Space – Year 5

What you have learnt already in year 4:

Chronological understanding:
I have learnt to become more secure in my knowledge of chronology and can place periods of history I have learnt about accurately on a timeline.
I have learnt to confidently make links between areas of history I have studied, identifying differences and similarities between them

Vocabulary:
I have learnt to remember and use a range of names and words from the areas I have studied in Year 4 as well as remembering some names and words from previous study.
I have learnt to generally use words and phrases to indicate time, talking about decades, centuries, millennium etc.
I have learnt to understand a few words related to history in general as well as periods of history e.g. empire, parliament, civilisation etc.

Questioning:
I have learnt to ask questions to develop my understanding.
I have learnt to challenge sources of information.
I have learnt to organise some information that is purposeful for responding to or asking questions.

Knowledge:
I have learnt to remember a range of key facts and information from areas of study in Year 4 and can remember a few facts from previous areas of study.
I have learnt to understand how our knowledge of history is developed through a range of sources.
I have learnt to use at least one type of source of information confidently and begin to use at least two different types of sources e.g. books, internet, visual clips

Key Historical Concepts:

- Chronology Empire
- Civilisation
- Wider World History
- Continuity and Change
- Cause and Consequence
- Similarity/difference/significance
- Local history
- Culture
- Economy
- Governance
- Vocabulary

What you will learn by the end of this unit:

I will learn in detail about the key events in the history of space exploration and place them on a timeline in chronological order

I will learn in detail about early missions and achievements such as the Space Race between the USSR and the USA

I will learn in detail about the launch of Sputnik 1 and the achievements of Yuri Gagarin as the first human in space

I will learn in detail about Apollo 11 and the first moon landing

I will learn in detail about the role of the Hubble Telescope in expanding our understanding of the universe

I will learn in detail about significant scientists and astronauts such as Stephen Hawking, Neil Armstrong, Valentina Tereshkova and Rosalind Franklin and the contributions they have made to space exploration and scientific discovery

I will learn in detail about the ISS and Tim Peake

Key Skills:

Evaluate and Create – I will be able to evaluate what I have learnt about the history of space and use this to help me in my work (both written and verbal).

Connect ideas – I will connect ideas by making links in the impact certain periods of time have had to nowadays and how life has developed.

Describe - I will learn to use a range of historical terminology to describe different periods of history and how they have impacted the world we know today.

Recognise impact – I will use what I have learnt to outline the impact early space exploration has had on society

Question/ideas/points of view – I will compare my own ideas, points of view and questions to those of my peers and think about how the range of answers will influence my view of the history of space exploration and development.

Respond thoughtfully – I will respond thoughtfully to questions and answers myself and peers have and use what I have learnt to further these.

Investigate – I will be able to use different methods to investigate different aspects of space exploration

What you will learn by the end of this Key stage:

I will be able to confidently analyse the consequences of key events, actions of significant figures and developments

I will be able to confidently describe in detail different societies and periods from history and make links between features within and across different periods.

I will be able to demonstrate that I can place significant events and figures into a chronological framework

I will be able to confidently describe and analyse why there are different interpretations of events in history

I will be able to construct informed responses that involve the selection and organisation of relevant information

Opportunities for teaching diversity, equality and expanding cultural capital:

- Introduce diverse figures in history of space exploration such as scientists, engineers and astronauts from various cultural backgrounds
- Discuss how different countries and cultures have contributed to space exploration
- Incorporate literature and media that feature diverse characters involved in space exploration
- Invite guest speakers or conduct virtual interviews with professionals in the field of space exploration
- Use inclusive language and imagery

Skills and knowledge I may use from other subjects:

Geography: Mapping work of the solar system. Label planets or judge distances away
from the sun

Maths: To help me work out how long-ago events happened and order them.

Literacy: I can use my reading and comprehension skills to further my knowledge of the history of space.

Art: to use craft materials to create a futuristic rocket, to sketch/paint accurate representations of the planets

Science: modelling the solar system, exploring gravity, building a rocket or drawing on what the children know already about the planets

Key Vocabulary:

Astronaut – A person who travels in outer space

Cosmologist – Someone who studies the science of the origin and development of the universe

Cosmonaut – A Russian astronaut

International Space Station – the collaboration of 5 national space agencies and other contractors situated in space

Mission – A specific task or journey, especially one for exploration or research

Optical – having to do with the sense of sight or the eye

Orbit – the curved path in which a planet, satellite or spacecraft moves in a circle around another body

Physicist – An expert in the study of physics

Satellite – An object that orbits around a planet, such as the moon, or around a star, such as the Earth

Space – The area beyond Earth's atmosphere, where the stars and planets are located

Spacecraft – A vehicle designed for travel or operation in outer space

Telescope – An instrument that uses lenses and sometimes mirrors to make distant objects appear larger

Early History of Space Exploration

Sputnik 1 was the first artificial satellite launched by the Soviet Union in 1957. It orbited the Earth for three months and carried a radio transmitter.

It did 1,440 orbits of the Earth during this time before it fell down into the Earth's atmosphere on 4th January 1958 and burned up. The USA was very surprised when the Soviet Union sent Sputnik 1 into space and didn't want to fall behind. They began spending more money on science and education. This was the start of the Space Race between the Soviet Union and the USA.

Significant Astronauts and Scientists

Yuri Gagarin - Yuri Gagarin was a Soviet cosmonaut and became the first human to travel to space in 1961. His famous flight was aboard to Vostok 1 spacecraft. He orbited Earth in 1 hour and 29 minutes. Gagarin never went to space again. Instead, he trained other cosmonauts and toured around the world.

Valentina Tereshkova - Valentina Tereshkova was the first woman to travel into space aboard the spacecraft Vostok 6. She completed 48 orbits of Earth in 71 hours.

Neil Armstrong – Neil Armstrong became the first person to walk on the moon in 1969.

Stephen Hawking - Stephen Hawking was a celebrated cosmologist and physicist who published ground breaking research. He was born in 1942 and died in 2018 at the age of 76. For most of his adult life, he had early onset Motor-Neurone Disease which caused a lot of mobility issues and make it hard for him to speak.

Tim Peake - Tim Peake is a British astronaut who became the first British astronaut to walk in space in 2016.

Apollo 11

Apollo 11 was the first flight to send people to the moon. It was done by NASA, the American space group. It went up to space on 16th July 1969, carrying three astronauts: Neil Armstrong, Buzz Aldrin and Michael Collins. On 20th July 1969, Armstrong and Aldrin became the first humans to land on the moon, while Collins stayed in orbit around the moon.

The International Space Station (ISS)

The ISS is the biggest object ever flown in space. It travels around the Earth at an average speed of 27,700 KM/h, completing 16 orbits a day. At night it can be easily seen from Earth, as it flies 320 KM above us. 16 countries worked together to build the station.

Astronauts live and work on the ISS. They carry out scientific experiments both inside and outside of the space laboratory. An Automated Transfer Vehicle delivers food, fuel, equipment and other supplies to the astronauts on the ISS.

Hubble Space Telescope (HST)

The HST is the first big optical space observatory telescope. Being above the atmosphere means it can see the sky more clearly than a telescope on the ground. It was launched on 24th April 1990 by both NASA and the ESA working together. It is the size of a large school bus.

When the HST took its first pictures, astronomers were not happy with the quality of them. They send another space shuttle up to repair it, but it was not easy. Extra small mirrors were installed to correct the light from the big mirror, which took 5 days! Repairs have been needed a further 5 times to keep it in orbit and make it even better a technology has improved.

Recall and Remember!

Children add to their mind maps throughout the unit to help them to remember more.

Teachers could create an assessment activity of their choosing such as a double page spread or a quiz to assess learning.

Timeline of Events														
1942	1947	1949	1957	1961	1963	1966	1969	1973	1986	1991	2001	2015	2016	2019
V2 – first rocket to reach 100km from the Earth's surface	The first animals are sent to space	The first monkey is sent to space	Russia launched Sputnik, the first satellite, into space	Yuri Gagarin became the first human in space	Valentina Tereshkova became the first woman in space	A robot space ship took photographs of the moon's surface	Neil Armstrong flew Apollo 11 to the moon	A Russian probe was sent to explore Mars	Seven astronauts killed in a rocket explosion	Helen Sharman won a competition to become the first British astronaut in space	Dennis Tito paid $20 million to be the first tourist in space	Tim Peake becomes first British astronaut to visit ISS NASA's Spacecraft flies past Pluto, taking photographs	NASA's space probe orbits Jupiter	NASA's New Horizons completes a fly past of Ultima Thule, an object in the Kuiper Belt and the furthest object explored by a spacecraft