



HIPPINGS METHODIST PRIMARY SCHOOL



Science Policy

'As a family we do our best with God in our hearts'
I can do all things through Christ who strengthens me: Philippians 4 verse 13

Our loving school endeavours to provide the best possible all-round education in a Christian setting. We will be a family that does our best with God in our hearts understanding that we are all His children. We aim for all within our school to develop spiritually, morally, academically and culturally.

The Importance of Science

At Hippings Methodist we want Science to stimulate and excite pupils' curiosity about phenomena and events around them. It can also satisfy their curiosity with knowledge. Science links ideas directly with practical experience, and therefore engages learners at many levels.

Through science, pupils understand how major scientific ideas contribute to technological change – impacting on industry, business and medicine and improving quality of life.

They learn to question and discuss science-based issues that may affect their own lives, the direction of society and the future of the world.

Here at Hippings Methodist we want children to be in awe of nature and the environment around them and in the wider world. We value that we are a family who can care for our world and that they are global citizens in all they do.

Using the New Programmes of Study from the National Curriculum (September 2013) we aim in this school to provide for all pupils:

- a positive attitude to Science and an awareness of the fascination of Science.
- to develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.
- to 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.
- initiative and an ability to work both independently and in co-operation with others.
- ability to communicate scientific ideas, questions and answers.
- to be equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

This policy reflects the School's values and philosophy in relation to the teaching and learning of Science.

It sets out a framework within which teaching and non-teaching staff can operate and gives guidance on planning, teaching and assessment.

School Policy and the National Curriculum

Rationale

We believe that all pupils of this school must have regular access to Science, appropriate to their stage of development and that emphasis should be given to this as a 'Core' subject. Science can be linked to a range of subjects and it is life all around them. We want the children to be aware that they are unique and have a responsibility to care for our world. Children will be our futures and we need to show them that through Science a range of opportunities for careers are available. Science can be used to build resilience as experiments and tests have to be repeated. Science is all around us and children can become global citizens through knowledge and experiences.

Knowledge, Skills and Understanding

In the Foundation Stage, teachers use the Early Learning Goals and in Key Stage 1 and 2, teachers use the National Curriculum documents both statutory and non-statutory, to ensure that all parts of the National Curriculum Programmes of Study for Science are taught.

Breadth of Study

Through careful planning and preparation we aim to ensure that, throughout the school, children will be given opportunities to:

- Develop their understanding through systematic enquiry, using both first-hand and secondary sources as appropriate.
- Consider simple scientific ideas and the evidence for them and also to collect evidence to test scientific ideas in a variety of ways.
- Work individually, in groups or as a whole class.
- Use I. C. T to collect, store, retrieve and present scientific information.
- Present information in a variety of ways, including drawings, diagrams, tables and charts.
- Consider health and safety in the context of their science work and to take action to control risks.
- Children to experience nature and the wider community of our school by learning through exploration outside of the classroom.

Scheme of Work

Science is a core subject in the National Curriculum, which identifies two areas of learning:

- **Working Scientifically** - *this specifies the understanding of the nature, processes and methods of science for each year group. It should not be taught as a separate strand and must be embedded within the content of biology, chemistry and physics units.*
- **Scientific Knowledge and Conceptual Understanding**- *this is a sequence of knowledge and concepts that allow children to make progress but also to allow for secure understanding of each key block of knowledge before progressing to the next stage.*

Teachers' Planning and Organisation

Planning in Science is a process in which all teachers are involved, and in which:

- The staff has agreed a cycle of topics, in line with the New Programmes of Study for Science (2013). Updated in May 2015. New Curriculum purchased 2020 and being implemented through 2020-2021.
- Medium Term Plans are drawn up by individual teachers for each half term using the statutory and non statutory guidance for each year group and topic. (Copies of these are kept in teachers own planning files.)
- The Head Teacher and the Science Co-ordinator monitor medium term plans.

In the early stages Science may be taught as part of an integrated topic. Later on Science is mainly taught as a separate subject, although there may be overlap with other curricular or cross-curricular areas.

The Reception class teacher bases teaching on objectives from Knowledge and Understanding of the World. This ensures that the children are working towards the Early Learning Goals for Scientific Development.

At Key Stage 1 the weekly allocation of teaching time for Science is 1 hour the allocation increases to approx. 1.5 hours at Key Stage 2.

However, these timings are no longer statutory as some topics lend themselves to study over a longer period of time or to be completed over a period of days, so it is being left to teachers' discretion to plan the timings.

Teachers also will plan as a whole team for Science Day, this usually takes place each year. Pupils move within their key stage and experience 'WOW' science topics for part of the week.

Differentiation

This should be incorporated into all Science lessons and can be achieved in various ways:

- *Stepped Activities* that become more difficult and demanding but cater for the less able in the early sections.
- *Common Tasks* which are open-ended activities/investigations where differentiation is by outcome.
- *Resourcing* which provides a variety of resources depending on ability, e.g. tables/charts, which need to be completed, specialised equipment.

- *Grouping* according to ability so that the groups can be given different activities when appropriate.
- All children are unique and are encouraged to record/present their work with homework tasks set throughout the year. This also gives the children and their families an opportunity to explore their own environments and science knowledge.

Special Educational Needs

Children with SEN are taught within the weekly Science lesson, and are encouraged to take part when and where possible (please see section on Differentiation).

Where applicable children's IPPs include suitable objectives from the National Curriculum for Science and teachers keep these objectives in mind when planning work.

If additional support staff are available to support groups or individual children, they must work in collaboration with the class teacher. Support staff will provide oral feedback to the class teacher at the end of each lesson.

Within the weekly Science lesson teachers not only provide activities to support children who find Science difficult but also activities that provide appropriate challenges for children who are more able in Science.

Equal Opportunities

We incorporate Science into a wide range of cross-curricular subjects and seek to take advantage of multi-cultural aspects of Science.

Spiritual, Moral, Social and Cultural Development.

These aspects of the curriculum are incorporated into scientific teaching wherever possible, e.g.

- **Social** - Using scientific information when debating topical issues, such as the environment, pollution, medicine, genetic engineering, general social consequences of actions. We want our children to feel valued and to show respect for others.
- **Moral** - Making informed choices, such as care and consideration for all living things, environmental issues, and personal health issues. We want children to accept that our world needs our care along with caring for each other in medical terms as well as emotionally.
- **Spiritual** - A sense of awe and wonder, and to have an appreciation of the diversity of life on Earth. We offer the children to openly discuss their thoughts about the Bible stories such as creation and how Jesus showed us how to care for each other's and God's world.
- **Cultural** - Awareness of the contribution of other societies to scientific knowledge and of other cultures, past and present, to the development of Science. We also look at other faiths in RE and we can link these at times to our Science work.

Resources and Funding

The school is well equipped for science teaching, and further resources are being purchased on a yearly basis. In past years the school has received two grants of £550 per year from The Edina Trust. This has significantly improved our resources but unfortunately, we are no longer able to apply for these grants. The Science budget over the last couple of years has been significantly reduced due to budget cuts across the curriculum. However, we do still have a good range of equipment and teachers ensure that all children have access to what they require for successful lessons.

The school has developed a range of I.C.T. resources for use in scientific investigations; we now have 2 data-loggers and 2 computer microscopes. It is hoped to buy more of these, in particular for the Key Stage 1 classes. As new technology is introduced funding will be looked at and the budget used appropriately. School has a range of I-pads and laptops that are available for lessons.

Each class now has an interactive whiteboard and it is hoped to begin purchasing software to aid teaching of Science, however in the meantime there are many excellent websites to use, such as BBC bitesize, twinkl and nature detectives.

Science equipment is stored on the Science shelves in the locked storeroom to which staff have access to at all times.

Books and published material are selected either from the school library or from the school library service.

Teacher reference material is available to help with background science.

An up-to-date list of resources is available in the Science file.

Assessment and Record Keeping

Teachers are expected to make regular assessment of each child's progress and to record these systematically. The following is the schools policy for assessment in Science:

Informal Tests – these can be carried out before or at the end of a topic, using oral discussion with the child/s, spider diagrams, mind maps etc.

Formal Written Tests – these are put together by the teacher or by using published material and examples generated by past SATs papers. The work set, combined with a scrutiny of children's recorded work over the previous half term, helps to review how well children have taken in the topic taught and identifies any remaining misconceptions. A record of each child's attainment against the key objectives is kept.

Formal Assessment – In the summer term the children are formally assessed as part of the School's Assessment Policy.

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Parental Involvement

- Parents are invited into school twice yearly to look at their children's work.
- Parents are welcome to discuss their child's progress at other times during the year if they so wish. We want parents to feel valued and to respect their concerns or worries about their child's progress. Likewise, if a child is naturally curious about Science we want to encourage this.
- Parents receive regular class-based information about their children's work, including a broad outline of the science to be covered.
- From time to time talks are organised for parents on curriculum matters, including Science.
- Publication of policy and results available on school website.

Reports to Parents

There are two reports each year one in the Spring Term and then at the end of the school year. Parents are given opportunities to discuss their child's progress on two separate parent's evenings which take place during the school year. (Covid 19 has made significant restrictions and changes have had to be made this year to face to face meetings, so a report was compiled in Autumn term and maybe again in Spring term)

Teachers use the information gathered from their half termly assessments to help them comment on individual progress. This data is put onto O'track so all staff can get access to this information. Subject Leaders can then discuss with individual class teachers about select groups and what support may be required.

Homework

It is our school policy to provide parents and carers with opportunities to work with their children at home. These activities may only be brief, others may be more of a project style but all are valuable in promoting children's learning in Science. It also gives parents an opportunity to discover God's amazing world with nature walks encouraged throughout the year with 'Walk to School Week' and to visit new places/museums etc with their children. We want parents to feel valued in the process of their children increasing their Scientific knowledge and skills.

Health and Safety

All staff who teach Science are conversant with the Health and Safety policy and relevant regulations and plan accordingly. All Science activities are risk assessed by the individual teacher, and County guidelines on safety procedures are followed.

The Cleapss Health and Safety booklet and other safety advice are also available for consultation in School.

The recommendations of the COSHH file are followed throughout the school.

