



St John's C of E (Aided) Primary School

Year 2 Science Long Term Overview

Biology	Chemistry	Physics
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Term	Knowledge (Objectives)
Autumn 1	<p>Animal Life Cycles – 7 sessions</p> <p>Knowledge Block 1: Animal timelines</p> <p><u>Substantive Knowledge:</u></p> <ul style="list-style-type: none"> - Things that are living, move, feed, grow, reproduce and use their senses. - Animals grow until they reach maturity and then don't grow any larger. - Animals reproduce when they reach maturity (adulthood). - All animals eventually, die. - Different animals live to different ages. - Different animals reach different sizes before they are able to reproduce. - Different animals reproduce at different ages. - Animals, including humans, have offspring which grow into adults. - Exercise, eating the right amounts of different types of food and hygiene are important to maintain good health and wellbeing. <p>Knowledge Block 2: How animals get their food</p> <p><u>Substantive Knowledge:</u></p> <ul style="list-style-type: none"> - Habitats are places where animals and plants live (from Year 1). - Animals live in habitats in which they are suited. - Different kinds of animals and plants depend on each other within habitat. - Animals get their food from plants and other animals. This can be shown in a food chain. - A food chain begins with a producer. This is often a green plant because plants can make their own food. - A living thing that eats other plants is called a consumer. <p><u>Disciplinary Knowledge (Working Scientifically):</u></p> <ul style="list-style-type: none"> - Gathering and recording of data to help in answering questions.

<p>Autumn 2/ Spring 1</p>	<p>Changing Materials – 12 sessions</p> <p>Knowledge Block 1: How materials can change</p> <p><u>Substantive Knowledge:</u></p> <ul style="list-style-type: none"> - Materials can be changed by physical force (twisting, bending, squashing and stretching). - The properties of a material determine whether they are suitable for a purpose. <p><u>Disciplinary Knowledge (Working Scientifically):</u></p> <ul style="list-style-type: none"> - Performing simple tests: identifying the independent variables, scaffolding for how to measure (dependent variable).
<p>Spring 2/ Summer 1</p>	<p>Making New Plants – 8 sessions</p> <p>Knowledge Block 1 – What are flowers for</p> <p><u>Substantive Knowledge:</u></p> <ul style="list-style-type: none"> - All flowering plants make seeds (reproduction) that can grow (germinate) into new plants. - Plants need water, light and a suitable temperature to grow and stay healthy. - There are two main groups of seed plants – plants with cones and plants with flowers. <p>Knowledge Block 2 – What happens after a plant has produced seeds</p> <p><u>Substantive Knowledge:</u></p> <ul style="list-style-type: none"> - Some plants die after it has produced its seed (annual) and sometimes the plant lives for many generations producing seeds each year (perennial). <p><u>Disciplinary Knowledge (Working Scientifically):</u></p> <ul style="list-style-type: none"> - Observing closely, using simple equipment. - Using their observations and ideas to suggest answers to questions. - Identifying and classifying. - Gathering and recording data to help in answering questions.
<p>Summer 1/2</p>	<p>Pushes and Pulls – 8 sessions</p> <p>Knowledge Block 1 – How things move</p> <p><u>Substantive Knowledge</u></p> <ul style="list-style-type: none"> - Objects can move (be in motion) in various ways-roll, slide and bounce. <p>Knowledge Block 2 – Forces change how objects move</p> <p><u>Substantive Knowledge:</u></p> <ul style="list-style-type: none"> - The pushing or pulling of an object can affect its motion. - Pushing or pulling can do three things, slow down, speed up or change the direction of an object. <p>Knowledge Block 3 – Making forces bigger</p> <p><u>Substantive Knowledge:</u></p> <ul style="list-style-type: none"> - The larger the push/pull the bigger the effect on motion. <p>Knowledge Block 4 – Forces can change the shape of objects</p> <p><u>Substantive Knowledge:</u></p> <ul style="list-style-type: none"> - Pushing and pulling objects can change their shape. <p><u>Disciplinary Knowledge (Working Scientifically):</u></p> <ul style="list-style-type: none"> - Observing closely, using simple equipment.

- Using their observations and ideas to suggest answers to questions.
- Asking simple questions and recognising that they can be answered in different ways.
- Gathering and recording data to help in answering questions.

Disciplinary Knowledge (Working Scientifically)

Years	Types of enquiry that must be introduced in phase	All children should learn to	Recording and teaching that supports key learning	Statutory requirements NC
1 and 2	<ul style="list-style-type: none"> • Comparing differences and changes. • Describing in order to classify. • Surveys to identify patterns and support classification. • Describing the effect of changing things. • Using secondary sources, including the internet and <i>experts</i>. • Pupils begin to look for relationships between variables (patterns) 	<ul style="list-style-type: none"> • Gather evidence to describe the differences and similarities between different organisms, habitats and objects. • Gather evidence to describe how things change over time or as a result of something happening (e.g. how some things spring back when bent and others do not, or plants will wilt when they are not watered). • Begin to gather evidence to describe the relationship between variables and patterns (cause and effect) by identifying and seeking to quantify what must be changed and what measured (<i>what change and what measure</i>). 	<p>Venn diagrams, bar charts.</p> <p>Timelines and tables showing how one and more than one thing changes over time, bar charts, tally charts.</p> <p>Results tables with the independent variable increasing in one column and the dependent variable in the other.</p>	<ul style="list-style-type: none"> • Asking simple questions and recognising that they can be answered in different ways. • Observing closely, using simple equipment. • Performing simple tests. • Identifying and classifying. • Using their observations and ideas to suggest answers to questions. • Gathering and recording data to help in answering questions.