Grewelthorpe & Fountains CE Primary Schools Federation

Science Policy

'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'
National curriculum 2014

Across our Federation, we aim to develop in pupils, curiosity, enjoyment and skills and a growing understanding of scientific knowledge, through an approach in which pupils raise questions and investigate the world in which they live.

Intent

Our intent is to give all children a strong understanding of the world around them, whilst acquiring specific skills and knowledge to help them to think scientifically. Children will gain an understanding of scientific processes, as well as an understanding of the uses and implications of science, today and for the future.

Our intent is that all children will use a range of skills and build knowledge through a spiral curriculum that will include observations, planning and investigations. All children will learn to question the world around them and become independent learners by exploring possible answers for their scientific based questions.

Concepts are reinforced by focusing on the key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions.

Implementation

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

- Science will be taught in blocks.
- 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.
- We build upon the learning and skill development of the previous years. As the children's knowledge and understanding increases, they become more proficient in selecting and using scientific equipment, as well as recording 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 school career. Key skills include predicting, measuring, observing, reflecting, analysing, presenting results, then drawing conclusions.
- Outdoor learning is embedded, and teachers find opportunities to develop the children's understanding of their surroundings by accessing the surrounding environment.

TEACHING APPROACHES

A wide range of teaching and learning styles will be used, with an emphasis on investigative, rather than illustrative practical activities
Our teaching is designed to be well-paced, interactive, confident, ambitious, supportive and inclusive. This is evidenced through:

- Scaffolded and appropriately differentiated activities that enable pupils to experience success in their learning and give them confidence to progress independently.
- Learning walls that act as prompts giving key strategies, concepts and vocabulary.
- The encouragement of collaborative learning through work in pairs, small and large groups.
- Adults in class supporting individuals and groups of children both on a needs basis and on a rotational basis.
- The promotion of independent learning through differentiated, and where appropriate, open-ended tasks that include skills practice and the application of such skills in a range of problem-solving contexts.
- Pupils will be taught to use a wide range of appropriate recording methods, which will include the use of Information Communication Technology at both Key Stage 1 and Key Stage 2.

CROSS CURRICULAR LINKS

Science contributes to many subjects within the primary curriculum and opportunities will be sought to draw scientific experience out of a wide range of activities.

OUTDOOR LEARNING
Where possible to include outdoor learning opportunities in planning in order to develop our whole schools Outdoor Learning provision.

KEY SKILLS (including Learning to Learn skills)

In addition, key skills that encompass 'learning to learn' skills underpin the teaching of science and are both developed within integral and discrete learning and teaching opportunities:

- Communication
- Application of Science
- Information and Communication Technology
- Working with others
- Improving own learning and Performance
- Problem Solving
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PLANNING

- Long term planning for science will follow the Science Programme of Study of the National Curriculum and will be based on the North Yorkshire Science Long Term Plan. Medium

term planning will take place every term, and will be constructed using the appropriate North Yorkshire Science Topics.

- Differentiation of activities will be made in the weekly/daily planning as appropriate to the pupils being taught based upon their prior knowledge, understanding and skills.
- The strong practical mathematical links with investigations will be seen as an opportunity for teaching and should be explored at the planning stage.

ASSESSMENT

Assessment is an integral part of the planning, learning and evaluation cycle. Evidence is gathered through planned opportunities for observation, pupil consultation, specific assessment for learning strategies, including focussed questioning. This evidence helps to inform the teacher at what level the individual child is working and is annotated in planning throughout the year. Judgements are made against each assessment focus and indicate whether a child is working at a low, secure or high level within age related expectations and provide a direction for future targets, both individual and curricular

ASSESSMENT FOR LEARNING

Assessment for learning, leading to personalised learning, is embedded in the teaching and learning of Science. Planning involves learners taking into account previous knowledge, skills and understanding. Learning is facilitated in a variety of ways that takes into account learning preferences.

Learning intentions are shared in each lesson, together with reference to learning to learn skills where appropriate. Product success criteria is given or generated within lessons as an aide memoir for learners as a tool to facilitate pupil/peer and teacher evaluation and feedback.

Teachers use higher order question skills to enhance thinking skills.

Children have regular opportunities to reflect on their learning during and at the end of lessons both to celebrate achievement and consider their next steps and targets for improvement.

INCLUSION

We aim to provide a culture that reflects our distinctive Christian ethos; a culture that ensures an ethos and environment that is a safe, welcoming place. Christian values are practised that centre on the uniqueness of individuals, their worth, potential and the need for inclusion in an accepting cohesive

Christian community. Contexts for learning seek to represent the breadth and diversity of the world in which we live. Learning and teaching approaches recognise and make provision for a range of learning styles.

Children with SEN are taught within the science lesson and are encouraged to take part when and where possible.

All adults communicate and plan collaboratively. The support teacher feeds back to the class teacher when appropriate to inform evaluations, assessment and future planning.

We aim to provide for all children so that they achieve as highly as they can in Science according to their individual abilities. We will identify which pupils or groups of pupils are under achieving and take steps to improve their attainment. Gifted children will be identified and suitable learning challenges identified.

Please see the federation policy on Special educational Needs.

EQUAL OPPORTUNITIES

All children are provided with equal access to the Science curriculum. We aim to provide suitable learning opportunities regardless of gender, ethnicity or home background. Materials used reflect the rich diversity of the world, its people and cultures.

MARKING

Our marking is analytical and informative to teacher, pupil and parent and aims to celebrate success whilst taking the child forward in terms of their learning. Marking is a central tool of assessment.

Self-marking and reflection is strongly encouraged and provide a useful assessment tool.

ROLE OF SUBJECT LEADER

The Subject Leader for Science is Nicola Micklefield. The Subject Leaders have a leading role in the development of the federation policy and approach in Science and aims to gain the requisite expertise through INSET and research. The Subject Leaders should be responsible for improving the standards of teaching and learning in Science through:

- being responsible for the development of science within the federation
- monitoring the effectiveness of science within the federation.
- Supporting teachers in their planning and strategies for classroom management.
- disseminating new information
- being responsible for providing appropriate science resources

STAFF DEVELOPMENT AND TRAINING

Staff development and training is provided in the following ways:

- Needs audit and planning for professional development.
- School based INSET led by Subject Leader or outside agencies.
- Liaison with inspectorate or advisory service.
- Working alongside other teachers or visiting other classrooms as an observer. (e.g. Sharing good practice. Supporting NQTs.)

PARENTAL INVOLVEMENT

Parents/teacher consultations are held at least twice each year to inform and update parents. Open evenings are held from time to time to provide parents with information on curriculum developments, school initiatives and to provide a general forum of interest.

Parents are informed of current themes and are encouraged to support their child's learning in these areas.

HEALTH AND SAFETY

During planning teachers need to consider and minimise risks for all activities and systematically teach pupils to take responsibility for determining the risks to themselves and others

The North Yorkshire guidelines for safety - ASE 'Be Safe' 3rd Edition are a **minimum** requirement of health and safety standards. Teachers should notify the science co-ordinator of any suggested amendments Free advice is available from CLEAPSS hotline 01895 251496

APPENDICES

We have the following resources within the federation to support our Science teaching:

- Resource boxes linked to the themes of the 'Science Topics' are kept in shared areas.
- Interactive teaching tools (ICT) -dataloggers

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Policy:	**Science Policy**
Signed Chair of Governors:	**RBain**
Date Signed:	**January 2021**
Governors Meeting Ratified:	**January 2021**
Review Date:	**Spring 2023**
Review schedule	**2 yearly**