



# THE 5 ENQUIRY TYPES: Research using secondary sources. Comparative and fair testing. Observing over time. Pattern seeking. Identifying, classifying, and grouping

AUTUMN	SPRING	SUMMER
AUTUMN 1: PHYSICS - FORCES	SPRING 1: ANIMALS, INCLUDING HUMANS	SUMMER 2: BIOLOGY – LIVING THINGS AND THEIR
-Explain that unsupported objects fall towards the Earth	Describe the changes as humans develop to old age.	HABITATS
because of the force of gravity acting between the Earth	Main Enquiry Types	-Describe the differences in the life cycles of a
and the falling object	Research using secondary sources.	mammal, an amphibian, an insect and a bird
-Identify the effects of air resistance, water resistance	Observing over time.	-Describe the life process of reproduction in some
and friction, that act between moving surfaces	WORKING SCIENTIFICALLY	plants and animals.
-Recognise that some mechanisms, including levers,	<ul> <li>Recording data and results of increasing complexity using</li> </ul>	Main Enquiry Types
pulleys and gears, allow a smaller force to have a	scientific diagrams and labels, classification keys, tables, scatter	Research using secondary sources.
greater effect.	graphs, bar and line graphs	Observing over time.
Main Enquiry Types	-identifying scientific evidence that has been used to support or refute ideas or arguments.	WORKING SCIENTIFICALLY
Comparative and fair testing.	SODING 1 AND 2: CHEMISTRY - DRODEDTIES AND	-Recording data and results of increasing complexity using
Observing over time.	SPRING I AND 2. CHEMISTRI - PROPERTIES AND	scientific diagrams and labels, classification keys, tables,
Pattern seeking.	<u>Compare and group together everyday materials on the</u>	scatter graphs, bar and line graphs
WORKING SCIENTIFICALLY	-compare and group together everyddy materials on the	-Reporting and presenting findings from enquiries, including
-Planning different types of scientific enquiries to answer	solubility transparancy conductivity (electrical and	conclusions, causal relationships and explanations of and
questions, including recognising and controlling variables	thermally and response to magnets	degree of trust in results, in ordi and written jorns such as displays and other presentations
where necessary	thermal), and response to magnets	-Identifying scientific evidence that has been used to
-Taking measurements, using a range of scientific equipment,	-Know that some materials will dissolve in liquid to form	support or refute ideas or arguments
with increasing accuracy and precision, taking repeat readings	a solution, and describe now to recover a substance from	support of rejute facto of arguments.
when appropriate	a solution	
-Recording data and results of increasing complexity using	-Use knowledge of solids, liquids and gases to decide how	
scientific diagrams and labels, classification keys, tables,	mixtures might be separated, including through filtering,	
scatter graphs, bar and line graphs	sieving and evaporating	





<ul> <li>-Using test results to make predictions to set up further comparative and fair tests</li> <li>-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</li> <li>-Identifying scientific evidence that has been used to support or refute ideas or arguments.</li> <li>AUTUMN 2: PHYSICS – EARTH AND SPACE</li> <li>-Describe the movement of the Earth, and other planets, relative to the Sun in the solar system</li> <li>-Describe the movement of the Moon relative to the Earth</li> <li>-Describe the Sun, Earth and Moon as approximately spherical bodies</li> <li>-Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</li> <li>Main Enquiry Types</li> <li>Research using secondary sources.</li> <li>Observing over time.</li> <li>WORKING SCIENTIFICALLY</li> <li>-Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> <li>-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</li> <li>-Identifying scientific evidence that has been used to support or refute ideas or arguments.</li> </ul>
<ul> <li>-Give reasons, based on evidence from comparative of fair tests, for the particular uses of everyday materia including metals, wood and plastic</li> <li>-Demonstrate that dissolving, mixing and changes of state are reversible changes</li> <li>-Explain that some changes result in the formation of new materials, and that this kind of change is not usureversible, including changes associated with burning the action of acid on bicarbonate of soda.</li> <li>Main Enquiry Types</li> <li>Comparative and fair testing.</li> <li>Observing over time.</li> <li>Pattern seeking.</li> <li>Identifying, classifying, and grouping</li> <li>WORKING SCIENTIFICALLY</li> <li>-Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> <li>-Taking measurements, using a range of scientific equipment with increasing accuracy and precision, taking repeat read when appropriate</li> <li>-Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, s. graphs, bar and line graphs</li> <li>-Using test results to make predictions to set up further comparative and fair tests</li> <li>-Reporting and presenting findings from enquiries, includin conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</li> <li>-Identifying scientific evidence that has been used to supporting refute ideas or arguments.</li> </ul>





# KNOWLEDGE TO BE LEARNED BY THE END OF EACH UNIT (WHAT DO WE WANT THE CHILDREN TO KNOW AND REMEMBER?)

	AUTUMN 1 - FORCES	SPRING 1: ANIMALS, INCLUDING HUMANS	SUMMER 2: BIOLOGY – LIVING THINGS AND THEIR
٠	<b>Gravity</b> is a force that pulls unsupported objects	<ul> <li>Humans develop in the mother's womb and are horn as a haby. They learn to walk as toddlers</li> </ul>	HABITATS
	very large object e.g. planets, moons]	They continue to <b>develop and change</b> as they	alive
•	Friction is a surface-to-surface force that works against the direction of movement. It will slow	get older. When they reach <b>puberty,</b> their bodies begin to change and become more adult	<ul> <li>Some living things reproduce sexually – with a male and female parts</li> </ul>
	down a moving object.	e.g. muscles develop, hair grows, breasts	• Some living things reproduce <b>asexually</b> – with
٠	Air resistance is a force that works against the	develop.	just one 'parent'
	direction of movement of an object through the	<ul> <li>As humans reach adulthood, they are ready to</li> </ul>	
	air. It will slow down a moving object.	have <b>offspring</b> of their own.	





	YEAR 5 STATUTORY REQUIREMENTS		
•	<ul> <li>Water resistance is a force that works against the direction of movement of an object through water. It will slow down a moving object.</li> <li>Levers, pulleys and gears are different ways of a small force having a greater effect.</li> </ul>	<ul> <li>As humans reach old age, their bodies start to decline and become more fragile and prone to illness.</li> <li><u>SPRING 1 AND 2: CHEMISTRY – PROPERTIES AND</u> <u>CHANGES OF MATERIALS</u></li> <li>A solution is a mixture of two or more substances that stays evenly mixed</li> </ul>	
<u>AUTU</u> • • • •	MN 2 – EARTH AND SPACE The Sun is a star at the centre of our solar system. Earth and the other planets orbit [move around] the sun. All planets spin on their axis while orbiting the sun. Earth takes 24hrs to complete one full rotation – the length of one day. When the sun shines on our part of the planet, we have daytime. When our part of the planet faces away from the sun, we have night time. The sun does not move through the sky. It stays in one place. It looks like it does because the Earth is rotating. The sun takes 365 [1/4] days to orbit the sun. This is the length of 1 year. [the ¼'s add up to the extra day in a leap year] The moon orbits the Earth and does NOT spin on its axis so the same side of the moon is always facing us. It takes one month [moonth] for the moon to orbit the Earth.	<ul> <li>Dissolving is when a substance reacts with a liquid and breaks down into parts too small to see. It does not disappear!</li> <li>Substances in a solution can be separated back into their original forms – this is called a reversible change.</li> <li>A chemical change is when two or more substances react and produce a new substance</li> <li>A physical change is a reaction when no new substances are produced.</li> <li>Irreversible changes are changes, usually physical or chemical, that cannot be undone [reversed] eg during cooking and baking.</li> </ul>	

SCIENCE PROGRESSION IN SKILLS AND KNOWLEDGE





٠	The Sun, planets and moon are approximately	
	spherical.	

Children working at below Age Related Expectations in SCIENCE at the end of Year 5: