

St Ippolyts CE (Aided) Primary School

"Love one another. As I have loved you, so you must love one another"

John 13:34



Science Policy

Date of Issue: September 2022

1. Intent

The national curriculum (2014) 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.*

At St. Ippolyts School, we provide children with an engaging, hands-on science curriculum that not only meets the requirements above but also fosters a curiosity and a sense of awe and wonder about the world we live in. Children are readily encouraged to be curious and ask their own scientific questions as well as develop specific Working Scientifically skills.

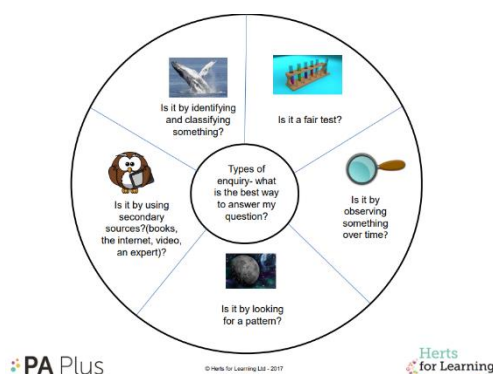
We believe that science can be seen everywhere you look, and so base our teaching and learning on this. An enquiry-based structure is the foundation we plan from, and children receive a broad and balanced range of learning experiences and activities because of this.

The expectation is that children will complete all areas noted in the National Curriculum as appropriate to their year group. However, due to the nature of our school and mixed age classes, some adaptations to the order of topics may be necessary. Throughout the children's time at St. Ippolyts, the subject leader regularly tracks coverage of units of work and ensures that by the time they finish in Year 6, all children will have covered all the learning objectives.

2. Implementation

2.1 Planning

At St Ippolyts, teachers plan engaging, motivating, and challenging lessons with a specific enquiry type in mind. We have adopted this approach and resources from Herts for Learning.



Teachers then create a positive learning environment for science, using hands-on resources and an investigative approach. We build upon the knowledge and skill development of the previous years. As the children's knowledge and understanding increases, and they become more proficient in selecting and using scientific equipment and collating and interpreting results, they become increasingly confident in their growing ability to come to conclusions based on real evidence. Teachers regularly demonstrate and model how to use scientific equipment, and other Working Scientifically skills in order to embed scientific understanding.

Furthermore, teachers strive for a child-led approach. Delivering carefully planned options for children to choose from, thus enabling children to take more responsibility of their learning.

2.2 Recording of Science Investigations and Learning

Although it is important for children to experience the whole-enquiry process each time, so that an understanding of each of the steps involved, they do not necessarily need to write up all of these stages. It might be appropriate at times to make group predictions, or review results as part of a class discussion. Teachers will then focus on asking pupils to individually write up the parts of the enquiry process they want to assess. When completing knowledge-based activities and tasks, teachers ensure children are provided with an opportunity to use their Learning Powers and have a 'show me what you know' style approach.

2.3 Vocabulary in Science

Throughout all science lessons, teachers and support staff regularly model accurate scientific language. By doing so, children are able to develop a comprehensive understanding of new vocabulary and can consistently and accurately apply this as the curriculum progresses. Our 'Progression in Science' document supports teachers with their planning and outlines key vocabulary necessary for each year group.

2.4 Resources

At St. Ippolyts, we have high-quality science resources to aid and support the teaching of all units and topics taught, from EYFS to Year 6. We keep these in a central store, where they are labelled and easily accessible to all staff. EYFS have a range of resources kept in classes, for simple access for children during exploration. The library contains a good supply of science topic books to support children's individual research.

2.5 Differentiation

This should be incorporated into science lessons where appropriate and can be done in various ways:

- Stepped Activities - which become more difficult and demanding but cater for the less confident in the early sections.
- Common Tasks - which are open ended activities/investigations where differentiation is by outcome.
- Grouping- according to ability so that the groups can be given different tasks when appropriate. Activities are based on the same theme and usually at no more than three levels.

Some children may require more significant adjustments e.g. for those who are on the SEND Register. Teachers are able to plan for these with support from the Inco if required.

2.6 Enrichment

Each year at St. Ippolyts School, we have two Science themed days a year. This provides opportunities for children to broaden their experiences and enjoy science learning independent of their statutory units of work. Science days provide children opportunities to attend different workshops ran by teachers but also outside agencies. The school has strong links with local companies such as GlaxoSmithKline and Children Challenging Industry.

2.7 Safety

- St. Ippolyts follows the advice published in 'Be Safe' as recommended by The Association for Science Education (2011). Teachers need to make risk assessment for situations not covered in 'Be Safe'.
- All teachers will be expected to refer to this publication when planning activities and assessing for any risk to children. The booklet will be kept in the staffroom.
- Further free Health and Safety advice can be sought from CLEAPSS
- Children will be made aware of safety issues that arise in topics or activities and will be trained to use the appropriate equipment and carry out tasks in a safe and responsible manner.
- Children will be increasingly required to identify safety considerations in their planning as they progress through the school.

3. Impact

By the time children leave St. Ippolyts school in Year 6, they will have a wealth of science knowledge and experiences to draw on. Our engaging, high-quality science education provides children with the foundations and knowledge for understanding the world around them as well as an inherent desire to know more. Children will have the resilience and confidence to answer a variety of enquiry questions, applying their working scientific skills readily.

Children are encouraged to share their misconceptions and misunderstandings and become skilled in using appropriate vocabulary in doing so. The inclusion of open dialogue to discuss and explain scientific concepts also strengthens the use and understanding of scientific language to ensure children can explain, and evidence their thinking.



In 2021, St Ippolyts school received the PSQM GILT award. The Primary School Quality Mark programme ensures effective leadership of science, enables schools to work together to share good practice and is supported by professional development led by local experts. It encourages teacher autonomy and innovation while at the same time offering a clear framework for development in

science subject leadership, teaching and learning. Schools that achieve PSQM demonstrate commitment and expertise in science leadership, teaching and learning.

3.1 Assessment

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 (National Curriculum 2014). At St. Ippolyts school, we use both a formative and summative approach to assessing where the children are in their learning.

Formative Assessment

At the beginning of each new unit of work, children are required to complete a mind-map of their current knowledge. They are then asked to revisit this mind-map after each lesson to add on anything new they have learnt. By doing so, teachers can continuously assess where children are and gather evidence to know whether a child has understood the key learning of the lesson. Children in Key Stage Two are required to do this independently in their science books. Children in Key Stage One can complete one mind-map with their teacher.

This should be displayed on the working wall and also added to weekly. Teachers will keep track to ensure all children's understanding is captured and not just the views of some.

Summative Assessment

Teachers use summative assessments as a benchmark to see if children are on track with their learning. At St. Ippolyts, children complete these summative assessments at three points during the academic year. Instead of a written paper, children will participate in an investigation where their working scientifically skills are monitored and noted down.

Teachers can then use this knowledge, as well as the evidence from the mind-maps to make an informed judgement of where each child is in the learning.

3.2 Monitoring and Evaluating

The subject leader is regularly released from their classroom in order to work with other teachers, monitor and evaluate the quality and impact of science teaching and learning throughout the school and enables the coordinator to support teachers in their own classrooms. Throughout the academic year, the Subject Leader regularly monitors the subject through learning walks, book looks, and planning scrutinises. Staff meetings are also scheduled regularly to allow opportunities for teachers to work together and share best practise, ensure coverage, and moderate the standards of science teaching and learning across the school.