SHERWOOD PRIMARY SCHOOL

POLICY FOR SCIENCE

JULY 2015

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This policy outlines the guiding principles by which this school will implement Science in the National Curriculum in England in the context of the Lancashire County Council's curriculum policy statement and its staffing, health & safety and equal-opportunities policies.

It is reviewed periodically.

1. Our rationale for teaching science

Science is a body of knowledge built up through experimental testing of ideas. Science is also methodology, a practical way of finding reliable answers to questions we may ask about the world around us. 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 through investigation, as well as using and applying process skills.

We believe that a broad and balanced science education is the entitlement of all children, regardless of ethnic origin, gender, class, aptitude or disability.

Our aims in teaching science include the following

- Preparing our children for life in an increasingly scientific and technological world.
- Fostering concern about, and active care for, our environment.
- Helping our children acquire a growing understanding of scientific ideas.
- Helping develop and extend our children's scientific concept of their world.
- Developing our children's understanding of the international and collaborative nature of science.

Attitudes

- Encouraging the development of positive attitudes to science.
- Building on our children's natural curiosity and developing a scientific approach to problems.
- Encouraging open-mindedness, self-assessment, perseverance and responsibility.
- Building our children's self-confidence to enable them to work independently.
- Developing our children's social skills to work cooperatively with others.
- Providing our children with an enjoyable experience of science, so that they will develop a deep and lasting interest and may be motivated to study science further.

Skills

- Giving our children an understanding of scientific processes.
- Helping our children to acquire practical scientific skills.
- Developing the skills of investigation - including observing, measuring, predicting, hypothesising, experimenting, communicating, interpreting, explaining and evaluating.
- Developing the use of scientific language, recording and techniques.
- Developing the use of ICT in investigating and recording.
- Enabling our children to become effective communicators of scientific ideas, facts and data.

2. Our teaching aims

- Teaching science in ways that are imaginative, purposeful, well managed and enjoyable.
- Giving clear and accurate teacher explanations and offering skilful questioning.
- Making links between science and other subjects.

Our role is to teach scientific enquiry through the contexts of the three main content areas (Biology, Chemistry and Physics). The breadth of study statement in the National Curriculum is concerned with issues such as the use of ICT, scientific language and health & safety.

Children in the foundation stage - the reception class - are taught the science elements of the foundation stage document through the Early-Learning Curriculum: Knowledge and Understanding of the World.

3. 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 National Curriculum in Science and science in the Foundation stage. Science teaching in the school is about excellence and enjoyment. We adapt and extend the curriculum to match the unique circumstances of our school.

KS1 and Foundation stage teachers should be teaching science for a minimum of one hour each week.

KS2 teachers should be teaching science for a minimum of two hours per week.

In KS 1/Foundation stage, a minimum of one third of lessons overall should include practical scientific enquiry.

In KS 2, a minimum of 50% of lessons overall should include practical scientific enquiry.
The school broadly Lancashire Topic Plans. The units are taught in order to ensure progression between year groups and guarantees topics are revisited.

Teachers are expected to adapt and modify the model plans to suit their children's interests, current events, their own teaching style, the use of any support staff and the resources available. We must ensure that any modification does not overlook any areas of the Lancashire scheme.

Generally, one unit may be taught in each half term.

Some units may have been moved between years, or amalgamated, where appropriate. Units on Life and Living Processes are commonly taught in the spring and summer terms. Some units may be taught in collaboration with outside agencies, including neighbouring secondary schools.

4. Our approach to science

- The essential elements describing how science is taught in our school are described below.
- We have adopted parts of a commercial primary science scheme, which are adapted to our circumstances.
- We use ICT widely in science. Children are given the opportunity to practice science skills and enhance their presentation using carefully chosen software.
- We use ICT for enquiry work, including microscopes with digital cameras, video capture of images and activities, and data logging.
- We use the school's intranet to share science resources.
- Other resources include selected video and wallchart resources; short video sequences and other teaching resources have been networked for interactive-whiteboard use.
- The school combines these secondary sources with first-hand scientific enquiries, building children's science skills.
- We actively teach science skills, and reinforce learning with selected enquiry simulations.
- We encourage children to ask and answer their own questions as far as practicable.
- Children complete at least two full enquiries each term, taking increasing responsibility for their planning, carrying them out and recording/interpreting the results.
- We use homework to support school and class activities. This relates to the school's overall homework policy.
- We use cross-curricula links to science with, for example, design and technology units.

5. Equal opportunities in science

Science is taught within the guidelines of the school's equal-opportunities policy.

- We ensure that all our children have the opportunity to gain science knowledge and understanding regardless of gender, race, class, physical or intellectual ability.

- Our expectations do not limit pupil achievement and assessment does not involve cultural, social, linguistic or gender bias.
- We aim to teach science in a broad global and historical context, using the widest possible perspective and including the contributions of people of many different backgrounds.
- We draw examples from other cultures, recognising that simple technology may be superior to complex solutions.
- We value science as a vehicle for the development of language skills, and we encourage our children to talk constructively about their science experiences.
- In our teaching, science is closely linked with literacy and mathematics.
- We recognise the particular importance of first-hand experience for motivating children with learning difficulties.
- We recognise that science may strongly engage our gifted and talented children, and we aim to challenge and extend them.
- We exploit science's special contribution to children's developing creativity; we develop this by asking and encouraging challenging questions and encouraging original thinking.

6. Assessment and recording in science

We use assessment to inform and develop our teaching.

- Topics commonly begin with an assessment of what children already know.
- We assess for learning (AfL). Children are involved in the process of self-improvement, recognising their achievements and acknowledging where they could improve. Activities during, and at the end of, each topic record achievement and celebrate success.
- We mark each piece of work positively, making it clear verbally, or on paper, where the work is good, and how it could be further improved.
- Children's work is compared with model answers to determine its level.
- We have a tracking system to follow and accelerate children's progress.
- The school science coordinator monitors progress through the school by sampling children's work at regular intervals. Children who are not succeeding, and children who demonstrate high ability in science, are identified and supported.
- The school uses commercial end-of-unit tests to assess learning and point up areas where remedial work is needed. Equally important is the continuous assessment of children's work, much of which is informal.
- This assessment is used to inform teaching throughout the school.
- The teachers assess children's level of attainment at the end of the each term. This teacher assessment is based on assessment records and work samples.
- Reports to parents are made verbally each term, and written once a year, describing each child's attitude to science, his/her progress in scientific enquiry and understanding of the content of science.

7. Resources in School

A wide variety of Science resources are available in school. These include children's reference books, teachers' resource books and notes, Science materials and equipment, videos and access to television and radio programmes with the accompanying notes. A range of pictorial resources such as posters, pictures and photographs is also available. Resources are shared and all staff, including visiting students, have equal access to all resources.

The majority of Science materials and equipment are kept in the science cupboard in the room between the Year 5/6 classrooms. All resources are clearly labelled in Red Storage boxes to distinguish them from the Maths and ICT resources in the same room. There is a sign out system so teachers are able to track where resources are should several classes need similar equipment. This cupboard is only accessible to members of school staff and to parents under teacher guidance. Children should NOT enter the storeroom to remove or replace resources at any time unless under the strict supervision of a teacher.

The Science Co-ordinator is responsible for maintaining science resources, monitoring their use and organising the resource area. Staff are asked to submit to the Science Co-ordinator lists of any resources which they require to be added to the existing stock. Staff are also asked to inform the co-ordinator if any resources are damaged or need replacing.

8. Health & Safety

When working with tools, equipment and materials, in practical activities and in different environments, including those that are unfamiliar, pupils should be taught:

- About hazards, risks and risk control.
- To recognise hazards, assess consequent risks and take steps to control the risks to themselves and others.
- To use information to assess the immediate and cumulative risks.
- To manage their environment to ensure the health & safety of themselves and others
- To explain the steps they take to control risks.

When teaching Science, Health & Safety issues must be taken into consideration.

- The children must be fully supervised, especially when using tools and apparatus.
- All equipment will be stored safely and returned to the correct place at the end of each lesson.
- The children and staff should wear protective clothing for example; safety goggles should be used when working with potentially dangerous substances.
- If using newspapers or magazines to protect tables care must be taken that in-appropriate articles, or photographs cannot be seen by the children.
- Materials for science should be bought from an educational supplier.
- The correct procedures and techniques must be shown to children before using any tools e.g. scissors, knives, chisels etc.
- All liquids or objects spilt or dropped onto the floor must be cleared away immediately so as not to cause accidents.
- Glass should always be handled carefully and when possible plastic should be used instead.
- Thermometers should always be used carefully.
- With naked flames e.g. lighted candles, children should be warned about long hair, ties and other bits of clothing not coming near the flame. Candles should be firmly fixed in a suitable holder.
- Hot water should be used with care, and should not be put in glass containers, which may crack.
- Lenses (e.g. Magnifying glasses) can focus light and heat, therefore special care should be taken that children do not look at a source of light through these lenses.
- Care should be given when holding any object close to the eye.
- Tasting of things should not be allowed , except under close supervision
- Care needs to be taken when carrying out electrical work. Mains electricity should not be used, only low voltage batteries.

Review

Approval date: July 2015

Review date: July 2018

Signed (Headteacher):

Signed (On behalf of the Governing Body):