



# Heaton St. Barnabas' CE (VA) Primary School

## Policy For

# Science

This policy was approved by Curriculum Committee

Signed .....

On: 17<sup>th</sup> March 2020

# Science Policy

Science is a systematic investigation of the physical, chemical and biological aspects of the world which relies on first hand experiences and on other sources of information. 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. The main aspects of science to be studied will be determined by the programs of study of the National Curriculum 2014.

Through science, pupils at Heaton St Barnabas Primary School will continue to deepen their respect, care and appreciation for the natural world and all its phenomena.

## Aims

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- to develop pupils' enjoyment and interest in science and an appreciation of its contribution to all aspects of everyday life
- to build on pupils' curiosity and sense of awe of the natural world that help them to answer scientific questions about the world around them
- to use a planned range of investigations and practical activities to give pupils a greater understanding of the concepts and knowledge of science
- to introduce pupils to the language and vocabulary of science
- to develop pupils' basic practical skills and their ability to make accurate and appropriate measurement
- to extend the learning environment for our pupils via our forest schools and the school grounds

## Objectives

- to develop pupils' enjoyment and interest in science including the effects scientists, from differing cultures, have had on our everyday lives.
- to encourage pupils to relate their scientific studies to applications and effects within the real world
- to develop a knowledge of the science contained within the programs of study of the National Curriculum.

## Pupils' curiosity and sense of awe of the natural world

- to develop in pupils a general sense of enquiry which encourages them to ask a variety of in depth questions and make suggestions using scientific language
- to equip pupils with skills to be able to predict the likely outcome of their investigations and practical activities.

## Investigations and practical activities

- to provide pupils with a range of specific investigations and practical work to develop their understanding of science
- to provide the children with the opportunities to plan, carry out and evaluate simple scientific investigations and to understand and use the term 'fair test'.

## Recording results

- to introduce pupils to the language and vocabulary of science and to give them regular opportunities, both oral and written, to use them to convey their ideas.
- within practical activities give pupils opportunities to use a range of simple scientific measuring instruments such as thermometers and force meters and develop their skill in being able to read them.
- to record their findings in diagrams, graphs, tables and charts
- to contribute to a class book showing the practical activities that are taking place
- to record individual work in pupil books as evidence of skills and knowledge

## Planning

The science long term plan identifies how the units have been distributed across the years of both key stages in a sequence that promotes curriculum continuity and progress in children's learning. The units reflect the balance of the programme of study. Many of the science units are cross curricular and are planned through the Cornerstones planning structure.

Medium term planning shows the teaching of the science unit throughout the half term. The teaching objectives linked to the programmes of study are identified on a planning grid and assessment grids. These are met through a variety of activities carried out in science / topic based lessons in ks1 and 2 The Senior Management Team and Science Coordinator evaluates the medium-term plans to ensure there is consistency within the units and progression throughout the key stages.

Short term planning is the responsibility of individual teachers, who build on their medium-term planning by taking account of the needs of children in a particular class and identifying the way in which ideas might be taught in the class. This can be presented through IWB planning.

To accomplish our aims in science, teachers shall plan carefully, monitor children's progress and provide a variety of teaching approaches and resources.

The teaching of science will be under regular review, as part of our on-going school development plans and will be monitored for its effectiveness in relation to this policy.

## **Access to the science curriculum**

Teachers will plan differentiated activities for the children within their classes depending on their needs and abilities. All pupils will be challenged through the tasks set to promote learning. Children with specific SEN will be supported by TA's when necessary or given an adjusted task to enable them to access the curriculum. Due to the practical nature of the science lessons, mixed ability groupings and pairings provides support and extension for children, allowing them to gain confidence and plug gaps.

More able children will be challenged to achieve greater depth through the broad and balanced curriculum planned with a focus on their independence.

## **Science through school**

Foundation Stage pupils investigate science as part of Understanding of the World. Children are encouraged to investigate through practical experience; teachers guide the children and plan opportunities that allow the children to experience and learn whilst experimenting for themselves. As the children progress through school their scientific skills and knowledge gained at Key Stage 1 will be consolidated and developed during Key Stage 2.

In Key Stage 1 the children are heavily guided when devising their investigations with teachers providing materials for them to use in their investigations. By Key Stage 2, the pupils are taking more control, deciding upon the question to be investigated, the equipment to be used etc.

## **Assessment for Learning, recording and reporting**

The assessment of science takes place at the end of the 3 assessment periods in the year. Teachers will use the school assessment spreadsheets to pinpoint the progress the children have made for each of the scientific objectives. The spreadsheets include both the science skills and science knowledge. Children are graded 1 to 4 (emerging to exceeding) depending on their understanding. An overall grade is given which encompasses both the knowledge and skills aspects.

Pupils will have an assessment book which will follow them through the key stage. Within the book will be recorded prior learning, through an activity or a mind map and 1 to 2 pieces of assessed work. Each piece will relate to a knowledge or skill objective.

The Parents are informed of the progress the children have made in science in the February report along with a comment of the science they have completed during the year. In July, they receive a grade and effort score for science. Parents are able to discuss their child's progress in science during the open evenings in October, March and July.

## **Health and safety**

Pupils will be taught to use scientific equipment safely when using it during practical activities. Class Teachers and Teaching Assistants will check equipment regularly and report any damage, taking defective equipment out of action. Teachers will be aware of the possible dangers relating to the investigations to be carried out and plan accordingly to keep children safe.

N Horsley March 2020