

Science

Policy 2019

Introduction

Science is about children developing a sense of enquiry and extending their knowledge about living things, materials, energy and the solar system. Science is concerned with investigation and children using investigations to add to their knowledge of how the world is constructed. Science must be as practical as possible. Throughout the school, children will be developing the scientific skills and observing, predicting hypothesising, recording and drawing conclusions. This will lead to children learning scientific knowledge and to plan and undertake scientific investigations.

Rationale

We believe that all pupils at Ormskirk Church of England Primary School must have at least one hour per week of taught science appropriate to their age and stage of development and that emphasis on investigation and enabling the pupils to link their science to the creative topic where possible. Part of our Science curriculum is taught as part of cross curriculum where links are strong which enables children to contextualise their learning. Areas of science which do not fit into cross curricular topics are taught discreetly to ensure coverage and experience.

Aims

- * We will endeavour to ensure a broad and balanced experience for all our pupils and, wherever possible, opportunities will be provided to develop skills and gain an understanding of scientific concepts through first-hand experience in a climate which encourages curiosity, perseverance, open-mindedness, critical reflection and co-operation.
- * Through developing science skills, children should acquire knowledge and an understanding of 'Life Processes and Living Things, Materials and their Properties and Physical Processes'.
- * We will teach science in isolation but draw from and relate it to other areas of the curriculum.

* Where possible we will link science learning and skills with industry as at present this is an area we are trying to develop to show children where science skills can be used in the real world. Use scientists from different areas of science during science days.

* Create curiosity to extend G & T scientists and other children. This will be done using an interactive display where children can predict, explore and answer their own curiosity.

Intended Outcomes

Pupils will be given opportunities to:

- develop their understanding through systematic enquiry, using both first hand and secondary resources.
- Plan and carry out their own investigations based on a scientific question
- use I.T. to collect, store, retrieve and present scientific information.
- relate their work in science to everyday life and industry.
- consider simple scientific ideas and the evidence for them and also to collect evidence to test scientific ideas in a variety of ways
- communicate scientific ideas and observations using appropriate scientific vocabulary.
- present information in a variety of ways including drawings, diagrams, tables and charts and in speech and writing; pupils should also use standard units of measurement and include graphs to record and present information.
- consider health and safety in the context of their science work and take action to control risks.
- Investigate their own interests with science and learn about famous scientists.

National Curriculum coverage

Equal Opportunities

When planning in science, Teachers should set high expectations and provide opportunities for all pupils to achieve. This includes girls and boys, pupils with special educational needs, gifted and talented, pupils with disabilities, pupils from all social and cultural backgrounds, pupils from different ethnic groups and pupils from diverse linguistic backgrounds. Teachers should be aware of

the requirements of the equal opportunities legislation that covers race, gender and disability.

Methodology

Time

Science will be taught through the Creative Curriculum and when Science does not have strong links to the Creative Curriculum it will be taught discretely. When science links to the creative curriculum it will be taught in great depth. Therefore the ratio of discrete teaching and that which is covered through the Creative Curriculum may vary.

Teaching and Learning Style

We will employ a range of teaching methods including whole class teaching, experimental learning, discovery methods, problem solving and open-ended investigations. Teaching will be made relevant by building on pupils' own experience and using contexts suitable for their age. Investigations are planned for and implemented through cross curricular topics where children are able to investigate problems. In KS2, children will be encouraged to plan their own investigations based on a question to deepen their passion and understanding of science.

In addition to this all science teaching over the course of a term will involve visual, auditory and kinaesthetic learning as has been developed through our learning network.

Our school's unique extensive grounds offer ample opportunity to study nature first hand. Study in the classroom is also complemented with trips to the Blackpool Zoo (Reception), Knowsley Safari Park (Y1) Eco Centre (Y3) Jodrell Bank (Y4), the space at Liverpool Museum (Y5) and Manchester Science Museum (Y6).

Planning, Continuity and Progression

Areas not covered in cross curriculum are highlighted on long term cross curricular plans and then planned for discretely.

Full coverage of the National Curriculum Programmes of Study will be ensured by using the

KS2/KS1 cover the long term planning document which break down the curriculum and objectives. Each year group plan lessons weekly based on a topic however, have the option of using the science boxes to create curiosity and ensure children are continually using scientific enquiry and vocabulary. In addition, each year group need to cover a famous scientist to study.

Foundation Stage cover Science skills through 'Understand the World', where children observe changes and ask questions about the world around them. Learning is planned and developed weekly taking account of children's interests. Activities which encourage children to observe changes and ask questions are delivered through Continuous Provision and Adult Led activities.

Key ideas will therefore be revisited, extended and consolidated.

Progression will be monitored by observations and Bloom's Taxonomy which will be recorded on Earwig. Science leaders will also visit classrooms and look at books to ensure continuity. In addition, after each unit the class will be given an open ended assessment which will encourage children to show the depth of their knowledge and this will be based on Blooms and a picture put on Earwig.

Key Skills and Cross Curricular Themes/Dimensions

As areas of the science curriculum are taught as part of cross curriculum, children are given the opportunities to explore science through other curricular areas using their science skills to answer questions.

Science gives children opportunities to develop their use of language, mathematical skills, ICT skills and it also links with other areas of the curriculum.

Differentiation and Special Educational Needs

Class Teachers and year groups will adapt their planning to suit the individual requirements of their class. Teachers will not only provide support for those children that find science difficult but will also provide appropriate challenges for the more able scientists. Teachers will differentiate by using varied

resources as support or extension tools, adult support and questioning. (See equal opportunities)

Health and Safety

All Staff teaching science should be conversant with the Health and Safety Policy and relevant regulations and plan accordingly. All science activities will be risk assessed by the teachers involved. Safety equipment will always be used by children during investigations when needed.

Health and Sex Education

All staff teaching science should be conversant with the relevant policies and plan accordingly. Sex Education (Growing Up Talk) is delivered at Year 5 and Year 6.

INSET and Professional Development

Provision of the scientific development of the staff will be made through consultation with the Teachers, Head Teacher and the Staff Development Co-ordinator.

Role of the Co-ordinator The Co-ordinator will:

- plan events whereby children and parents can enjoy science together.
- monitor medium term planning to ensure continuity and progression of the science curriculum.
- carry out learning walks
- monitor equipment need and order new equipment and materials.
- update staff by attending relevant courses and disseminating information.
- assist in planning, offering support in the classroom and providing relevant scientific information for non-specialists if required.
- begin to organise links with industries.
- create science displays showing progression through school and an interactive display

Resources

The School must be suitably equipped to carry out science teaching. Staff members will inform the Co-ordinator if additional resources are needed. The

School will continue to develop its range of I.T. resources for use within science.

Each year group have topic boxes relevant to each of the units that they cover. Other general resources for Foundation KS1 and KS2 are kept in a central area including resources, books and resources for investigative use.

Reporting

Parents will be informed verbally of their child's progress twice yearly at Parent evenings and then in a written report at the end of the academic year. Children's parents will be able to follow their child's learning on 'Earwig' which enables constant reporting to parents.

Marking

The quality of marking in science is crucial. When commenting on children's work it is essential that any comments are constructive and will enable the children to move on in their scientific learning. (Also refer to the School's Marking Policy). KS1 may be more verbal. Respond to marking is expected to be seen in science books. Earwig is another way to record science.

Monitoring

The Co-ordinator will monitor and evaluate the work covered in the science units in a variety of ways:

- learning walks
- Scrutiny of children's work
- Checking the objectives are being met using Earwig and Book looks.
- Assessment by blooms on Earwig.

Review of this Policy

This policy statement will be reviewed annually by the Head Teacher and the Science Co-Ordinator.

