

Aims National Curriculum Aims for Key Stage 1 & 2

All Pupils should have opportunity to:

- Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.
- Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.
- Be equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

**Science
Year 5**

<i>Statutory Curriculum Objectives</i>	<i>Can I Statements</i>	<i>Voyage of Discovery</i>	<i>Expanding Empires</i>	<i>Mediterranean Life</i>
LIVING THINGS & THEIR HABITATS: <i>Pupils should read, spell and pronounce scientific vocabulary correctly.</i>	<i>Can I read, spell and pronounce scientific vocabulary correctly? Lifecycle, asexual reproduction, Stigma, stamen, petal, flower, leaf, stem, root, pollen, seed, photosynthesis, fertilise, germinate, pollinate, dispersal, sexual reproduction, fertilisation, gestation, growth, birth, baby, foetus,</i>			
LIVING THINGS AND THEIR HABITATS: <i>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</i> W/S: <i>Identifying scientific evidence that has been used to support or refute ideas or arguments.</i>	<i>Can I observe and describe the differences in the life cycle of a mammal, an amphibian, an insect and a bird in my local environment? Can I find out about and compare these to other plants and animals around the world? Can I ask pertinent questions? Can I discuss my findings appropriately?</i>			
LIVING THINGS AND THEIR HABITATS: <i>Describe the life process of reproduction in some plants and animals.</i>	<i>Can I begin to understand how plants reproduce? Can I begin to understand how mammals reproduce? Can I describe the life process of reproduction in some plants and animals?</i>			
LIVING THINGS & THEIR HABITATS: <i>Uses and implications of science today and for the future</i>	<i>Can I find out about the work of David Attenborough and Jane Goodall? Can I consider how their research has made an impact?</i>			

EXPERIENCES- LIVING THINGS AND THEIR HABITATS Children should use the local environment throughout the year to raise and answer questions that help them to observe life cycle changes in a variety of living things e.g. Allotment, animals, birds in local environment and compare these to plants and animals from around the world and even from different time periods (prehistoric).

<p>ANIMALS, INCLUDING HUMANS: Pupils should read, spell and pronounce scientific vocabulary correctly.</p>	<p>Can I read, spell and pronounce scientific vocabulary correctly? sexual reproduction, fertilisation, gestation, growth, birth, baby, foetus, puberty, penis, testicles, sperm, vagina, uterus, ovum (egg), menstruation,</p>			
<p>ANIMALS, INCLUDING HUMANS: Describe the changes as humans develop to old age. W/S: Identifying scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>Can I create a timeline and describe the changes as humans develop to old age? Can I learn about the changes experienced in puberty? Can I research and compare the gestation periods of other animals and compare them with humans? Can I explore reasons for differences in gestation periods?</p>			
<p>ANIMALS, INCLUDING HUMANS: Uses and implications of science today and for the future</p>	<p>Can I think about how knowing the length of a gestation period is useful to farmers and those running breeding programs?</p>			

EXPERIENCES- ANIMALS, INCLUDING HUMANS: Pupils should talk about the changes that occur from birth to old age with special focus on puberty and how this is relevant to themselves.

<p>PROPERTIES & CHANGES OF MATERIALS: Pupils should read, spell and pronounce scientific vocabulary correctly.</p>	<p>Can I read, spell and pronounce scientific vocabulary correctly? Hardness, solubility, transparency, conductivity (electrical and thermal) magnet, solution, filtering, sieve, evaporation, dissolve, reversible, irreversible,</p>			
<p>PROPERTIES & CHANGES OF MATERIALS: Compare and group together everyday materials based on their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. W/S: Planning different types of scientific enquiries to answer</p>	<p>Can I compare and group together everyday materials based on their properties? (Hardness, solubility, transparency, conductivity, response to magnets)</p>			

questions, including recognising and controlling variables where necessary				
PROPERTIES & CHANGES OF MATERIALS: Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution	Can I recognise that some materials will dissolve in liquid to form a substance? Can I describe how to recover a substance from a solution?			
PROPERTIES & CHANGES OF MATERIALS: Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. W/S: Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary W/S: Using test results to make predictions to set up further comparative and fair tests	Can I use my knowledge of solids, liquids and gases to decide how mixtures might be separated? Can I attempt to separate a water and salt solution, a sand and water solution and a muddy water solution using filtering, sieving and evaporating? Can I review my findings against my predictions and plan further tests?			
PROPERTIES & CHANGES OF MATERIALS: Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic	Can I give reasons, based on evidence from comparative and fair tests, for the uses of everyday materials?			
PROPERTIES & CHANGES OF MATERIALS: Demonstrate that dissolving, mixing and changes of state are reversible change W/S: Recording data and results of increasing complexity using scientific diagrams and labels	Can I demonstrate that dissolving, mixing and changes of state are reversible change?			
PROPERTIES & CHANGES OF MATERIALS: 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.	Can I explain that some changes result in the formation of new materials? Can I recognise that this kind of change is not usually reversible?			

<p>W/S: Recording data and results of increasing complexity using scientific diagrams and labels</p>				
<p>PROPERTIES & CHANGES OF MATERIALS Uses and implications of science today and for the future</p>	<p>Can I learn about chemists such as Spenser Silver who invented Post it glues and/or Ruth Benerito who invented wrinkle free cotton? Can I research and discuss the creative use of new materials such as polymers or super-thin/light and strong materials today?</p>			
<p>EXPERIENCES- PROPERTIES & CHANGES OF MATERIALS: Pupils should build upon their knowledge and understanding of materials in year 3 and 4 (Magnetism and Electricity). They should practically explore reversible and irreversible changes.</p>				
<p>EARTH AND SPACE: Pupils should read, spell and pronounce scientific vocabulary correctly.</p>	<p>Can I read, spell and pronounce scientific vocabulary correctly? Solar system, Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, moon, orbit, axis, rotation</p>			
<p>EARTH AND SPACE: Describe the movement of the Earth, and other planets, relative to the Sun in the solar system</p>	<p>Can I describe the movement of the Earth, and other planets, relative to the sun in the solar system?</p>			
<p>EARTH AND SPACE: Describe the movement of the Moon relative to the Earth</p>	<p>Can I describe the movement of the Moon relative to the Earth?</p>			
<p>EARTH AND SPACE: Describe the Sun, Earth and Moon as approximately spherical bodies</p>	<p>Can I describe the Sun, Earth and Moon as approximately spherical bodies?</p>			
<p>EARTH AND SPACE: Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky W/S: Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p>	<p>Can I use the idea of the Earth's rotation to explain day and night? Can I explain the apparent movement of the sun across the sky? (https://www.suncalc.org) Can I track the suns movement by measuring and recording shadow length?</p>			
<p>EARTH AND SPACE: Uses and implications of science today and for the future</p>	<p>Can I learn about how ideas about the solar system have developed and evolved over time (geocentric/heliocentric) through the</p>			

	work of scientists such as Ptolemy, Alhazen and Copernicus?			
EXPERIENCES- EARTH AND SPACE: Pupils should create simple models of the solar system, demonstrating that they understand the sun (a star) at the centre of our solar system. They should construct simple shadow clocks or sundials to track the sun's apparent movement across the sky (Pupils should be warned not to look directly at the sun). Using internet links (https://www.suncalc.org) pupils should compare the time of day at different places on Earth.				
FORCES: Pupils should read, spell and pronounce scientific vocabulary correctly.	Can I read, spell and pronounce scientific vocabulary correctly? Air resistance, friction, water resistance, gravity, mechanisms, pulleys and gears,			
FORCES: Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object	Can I explain that unsupported objects fall towards the Earth because of the force of gravity?			
FORCES: Identify the effects of air resistance, water resistance and friction, that act between moving surfaces W/S: Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary W/S: Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate W/S: Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations	Can I identify the effects of air resistance, water resistance and friction that act between moving surfaces? Can I design and make parachute? Can I devise a test for identifying the most effective design (in a class or group) using fair testing? Can I present my findings?			
FORCES: Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	Can I recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect?			 (DT)
FORCES: Uses and implications of science today and for the future	Can I learn about how scientists such as Galileo and Newton helped to develop the theory of gravitation?			

EXPERIENCES- FORCES: Pupils should explore air resistance through observing falling parachutes and sycamore seeds. They should explore friction and how it slows or stops moving objects for example the brakes on a bicycle wheel. Pupils should explore the effects of levers, pulleys and simple machines on movement.

Working Scientifically Statutory Curriculum Objectives	Voyage of Discovery	Expanding Empires	Mediterranean Life
<i>W/S: Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</i>	✓		✓
<i>W/S: Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</i>	✓		
<i>W/S: Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</i>		✓	✓
<i>W/S: Using test results to make predictions to set up further comparative and fair tests</i>			✓
<i>W/S: Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</i>	✓		
<i>W/S: Identifying scientific evidence that has been used to support or refute ideas or arguments.</i>			✓