Rationale
Science teaches an understanding of natural phenomena. It aims to stimulate a child’s curiosity in finding out why things happen in the way that they do. It teaches methods of enquiry and investigation to stimulate creative thought. Children learn to ask scientific questions and begin to appreciate the way in which science will affect the future on a personal, national and global level.

Science in our school is about developing children’s ideas and ways of working that enable them to make sense of the world in which they live. We believe a broad and balanced science education is the entitlement of all our children.

How Science is structured through the school
Planning for science is a process in which all teachers are involved to ensure that the school gives full coverage of the Science Programmes of Study from the National Curriculum for KS1 and Understanding the World for the Early Years Foundation Stage. Each topic is completed in a block (usually over a half term) for KS1. Topics are revisited and knowledge and vocabulary are developed throughout the year as links are made in other areas of the curriculum. Extension for pupils will be an increase in the depth and breadth of understanding of the scientific knowledge (mastery) and progressive for scientific skills, thereby developing deep, secure learning for all. In addition to the statutory curriculum we will also enrich the children’s learning with visitors and assemblies, which reflect current interests of the children or topical issues locally and world wide. We also have an annual Science and Technology week.

Organisation and Planning for KS1
Working Scientifically
During years 1 and 2, pupils are taught to use the following practical scientific methods, processes and skills through the teaching of the programmes of study content:

- asking simple questions and recognising that they can be answered in different ways
- observing closely, using simple equipment
- performing simple tests
- identifying and classifying
- using their observations and ideas to suggest answers to questions
- gathering and recording data to help in answering questions

Yr1 Programme of Study
- Plants
- Animals, including humans
- Everyday materials
- Seasonal changes

Yr2 Programme of Study
- Living things and their habitats
- Plants
- Animals, including humans
- Uses of everyday materials
Teaching and learning style
We use a variety of teaching and learning styles in science lessons. Our principal aim is to develop children's knowledge, skills, understanding, curiosity and enjoyment of science. Sometimes, we do this through whole-class teaching, but our aim is to make science as practically based as possible for our young learners. We encourage the children to ask, as well as answer, scientific questions. They have the opportunity to use a variety of data, such as statistics, graphs, pictures and photographs. They use ICT in science lessons because it enhances their learning. They take part in role-play and discussions, and they present reports to the rest of the class. They engage in a wide variety of problem-solving activities. Wherever possible, we involve the pupils in real scientific activities, e.g. investigating a local environmental problem, or carrying out a practical experiment and analysing the results.

We recognise that in all classes, children have a wide range of scientific abilities, and we ensure that we provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this in a variety of ways:

- setting tasks which are open-ended and can have a variety of responses;
- setting tasks of increasing difficulty (we do not expect all children to complete all tasks);
- grouping children by ability in the room, and setting different tasks for each ability group;
- mixed ability groups to enable peers to use their strengths to make a successful team
- providing resources and questions of different complexity, matched to the ability of the child.

Organisation and Planning for Science in the Early Years Foundation Stage
Understanding the world involves guiding the children to make sense of their physical world and their community through opportunities to explore, observe and find out about people, places, technology and the environment.

Science (Understanding the World) is implemented in Nursery and Reception through planned and purposeful play and through a mix of adult led and child initiated activities. Aspects are integrated into our topic planning but we also allow children’s interests to guide our teaching and take the children’s learning further.

We relate the scientific aspects of the children’s work to the objectives set out in the Early Learning Goals (ELGs) which underpin the curriculum planning for children aged birth to five.

Early Learning Goal: The World

*Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.*

Outdoor Provision

We use our grounds and local environment to enhance the experiences of our children in their science learning.

Cross Curricular Themes

English

Science contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. Some of the texts that the children study in the Literacy Hour are of a scientific nature. The children develop oral skills in science lessons through discussions, role play, interviews, group and partner activities and recounting their observations of scientific experiments. They develop their writing skills through labelling, mind maps, posters, writing reports and recording information in a variety of ways.
Mathematics

Science contributes to the teaching of mathematics in a number of ways. When the children use weights and measures, they are learning to use and apply number. Through working on investigations, they learn to estimate and predict. They develop accuracy in their observation and recording of events. Many of their answers and conclusions include numbers.

Personal, social and health education (PSHE) and citizenship

Science makes a significant contribution to the teaching of PSHE and citizenship. This is mainly in two areas. Firstly, the subject matter lends itself to raising matters of citizenship and social welfare. For example, children study the way in which people recycle material and how environments are changed for better or worse. Secondly, the subject gives children numerous opportunities to debate and discuss. They can organise campaigns on matters of concern to them. Science thus promotes the concept of positive citizenship.

Spiritual, moral, social and cultural development

Science teaching offers children many opportunities to examine some of the fundamental questions in life, e.g. the evolution of living things and how the world was created. Through many of the amazing processes that affect living things, children develop a sense of awe and wonder regarding the nature of our world. Science raises many social and moral questions. We give them the chance to reflect on the way people care for the planet, and how science can contribute to the way in which we manage the Earth's resources. Science teaches children about the reasons why people are different and, by developing the children's knowledge and understanding of physical and environmental factors, it promotes respect for other people.

Science and ICT

ICT enhances the teaching of science in our school, because there are some tasks for which ICT is particularly useful. It also offers ways of impacting on learning which are not possible with conventional methods. Software is used to animate and model scientific concepts, and to allow children to investigate processes which it would be impracticable to do directly in the classroom. Data loggers are used to assist in the collection of data and in producing tables and graphs. Children use ICT to record, present and interpret data, to review, modify and evaluate their work, and to improve its presentation. Children learn how to find, select, and analyse information on the Internet and on other media. They also use e-mail to communicate on their scientific findings with children in other schools and countries.

Science and inclusion

At our school, we teach science to all children, whatever their ability and individual needs. Science forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our science teaching, we provide learning opportunities that enable all pupils to make good progress. We strive hard to meet the needs of those pupils with special educational needs, those with disabilities, those with special gifts and talents, and those learning English as an additional language, and we take all reasonable steps to achieve this. For further details, see individual whole-school policies: Special Educational Needs; Disability Discrimination; Gifted and Talented Children; English as an Additional Language (EAL).

We enable all pupils to have access to the full range of activities involved in learning science. Where children are to participate in activities outside the classroom (a trip to a science museum, for example), we carry out a risk assessment prior to the activity, to ensure that the activity is safe and appropriate for all pupils.
**Assessment for learning**

Assessment, Reporting and Recording

Teachers will assess children's work in science by making informal judgements during lessons. On completion of an activity, the teacher assesses, and uses this assessment to plan for future learning. Written or verbal feedback is given to the child to help guide his/her progress. Older children are encouraged to make judgements about how they can improve their own work. Assessments are recorded on Target Tracker (EYFS & KS1) and additional records are made at the front of children's books for KS1.

Parents are informed of their child's progress in science during parent's evenings in the Spring and Summer terms.

**Resources**

We have sufficient resources for all science topics in the school. We keep these in a central store, where there is a box of equipment for each unit of work. The library contains a good supply of science topic books. We use a variety of computer software to aid whole class teaching, group work, recording of data and to support children's individual research.

**Monitoring and Evaluation**

Weekly Year Group meetings keep all members of the Year Group in touch with each other and give an opportunity for ongoing monitoring and evaluation. The medium term planning is saved on the staff drive for the curriculum Co-ordinator to monitor what is happening in each year group. At the end of the unit, it is evaluated and the findings are fed back to the Science Leader and Curriculum Co-ordinator.

**The Science Leader**

The Science Leader will:

- attend courses and continue to develop the subject knowledge in the light of government initiatives and discussion with staff.
- support colleagues in their teaching, by keeping informed about current developments in science and providing a strategic lead and direction for this subject.
- give the Headteacher an annual summary report in which she evaluates the strengths and weaknesses in science and indicates areas for further improvement.
- monitor, store and order resources.
- use specially allocated regular management time to review evidence of the children's work, and to observe science lessons across the school.
- liaise with the Science Leader in the Junior School.

This policy will be reviewed regularly.

**Updated May 2018**

<table>
<thead>
<tr>
<th>Signed</th>
<th>Date</th>
<th>Headteacher</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Signed</th>
<th>Date</th>
<th>Chair of Governors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>