



SCIENCE POLICY

At Fulwell Infant School Academy science is set within a broad, integrated curriculum. We aim to ensure that every child has access to the intentions set out in our curriculum intent document.

INTENT

Vision statement - We intend to embed an exciting, practical, high- quality science curriculum that provokes questioning, curiosity and the accurate use of scientific vocabulary. We will maximise use of our locality including the school grounds. The curriculum will inspire the next generation to excel and succeed in science as they discuss, question, measure, predict, test fairly and reason why building their scientific knowledge systematically.

Science is a crucial discipline and vital to the world's future prosperity. Children are taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of knowledge and concepts, children are encouraged to develop a sense of excitement and curiosity about the natural world. They are encouraged to make sensible predictions and hypothesise whilst recording their work in a range of ways. They are introduced to the concept of a 'fair test' and limiting the variables in any experiment. In our school the teaching and learning in science is enquiry based and firmly centred on the children's direct experiences, which include their developing knowledge of their immediate environment including themselves, other people, and features of the familiar, natural and constructed world.

TIME ALLOCATION

Throughout the school year we aim to seek a balance between all subject areas. Science will be taught using a thematic approach providing flexibility for short and long projects at a relevant time for the children to build onto all their learning. Teachers will use their professional judgement in deciding the best use of time.

BEHAVIOUR and ATTITUDES

At Fulwell Infant School Academy we strive for excellence in science by providing a safe, secure, caring environment, where all pupils are valued and respected as individuals, enabling them to reach their full potential. We believe that science stimulates and excites children's curiosity about phenomena and events in the world around them. It also satisfies their curiosity with knowledge. Because science links direct practical experience with ideas, it can engage learners at many levels. Around our school children are motivated and inspired by engaging and interactive science displays, which include key vocabulary and relevant questions.



The essential characteristics of a 'Scientist' at Fulwell Infants

Ask questions and explore answers.

Use computing in science studies.

Predict, reason and investigate, developing greater understanding of the concepts and knowledge of Science.



Carry out tests and enquiries recording, measuring, reporting and presenting conclusions.



Observe differences and make comparisons.

Demonstrate an awareness of health and safety

Use correctly and appropriately scientific vocabulary in communicating.

Solve scientific problems, make accurate and appropriate measurements.



Demonstrate enjoyment and interest in science and an appreciation of its contribution to all aspects of everyday life and the world we live in.



Be familiar with our locality to extend our learning environment.



Have curiosity and a sense of awe and wonder of the natural world.





IMPLEMENTATION

- Motivate and stimulate interest and excitement for learning
- Ensure children discuss and take an active part in their learning
- Address the literacy and numeracy needs of each individual and make full use of ICT in the provision of learning opportunities for all learners with additional educational needs, setting appropriate yet challenging targets for improvement.
- Provide a broad and balanced curriculum using a thematic approach where curriculum areas are linked. Science contributes significantly to the teaching of English by actively promoting the skills of thinking, reading, writing, speaking and listening. The children develop oral skills in science lessons through discussions and through recounting their observations of scientific experiments. They develop their writing skills through writing reports and projects and by recording information. Science also contributes to the teaching of mathematics in a number of ways. The children use weights and measures and learn to use and apply number skills. Through working on investigations, they learn to estimate and predict. They develop the skills of accurate observation and recording of events. They use numbers in many of their answers and conclusions.
- Ensure children embed key concepts in their long-term memory.
- Provide opportunities that extend and enrich learning to include visits or visitors, where appropriate
- Ensure that we use a range of classroom practice and teaching style appropriate to the needs of the learners in the group.
- Use the full range of differentiation (scaffold and challenge) strategies to ensure that all learners have the opportunity to access the curriculum and make progress and adopt teaching methods that reflect the differing learning styles of the individuals in the group.
- Monitor progress against targets and share the information with the learner and parents
- Seek to overcome potential barriers to effective inclusion.
- Ensure display in the learning environment celebrates the achievement of our children and scaffolds their learning to extend their achievement further.
- Provide home learning activities which extend and support learning.



Curriculum planning for Science

Long term plans map out the themes covered in each term for each year group in key stage 1. The curriculum leader for science will liaise with all curriculum leaders to ensure that learning builds upon learning.

Medium term plans

- A mapping overview of content which are constantly being reviewed and amended to ensure relevance for the cohort of children, give details of each unit of work for each term. They ensure an appropriate balance and distribution of work across each term.
- Key skills development to ensure children progress at a level according to their ability. They identify learning objectives and outcomes for each theme.

Short-term plans are completed by staff for each block of learning.

These include:

- the specific learning objectives and detail how the lessons are to be taught,
- success criteria which are shared with the children to ensure children understand their next steps to learning,
- activities to engage the children and to lead their development through active participation.

We plan the activities in science so that they build upon the prior learning of the children. We give children of all abilities the opportunity to develop their skills, knowledge and understanding and we also build planned progression into the scheme of work, so that the children are increasingly challenged as they move through the school.

Planning is recorded in class files which are accessible to all staff. In this way subject/curriculum leaders can monitor and develop learning within their curriculum area. Scrutinies of planning and work are carried out by subject leader/leadership with feedback given to ensure children access the full curriculum. We will ensure that we plan to meet the needs of the following clearly identifiable groups:

- Gifted and talented learners
- Learners from different ethnic groups
- Learners for whom English is an Additional Language
- Learners with Special Needs and disabilities
- LGBT



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- Learners with emotional, behavioural or social needs
- Learners who are at risk of disaffection or exclusion
- Learners who are "Looked After" in public care
- Learners in receipt of Pupil Premium.

SPIRITUAL, MORAL, SOCIAL AND CULTURAL DEVELOPMENT

Learning through science contributes to the children's spiritual development in many ways. We provide children with the opportunity to discuss moral questions, what is right and wrong. Children learn how society has changed and develop skills to become good citizens. They study their own rich cultural heritage and developing an understanding of how this culture is enriched by the multi-cultural British society of today, based on British values of democracy, the rule of law, individual liberty and mutual respect and tolerance of those with different faiths and beliefs.

PERSONAL DEVELOPMENT

Through science, children understand how major scientific ideas contribute to technological change - impacting on industry, business and medicine and improving the quality of life. Children recognise the cultural significance of science and trace its world-wide development. They learn to question and discuss science-based issues that may affect their own lives, the direction of society and the future of the world. It is very important that this policy reflects the essential part that science plays in the education of the children at Fulwell Infant School Academy. It is important that a positive attitude towards science is encouraged amongst all our children in order to foster self-confidence and a sense of achievement. Children need to be encouraged to explore and communicate the structure, patterns and relationships within science in order to solve the everyday problems and develop their own scientific thinking.

ENRICHMENT

The immediate environment is a rich source of experiential learning and can be used to deepen children's scientific skills, knowledge and understanding. The National Curriculum aims can be further developed by children experiencing outdoor learning and our local environment is a positive stimulus for children's learning. It is crucial that we use our local environment as it is a valuable source of learning that provides many key opportunities to further develop children's understanding. Extra-curricular opportunities are carefully planned within each year group and external visits and visitors are organised to link closely to the specific topic. Biennially Science Fortnight is planned, the aim of the event is to engage and inspire children with science using hands on practical opportunities



linked to science. All these opportunities and experiences are researched to ensure they are beneficial and appropriate to the children's learning.

RESOURCES

We have sufficient resources available in school to meet the needs of the Academy Curriculum. This allows resources to be matched to any developments in the curriculum, through the teaching of knowledge, skills and understanding.

ASSESSMENT

Formative assessment involves spending time before and during each unit or theme time eliciting children's knowledge and understanding - Mind Mapping/ Spider Graphs, discussions etc. We follow the principles of Assessment for Learning in all of our Knowledge and understanding. This involves identifying a child's progress in each area of learning, determining what each child has learned and identifying the next steps in his/her learning, linked to the learning intention and success criteria for the session. Effective tools used by our teaching staff include:

- Sharing explicit learning intentions and success criteria
- Quality questioning Self-assessment and peer assessment against learning intentions and success criteria
- Quality marking to identify areas where the success criteria has been met and areas that need to be improved
- Summative assessment involves spending time at the end of each unit or at the end of year assessing children's skills and understanding. The National Baseline (2019) will provide a baseline assessment level for each child. Class teachers assess children against
- Key learning, identified on the termly foundation plan. This identifies children needing additional support and those who are working at a mastery level.

Assessment against the National Curriculum allows us to consider each child's attainment and progress against age related expectations. This ensures that our teaching is matched to the child's needs. Intervention is provided, as set out in the renewed SEN code of Practice (2014), through quality first teaching and where a child is in receipt of a statement of Special Educational Needs or Education Health Care

(EHC) plan a specific education plan will be in place linked to specific targets. The targets may include, as appropriate, specific targets relating to science.



INCLUSION

The governors and staff of the academy are committed to providing an inclusive range of high quality learning opportunities for everyone involved with the school and

Community. We will ensure that everyone has an equal opportunity to access the full range of provision available in science and will actively seek to remove barriers to learning and participation. The teaching and learning, achievements, attitudes and well-being of every child are important.

HEALTH AND SAFETY

The teacher will be responsible for planned activities within science that are appropriately risk assessed to comply with health and safety requirements. They are also responsible for the health and safety of themselves, classroom assistants, visitors and pupils within their class.

IMPACT

Leadership will consider first hand evidence of how children are doing in each subject. Quality first teaching in response to the planned curriculum will provide evidence and information to answer the key questions listed below:

Do all our children achieve as much as they can?

Are there differences in the achievement of different groups of children?

What are we doing for those children who we know are not achieving their potential?

Are our actions effective?

Is the curriculum promoting outstanding learning?

SUBJECT LEADER

The Subject Leader has the responsibility for overseeing and resourcing the subject. There is an annual budget for resourcing science so that effective teaching can take place and the school's policy can be maintained. This may vary from year to year according to curricular priority and resources available. (see role of subject leader document)

MONITORING AND REVIEW

The leadership team (including the subject leader) is responsible for monitoring planning and the standard of children's work. Monitoring activities include planning and work scrutinies. This involves interviewing children across key stages. Children are asked focused questions about their learning with their work. This enables curriculum leaders to monitor progress within their subject.

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The curriculum leader supports colleagues in the teaching of science, by giving them information about current developments in the subject and by providing a strategic lead and direction for the curriculum area in the school. Curriculum leaders meet with governors, as appropriate, to discuss current developments in their subject. Key questions are discussed during these meetings.

Sarah Lewis