Believe and Achieve

Prees C.E Primary School and Nursery

With PIPS

Science Policy

Mission Statement:

'Christian values are the foundation upon which Prees C. E. School is built.

St Chad's church is at the heart of our school and the wider community.
The cross of St Chad symbolises our link through the ages to the Cathedral of our Lichfield Diocese.

We are committed to promoting Christian values such as love, peace, forgiveness and self-control, to enable our children to develop into the people they are meant to be.'

Believe and Achieve

'A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. 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. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.'

National Curriculum for England; September 2013

The science to be studied will be determined by the programmes of study of the National Curriculum and the North Shropshire Alliance's Small Schools Scheme of Work.

Through science pupils will continue to deepen their respect, care and appreciation for the natural world and all its phenomena.

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
- 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 other subjects (information and communication technology, mathematics and English) in their science studies.
- to extend the learning environment for our pupils via our environmental areas and the locality
- to promote a 'healthy lifestyle' in our pupils
- to support the values core of our curriculum

To develop pupils' enjoyment and interest in science and an appreciation of its contribution to all aspects of everyday life.

- 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 programmes of study of the National Curriculum.

To build on pupils' curiosity and sense of awe of the natural world

- to develop in pupils a general sense of enquiry which encourages them to question, predicty and make suggestions

To use a planned range of investigations and practical activities to give pupils a greater understanding of the concepts and knowledge of science

- to provide pupils with a range of specific investigations and practical work which gives them a worth-while experience to develop their understanding of science
- to develop progressively pupils' ability to plan, carry out and evaluate simple scientific investigations and to appreciate the range of scientific investigations.

To develop the ability to record results in an appropriate manner including the use of diagrams, graphs, tables and charts

- to introduce pupils to the language and vocabulary of science
- to give pupils regular opportunities to use the scientific terms necessary to communicate ideas about science
- to develop pupils' basic practical skills and their ability to make accurate and appropriate measurements
- within practical activities give pupils opportunities to use a range of simple scientific measuring instruments to develop their skill in being able to read them.

To develop pupils' use of information and communication technology (ICT) in their science studies

- to give pupils opportunities to use ICT (digital video camera, digital camera, data logger, computers) to record their work and to store results for future retrieval throughout their science studies
- to give pupils the chance to obtain information using books, publications and the internet.

Principles of learning and teaching - Differentiation and SEND

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 less able pupils and any on the SEND register 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

All staff, including those in a supportive role, must have a clear idea of the concepts and skills to be taught. Science should be taught through investigative work wherever possible, supporting the factually based areas of the subject.

Variety.

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

- activities to develop good observational skills
- practical activities using measuring instruments which develop pupils' ability to read scales accurately
- structured activities (modeled or intermediate investigations) to develop understanding of a particular scientific concept or skill.
- open-ended investigations.

On some occasions pupils will carry out the whole investigative process themselves or in small groups. (Independent investigation)

Children should be allowed independence in their investigative work, even if a teacher knows the process or outcome may not be correct – children should be allowed to learn from their mistakes so they can develop resilience and become better scientific thinkers.

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 we will relate it to all areas of the curriculum. We will also ensure that pupils realise the positive contribution of both men and women to science and the contribution from those of 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 Knowledge & Understanding of the World. By careful planning, pupils' scientific skills and knowledge gained at Key Stage 1 will be consolidated and developed during Key Stage 2.

Pupils in Key Stage 1 will be introduced to science through focused observations and explorations of the world around them. These will be further developed through supportive investigations into more independent work at Key Stage 2.
The knowledge and content prescribed in the National Curriculum will be introduced throughout both key stages in a progressive and coherent way. How this is achieved is indicated in our scheme of work for science.

Equality of Opportunity
All children have equal access to the science curriculum and its associated practical activities. The SLT, Class Teachers and Key Workers 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. This is being monitored by analysing pupil performance throughout the school to ensure that there is no disparity between groups.

Health and safety
Pupils will be taught to use scientific equipment safely when using it during practical activities. Class Teachers, Key Workers and the Subject Leader will check equipment regularly and report any damage, taking defective equipment out of action. A simple risk assessment will be carried out for all practical activities.

Assessment for Learning, recording and reporting
Assessment will be based on the statutory programme of study for thinking scientifically. Assessments will be carried out termly and based on the progress of the child, using the criteria of Emerging (1) – making slower progress, Expected (2) - on target to make expected progress, and Exceeding (3) - making accelerated progress.

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 sometimes making marking different. It is, however, important that written work is marked in line with the school's marking policy, regularly and clearly, as an aid to progression and ongoing assessment. When appropriate, pupils may be asked to self assess or peer assess their own or other's work.
Marking for improvement comments in a child's book must be relevant to the learning objective to help children to better focus on future targets. It is imperative that children are given the time to improve their work and teachers will support children by scaffolding improvements as necessary.

Role of the subject Leader
The Subject Leader will provide professional leadership and management for science and will ensure that it is managed and organised so that it meets the aims, objectives and values of the school. The Subject Leader will monitor teaching and learning within the subject and will initiate reviews of the scheme of work. The Subject Leader will manage the resources for science and will maintain the stock to meet the needs of the curriculum.

Resourcing
Scientific resources are kept boxed in the store in upper KS2. They should be replaced in the correct places after use. Any consumables that need replacing should be reported to the science coordinator. The science Subject Leader will see that this level of resourcing is maintained and will administer the allocated budget for science.

Review
The Science Subject Leader will monitor classroom teaching in all year groups according to the monitoring schedule. The effectiveness of the science curriculum will be evaluated through classroom observations, discussions with children, book trawls and discussions with staff. This evaluation will form the basis for an action plan, which will then inform the School Improvement Plan.

Policy Renewed: October 2014
Review: October 2016