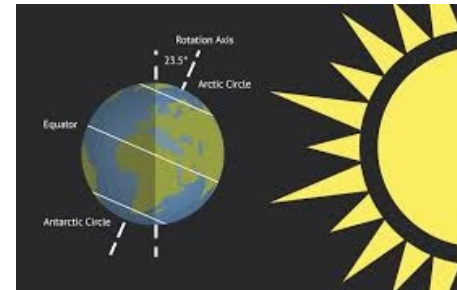
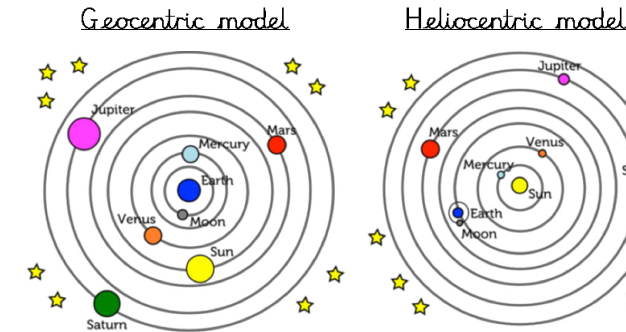
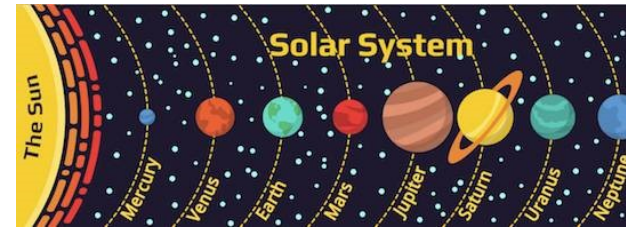


## Science: Earth and Space

- ◆ It can seem as though the Sun moves across the sky during the day but the Sun does not move at all! It is actually the Earth that is moving!
- ◆ Earth rotates (spins) on its axis. It does a full rotation once every 24 hours. At the same time, the Earth is also orbiting (revolving) around the Sun.
- ◆ Historically, people believed that the planets orbited the Earth (geocentric model). We now know that the planets orbit the Sun (heliocentric model).
- ◆ It takes just over 365 days for the Earth to orbit the Sun.
- ◆ Daytime occurs when the side of Earth is facing the Sun. Night occurs when the side is facing away from the Sun.
- ◆ The Moon orbits Earth in an oval-shaped path, while spinning on its axis.
- ◆ At various times in a month, the Moon appears to be different shapes. This is because as the Moon rotates around Earth, The Sun lights up different parts of it.



## Vocabulary

|              |            |
|--------------|------------|
| star         | attraction |
| heliocentric | equator    |
| geocentric   | gravity    |
| Solar System | rotation   |
| moon         | hemisphere |
| mass         | orbit      |
| revolve      | weight     |
| attract      | axis       |

## Geography: Geographical Skills

- ◆ Human geography is the study of human interaction with the Earth and the environment.
- ◆ Physical geography is the study of naturally occurring changes and the physical features of the Earth.
- ◆ We can analyse the changes in geographical features over time by comparing historical and modern day maps.



Sneinton Dale  
cinema (1932)

The same  
location  
(2021)

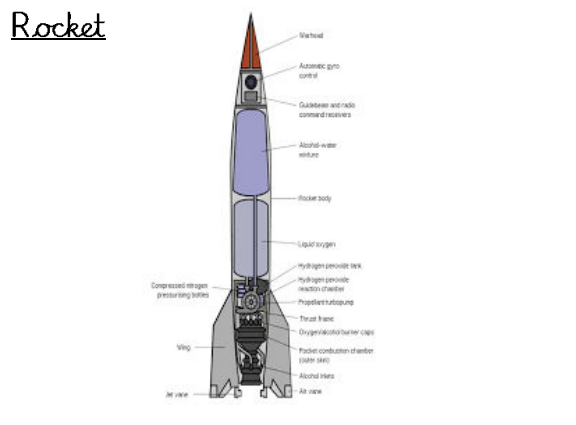


## Vocabulary

|            |              |
|------------|--------------|
| human      | Sneinton     |
| physical   | similarities |
| local      | differences  |
| historical | analyse      |
| land use   | local        |

### Design Technology: Key Knowledge

- ♦ We are going to be designing and making rockets.
- ♦ Rockets should be streamlined to reduce the effects of air resistance (remember our science learning from the Autumn term!)
- ♦ The materials should be light yet durable so the rocket can easily lift off the ground but remain intact.
- ♦ Our rockets could be powered in different ways—will you use an electrical circuit or a chemical reaction?

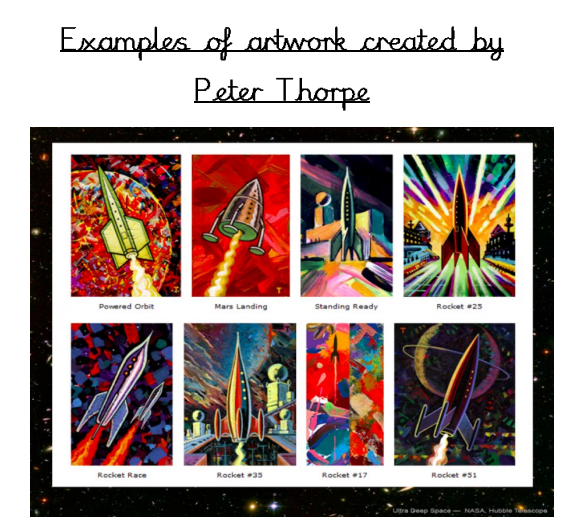


### Vocabulary

|          |            |
|----------|------------|
| design   | identify   |
| function | recycled   |
| product  | materials  |
| sketch   | evaluate   |
| annotate | components |

### Art: Key Knowledge

- ♦ Peter Thorpe is a well-known illustrator who paints many covers of books - his love of space inspires his art.
- ♦ Peter Thorpe often will paint with acrylic on black or white paper.
- ♦ This way, the colour of the image he paints will pop!
- ♦ His background are often abstract.
- ♦ There are ways to combine properties of line, shape, texture and pattern in work to create a variety of effects.



### Vocabulary

|              |         |
|--------------|---------|
| Peter Thorpe | texture |
| illustrator  | shape   |
| dark         | line    |
| bright       | effect  |
| abstract     | colour  |

### Space Travel Timeline

- 1942** In 1942, the V2 was the first rocket to reach 100km from the Earth's surface. It was designed by a German engineer called Wernher Von Braun.
- 1947** The first animals are sent to space. Fruit flies were used to see how they would react to the environment of space. The flies were sent to space with some corn for food.
- 1949** The first monkey is sent to space. His name is Albert II and was a Rhesus monkey. He set off on 14th June in an American rocket and flew 83 miles away from Earth!
- 1957** On the 4th October, Russia launched Sputnik, the first satellite into space. 'Sputnik' means 'satellite' in Russian. From this day on, the space age had begun!
- 1957** In November, Laika the Russian space dog became the first animal to orbit the earth. She travelled in a spacecraft called Sputnik 2 and her name means 'barker' in Russian. She was sent to see whether survival by humans in space was possible.
- 1959** Russian and American scientists were in a competition to send a spacecraft to the moon. Russia succeeded first. A space probe called Lunar 2 was sent and it travelled at such an immense speed that it would have killed a person if they were inside it!
- 1961** Russian cosmonaut Yuri Gagarin became the first man in space. His spacecraft, Vostok 1, completed one orbit of the earth in 2 hours. He had to land by parachute as the craft was designed to crash land.
- 1963** Russian cosmonaut Valentina Tereshkova is the first woman in space and a crater on the far side of the moon is named after her!
- 1966** A robot spaceship was sent to the moon on 30th May by NASA to ensure a safe landing. The robot was called Surveyor 1 and it took photographs of the moon's surface and sent them back to excited scientists on Earth. The information was used to figure out if a safe landing was possible.
- 1969** On the 20th July, Neil Armstrong and Buzz Aldrin set foot on the moon! Their spaceship, Apollo 11 flew them 250,000 miles and the first words said on the moon were 'the eagle has landed.'
- 1971** From this year on, American astronauts embarked on their fifth and sixth missions and the Lunar Rover was used to travel on it.
- 1973** A Russian probe is sent to explore Mars. It stayed in orbit for a year but it was destroyed when the parachute failed to open upon landing.
- 1986** A terrible tragedy occurs as a rocket explodes shortly after it launches, killing seven astronauts. This happened on January 28th and reminded everyone just how dangerous space travel is and how brave astronauts are.
- 1991** Helen Sharman won a competition to become the first British astronaut in space. She had to undergo 18 months of intensive training and was part of a mission to the MIR space station.
- 2001** On 28th April, American millionaire Dennis Tito became the first space tourist in a Russian spacecraft. He paid 20 million dollars for the privilege!
- 2003** In mid 2003, the 'Nasa Mars Exploration Rover Mission' was launched. This space mission involved two rovers, Spirit and Opportunity. The rovers were given the task of exploring Mars and sending any data back to Earth.
- 2004** The Rosetta/Philae mission began 2nd March 2004 but was completed late 2014. Philae was detached from the Rosetta aircraft where it would land successfully on the surface of a comet and transmit data back to Earth.
- 2006** On June 21st, the company Scaled Composites launched SpaceShipOne, the first privately funded aircraft. Tickets can still be bought for their new aircraft SpaceShipTwo.
- 2015** Tim Peake becomes the first British ESA Astronaut and the sixth British-born person to visit the International Space Station.
- 2015** NASA's New Horizons spacecraft completes a fly past of Pluto, taking detailed photographs of the dwarf planet and its largest moon, Charon.
- 2016** NASA's Juno space probe enters orbit around Jupiter, taking detailed photographs and studying the gas giant's composition.
- 2017** After 13 years orbiting Saturn, the Cassini space probe was deliberately destroyed after plummeting into the planet's atmosphere.
- 2018** During a test flight of a Falcon Heavy rocket, Tesla and SpaceX successfully put a Tesla roadster into orbit around the Earth.
- 2019** 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.
- 2019** China's Chang'e 4 explorer successfully becomes the first spacecraft to land on the far side of the Moon.