

## Maple Tree Primary School

### Year 5: Space

#### What should I already know?

- Light travels in straight lines
- Light can be blocked which causes shadows
- A year is 365 days and day is 24hrs
- A sphere is a 3 Dimensional shape
- The earth moves around the sun.
- The moon moves around the earth

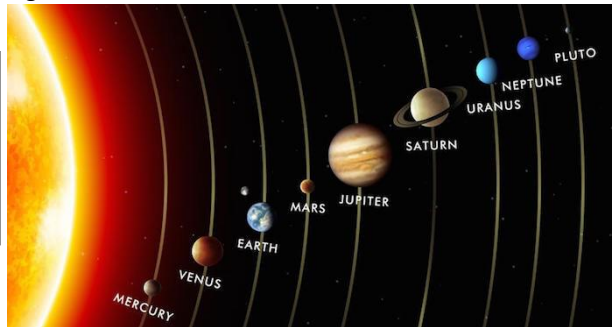
#### Knowledge and skills

- The Sun **not** a planet, it is a star.
- The Sun is the centre of the solar system (Heliocentric model)
- 1 Earth year is the time it takes the Earth to make one orbit of the Sun.
- 1 Earth day is the time it takes the Earth to spin a complete rotation on its axis.
- The reason why days are longer in the summer and shorter in the winter is due to the tilt of the Earth and how it spins on its axis
- The Space race was between the USA and the USSR (Soviet Union) and used as a show of strength on the world stage.
- Yuri Gagarin was the first man to orbit the Earth (in space)
- Neil Armstrong is reportedly the first man to walk on the moon.

#### Diagrams

Below is a table showing how long each planet takes to orbit the Sun:

|         |                      |
|---------|----------------------|
| Mercury | 87.97 Earth days     |
| Venus   | 224.70 Earth days    |
| Earth   | 365.25 Earth days    |
| Mars    | 686.98 Earth days    |
| Jupiter | 4332.82 Earth days   |
| Saturn  | 10,755.70 Earth days |
| Uranus  | 30,687.15 Earth days |
| Neptune | 60,190.03 Earth days |



| Vocabulary         |   |
|--------------------|---|
| Sun                | A huge star that Earth and the other planets in our solar system orbit around.  |
| star               | an object in space made of luminous plasma (bright gas) held together by its own gravity  |
| moon               | A natural satellite which orbits Earth or other planets.  |
| planet             | A large object, round or nearly round, that orbits a star.  |
| sphere             | A round 3D shape in the shape of a ball.  |
| spherical bodies   | Astronomical objects shapes like spheres.   |
| satellite          | Any object or body in space that orbits something else, for example: the Moon is a satellite of Earth.  |
| Pluto              | used to be considered a planet but was reclassified as a dwarf planet in 2006.  |
| orbit              | To move in a regular, repeating curved path around another object.  |
| rotate             | To spin. E.g. Earth rotates on its own axis.  |
| axis               | An imaginary line that a body rotates around. E.g. Earth's axis (imaginary line) runs from the North Pole to the South Pole.  |
| geocentric model   | A belief people used to have that other planets and the Sun orbited around Earth.   |
| heliocentric model | The structure of the Solar System where the planets orbit around the Sun.   |
| astronomer         | Someone who studies or is an expert in astronomy (space science).   |
| friction           | the force that acts upon one surface when it moves against another  |
| dwarf planet       | a small planet  |
| solar system       | the name given to our Sun and eight planets and their moons   |
| Light-year         | A light-year is a measurement of distance and not time. A light-year is the distance a beam of light travels in a single Earth year, which equates to approximately 6 trillion miles (9.7 trillion kilometres). |
| Trillion           | one million million – 1,000,000,000,000   |





| Question 1 Which of these causes day and night? | Start of unit | End of unit |
|---|---------------|-------------|
| The Sun moves across the sky.                   |               |             |
| The Moon comes out at night.                    |               |             |
| The Earth rotates on its axis                   |               |             |
| The Earth orbits the Sun.                       |               |             |

| Question 2: How long does it take the Earth to orbit the Sun? | Start of unit | End of unit |
|---|---------------|-------------|
| 365 and a quarter days  |               |             |
| 28 days   |               |             |
| 24 hours  |               |             |

| Question 3: The seasons are caused by... | Start of unit | End of unit |
|--|---------------|-------------|
| the weather                              |               |             |
| the Moon                                 |               |             |
| the Earth's rotation on its axis         |               |             |
| the Earth's tilt as it orbits            |               |             |

| Question 4: The Solar System includes... | Start of unit | End of unit |
|--|---------------|-------------|
| the Sun                                  |               |             |
| the planets                              |               |             |
| asteroids, meteorites and comets         |               |             |
| all of the above                         |               |             |

| Question 5: The Sun's _____ keeps the planets orbiting it | Start of unit | End of unit |
|---|---------------|-------------|
| gravitational pull (gravity)                              |               |             |
| burning gas   |               |             |
| spherical shape   |               |             |

| Question 6: Write the order of the planets from the distance of the Sun |   |   |
|---|---|---|
| Start of unit   | Venus, Mars<br>Mercury, Saturn<br>Uranus, Earth<br>Jupiter, Neptune |  |
| End of unit   | Venus, Mars<br>Mercury, Saturn<br>Uranus, Earth<br>Jupiter, Neptune |  |

| Question 7: A solar eclipse is when...        | Start of unit | End of unit |
|---|---------------|-------------|
| the Moon passes between the Sun and the Earth |               |             |
| the Moon comes out in the day                 |               |             |
| the Earth stops orbiting the Sun              |               |             |
| the Sun moves in front of the Moon            |               |             |

| Question 8: Jupiter, Saturn, Uranus and Neptune are known as... | Start of unit | End of unit |
|---|---------------|-------------|
| the rocky planets   |               |             |
| the gas and ice giants  |               |             |
| asteroids   |               |             |
| dwarf planets   |               |             |

| Question 9: Time zones are caused by.. | Start of unit | End of unit |
|--|---------------|-------------|
| the Moon's orbit                       |               |             |
| the Sun moving across the sky          |               |             |
| the Earth's rotation on its axis       |               |             |
| the Earth's tilt as it orbits          |               |             |

| Question 10: What do the Sun, Earth and Moon all have in common? | Start of unit | End of unit |
|--|---------------|-------------|
| They all move in space   |               |             |
| They are the same size   |               |             |
| They are all approximately spherical                             |               |             |
| They are all stars   |               |             |