

Year 5- Blast Off!



Term:	Autumn 1
Subject focus:	Science and Art
Non-Fiction:	Explanation
Fiction:	Narrative Sci-Fi

Concepts	
Science	Art
Phenomenon/Inspiration	Inspiration/Creativity/Critique
<p>This topic links with the Science learning of the term, 'Earth and Space'. It builds on children's learning in Year 4 where they are learnt about the importance and uniqueness of planet Earth and now will apply that knowledge to explore the whole of the solar system, making comparisons between different planets. This topic also builds upon knowledge gained in EYFS when children learnt about <i>Our Planet and Beyond</i>, as well as making links with what the children learnt in previous topics about the Romans and Ancient Egyptians. The children have also learnt about the phases of the moon in EYFS and KS1, as well as how the moon gives the earth light. Throughout this topic, these ideas are revisited in greater depth and the children have the opportunity to extend their knowledge of these concepts.</p> <p>Alongside the scientific aspects of the solar system, children explore the people behind the Space Race, specifically learning about Katherine Johnson, Dorothy Vaughan and Mary Jackson, three mathematicians who worked as computers (then a job description) at NASA during the space race. Exploring how they overcame discrimination, as women and as African Americans.</p> <p>Children learn about space exploration in the current world, as well as what has been discovered about the solar system in the recent years.</p> <p>This topic gives the children the opportunity to explore the work of Van Gogh, as well as paintings by other who have been inspired by his work. They will build upon their existing painting skills, experimenting with different paints to create a similar effect as that used by Van Gogh in <i>Starry Night</i>. The children's painting skills will be developed further in Year 6 when they study Monet and use a different medium to create a different effect.</p>	

Science

National Curriculum

Science

- I can describe the movement of the Earth, and other planets, relative to the Sun in the solar system
- I can describe the movement of the Moon relative to the Earth
- I can describe the Sun, Earth and Moon as approximately spherical bodies
- I can explain day and night and the apparent movement of the sun across the sky using the idea of the Earth's rotation

Art

- I can develop different ideas which can be used to explain my choices for the materials and techniques I have used
- I can confidently and systematically investigate how I can use new and unfamiliar materials and use these learnt techniques within my work
- I can talk about my work and how close it came to what I wanted to do
- I can research and discuss various artists, architects and designers and discuss their processes and explain how these were used in the finished product
- I can mix colours to express mood, divide foreground from background or demonstrate tones
- I can experiment with using layers and overlays to create new colours/textures

Computing

- I can select appropriate software to use for a given task
- I can confidently use a range of software tools
- I can use more advanced features when searching online
- I can use a range of search tools to find exactly what I am looking for

Year 5 Science Blast Off

Foundation Subject Knowledge and Skills

What are the main concepts?

- The Earth, Sun and Moon are spherical
- The Sun is a star at the centre of the Solar System
- The names of the 8 planets in the Solar System
- The planets in order are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune
- The properties of the planets in the Solar System
- Mercury, Venus, Earth and Mars are all rocky planets as they are mostly made up of metal and rock, they are heavy, do not have rings and have very few moons
- Jupiter, Saturn, Uranus and Neptune are mostly made up of gases (helium and hydrogen) although they do have cores made up of rock and metal. They move more quickly, some have rings and all have a large number of moons
- Pluto is not a planet anymore, it is known as a dwarf planet
- The movement of Earth and other planets in the Solar System relative to the Sun
- The Earth orbits the Sun and this takes 365 $\frac{1}{4}$ days

<p>How do we inquire this concept?</p>	<ul style="list-style-type: none"> • The Earth rotates on its axis and this takes 24 hours • The Earth’s rotation on its axis causes day and night • Although the Sun appears to be moving through the sky, it is actually the Earth that is rotating • The Earth rotating on its axis means that day and night happen at different times around the world • There are 24 different time zones around the world • The Moon orbits the Earth and this takes approximately 28 days • Observe the phases of the moon • Observe the change in shadows over a course of a day and understand why they are in different positions and different lengths
<p>How does this effect today’s world?</p>	<ul style="list-style-type: none"> • It is dangerous to look directly at the sun, even when wearing dark glasses • People now believe the geocentric model rather than the heliocentric model to explain the movement of Earth and the other planets • The heliocentric model believed that the Sun and Moon were orbiting the Earth and the Earth stayed still • The geocentric model places the Sun at the centre of the Solar System and that the planets orbit the Sun • Ptolemy was an Ancient Greek and believed in the heliocentric model • Alhazen was an Islamic Scholar and questioned what Ptolemy thought • Copernicus challenged the thinking of others and moved towards the geocentric model
<p>How can we apply what we know to the future?</p>	<ul style="list-style-type: none"> • Know about space exploration and what has been discovered about the solar system in recent years • Know that there are scientists who work to find out more about the solar system and universe • Learn about Katherine Johnson, Dorothy Vaughan and Mary Jackson, three mathematicians who worked as computers (then a job description) at NASA during the space race. They overcame discrimination, as women and as African Americans • Learn about Christine Darden, who was the first African American woman to be promoted into the Senior Executive Service for her work in researching supersonic flight and sonic booms. • Learn about some of the current space missions and their aims https://www.jpl.nasa.gov/missions/?type=current
<p>Art</p>	
<p>Year 5</p> <p>Art- Painting</p>	
<p>Year 5</p>	<ul style="list-style-type: none"> • Look at the work by Van Gogh, focusing on Starry Night • Learn about the techniques and tools he used to create the effects in the painting • Experiment with different paints to create a similar effect to that of Van Gough • Look at painting by other artists that have been inspired by this painting, evaluating the similarities and the differences https://github.com/icjohnson/neural-style • Look at images of buildings in London and make observational drawings of them in their sketchbooks • Plan out a piece of work which will be inspired by Van Gough and be a study of a famous landmark in London • Using acrylic paint, create their own piece of art work inspired by Starry Night • Evaluate end piece, discussing likes and dislikes

Writing Outcomes	
Non-Fiction	Fiction
Biography of one of the women from Hidden Figures	Text: Phoenix Descriptive narrative of a setting in another world