

At Inspire Academy Primary School, our curriculum is carefully planned, tailored, progressive and aspirational. It ensures learning that contextualises, addresses cultural deficit and gaps in knowledge and experience, and that ultimately equips our children for the next stage of education and for life beyond.

INTENT	<p>At Inspire Academy 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.</p> <p>The Scientific area of learning is concerned with increasing pupils' knowledge and understanding of our world, and with developing skills associated with Science as a process of enquiry. It will develop the natural curiosity of the child, encourage respect for living organisms and the physical environment and provide opportunities for critical evaluation of evidence. Science at Inspire Academy recognises the importance of key skills and having power to find answers through drive, confidence and independence. It also recognises the importance of life skills, equipping child for the world beyond school. We encourage our pupils to continue asking questions and to be curious about the world around them.</p> <p>At Inspire Academy, in conjunction with the aims of the National Curriculum, our Science teaching offers opportunities for our pupils' to:</p> <ul style="list-style-type: none"> • 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 scientific enquiries that help them to answer scientific questions about the world around them; • be equipped with the scientific knowledge required to understand the uses and implications of Science, today and for the future. • develop the essential scientific enquiry skills to deepen their scientific knowledge. • Use a range of methods to communicate their scientific information and present it in a systematic, cross-curricular manner, including I.C.T., diagrams, graphs and charts and a variety of written text types. • Develop a respect for the materials and equipment they handle with regard to their own, and other children's safety. • Develop an enthusiasm and enjoyment of scientific learning and discovery. <p>The National Curriculum will provide a structure and skill development for the science curriculum being taught throughout the school, which is linked, where possible to other areas of the curriculum to provide a creative scheme of work, which reflects a balanced programme of study e.g. circulatory system linked with PE.</p>
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	Working Scientifically Skills	Scientific Enquiry	Scientific Knowledge	Vocabulary
Underpinned by	At Inspire, Science is taught through enquiries which develop children's working scientifically skills as well as knowledge as they progress through each topic and key stage. Skills are carefully and progressively mapped across each Key Stage in line with the National Curriculum. Key skills are progressively built upon to support their ability ensuring well-rounded learners.	Types of scientific enquiry include: <ul style="list-style-type: none"> • observing over time • pattern seeking • identifying, classifying and grouping • comparative and fair testing (controlled investigations) • research using secondary sources 	The teaching of scientific knowledge is embedded within scientific enquiry where the children develop their working scientifically skills as well as scientific knowledge. This is done as much as possible where appropriate. Knowledge is progressive and builds upon previous learning.	Pupils will use and understand appropriate topic-based vocabulary and working scientifically vocabulary. This vocabulary is progressive across key stages. Vocabulary is displayed on knowledge organisers and working walls in classrooms.

National Curriculum

At Inspire Academy we believe that for the children to become scientists, they not only need knowledge, but also the skills to work scientifically and opportunities for skills and knowledge to be applied. The Science subject leads have set out clear expectations to teachers that any teaching and learning plans use the Primary Assessment Network (PLAN). Use of these provide clear guidance to all teaching staff on the progression and application of skills and knowledge expected for each topic, in each year group. Key vocabulary is identified for each science topic and it is expected that these keywords will be explored through teaching and be displayed on science working walls. Big questions and key ideas (and misconceptions) are included within the curriculum planning; these promote discussion, challenge thinking and ensure the full coverage of all five types of scientific enquiry.

EYFS

In the Foundation Stage, our pupils are taught Science through the key area of learning set out within the EYFS Statutory Framework. This is achieved by providing our pupils with a broad range of teacher-led, child-initiated and continuous provision learning opportunities. Our pupils will explore and use their senses to investigate a range of objects and materials, they will compare and discuss similarities, differences, patterns and change. Ask questions about why things happen, why things work and discuss their findings. Pupils will explore, identify and observe the different features of living things, objects and worldly events, as well as features of the place they live and in the natural world around them.

External Stimuli

Children have the opportunity to develop their science capital through extra-curricular activities such as, visitors and trips and special science learning days. The school takes part in national science events such as British Science Week and Citizen Science projects. We make full use of our unique school grounds and community setting; for example, our small woodland (forest school) area or by arranging visits to/from local farmers and wildlife charities. Our promotion of outdoor learning complement the science curriculum and provide a real context for the children to apply their knowledge and skills. Although the majority of the science teaching (Y1-6) is taught as a discrete subject, there is an expectation that all class teachers will promote and incorporate science across the wider curriculum where possible and relevant i.e. look at famous scientist in Guided Reading. The implementation of this is monitored by the subject leaders. Class teachers are given regular CPD to ensure they have the skills and knowledge to be able to do this.

Progression of Knowledge

- Science will be taught in planned and arranged topic blocks by the class teacher, to have a project-based approach. This is a strategy to enable the achievement of a greater depth of knowledge by consistently building on prior learning. In a few instances, some topics will be revisited throughout the year for example to allow for observation over time such as 'Seasonal Changes' and 'Plants' in Year 1.
- Existing knowledge is checked at the beginning of each topic, and at the start of lessons. At the end of each Science topic, children will undertake a quiz style test based upon not only learning from last week but also from the past few weeks and the start of term. This ensures that teaching is informed by the children's starting points and revisits any key knowledge that is needed to ensure successful progression.
- Knowledge organisers make clear the expected key learning children will acquire in a given Science 'topic'. They display and explain progressive key vocabulary linked to that topic. They are a working document that support within lessons and provide a self-assessment opportunity for children.

Progression of Skills

- Working Scientifically skills are embedded into lessons to ensure that skills are systematically 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 topics.
- 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, clubs 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 STEM 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 the wider community.
- At the end of each topic, key knowledge is reviewed by the children and rigorously checked by the teacher and consolidated as necessary.

- Through our planning, we involve problem solving opportunities that allow children to apply their knowledge, and find out answers for themselves. Children are encouraged to create 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 and visible within books and on displays. 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 pupils regularly to identify those children with gaps in learning, so that all pupils keep up. Tasks are selected and designed to provide appropriate challenge to all learners, in line with the school's commitment to inclusion.
- By using the 'PLAN' document we build upon the knowledge and skills developed in previous years. As the children's knowledge and understanding increases, they develop their confidence in creating and investigating their own scientific questions; 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.

Impact	At the end of each year, children will have deepened their scientific knowledge and conceptual understanding through the 5 different types of science enquiries. Working scientifically enquiry skills will have been developed alongside the contexts of the topics (scientific knowledge) which help them to answer questions about the world around them.			
	PUPIL VOICE Through discussion and feedback, children talk enthusiastically about their Science lessons and show a genuine curiosity and interest in the areas they have explored.	EVIDENCE IN KNOWLEDGE End of unit quizzes revisit knowledge from different points in the academic year. Pupils can call on their prior learning to propel their understanding of Science. They can verbally explain their learning clearly using key vocabulary.	EVIDENCE IN SKILLS Pupils use acquired vocabulary to interpret and convey their understanding of the subject. They are able to record data in a variety of ways and can prove or disprove a hypothesis in a fair and safe manner.	BREDTH AND DEPTH Teachers plan opportunities for pupils to study across concepts and deepen their conceptual understanding in aspects of particular scientific value. Pupils have the confidence and are inspired to further their knowledge.