Curriculum Overview High Ham Church of England Primary School

Curriculum Area: Science

Curriculum Lead: Amy Palmer

Our curriculum approach to science reflects our ethos statement ***'Discovering, learning, believing Together'*** *– in particular we are keen for pupils to discover their own passion for science within the curriculum as well as providing a wonderful opportunity to work together with others*

Intent

All pupils will develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics. Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them. All pupils are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future. Offer all children the opportunities to explore their interests or hobbies further through additional STEM activities. To ensure all children are involved in a science themed day at least once a term.

Implementation

All children study science weekly with great emphasis on 'working scientifically' All children are supported in their understanding through the use of resources and technology. In addition to subject-specific learning both KS1 and KS2 take part in a specialised science day once a term. These are called STEM days. Children explore science topics in single or mixed year groups but are also linked with Technology, Engineering and Mathmatics. These days will focus on fostering inquiring minds, logical reasoning and collaboration skills.

Impact

At each stage children have developed secure and deep understanding of scientific concepts and use the correct vocabulary when working scientifically through experimentation. Children enjoy exploring the science topics and can apply problem solving skills across the curriculum.

Planning

We follow plans from Hamilton Trust and STEM which all link to the objectives set out in the National Curriculum for each year group. The school website has links to planning which shows how our long-term plan for science feeds into the short-term plans for each term and clearly demonstrate how science learning episodes are increasing the depth of understanding and range of knowledge throughout the primary years.

Knowledge and skills progression through the school

At High Ham in KS1 science skills and knowledge will be developed through each phase of learning by building on previous levels of understanding. The particular KPI's (Key Performance Indicators) are outlined below but a full copy is available here High Ham Pupil Progression in Science Full List

In Key Stage 1 this will involve pupils:

- 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.

In Lower Key Stage 2 knowledge and skills will be further developed to involve:

- 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 ways to help in answering questions
- 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.

In Upper Key Stage 2 knowledge and skills will be further developed to involve;

- 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
- Using test results to make predictions to set up further comparative and fair tests
- 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
- Identifying scientific evidence that has been used to support or refute ideas or arguments.

Recording

Children record their science in individual books. This is marked in line with the school marking policy. Not all children will complete written evidence when working on an experiment.

Assessment

Ongoing teacher assessment will take place using 'Educator' (our whole school assessment system).

Reporting

At the end of the year on the annual report to parents a judgment will be made regarding their child's attainment in science relating to the national curriculum for their year group. For example, HNM (Has Not Met), ARE (Are Related Expectations), GD (Greater Depth).

Monitoring

#HighHamScience Twitter feeds show the learning objectives being taught. Curriculum leader to collate evidence including lesson learning walks during the year. Curriculum leader to work alongside their curriculum partner to collate evidence including analyzing how planning matches the evidence in books, learning walks, speaking to pupils about their learning and discussing with colleagues what has gone well as well as any lessons learnt. Where relevant the implementation of school polices (such as marking) will be reviewed in light of the well-being schools agenda (aspect of the School Development Plan) to ensure the workload for science is both manageable and is making an impact on the children's learning

Review

October 2020.

Originally written and reviewed by Amy Palmer and Elinor McElwaine Oct 2019.