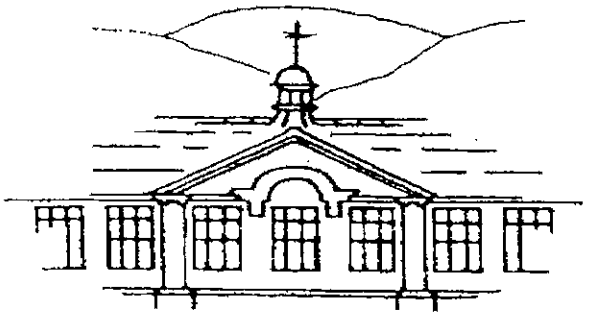

Weston Rhyn Primary School

Science Policy

Produced by: R.M.Hines

Date: June 2017

Position: Science Coordinator

Current Document Approved: June 2017

Date of Next Review: June 2019 (Soon if any national changes take place.)

Purpose

It is intended that this policy will:

• Provide a corporate statement of purpose

• Ensure that each pupil's entitlement to scientific experiences is realised.

• Provide a framework that will maximise the strengths of individual teachers and ensure that pupils receive a high-quality science education.

Aims and Objectives

In its simplest form science is concerned with finding out about things. It involves a systematic study of the natural and physical world based on processes that lead to the drawing of conclusions. From birth children naturally investigate their surroundings; they question the world around them, experiment and draw conclusions. The steps in this process lead to a progressively deeper scientific understanding. It is important therefore to build upon a child's natural curiosity and to encourage a scientific approach based on a rich resource of experiences. In the primary school, it is important that many of these experiences are first-hand although the use of secondary sources of information has a part to play. The aims of the subject should be realised by all pupils, regardless of ability, gender or ethnic group.

The aims can be summarised as follows:

• To encourage a sense of interest and enjoyment in all pupils.

• To enable the acquisition of a wide range of knowledge, understanding, skills and attitudes

• To develop an enquiring mind and a scientific approach to solving problems.

• To explore how and why things happen

• To understand the world in which we live and develop sensitivity and respect for the environment

• To encourage safe and careful practical work

Skills and Attitudes

<u>Skills</u>

Most, if not all, of these skills and attitudes can be developed in other areas of the curriculum and are not exclusive to science.

The scientific process can be summarised by the following sequence:

• Children observe the world around them.

• These observations raise questions and hypotheses in the child's mind.

• Children plan investigations to answer the question and test the hypothesis.

• Children perform the investigation and collect data.

- They interpret the data and analyse the results.
- They draw conclusions.
- Children evaluate their investigation with regard to the initial question.
- They raise further questions.

This is a sophisticated process and children will need to gain experience of each part before they will be able to tackle a complete investigation. However, very young children can engage in this process and should be given opportunities to do so. Individual skills that are needed to support this investigative approach include:

- Observing
- Discussing
- Questioning
- Classifying
- Measuring
- Recognising patterns
- Predicting
- Fair testing
- Interpreting
- Communicating

<u>Attitudes</u>

The study of science provides rich opportunities to develop the following attitudes:

- Curiosity
- Open-mindedness
- Perseverance
- Tolerance
- Co-operation
- Responsibility
- Critical awareness
- Originality
- Questioning
- Reasoning

Teaching Methods

Science is a subject based around practical investigations. It is therefore essential to employ teaching methods which maximise the potential for investigative work. It is the responsibility of individual teachers to select the approach which is most effective in achieving the learning objectives for a particular lesson. However, there should be a balance maintained between guided practical work and investigative work; between class and group work and between the use of first- and second-hand sources of evidence.

Curriculum Time

Due to the school's changing approach towards the entire curriculum, science is now taught for a certain amount of time each week.

Content organisation and planning

Due to the school's changing approach towards the entire curriculum, science is now taught for a certain amount of time each week. In KS1 is 1 ½ hours per week or 54 hours over a year which equates to approximately 7% of a 21 hour teaching week. Teachers may decide depending on the topic that science may be blocked, hence the hours over a year.

KS2 is 2 hours per week, or 72 hours over a year which equates to 9% of a 21 hour teaching week.

In Nursery and Reception, the staff follow Development Matters.

Continuity

Continuity will be achieved through the planning process used in the development of the long-term plan. This will ensure continuity and progression between year groups and key stages. The clarity of the long-term plan will allow all teachers to have an overview of science within the school. Meetings of staff within the school and liaison with staff in other schools will ensure that opportunities are provided to discuss this important aspect of children's education in science.

Differentiation

Short term planning is the responsibility of individual teachers who build on the medium-term plan by taking into account the needs of the children in their particular class.

Ideally each child will be given tasks appropriate to their individual needs. Teachers will use a variety of approaches and teaching styles as appropriate, such as:

- Giving different tasks
- Giving different resources to assist children
- Giving different levels of support
- Giving open-ended tasks which allow for a range of different outcomes

Cross-curricular links

As a school we believe that a cross-curricular approach can help embed concepts and enrich learning experiences in addition to consolidating subject knowledge. Although science is taught in the school as a subject staff are expected to consider and reference in topic work examples of them embedding science in a cross curricular approach.

• Numeracy: data collection and analysis, reading and extracting information from tables and graphs at the appropriate mathematical level for the child. These are linked by close liaison between numeracy and science coordinators.

• ICT: there are a variety of opportunities for using ICT, linked with the Computing Curriculum. ie data logging

• PE: awareness of how the body works and the effects of exercise

Sex and Relationships Education

Sex and Relationships Education will be taught in line with our SRE policy (see separate document).

Equal opportunities

Equal opportunities are a fundamental right that must be allowed to all children regardless of race, culture, gender or specific educational needs.

Assessment

Assessment is important in providing information about children's achievements which can then be used to inform the planning of future work. Formative assessment is ongoing during each unit of work and summative assessment is used at the end of each unit of work. (See separate Assessment Policy for more information.)

Marking

Marking of science will be undertaken in line with the School's Marking Policy.

Monitoring

The Science subject leader and the Senior Management Team will monitor Science following the Schools annual monitoring schedule.

Health and Safety

Science poses a number of potential dangers in the classroom as a result of its practical nature. Children should be made aware of the safety requirements and encouraged to develop an awareness of safety as they undertake practical work. Risk assessments are undertaken and shared with the children at the start of any practical unit of work to ensure all are aware of the potential risks and dangers and can keep themselves safe.

Resources

The responsibility for maintaining an adequate supply of resources rests with the Science subject leader. Many of the resources will be stored centrally but basic and regularly used items will be

available in each classroom or year group. The effective management of these resources, whilst ultimately the responsibility of the Science subject leader, is also the responsibility of each classroom teacher who uses them.

Review

Revision and updating will be done by the Science subject leader following discussion with the Head Teacher.

The **Science Policy** was considered and adopted by the Governing Body of Weston Rhyn Primary School on 22nd June 2017.

Chair of Governors _____ Date 22.6.17.

Headteacher _____ Date 22-6-17

This policy will be reviewed in June 2018 (or sooner)