Chile and Argentina border (tallest volcano in the world) link to Y3 South America
- Mount Vesuvius, near Naples, Italy
- Krakatoa, Indonesia
- Mount St. Helens, Washington, USA
- Mount Tambora, Indonesia
- Mauna Loa, Hawaii
- Eyjafjallajökull, Iceland
- Mount Pelée, Martinique, Caribbean

The word volcano originally comes from the name of the Roman god of fire, Vulcan.
· The object with the most volcanic activity in our solar system is Io, one of Jupiter's moons. Covered in volcanoes, its surface is constantly changing due to the large amount of volcanic activity.

	Mountain is a landform that rises high above its surroundings. Taller than a hill, it usually has steep slopes and a rounded or sharp peak. Mountains are rarely found alone. Groups of mountains are called ranges. Lines of ranges form mountain belts. Some mountains were formed by the activity of volcanoes. Scientists believe that most volcanic mountains are made up of rock that melted deep within Earth. The molten rock then rose through Earth's surface, or crust. It then flowed onto the surface in the form of lava. The lava, along with volcanic dust, built up to form mountains. Volcanic mountains are typically steep and cone shaped. **Volcanic mountains**. • Many of the mountains in the Andes eg Tungurahua in Ecuador(link to Y3 South America) • Mount Fuji in Japan, • Mount Kilimanjaro in Africa • Mount Rainier in the United States Other mountains were formed by movements within Earth's surface, or crust. The theory called **plate tectonics** explains this type of mountain building. Earth's surface is divided into huge pieces called plates, which move very slowly. The continents sit on top of the plates and move with them. At times the plates collide, forcing the rock upward. The **Himalayas** of Asia are an example of this type of mountain chain. They were formed when a plate carrying India collided with the Asian plate. **Human geography of Volcanoes. Volcanic ash** is a combination of fine particles made of rock, tiny strands of supercooled lava called **volcanic glass**, and minerals. The particles are usually small but can contain powdered rocks from the volcano's exterior shattered during an eruption. The result is fine, sand-like particles and clouds of ash raining from the sky. Ash clouds rain down on surrounding areas, sometimes coating the earth in feet of ash. Wind can carry fine particles of ash away from the eruption site, extending the damage to surrounding communities. Volcanic ash can also cause thunder and lightning storms, and if it is carried high enough into the atmosphere it can deflect light from the Sun, cooling temperatures on earth and creating a **volcanic winter**. When volcanic ash is carried into the atmosphere, the rock particles can also create acid rain, which erodes the land it precipitates to, such as the forest shown below. **Human geography of Mountains** Mountain ranges - natural barriers to travel. Roads are difficult to build across them. Railroads need expensive tunnels to cross even low mountains. Therefore mountain ranges tend to divide the people on either side of them. They often form borders between countries. Life is hard in mountain lands. The high places of the world are cold and have little soil, making farming difficult. However, many mountain areas are vacation resorts. Skiing and climbing are popular mountain sports. **Earthquakes** – friction and movement of the plates. An earthquake is the shaking and vibration of the Earth's crust due to movement of the Earth's plates (plate tectonics). Earthquakes can happen along any type of plate boundary. Earthquakes occur when tension is released from inside the crust. Plates do not always move smoothly alongside each other and sometimes get stuck. When this happens pressure builds up. When this pressure is eventually released, an earthquake tends to occur. Modern day volcanos – Iceland – events in recent years and how it effects human beings.	