Archdiocese of Birmingham

St Gregory's Catholic Academy

Science Policy

POLICY

Approval and review

Committee to approve policy	Achievement and Standards Committee
Date of Academy Committee Approval	June 2016
Chair of Academy committee	Mr Ray Chadwick
Signature	
Head teacher	Mrs M Yates
Signature	
Policy review period	12 months
Date of policy review	June 2017

MISSION STATEMENT

With respect for God and united in faith, we place service before self to inspire hearts and minds.
By achieving together through out love and faith, we place Christ at the centre of all we do.

Version Control			
Version	**Date Approved**	**Changes**	**Reason for Alterations**
Issue 1		Annual update of policy	

Purpose

At St Gregory's we believe children should be provided with a high-quality science education in order to provide 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 are taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils are encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. We encourage them to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes

Aims

The curriculum for science aims to ensure that all pupils:

- develop **scientific knowledge and conceptual understanding** through the specific disciplines of biology, chemistry and physics
- develop understanding of the **nature, processes and methods of science** through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the **uses and implications** of science, today and for the future.

Focus of Science

The principal focus of our science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. We encourage them to be curious and ask questions about what they notice. We help them to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They should use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science is done through the use of first-hand practical experiences, but there is also be some use of appropriate secondary sources, such as books, photographs and videos.

The principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They will explore, talk about, test and develop ideas about everyday phenomena and the relationships between living things and familiar environments, and develop their ideas about functions, relationships and interactions. We encourage them to ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They will draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.

The principal focus of science teaching in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They will explore and talk about their ideas; ask their own questions about scientific phenomena; and analyse functions, relationships and interactions systematically. They will encounter more abstract ideas and recognise how these ideas help them to understand and predict how the world operates. They will recognise that scientific ideas change and develop over time. We encourage them to select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils will draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings

Scientific knowledge and conceptual understanding

While it is important that pupils in our school make progress, it is also vitally important that they develop secure understanding of each key block of knowledge and concepts in order to progress to the next stage.
Pupils will be encouraged to use, technical terminology accurately and precisely and build up an extended specialist vocabulary. We will encourage them to apply their mathematical knowledge to their understanding of science, including collecting, presenting and analysing data.

The nature, processes and methods of Science

'Working scientifically' specifies the understanding of the nature, processes and methods of science for each year group. At St Gregory's we do not teach this as a separate strand. 'Working scientifically' is embedded within the content of biology, chemistry and physics, focusing on the key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions. These types of scientific enquiry include: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources. Pupils seek answers to questions through collecting, analysing and presenting data.

Spoken language

Our curriculum for science reflects the importance of spoken language in pupils' development across the whole curriculum – cognitively, socially and linguistically. The quality and variety of language that pupils hear and speak are key factors in developing their scientific vocabulary and articulating scientific concepts clearly and precisely. We will assist them in making their thinking clear, both to themselves and others, and we will ensure that pupils build secure foundations by using discussion to probe and remedy their misconceptions

Spelling

Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge

Implementation of the Science Curriculum

All class teachers are responsible for teaching Science.

- The children are encouraged to work as individuals, in pairs, in groups and also as a whole class where appropriate.
- The school uses the New Primary Curriculum to support planning.
- Each class has access to a variety of resources to support their units.
- Whenever possible the Science activities are linked to, and draw upon, knowledge and skills from other curriculum areas.
- Classroom assistants where available, will be provided with specific guidance on ways in which they are to work with the children, the degree of independence that the children should be given and the specific aims and objectives for any activity that they are to do.

Equal Opportunities and Special Needs

- Activities are planned in a way that encourages full and active participation by all children irrespective of ability.
- All units of work indicate differentiated learning outcomes to cater for differing abilities.
- Differentiated activities and independent work is planned.
- Support from TSAs or through writing frames is used where required.
- Every effort will be made to ensure that activities are equally interesting to both boys and girls and gender stereotyping is not reinforced.

Children with specific difficulties or special needs are given help and encouragement and encouraged to develop their independence

The Foundation Stage

At St. Gregory's Catholic Academy children are encouraged to develop an enjoyment and confidence in Science through the objectives outlined in our Development Matters document. Children make use of the indoor and outdoor environment to promote active learning with cross-curricular links. There is a strong emphasis on Science vocabulary, which children are encouraged to use when explaining or talking about science.

Recording, Assessment and Reporting

- Coverage of the statutory requirements is mapped by individual teachers against their proposed Science activities over the year.
- Children record their learning in a variety of ways, including using a range of digital devices.
- At the end of each term children's achievement is assessed and recorded against the requirements of the New Curriculum. These records are kept by the class teacher. with a copy being forwarded to the subject leader.
- Examples of investigations, practical and written work and photographs are kept for a portfolio to provide evidence of coverage and progression. This portfolio is updated and kept by the subject leader.
- An annual report to parents details children's progress and achievements in Science.

Resources

- Children will have opportunities to use a range of digital devices and other ICT resources to facilitate their Science projects.
- Children will have the opportunity to use a wide range of good quality resources regularly in order to carry out practical activities and investigations.
- Most Science equipment is kept centrally, and is accessible to all staff. Some materials and equipment needed for specific units are stored in the teacher's own classrooms.
- Certain resources are shared with Maths and D and T.
- Published resources to support year group teaching and learning are kept in the class teacher's rooms.
- Materials may be requested for the children to bring in to school as required. (e.g. boxes, plastic containers, wool, fabric etc.)

A form is available for teachers to complete and forward to the subject leader when they require resources

Role of the subject leader

The subject leader will:

- Lead the development of teaching, learning and assessment of Science.
- Monitor assessment at appropriate stages and provide feedback to relevant individuals.
- Provide guidance to individual members of staff.
- Keep up to date with local and national developments in Science and disseminate relevant information.
- Review and monitor the success and progress of children's work.
- Order resources linked to the planned work.
- Be responsible for the organisation and maintenance of Science resources.

Health and Safety

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

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

First Aid

Teachers and helpers should understand the schools procedure about First Aid, know where the First Aid box is kept and know the person responsible for First Aid.
All accidents, however minor, should be recorded

Signed: Executive Headteacher Date:

Signed: Chair of Academy Committee Date:

The policy will be reviewed ……