

- **Science: Year 5**

National Curriculum links:

- Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object
- Identify the effects of air resistance, water resistance and friction, that act between moving surfaces
- Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.
- 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 and the apparent movement of the sun across the sky.
- Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird
- Describe the life process of reproduction in some plants and animals.
- Describe the changes as humans develop to old age
- Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets
- Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution
- Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating
- Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic
- Demonstrate that dissolving, mixing and changes of state are reversible changes
- Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.

<b>Sequence of learning:</b>				
<b>Autumn</b>		<b>Spring</b>		<b>Summer</b>
<b>Forces</b>	<b>Earth and Space</b>	<b>Living things and their habitat- Animal life cycles</b>	<b>Animals including humans- changes in humans</b>	<b>Properties of materials and their changes</b>
Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object	Describing the Sun, Earth and Moon as approximately spherical bodies	Describe the life process of reproduction in plants	Describe changes to humans from birth to old age	Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets
Identify the effects of air resistance	Describing the movement of the Earth, and other planets, relative to the Sun in the solar system ( name the planets of the Solar System)	Describe the life cycles of a bird	Describe the physical changes which occur during puberty	Investigate the properties of materials for thermal conductors and insulators
Identify the effects of water resistance	Describing the movement of other planets, relative to the Sun in the solar system Identifying scientific evidence that has been used to support or refute ideas or arguments	Describe the life cycles of an amphibian and an insect (explore metamorphosis and compare)	Describe and explain the menstruation cycle	Investigate the properties of materials and conductivity
Identify the effects of friction, that act between moving surfaces	Explain day and night and the apparent movement of the Sun across the sky	Describe the life cycle of mammals	Describe growth of babies	Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution
Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	Investigate night and day in different parts of the Earth.	Make comparisons between life cycles of different animals	Describe changes in old age	Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating
Recognise that some mechanisms, including levers, pulleys and gears,	Describing the movement of the Moon relative to the Earth by	To research and find out about a animal behaviourist/ science e.g.		Compare, present results and draw conclusions from investigations

allow a smaller force to have a greater effect.	explaining how the Moon orbits the Earth.	David Attenborough / Jane Goodall		
				Demonstrate that dissolving, mixing and changes of state are reversible changes
				Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.

Key vocabulary:

Reproduce	Sperm	Fertilises	Metamorphosis
Puberty	Menstruation	Sexual maturity	Adolescent
Earth	Space	Orbit	Solar system
Gravity	Friction	Air resistance	Water resistance
Reversible	Non-reversible	Mixture	Solution/ Insoluble