



Y5 Science
Knowledge and Skills
Organisers
Earth and Space

Our Science Knowledge and Skills organisers are primarily a planning guide for the teachers. They include the statutory statements (**Subject Knowledge to be covered**) and the non statutory guidance (in blue). They offer suggestions (in red) for how these statements might be taught **working scientifically** – which is a requirement of the National Curriculum.

The Knowledge and Skills Organisers map out how and when these areas are taught and help to build a clear, progressive scientific statement of intent for our children as they progress through the school.

We have added additional ideas and guidance for the teachers, which they can choose to use and interpret i.e. how the local area might be used, key questions and ideas which might be pursued, outdoor learning opportunities and cross curricular links as these are features we recognise are important in terms of our holistic curriculum provision.

Parental/ carer support:

By mapping out our curriculum in this way we hope that these documents also help parents and carers support the learning of their child/ren by

- Showing the knowledge being covered
- Offering some suggestions which might also be investigated at home
- Sharing key vocabulary, which can be discussed to ensure your child's understanding
- Suggestions of places to visit

Outdoor Learning:

Shadow investigation

Sundials

Observing sun (not directly) and moon

Local Links

Bayfordbury Planetarium

Ogden Trust events

Free use of Planetarium in school (needs booking well in advance)

STEM discovery centre – Mars Rover (Stevenage)

Subject specific vocabulary

See file

Solar system, Planet
Stars, moon
Rotate, Orbit
Axis, Tilt

Resources

Phizzi Space box kept in year 5
Resources and lesson plans
Good TV programs – and you tube clips

Science skills (Working Scientifically) to be covered

- planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate e.g constructing simple shadow clocks and sundials, calibrated to show midday and the start and end of the school
- recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs - e.g : comparing the time of day at different places on the Earth through internet links and direct communication;
- using test results to make predictions to set up further comparative and fair tests
- 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
- identifying scientific evidence that has been used to support or refute ideas or arguments e.g creating simple models of the solar system; day; finding out why some people think that structures such as Stonehenge might have been used as astronomical clocks

Year 5 – Earth and Space

Possible Questions/ experiences

Explore the make up of the solar system. What is the sun?
What is the moon? How are they different? What other moons are there in the solar system?
Why does it look like the sun is moving?
Why does the moon appear to change shape?
What effect does the moon have on the sea?
What is the sun?
How do the sun, moon and Earth move in relation to each other?
How have ideas about the solar system changed?
Why do we get day and night?
Explain why the shadow length and position changes.
Extension Question: Why do we have seasons?

Subject Knowledge to be covered:

- describe the movement of the Earth and other planets relative to the sun in the solar system (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 8 planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune (Pluto was reclassified as a 'dwarf planet' in 2006).
- describe the movement of the moon relative to the Earth (They should understand that a moon is a celestial body that orbits a planet (Earth has 1 moon; Jupiter has 4 large moons and numerous smaller ones).
- describe the sun, Earth and moon as approximately spherical bodies
- use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky
- Pupils should find out about the way that ideas about the solar system have developed, understanding how the geocentric model of the solar system gave way to the heliocentric model by considering the work of scientists such as Ptolemy, Alhazen and Copernicus.

Cross -Curricular links

English – diary writing/biography writing from famous astronaut
Art – solar system picture (skill of shading)
DT – 3-D models of The Solar System
History - Galileo and Copernicus – historical figures how ideas of solar system has developed
Maths - problems related to planetary distance and facts
Geography – launch and landing sites of rockets and why are they located here?