



# St James' Church of England Primary School

## Science Overview Sheet



### Year 5 – Earth and Space



**Rationale:** Pupils should be introduced to a model of the Sun and Earth that enables them to explain day and night. Pupils should learn that the Sun is a star at the centre of our solar system and that it has eight planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune (Pluto was reclassified as a 'dwarf planet' in 2006). They should understand that a moon is a celestial body that orbits a planet (Earth has one moon; Jupiter has four large moons and numerous smaller ones).

Note: Pupils should be warned that it is not safe to look directly at the Sun, even when wearing dark glasses.

**Pre-unit task:** Knowledge Organiser Quizzes

#### Working Scientifically:

- *Comparing the time of day at different places on the Earth through internet links and direct communication.*
- *Creating simple models of the solar system.*
- *Constructing simple shadow clocks and sundials, calibrated to show midday and the start and end of the school day.*
- *Finding out why some people think that structures such as Stonehenge might have been used as astronomical clocks.*

#### Statutory Requirements:

- 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.
- The Earth spins once around its own axis in 24 hours, giving day and night.
- The Earth orbits the Sun in one year.
- We can see the Moon because the Sun's light reflects off it.
- The Moon orbits the Earth in approximately 28 days and changes to the appearance of the moon are evidence of this.
- The Sun *appears* to move across the sky from East to West and this causes shadows to change during the day.
- Changes to shadow length over a day or changes to sunrise and sunset times over a year are evidence supporting the movement of the Earth.

#### Overview:

Lesson 1: Spherical Bodies - I can explain why we know the Sun, Earth and Moon are spherical.  
Lesson 2: The Planets - I can name and describe features of the planets in our solar system.  
Lesson 3: Geocentric Versus Heliocentric - I can explain how planets move in our solar system.  
Lesson 4: Night and Day - I can explain day and night and the apparent movement of the sun across the sky.  
Lesson 5: Night and Day International - I can investigate night and day in different parts of the Earth.  
Lesson 6: Movement of the Moon - I can explain the movement of the Moon.

#### Cross Curricular Links

#### Resources

- Globes
- Black card
- Split pins
- Scissors
- Glue
- Video recording equipment – camera/tablet
- Bell/instrument/online timer
- Blank A3 sheets of paper
- Colour Pencils

#### Notes and Guidance

**Most Children will:** • Describe a sphere. • Identify scientific evidence with support. • Name the planets in the solar system with support. • Explain how the planets orbit the Sun. • Explain how night and day occur.

**Less Able Children will:** • Describe the Sun, Earth and Moon as spherical. • Name the planets in the solar system independently. • Distinguish between heliocentric and geocentric ideas of planetary movement. • Explain that day and night is due to rotation of the Earth.

**More Able Children will:** • Place the planets in the solar system in the correct order. • Explain theories of planetary movement in the solar system using evidence. • Explain using evidence how night and day occur. • Explain why night and day occur at different times in different places on Earth.