# SBSP PROGRESSION OF COMPONENT KNOWLEDGE THROUGH SCIENCE UNITS

## PHYSICS – EARTH AND SPACE

**Year 5 NC links:**

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

**Year 5 Component Knowledge**

- Name key characteristics of a planet
- Understand the order of the planets from the Sun
- Describe the Sun, Earth, moon and other celestial bodies as spheres
- Understand the differences between a heliocentric and geocentric model of the solar system
- Understand how attitudes and knowledge can change and adapt over time
- Represent visual characteristics of a planet
- Understand how Earth moves in space
- Understand how the Sun transitions across the sky
- Understand how night and day happen
- Understand that time can be different in various parts of the world
- Understand how time can be recorded using a 'solar clock'
- Understand how the Sun transitions across the sky
- Describe how the Earth and Moon move relative to the Sun
- Describe the movement of the Moon relative to the Earth
- Explain that the Moon orbits the Earth, not the Sun
- Create a representation of their knowledge of the planets and space using their imagination
- Describe the characteristics of a planet
- Understand that all planets are different to one another

**Working Scientifically Component Knowledge**

- Identifying scientific evidence that has been used to support or refute ideas or arguments
- Taking measurements, using a range of scientific equipment, with increasing accuracy and precision and taking repeat readings when appropriate
- Reporting and presenting findings from enquiries - including conclusions, causal relationships and explanations of and a degree of trust in results - in oral and written forms such as displays and other presentations
- Use a model to answer questions
- Using test results to make predictions to set up further comparative and fair tests

**Key Vocabulary**

- orbit, terrestrial planet, Solar System, spherical, gas giant planets
- geocentric, heliocentric, dwarf planet, astronomy
- poles, season, axis, hemisphere
- shadow, time zone, sundial, dial, gnomon
- phase, waxing, waning, eclipse, moon, rocky planet, gas planet

**KS3 NC links:**

Gravity force, weight = mass x gravitational field strength (g), on Earth g=10 N/kg, and it is different on other planets and stars; gravity forces between Earth and Moon, and between Earth and Sun (qualitative only). Our Sun as a star, other stars in our galaxy, other galaxies. The seasons and the Earth's tilt, day length at different times of year, in different hemispheres. The light year as a unit of astronomical distance.