



## WESTON LULLINGFIELDS C.E PRIMARY SCHOOL SCIENCE

### Progression of Skills in each curriculum area and Intent, Implementation, Impact

The document below has been designed to show how we cover all of the relevant Science knowledge and skills across our school curriculum.

#### Level Expected at the End of EYFS

We have selected the Early Learning Goals that link most closely to the Science National Curriculum.

#### Understanding the World (The World)

Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.

#### Physical Development (Health and Self-Care)

Children know the importance for good health of physical exercise, and a healthy diet, and talk about ways to keep healthy and safe.

#### Level Expected at the End Key Stage 1/ Key Stage 2

Key Stage 1 National Curriculum Working Scientifically	Lower Key Stage 2 National Curriculum Working Scientifically	Upper Key Stage 2 National Curriculum Working Scientifically
<p>During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"><li>• asking simple questions and recognising that they can be answered in different ways;</li><li>• observing closely, using simple equipment;</li><li>• performing simple tests;</li><li>• identifying and classifying;</li><li>• using their observations and ideas to suggest answers to questions;</li><li>• gathering and recording data to help in answering questions.</li></ul>	<p>During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"><li>• asking relevant questions and using different types of scientific enquiries to answer them;</li><li>• setting up simple practical enquiries, comparative and fair tests;</li><li>• making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers;</li><li>• gathering, recording, classifying and presenting data in a variety of ways to help in answering questions;</li><li>• recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables;</li><li>• reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions;</li><li>• using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions;</li><li>• identifying differences, similarities or changes related to simple scientific ideas and processes;</li></ul> <p>using straightforward scientific evidence to answer questions or to support their findings.</p>	<p>During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"><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 readings when appropriate;</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>• 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 a degree of trust in results, in oral and written forms such as displays and other presentations;</li></ul> <p>identifying scientific evidence that has been used to support or refute ideas or arguments.</p>

## Intent

It is our intention that through our Science curriculum we develop in all young people a lifelong curiosity and interest in the sciences. When planning the science curriculum, we intend for children to have the opportunity, wherever possible, to learn through varied systematic investigations, leading to them being equipped for life to ask and answer scientific questions about the world around them. As children progress through the year groups, they build on their skills in working scientifically, as well as on their scientific knowledge, as they develop greater independence in planning and carrying out fair and comparative tests to answer a range of scientific questions. Our scheme of work, predominantly using PlanBee, and Hamilton Trust, uses stimulating themes to engage our children, ensures that children have a varied, progressive and well-mapped-out science curriculum that provides the opportunity for progression across the full breadth of the science national curriculum for KS1 and KS2.



**Implementation** We implement a two year long term plan for our EYFS and KS1 Children in Acorn class and a 4 year rolling programme in our Oak class for the KS2 children. Using PlanBee and Hamilton trust Science schemes of work that include detailed lesson plans with the scientific knowledge teachers need to deliver effective Science teaching and learning. The acquisition of key scientific knowledge is an integral part of our science lessons.

Our Science lessons include slides to help explain scientific concepts and challenge children to think scientifically, practical enquiries and experiments, and a range of Science resources such as activity cards, information sheets and worksheets. Every lesson addresses National Curriculum Science objectives, so teachers can plan for (and track) progression throughout the academic year. Teachers use linked knowledge organisers which enable children to learn, retain and reinforce key scientific vocabulary and knowledge contained within each unit. The progression of skills for working scientifically are developed through the year groups and scientific enquiry skills are of key importance within lessons. Wherever possible units of work are introduced or enhanced by visits or visitors to provide context and interest for the pupils.

Each lesson has a clear focus. Scientific knowledge and enquiry skills are developed with increasing depth and challenge as children move through the year groups. They complete investigations and hands-on activities while gaining the scientific knowledge for each unit. Teachers are aware that pupil cohorts may be starting the planning cycles at different points, and so enable opportunities to recap/introduce concepts where necessary. The sequence of lessons helps to embed scientific knowledge and skills, with each lesson building on previous learning. There is also the opportunity to regularly review and evaluate children's understanding. Activities are effectively differentiated so that all children have an appropriate level of support and challenge, particularly important as our classes consist of whole key stage groups. Teachers are equipped with secure scientific subject knowledge, enabling them to deliver high-quality teaching and learning opportunities while making them aware of possible scientific misconceptions.



## Impact

Using PlanBee and Hamilton Trust schemes and other complementary resources including display materials, will result in an increase in the profile of science across the school. The learning environment across the school will be more consistent with science technical vocabulary displayed, spoken and used by all learners. Whole-school and parental engagement will be improved through the use of science-specific home learning tasks and shared use of knowledge organisers.

Progress will be seen through a child's ability to know more, understand more and explain more. This can be measured in different ways. Children who feel confident in their science knowledge and enquiry skills will be excited about science, show that they are actively curious to learn more and will see the relevance of what they learn in science lessons to real-life situations and also the importance of science in the real world. Attainment and progress can be measured across the school using our school assessment sheets. Impact can also be measured through useful, low time-consuming methods such as key questioning skills built into lessons, child-led assessment such as success criteria grids, and KWL grids and summative assessments aimed at targeting next steps in learning.

