Science Intent, Implementation & Impact Statement

The National Curriculum for Science aims to ensure that all children:

- 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
- are equipped with the scientific knowledge required to understand the uses and
- implications of science, today and for the future.

Intent: In line with our values at Hollinhey, our Science curriculum allows all children to operate as successful scientists through being taught a wide range of essential enquiry skills, concepts and key knowledge.

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.

We recognise the importance of Science in every aspect of daily life. As one of the core subjects taught in Primary Schools, we give the teaching and learning of Science the prominence it requires. Our intent is to:

Honesty – We aspire to encourage resilience, perseverance and an acceptance that mistakes are an important part of learning particularly in the scientific field and provide opportunities for critical evaluation of evidence.

Effort – develop the natural curiosity of the child; pupils are encouraged to ask questions and be curious about their surroundings and a love of science is nurtured through a whole school ethos and a varied science curriculum.

Achievement –increase pupils' knowledge and understanding of our world, and with developing skills associated with Science as a process of enquiry in order to build a foundation for future study and attainment; create a positive attitude to science learning within their classrooms and reinforce an expectation that all children are capable of achieving high standards in science

Respect – encourage respect for living organisms and the physical environment, develop a respect for the materials and equipment they handle with regard to their own, and other children's safety.

Tolerance – provide effective support to pupils where they find it difficult to grasp a scientific concept or retain vocabulary or scientific facts in an inclusive manner, with high aspirations for all our learners and encourage teamwork and peer-peer support.

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Implementation:

The programmes of study for science are set out year-by-year for key stages 1 and 2 in the national curriculum. Class teachers are responsible for ensuring that all of the relevant statutory content is covered within the school year. Our curriculum is set out in the 'Hollinhey Progression of Scientific Skills and Knowledge' Document and builds upon earlier opportunities they have had to play, explore, create, engage in active learning, and think critically in the Early Years Foundation Stage.

KS1 carry out 4 Science Themes per class and KS2 5 Science themes per class over the year. These may be the main drivers for our half-termly themes, complement these themes or be covered as standalone units.

Our whole school approach to the teaching and learning of science involves the following;

- Science will be taught in planned and arranged theme blocks by the class teacher. This is a strategy to enable the achievement of a greater depth of knowledge.
- Through our planning, we involve problem solving opportunities that allow children to find out for themselves. Children are encouraged to ask their own questions and be given opportunities to use their scientific skills and research to discover the answers. This curiosity is celebrated within the classroom. Planning involves teachers creating engaging lessons, often involving high-quality resources to aid understanding of conceptual knowledge.
- Teachers use precise questioning in class to test conceptual knowledge and skills, and assess children regularly to identify those children with gaps in learning, so that all children keep up.
- We build upon the learning and skill development of the previous years. Existing knowledge is checked at the beginning of each theme. This ensures that teaching is informed by the children's starting points and that it takes account of pupil voice, incorporating children's interests.
- As the children's knowledge and understanding increases, and they become more proficient in selecting, using scientific equipment, collating and interpreting results, they become increasingly confident in their growing ability to come to conclusions based on real evidence.
- Working Scientifically skills are embedded into lessons to ensure these skills are being developed throughout the children's school career and new vocabulary and challenging concepts are introduced through direct teaching. This is developed through the years, in-keeping with the themes.
- Teachers demonstrate how to use scientific equipment, and the various Working Scientifically skills in order to embed scientific understanding.
- Teachers find opportunities to develop children's understanding of their surroundings by accessing outdoor learning and workshops with experts.
- Children are offered a wide range of extra-curricular activities, visits, trips and visitors to complement and broaden the curriculum. These are purposeful and link with the knowledge being taught in class.
- Regular events, such as Science Week or project days, such as Environment Day, allow all pupils to come off-timetable, to provide broader provision and the acquisition and application of knowledge and skills. These events often involve families and the wider community.
- At the end of each topic, key knowledge is reviewed by the children and checked by the teacher and consolidated as necessary.

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Impact:

The successful approach at Hollinhey Primary results in a fun, engaging, high-quality science education, that provides children with the foundations for understanding the world. Our engagement with the local environment ensures that children learn through varied and first hand experiences of the world around them. So much of science lends itself to outdoor learning and so we provide children with opportunities to experience this. Through various workshops, trips and interactions with experts and local charities, children have the understanding that science has changed our lives and that it is vital to the world's future prosperity. Children learn the possibilities for careers in science as a result of our community links and connection with local employers e.g. Astra Zeneca & Siemens and national agencies such as the STEM association. Pupil voice is used to further develop the Science curriculum, through questioning of pupil's views and attitudes to Science to support the children's enjoyment of science and to motivate learners. Children at Hollinhey primary overwhelmingly enjoy science and this results in motivated learners with sound scientific understanding.