Science at Holy Family Catholic Primary School

**WHAT IS SCIENCE?**

Science is a body of theory and knowledge, which allows us to make sense of the physical, material and biological aspects of the world around us. It is based on experimental testing of ideas and is organised in a logical way, built on a highly unified system of concepts. Scientific methodology gives us a practical and reliable way of finding answers to our questions about the physical world.

# THE AIMS OF TEACHING SCIENCE

At Holy Family science education aims to equip pupils to understand the world in which they live and will work. It seeks to do this by enabling pupils to:

* develop their natural curiosity about the world around them;
* understand the scientific principles that underlie the natural and social worlds;
* develop attitudes which are consistent with scientific ways of thinking and working, such as objectivity, perseverance, open-mindedness and acceptance of the value of team-work;
* develop scientific methods of enquiry based on sound evidence amassed through observation, prediction and experimentation, such that valid conclusions can be drawn;
* build up a body of scientific knowledge and understanding to provide a basis for future enquiry;
* become effective communicators;
* appreciate the impact of science on society and the individual;
* appreciate the developmental nature and limitations of scientific knowledge;

To achieve these aims all pupils will study a broad and balanced science curriculum, based on the theory and practice of science, including ample opportunities for appropriate experimental and investigative work.

The National Curriculum for Science, of which science is a core subject, provides a basis for such study and should be seen as the entitlement for all pupils, with modification only being necessary for a very small proportion of pupils.

# THE PRINCIPLES OF TEACHING SCIENCE

At Holy Family all pupils will have the opportunity to study the National Curriculum for Science at levels which are appropriate to their needs. This will provide a framework in which pupils will be able to:

* acquire scientific knowledge and understanding;
* make observations and measurements;
* design and carry out experiments to test hypotheses;
* record, interpret and communicate information in a variety of ways;
* handle equipment correctly and safely;
* solve problems using their knowledge and understanding of science;
* draw appropriate conclusions through interpreting data;
* consider moral and ethical questions raised by current or historical research;

# STRATEGIES FOR THE TEACHING OF SCIENCE

At Holy Family pupils will learn about science through carrying out experimental and investigative work wherever possible. Learning will also draw on the everyday experience of pupils and on the industrial and environmental applications of science. Science will be a relevant and enjoyable part of the curriculum for all pupils. At Holy Family the Collins Science scheme of work is followed from Y1 to Y6. Science is taught as a discrete subject but, in addition, it may also be taught using a cross curricular approach when covering other topics.

The teaching of science will:

* be delivered by staff with adequate subject knowledge;
* be challenging to pupils of all abilities;
* be based on a variety of teaching and learning strategies;
* be based on practical work wherever possible;
* start from the pupil’s existing knowledge and experience;
* take account of pupil’s previous study of science (continuity);
* move logically through the programmes of study to allow increasingly sophisticated ideas to be taught at appropriate levels (progression);
* develop specific skills and knowledge by direct teaching. This will, at times, involve whole class teaching and there will be a need to provide opportunities for practice and consolidation through classwork and homework;
* be differentiated to meet the needs of the ability range being taught;
* be well planned to include specific learning objectives for each lesson;
* include appropriate assessment which can be used to inform future planning, through the use of Test base for upper KS2 and ongoing daily assessment from the Collins Science scheme, throughout the school;
* be well managed and well disciplined, paying due regard to the health and safety of all involved;
* be based on a firm commitment to deliver quality in the classroom and be monitored to ensure that this happens;
* make good use of available teaching assistant support;
* be adequately resourced;

# ASSESSMENT, RECORDING AND REPORTING

***(Refer to Holy Family assessment policy)***

Pupils will be regularly assessed against learning objectives to inform planning and to ensure appropriate teaching and learning opportunities. End of Key Stage summative assessment will follow National Curriculum requirements.

# SPIRITUAL, MORAL, SOCIAL AND CULTURAL ASPECTS

At Holy Family opportunities to promote, appreciate and develop pupils spiritual, moral, social and cultural awareness and understanding will be sought. These opportunities will be promoted in practice.

# ENGLISH, MATHEMATICS AND ICT

Opportunities exist within science for the enhancement and development of key skills and concepts in English, Mathematics and ICT. These opportunities should be clearly identified and promoted in practice.

Science allows for the development of mathematics in particular in a number of ways:

* communicating scientific information in an appropriate form such as drawings, diagrams, tables, charts and graphs;
* estimating, checking and evaluating results;
* collecting and interpreting data;

Science allows for the development of literacy in particular in a number of ways:

* communication in speech and writing;
* reading and listening skills;
* developing and using scientific vocabulary;
* following and giving instructions in speech and writing;
* reporting findings;
* describing outcomes and conclusions;

Science allows for the development of ICT in particular in a number of ways:

* data logging;
* modelling;
* simulations;
* use of spreadsheets and databases;
* some aspects of control;

**SPECIAL EDUCATIONAL NEEDS AND EQUAL OPPORTUNITIES**

***(Refer to Holy Family Special Educational Needs Policy)***

All pupils are entitled to a broad, balanced and relevant curriculum in science at an appropriate level regardless of ability, gender, religion, race, social circumstances or first language. Early intervention, which may include the provision of appropriate learning support, will be a priority and will help ensure that pupils are given every opportunity to succeed.

Due to the practical and investigative nature of the subject, most pupils with special educational needs are able to succeed in science, often performing better than they do in other core subjects. They are provided with appropriately differentiated work, which is planned and meets the requirements of individual educational plans, this allows pupils with special educational needs to make good progress in relation to their prior attainment. The use of IEPs will be reviewed in light of the SEN Reforms 2014.

# The school takes every opportunity to ensure suitable challenges for those pupils deemed to be more able, as well as catering for pupils with a special educational need.

# HEALTH AND SAFETY IN SCIENCE

At Holy Family all pupils and staff should be careful to work safely, paying due regard to relevant legislation. Pupils should be taught specific safe practices and staff need to ensure that these are adhered to.

Staff need to familiarise themselves with the school’s Health & Safety Policy.

Policy Reviewed: January 2016

Signed ………………………………………………………………..