



## Subject – Science:

School Vision and motto:

*'Making Learning an Adventure'*

At Holywell Village First School we have high aspirations for our children to become well-rounded and responsible future citizens. They are happy, independent and have positive self-esteem. Our children have a thirst for learning. They are curious about the world around them and are confident to 'have a go'. They are reflective learners who persevere and demonstrate good communication and social skills. They are thoughtful, caring and kind.

*'We want our children to be the best they can be.'*

### Science Curriculum Intent

*Why do we teach Physical Education?*

"A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes." (DfE (2014), Science programmes of study: key stages 1 and 2 National curriculum in England).

### Our curriculum is unique to HVFS

At Holywell First School, we pride ourselves on providing children with a unique curriculum. We provide this by.

- Providing a creative, Science Capital based curriculum, which planned to build increasingly sophisticated scientific knowledge. Children have the disciplinary and substantive knowledge to think like a scientist.
- Effective, progressive and manage 'chunks' of learning means that children can apply their disciplinary knowledge to different concepts as well as procedures. This enables our children to think of their own scientific questions and how they can find the answer.
- Science is coherently linked to their own lives, interests and locality. Children make strong links between what they are learning and why. They become good citizens of the world who are encouraged to ask questions and by the end of Year 4, they can suggest ideas on how to find the answer.
- Holywell's accumulative curriculum allows children to reflect upon their own learning and make links to prior learning. They transfer learning from one context to the next through the use of 'prior knowledge' activation activities. Science is taught with retrieval practice at the forefront of all lessons. This reinforces their conceptual understanding.
- Children begin their Science journey from EYFS through to Year 4 with a focus on vocabulary, which is pre-taught at the beginning of lessons. Language is strongly associated with achievement therefore vocabulary is explicitly taught throughout all year groups. This allows children to accurately and confidently express their thoughts and ideas.
- Learning is enquiring and practical activity based. Children learning through applying transferable skills and knowledge to a range of fun, relevant and engaging enquiry based activities.
- Teachers are dedicated to upskilling their own knowledge to ensure that learning can curriculum is incredibly important, and time needs to be appropriately attributed to each of the components existing in the curriculum

## Implementation

### *How do we teach Science?*

In line with our creative curriculum, Science at Holywell Village First School is implemented through fun and engaging cross-curricular work. At times, children may study a discrete science unit, but enquiries are usually set in a relevant context. The emphasis, in our teaching of science, is largely on first-hand experience and the development of skills. We encourage the children to take control of their own learning through the planning and development of their own scientific enquiry to proposing their own scientific questions. The children are also encouraged to make their own self-assessments, alongside peer and teacher, against learning outcomes and success criteria.

Children are encouraged to communicate their findings in a variety of ways:

- written explanations (letters, speech bubbles, reports, newspaper articles)
- drawings and diagrams
- graphs, tables, charts, Venn and Carroll diagrams
- posters
- oral presentations
- drama

- relevant discussion

## **Vocabulary**

Science is a Vocabulary-rich subject. In each medium-term plan, teachers plan vocabulary development carefully so that pupils benefit from repeated encounters with words. This ensures that pupils have the language required to access learning. Children may use more informal terms and teachers will be aware of these more informal terms.

Pupils are taught the specific meaning of terms; to ensure there is a shared understanding as this can be a barrier to success and participation - it can exclude some pupils from some activities.

Teachers will use specific and precise terminology to enable children to make more careful observations and enhance their disciplinary and substantive knowledge.

## **Our Science learning journey:**

Holywell's Science journey is carefully planned and progressive curriculum. In line with our creative curriculum, Science at Holywell Village First School is implemented through fun and engaging cross-curricular work. Science is taught with a Science Capital approach where learning is relevant and linked to whole school topics, the children's locality and their interests. Teaching and learning of science is broken down into small chunks of learning which allows children to understand key components to support their conceptual development.

The emphasis, in our teaching of science, is largely on first-hand experience and the development of skills. Teachers plan opportunities for pupils to recall prior learning. This enables pupils to consolidate their previous learning, while also preparing them for future learning, in line with the sequence of lessons. This is particularly important for our EAL and SEND children, who may need more opportunities to retain and embed scientific vocabulary and concepts. Age appropriate scientific vocabulary is introduced and reinforced. Children are given opportunities to consolidate their use of scientific vocabulary as they move through the year groups.

Throughout Holywell's carefully sequenced lessons, the children will gain disciplinary knowledge. The knowledge of how a scientist works and learns. This contains the what, why when and where and why of working scientifically skills linked to the different forms of enquiry (observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing; and researching using secondary sources). These working scientific skills are taught alongside substantive knowledge as outlined in the National Curriculum.

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## **Science opportunities beyond the National Curriculum:**

At Holywell Village First School – Science Capital

We are passionate about social inclusion so that all pupils regardless of their backgrounds or abilities, have opportunities to engage in Science and activities that they would not usually encounter through:

- Working closely with their dedicated Parent Governor to develop and arrange exciting science activities throughout the year in conjunction with Churchill Community College and their Science Ambassadors (CITIZENSHIP, CONFIDENCE)
- To participate in British Science Week and themed activities (CHALLENGE, and CONFIDENCE)
- Trips to local museums (CHALLENGE, CITIZENSHIP, CONFIDENCE)
- Lessons are planned and delivered with high quality teaching and engaging resources (CHALLENGE)
- Capital Science approach to teaching (CHALLENGE, CITIZENSHIP, CONFIDENCE)
- After school clubs for gifted and talents children (CHALLENGE)
- STEM Ambassadors workshops to inspire and breakdown stereotypes(CHALLENGE, CITIZENSHIP, CONFIDENCE)

The children use a range of ICT for research as well as gathering and recording findings to their own questions. (CHALLENGE, CITIZENSHIP, CONFIDENCE)

## **Impact**

Children will be become creative, critical thinkers and reflective learners, who have a web of knowledge, vocabulary and skills linked to Science and the world around them. Children will begin to acquire the skills and understanding to prepare them for life in the 21st century. Each lesson builds on the previous and children's skills and knowledge are developed throughout each topic. Each Year group's skills and technical knowledge build upon the last to show a clear progression of skills throughout the school.

Subject and school leaders monitor the impact of our curriculum provision through completing:

- Regular monitoring
- Book Scrutiny
- Assessment monitoring
- Data analysis
- Pupil Voice

Jennifer Fields: Subject leader. July 2022