



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

Science Long Term Overview 2024-2025

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| Biology | Chemistry | Physics |
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| Year Group | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 | |
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| EYFS | Materials | | Hot and Cold | | Food | Growing | Minibeasts |
| | Seasons | | | | | | |
| 1 | Describing materials 6 sessions | Animal survival 7 sessions | Habitats 7 sessions | | Seasons 7 sessions | | Plants 8 sessions |
| 2 | Changing materials 6 sessions | Animal life cycles 7 sessions | Changing materials 6 sessions | Pushes and pulls 8 sessions | | Making New Plants 8 sessions | |
| 3 | Solids, Liquids and Gases 7 sessions | Rocks and soils 6 sessions | Animals, Skeletons and Movement 6 sessions | Light 6 sessions | Plants and their food production 7 sessions | Magnets 6 sessions | |
| 4 | Mixtures and separating them 8 sessions | Living things 6 sessions | Digestion 7 sessions | | Plant Reproduction 7 sessions | | Making electrical circuits work 6 sessions |
| 5 | Space and gravity 8 sessions | Circulation 7 sessions | Forces that oppose motion 8 sessions | | Fossils, geological time and classification 5 sessions | | Making new substances 8 sessions |
| 6 | Sound 10 sessions | | How light behaves 7 sessions | | Controlling electrical circuits 8 sessions | | Classification and Evolution 7 sessions |

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 |
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| 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 (eg 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. |
| 3 and 4 | <ul style="list-style-type: none"> • Pupils become confident in identifying relationships between variables (patterns). | <ul style="list-style-type: none"> • Recognise that factors other than that we are changing may have an effect and seek to control these factors (<i>what change and what measure and what keep same</i>). • Gather evidence to describe and classify patterns of behaviour, characteristics and properties of materials and make generalisations from data samples. | <p>Results tables with independent variable increasing in one column and dependent variable in the other.</p> <p>Increasing use of equipment that allows for standard measure (thermometers, data loggers, measuring cylinders, force meters, digital balances).</p> | <ul style="list-style-type: none"> • Asking relevant questions and using different types of scientific enquiries to answer them. • Setting up simple practical enquiries, comparative and fair tests. • Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. • Gathering, recording, classifying and presenting data in a variety of |

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| | | | | <p>ways to help in answering questions.</p> <ul style="list-style-type: none"> • Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. • Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. • Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. • Identifying differences, similarities or changes related to simple scientific ideas and processes. • Using straightforward scientific evidence to answer questions or to support their findings. |
| 5 and 6 | <ul style="list-style-type: none"> • Pupils explore more complex relationships or questions requiring greater precision; this will often require the identification of important values (eg biggest, smallest, optimum). | <ul style="list-style-type: none"> • Recognise that conclusions may be uncertain due to difficulties controlling and measuring variables accurately and that measurement always introduces some error. Understand that repeating experiments helps to identify what the true value is and that data points far from the mean are likely to be inaccurate and should be discounted when averaging. • Adapting experiments to produce more precise conclusions when the questions requires it, especially when seeking to find maximum, minimum or specific values. | <p>Results tables with the independent variable increasing in one column and the dependent variable in the other, results tables that show pupils <i>choosing</i> to repeat experiments as appropriately and the averaging of repeated measurements, scatter graphs to identify precise relationships and important values.</p> | <ul style="list-style-type: none"> • Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. • Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. • Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. |

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| | | | | <ul style="list-style-type: none">• Using test results to make predictions to set up further comparative and fair tests.• Reporting and presenting findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.• Identifying scientific evidence that has been used to support or refute ideas or arguments. |
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