IGNITE INNOVATE INSPIRE
Policy for Science

"The important thing is to never stop questioning." Albert Einstein

Curriculum Vision: <u>Why</u> we teach this Science curriculum
At Monkhouse, we believe all children will be ambitious, courageous, resilient, respectful and kind so that they fulfill their unique potential and become active members of the wider global community.

<u>What</u> we teach in our Science curriculum
At Monkhouse, we provide a broad, balanced and progressive Science curriculum which is integrated into other areas of the curriculum where appropriate. We aim to ignite a passion for learning and exploring Science through five main types of enquiry: comparative testing, observing over time, classifying and grouping, researching using secondary sources and pattern seeking. We hope to inspire children to see the world beyond the Scientific concepts they already know and we aim to provide them with the skills and confidence to innovate their knowledge of Science to make meaning of their learning.
In Science, our curriculum is designed to allow the children to learn about 'everything, always moving forward'. This mantra is an underlying feature of each science unit to allow children to understand the historical development of scientific approaches, the impact this has had on our lives and how this may be applied in the future. This is planned for, in order to develop curriculum links and to promote critical thinking about how current learning fits within people's lives now and in the future. Children are encouraged to develop an awareness of their position in the world and actively link their knowledge across the curriculum. Science is an invaluable component of everyday life with constant discoveries and developments that continue to change our lives and we want the children to see this.

How we teach our Science curriculum
We aim to enhance curiosity for Science through practical and engaging investigations. Knowledge is taught alongside skills, this is then applied through different types of Scientific enquiries. We explicitly model links between prior and new learning. Children are given opportunities to reflect on their findings, learn from their mistakes, to raise further questions and to plan further scientific enquiries, as appropriate. As a staff, we ensure that the children are taught Science through working scientifically and these skills are gradually embedded across the academic year. Technology is used in a range of forms to enhance the Science curriculum. Children use technology to research, record and present information in digital forms eg Keynote and iMovies. Through maximising the use of technology, as a school, we make Science more practical, engaging and inclusive to all pupils.

Children are encouraged and supported to make individual progress and develop their skills during their science lessons through a range of differentiated steps, irrespective of their starting level. As part of the science curriculum, along with the knowledge in each unit, the children will gain historical understanding of that area of Science including famous scientists and their achievements. They will look at how a particular area of science is advancing because of the ongoing vast developments. The children will be provided with

opportunities to look at how a specific area of science is constantly developing and they will learn about different jobs and roles in the STEM industry.

In the Early Years Foundation Stage, educators will prepare children for the primary science curriculum through practical explorations of the natural world and everyday materials. Educators will offer a wide range of provocations which inspire children to observe, ask questions, investigate and build their vocabulary using all five senses. Adults will sustain children's early scientific thinking and scaffold simple investigations to help them make connections and draw simple conclusions. Drawing on the Development Matters guidance, the children will observe plant growth and change and encounter animals to learn more about their behaviours and their needs. They will observe and respond to the changing weather. They will play with a wide range of materials, building a vocabulary to describe their properties. Knowledge and understanding will be enriched through exploration both within the classroom and outdoors, such as through; water play exploring sinking and floating, sand play exploring changes in state and bug hotels, flower beds and wildlife areas to promote curiosity in wildlife, minibeasts and growing.

Assessment and Monitoring

We assess key skills and knowledge through summative and formative assessment. This helps identify children who require more support or have a greater depth of understanding. We assess pupils' prior knowledge in order to identify any misconceptions and identify pupils' starting points. Practical evidence demonstrating Science skills and knowledge may be uploaded to Schoolwork. Knowledge organisers have been developed to ensure a wide and broad range of coverage, which have been written to contribute towards our vision in Science. A mixture of multiple answer Socrative quizzes and TAPS focussed assessments tasks have been made available for each year group and for each unit in science to give the children an opportunity to demonstrate their scientific knowledge. Science is taught weekly and is recorded in children's science books, however this can be recorded in many different ways: written work, PicCollage, photographs, videos on Schoolwork, iBooks etc. At the end of each term, the subject leader provides feedback to the SLT through a subject leader report. This includes analysis of data and evidence in books and details actions for the coming term based on the analysis. Where necessary, staff support and CPD is delivered on the outcomes of this monitoring.

Participation - Community School, Local, Regional, National and Global

At Monkhouse, we recognise the importance of Community links to both the pupils, parents and the wider community. The children are given opportunities to use their scientific knowledge to solve problems in real life contexts and to share their knowledge with parents. Our children have worked on solving many environmental issues e.g. by designing electric cars and emergency shelters.

Extra Curricular

At Monkhouse, we offer a range of extra curricular activities to support and enrich learning in school. Over the course of the year, we offer opportunities for children to work collaboratively on Science projects both in school and with our wider collaborative group of schools. We invite external agencies to offer expertise and deliver engaging sessions to inspire pupils. As well as this, we offer a STEM club in partnership with our local High School. STEM Ambassadors for high school plan and deliver these sessions to Key Stage 2 pupils and as a result achieve a CREST Award.

INVOLVEMENT WITH EXTERNAL AGENCIES

Within projects, we liaise with external agencies and invite visitors in to make learning meaningful, purposeful and engaging. Children share their learning through project exhibitions and STEM fairs, where families, other classes and the wider community may be invited to share in our learning.