

Science Year 5
Core Purpose Long Term Overview

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit	Forces	Earth and space	Living things and their habitats	Animals, including humans	Properties and changes of materials	Forces
Knowledge content	<ul style="list-style-type: none"> identify the effects of air resistance, water resistance and friction, that act between moving surfaces explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> describe the changes as humans develop to old age 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect
Rationale for order	Should be taught before Earth and Space as children can then apply their understanding of gravity to planetary formation, movement and orbits.	Should follow forces, as an understanding of gravity is essential to understand why the Earth and the Moon move as they do and why they are spherical.	Should be taught before 'Animals including humans' to lead in, as an understanding of lifecycles will help. Also, children may observe spring as a time for new life.	Understanding of basic lifecycles will allow children to better understand gradual changes during human lifecycle. Will support/ supported by SRE.	Evaporation will work best when the weather is warm.	As previous half term has a lot of teacher assessment criteria this half term is kept light on science in case there is the need for materials to run over.
Key Knowledge (to be retained in bold)						

SC1 Investigation focus	<p>SC1 Focus</p>	<p>How can I make a ball of playdough fall slower?</p> <p>Drop a ball of playdough through a tall water vessel, ask question how can I make it fall slower? (not a full investigation with changing variables) – Children are predicting, testing, recording and concluding.</p>					
	<p>Working Scientifically focus covered from progression overview:</p> <p>(Focus which will be primarily child led/independent. There is a focus on developing SC1 skills, which should be first modelled and allow a chance for the children to develop indep)</p>	<p>THIS UNIT WILL BE FULLY GUIDED AND MODELLED BY THE TEACHER This should build on the plan do review model used in EYFS</p> <p>PLAN -That scientific investigation begins with a question they want to find the answer to -That they can ask questions about the world and then make observations to answer these questions.</p> <p>CONDUCT -That they can use magnifying glasses to observe objects closely (as a way of collecting results) -That objects can be identified or sorted into groups based on their observable properties (Classification)</p> <p>RECORD - That in order to answer the asked questions, data needs to be gathered and recorded -That they can write down numbers and words or draw pictures to record what they find</p> <p>CONCLUDE AND EXPLAIN -To suggest an answer based on real life experience or using taught scientific knowledge</p>	<p>PLAN -That scientific investigation begins with a question they want to find the answer to -That they can ask questions about the world and then make observations to answer these questions.</p> <p>CONDUCT -That they can use magnifying glasses to observe objects closely (as a way of collecting results) -That objects can be identified or sorted into groups based on their observable properties (Classification)</p> <p>RECORD - That in order to answer the asked questions, data needs to be gathered and recorded -That they can write down numbers and words or draw pictures to record what they find</p> <p>CONCLUDE AND EXPLAIN -To suggest an answer based on real life experience or using taught scientific knowledge</p>	<p>PLAN -That scientific investigation begins with a question they want to find the answer to -That they can ask questions about the world and then make observations to answer these questions.</p> <p>CONDUCT -That they can use magnifying glasses to observe objects closely (as a way of collecting results) -That objects can be identified or sorted into groups based on their observable properties (Classification)</p> <p>RECORD - That in order to answer the asked questions, data needs to be gathered and recorded -That they can write down numbers and words or draw pictures to record what they find</p> <p>CONCLUDE AND EXPLAIN -To suggest an answer based on real life experience or using taught scientific knowledge</p>	<p>PLAN -That scientific investigation begins with a question they want to find the answer to -That they can ask questions about the world and then make observations to answer these questions.</p> <p>CONDUCT -That they can use magnifying glasses to observe objects closely (as a way of collecting results) -That objects can be identified or sorted into groups based on their observable properties (Classification)</p> <p>RECORD - That in order to answer the asked questions, data needs to be gathered and recorded -That they can write down numbers and words or draw pictures to record what they find</p> <p>CONCLUDE AND EXPLAIN -To suggest an answer based on real life experience or using taught scientific knowledge</p>	<p>PLAN -That scientific investigation begins with a question they want to find the answer to -That they can ask questions about the world and then make observations to answer these questions.</p> <p>CONDUCT -That they can use magnifying glasses to observe objects closely (as a way of collecting results) -That objects can be identified or sorted into groups based on their observable properties (Classification)</p> <p>RECORD - That in order to answer the asked questions, data needs to be gathered and recorded -That they can write down numbers and words or draw pictures to record what they find</p> <p>CONCLUDE AND EXPLAIN -To suggest an answer based on real life experience or using taught scientific knowledge</p>	<p>PLAN -That scientific investigation begins with a question they want to find the answer to -That they can ask questions about the world and then make observations to answer these questions.</p> <p>CONDUCT -That they can use magnifying glasses to observe objects closely (as a way of collecting results) -That objects can be identified or sorted into groups based on their observable properties (Classification)</p> <p>RECORD - That in order to answer the asked questions, data needs to be gathered and recorded -That they can write down numbers and words or draw pictures to record what they find</p> <p>CONCLUDE AND EXPLAIN -To suggest an answer based on real life experience or using taught scientific knowledge</p>
Assessment focus	<p>Teacher Assessment Framework Knowledge</p>	<p>Describe the effects of simple forces that involve contact (air and water resistance, friction) and gravity</p>	<p>Describe the shapes and relative movements of the Sun, Moon, Earth and other planets in the solar system; and explain the apparent movement of the sun across the sky in terms of the Earth’s rotation and that this results in day and night</p>	<p>Describe and compare different reproductive processes and life cycles in animals</p> <p>Name, locate and describe the functions of the main parts of plants, including those involved in reproduction</p>		<p>Group and identify materials in different ways according to their properties, based on first-hand observation; and justify the use of different everyday materials for different uses, based on their properties</p> <p>Identify and describe what happens when dissolving occurs in everyday situations; and describe how to separate mixtures and solutions into their components</p> <p>Identify, with reasons, whether changes in materials are reversible or not</p>	<p>Identify simple mechanisms, including levers, gears and pulleys, that increase the effect of a force</p>