St. Philip’s Catholic Primary School



Science Policy

September 2023

**Intent**

At St Philip’s Catholic Primary School, we want our children to love Science - our children are the future SCIENTISTS! Our intent is to give every child a broad and balanced Science curriculum which enables them to confidently explore and discover what is around them, so that they have a deeper understanding of the world we live in. We want them to have no limits to what their ambitions are and grow up wanting to be astronauts, forensic scientists, botanists, or microbiologists. We want our children to remember their science lessons in our school, to cherish these memories and embrace the scientific opportunities they are presented with. Our aim is that Science lessons help every child secure and extend their scientific knowledge and vocabulary, as well as promoting a love and thirst for learning. At St Philips, we have a carefully planned curriculum underpinned by the Catholic Values preparing children for the responsibilities and experiences of later life.

 **At St Philip’s we aim to:**

* encourage positive attitudes towards Science.
* build on children’s natural curiosity and to develop a scientific approach to problems.
* encourage independent work and thinking.
* develop social skills in order to work co-operatively with others.
* help acquire practical scientific skills.
* develop the skills of investigation e.g. observing, predicting and measuring.
* use scientific language in discussion and recording of work.
* use ICT in investigating and recording.
* provide our children with an enjoyable experience of Science.

**Principles for teaching Science at St Philips**

At St Philip’s, Science topics are taught within each year group following a two-year cycle in accordance with the National Curriculum.

* The 6 principles devised by the children and staff at St Philips form the basis of each science lesson-
1. **We have fun during practical activities**
2. **We solve problems together**
3. **We learn something new**
4. **We can ask lots of questions**
5. **We have the freedom to make mistakes**
6. **We can experiment with different equipment**
* Topics are sequenced to allow children to focus on developing their knowledge and skills, studying each topic in depth as well as linking to the social action theme.
* Every year group will build upon the learning from prior year groups therefore developing depth of understanding and progression of skills.
* Children build on their working scientifically skills and carry out an investigation each half term.
* Children explore, question, predict, plan, carry out investigations and observations as well as conclude their findings.
* Children present their findings and learning using science specific language, observations and diagrams.
* In order to support children in their ability to ‘know more and remember more’ there are regular opportunities to review the learning taken place in previous topics as well as previous lessons. This is done by having a revision question at the start of each lesson.
* Effective CPD and standardisation opportunities are available to staff to ensure high levels of confidence and knowledge are maintained.
* Effective use of education visits and visitors are planned, to enrich and enhance the pupil’s learning experiences within the Science curriculum.
* Teachers use effective assessment for learning in each lesson to ensure misconceptions are highlighted and addressed.
* Effective modelling by teachers ensures that children are able to achieve their learning intention, with misconceptions addressed within it.
* Through using a range of assessment tools, differentiation is facilitated by teachers, to ensure that each pupil can access the Science curriculum.
* Cross-curricular links are planned for, with other subjects such as Maths, English and Computing.
* Our Subject Assessment Tracker allows us to use data to inform future practice, plan for revision opportunities and target specific children.
* Children each year study a female scientist or a scientist from a diverse ethnic background showcasing that science has no limits and is inclusive to all.
* Children collaborate with other schools in our CARITAS cluster group to hold science fairs encouraging the love for Science.

**Catholic Social Teaching**

In each unit of work for Science, a link is made (where reasonably possible) to a Catholic Social Teaching principle. This is discussed within the Science lessons to ensure that at all times our catholic life and mission is always at the forefront of the curriculum we teach. Children apply these principles to real life concepts to reflect and think deeply about their faith in action in the world today. This is evidenced through the principles being attached to the science display board in classes and work in books where it has been discussed will be marked with a “catholic social teaching” stamp.

**Planning and National Curriculum Coverage:**

 Science is a core subject in the National Curriculum. At St Philip’s we have adopted the new 2014 curriculum for science using a cross- curricular approach. Topics build upon prior learning and progression is built in so that children are increasingly challenged as they move up the school.

The new statutory requirements are split into two areas:-

1. Working Scientifically (replaces Scientific Enquiry). This is to be embedded into Science Topics taught through practical and investigative work

2. Scientific Knowledge and Conceptual Understanding – This will be taught through topics and includes concepts and scientific facts.

Children in the Foundation Stage are taught Science elements through the section of Knowledge and Understanding of the World.

**Time allocation**

The time spent on science is one hour per week in each half term. All teaching staff choose at their own discretion if further time is needed to cover the strands of the National Curriculum. Science teaching may also take place out of topics, as standalone lessons or as blocked periods.

**Lesson Structure**

All Science lessons should have a clear skills based learning objective and success criteria.

Science lessons have no imposed formal structure but may contain the following elements:

**Retrieval**: what they already know from experience, what they have learnt so far

**Discussion:** what they will be finding out about next, what would they like to know.

**Teaching**: directly to the whole class or through group or individual work.

**Practical tasks or investigative work**: working in groups or individually, practising scientific skills, finding out answers, being encouraged to think scientifically, sorting and classifying, observing etc.

**Recording**: writing about what they have found out, drawing charts and tables and diagrams, using the computer and other media to record what they have done or found out about.

**Communicating**: sharing ideas and knowledge through presentations in small groups.

**Assessment and Recording:**

Children’s skills, knowledge and understanding in science are assessed through formative assessment in each lesson. Teachers assess as an on-going process, addressing misconceptions and giving feedback during each science lesson.

Each lesson is evaluated against the lessons objective and success criteria with notes to aid future planning and to identify children who need further support or extension. Questioning children can also elicit understanding on an informal basis. In line with the school’s marking policy work is marked as appropriate and next steps added. Children are given time to read feedback and action teacher comments which focus on the learning objectives.

Teachers will use the science assessment target sheets to assess children for each topic. This will help to identify gaps in children’s understanding and inform future planning.

One Science Investigation will be recorded every half term in separate investigation books. The investigation can be topic related or a standalone lesson.

Science Co-ordinator to monitor progress across the school by sampling children’s work.

#### Resources

* The vast majority of resources are stored centrally in the ART cupboard.
* Teachers and Teaching assistants need to collect their resources as they need them and ensure they return them to where they came from.
* Staff should notify the Co-ordinator of any extra resources required, of any breakages or losses that occur and of any new materials, books, videos etc that might prove useful.
* Unsupervised children should not be allowed to collect resources.
* PlanBee planning used to form the foundation of planning.

**Differentiation**

 All children will have their academic needs met in Science through differentiation.

This can be achieved by:

• Use of support staff

• Matching level of activities to meet needs.

• Assistance to access texts.

• Use of visual aids.

**Equal opportunities provision**

We aim to provide a supportive and flexible atmosphere in which all children are enabled to achieve success. All pupils are given access to the science curriculum regardless of sex, religion age, ethnic origin or gender. Targets from Individual Education Plans should be incorporated into planning for science, providing appropriate additional resources as necessary, and flexibility in expectations of children with Special Educational Needs, particularly in recording. More able pupils are appropriately challenged.

Health and Safety

Safety hazards should be pointed out to the children at the beginning of any work.

The National Curriculum states;

‘When working with tools, equipment and materials, in practised 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 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.
6. To use tools and suitable materials in a safe manner.

**Monitoring and review**

It is the responsibility of the subject leader to monitor the standards of children’s work and the quality of teaching in science. The subject leader is also responsible for supporting colleagues in their teaching, for being informed about current developments in the subject, and for providing a strategic lead and direction for science in the school. The subject leader gives the head teacher an annual summary report in which s/he evaluates strengths and weaknesses in science, and indicates areas for further improvement. The subject leader has allocated time for fulfilling the vital task of reviewing samples of children’s work, and visiting classes to observe science teaching.

This policy will be reviewed annually

Quratulain Khan.

Science Subject lead.