



## Wheatlands Primary School Science Policy

This policy outlines the teaching, organisation and management of science taught and learnt at Wheatlands Primary School.

### Our Vision

Through a positive caring environment, we provide the opportunity for every child to reach their full potential in science. We embrace the school's values of open-mindedness and creativity within a supportive and stimulating environment. Our science motto is : *When I hear I forget, when I see I remember, when I do I understand.*

### Rationale

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. The scientific process and pupils' problem-solving activities will be used to stimulate curiosity and deepen their understanding of the concepts involved. The main aspects of science to be studied will be determined by the programmes of study of the National Curriculum 2014.

Through science, pupils at Wheatlands Primary School will develop respect, care and a sense of awe and wonder for the natural world and all its phenomena. Our pupils will be encouraged to ask questions and begin to appreciate the way science will affect their future on a personal, national and global level.

### Aims

- 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, wherever possible through first-hand experience
- 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 measurements

- to develop pupils' use of computing in their science studies
- to extend the learning environment for our pupils through outdoor learning within the school grounds and beyond
- to promote a 'healthy lifestyle' for all of our pupils

### Objectives

The following objectives derived from the above aims will form the basis of our decisions when planning a scheme of work. Assessment will also be related to these objectives:

- to develop pupils' enjoyment and interest in science and an appreciation of its influence on all aspects of everyday life, including the contribution made by famous scientists
- to encourage pupils to relate their scientific studies to applications and effects within the real world
- to build on pupils' curiosity and sense of awe of the natural world
- to develop a knowledge of the science contained within the programmes of study of the National Curriculum.
- to introduce pupils to the language and vocabulary of science and provide regular opportunities for them to use appropriate scientific terms when communicating their ideas
- to develop in pupils a general sense of enquiry which encourages them to question and make suggestions
- to use a broad range of suitable investigations and practical activities including pattern seeking, identifying, classifying and grouping, comparative and fair testing and researching using secondary sources, to enable pupils to gain a greater understanding of the concepts and knowledge of science
- to develop progressively pupils' ability to plan, carry out and evaluate simple scientific investigations and encourage pupils to predict likely outcomes, particularly in situations where they have prior experience on which to base their theories.
- to develop pupils' basic practical skills and their ability to make accurate and appropriate measurements using a range of simple scientific measuring instruments such as digital thermometers and force meters
- to develop the ability to record results in an appropriate manner including the use of diagrams, graphs, tables and charts
- to give pupils opportunities to use technology (i-Pad, video, digital camera, data logger) to research, record, store data and present findings as part of their scientific studies

## Principles of Teaching and Learning

### Differentiation and Additional Educational Needs

The study of science will be planned to give pupils a suitable range of differentiated activities appropriate to their age and abilities. Tasks will be set which challenge all pupils, including the more able. For pupils with SEN the task will be adjusted or pupils may be given extra support. The grouping of pupils for practical activities will take account of their strengths and weaknesses and ensure that all take an active part in the task and gain in confidence.

### Breadth and Balance

#### **Variety**

Pupils will be involved in a variety of structured activities and in more open-ended investigative work:

- activities to develop good observational skills, including those over time
- practical activities using measuring instruments which develop pupils' ability to read scales accurately
- structured activities to develop understanding of a scientific concept
- open ended investigations
- pupils will carry out the whole investigative process independently, as a whole class or in small groups

#### **Relevance**

Wherever possible science work will be related to the real world and everyday examples will be used.

### Cross-curricular Skills and Links

Science pervades every aspect of our lives and is therefore relevant to most areas of the curriculum. Our school currently adopts a creative curriculum whereby several themes or units of work are planned by each phase within the framework of a two year-rotating cycle. Topics are continually reviewed and chosen to reflect pupils' interests as well as taking into account events of a global, national, local or school nature. This ensures that science is taught within relevant and meaningful contexts alongside other subjects. In addition to this, pupils' learning in science is enhanced and promoted through assemblies, science weeks, visits and visitors to school.

Through such experiences, we ensure that pupils realise the positive contribution of both men and women to science as well as the influence of scientists from other cultures. We will not only emphasise the positive effects of science on the world but also include problems which some human activities can produce.

### Continuity and Progression

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 independently in a variety of settings, including a dedicated 'interest' area. By careful planning, the knowledge and content prescribed in the National Curriculum will be introduced throughout both key stages in a progressive and coherent way. Pupils in Key Stage 1 will be introduced to science through focused observations and explorations of the world around them. Teaching activities in this phase will ensure that pupils have the necessary vocabulary as a firm foundation for developing understanding of key scientific concepts. Investigative skills will be taught through supportive investigations progressing to more independent work and application of skills at Key Stage 2.

### Equality of Opportunity

All children have equal access to the science curriculum and its associated practical activities. The SLT, Class Teachers and TAs at Wheatlands Primary School are responsible for ensuring that all children, irrespective of gender, learning ability, physical disability, ethnicity and social circumstances, have access to the whole curriculum and make the greatest possible progress. Where appropriate, work will be adapted to meet pupils' needs and, if appropriate, extra support given. More able pupils will be given suitably challenging activities. Gender and cultural differences will be reflected positively in the teaching materials used. All children have equal access to the Science Curriculum, its teaching and learning, throughout any one year.

### Health and Safety

Pupils will be taught to use scientific equipment safely during practical activities. Class Teachers and Teaching Assistants will check equipment regularly and report any damage, taking defective equipment out of use. Teachers will assess all practical activities on an individual basis, making note of any perceived risk and where appropriate seek further advice through reference to CLEAPPS, and/or consultation with science

leaders/head teacher. Any potentially hazardous activities must be discussed with the Head who will determine the appropriateness of said activity.

### Resourcing

There is a range of resources to support the teaching of science across the school. Resources pertaining to more than one year group are kept in a central storage area, with potentially hazardous resources stored securely. Larger and outdoor equipment is situated in an outdoor shed. The library contains a good supply of science reference books and school computers and i-Pads are regularly updated with relevant software.

### Assessment for Learning, Recording and Reporting

Throughout the school teachers will assess whether children are working at, above or below the expected level for their age based on their understanding and application of the content of the National Curriculum 2014. Progress and attainment for each year group is recorded and stored within a dedicated science folder which is then passed on to the next teacher during transition meetings. Individual pupils' progress is reported to parents through parent consultation meetings and end of year reports.

### Marking for Improvement

Much of the work done in science lessons is of a practical or oral nature and, as such, recording will take many varied forms. It is however, important that written work is marked regularly and clearly, with comments being relevant to the science learning objective. This helps children to better focus on future targets, aids progression and celebrates achievement. When appropriate, pupils may be asked to self-assess or peer assess their own or other's work.

### Role of the Subject Leader

Science leaders will keep informed about current developments in science through attending Science cluster meetings termly and through attending local training courses when applicable. They will provide a strategic lead and direction for the subject in school, delivering staff or phase meetings when required. Standards of teaching and learning will be adjudged using data review from science folders, book scrutiny, lesson observations, evidence from 'Science Learning Wall,' tasks and pupil voice.

**Review date: September 2019**