



OUR LADY AND
ST HUBERT'S
CATHOLIC PRIMARY SCHOOL



At Our Lady and
St. Hubert's, home,
school and parish
work together,
knowing that God is
with us in all we do.

Science

Guidance and Procedures

Intent, Implementation, and Impact

Intent

At Our Lady and St Hubert's, students will gain a strong understanding of the world around them, whilst acquiring specific skills and knowledge to help them to think scientifically. Children will aim to develop a sense of excitement and curiosity about natural phenomena and an understanding of how the scientific community contributes to our past, present and future. We want pupils to develop a complex knowledge of Biology, Chemistry and Physics, but also adopt a broad range of skills in working scientifically and beyond. The scheme of work is inclusive and meaningful, so all pupils may experience the joy of science and make associations between their science learning and their lives outside the classroom. Studying science allows children to appreciate how new knowledge and skills can be fundamental to solving arising global challenges linking to citizenship.

They will be encouraged to think about how they can use their scientific understanding to assist them in finding solutions to real world problems, using a range of skills.

Implementation

To meet the aims of the National curriculum for science at OLSH and in response to the Ofsted Research review into science, we have identified the following key strands for children to work through as they progress through school:

Scientific knowledge and understanding of:

- Biology - living organisms and vital processes.
- Chemistry - matter and its properties. ○ Physics - how the world we live in 'works'.
- Working scientifically - processes and methods of science to answer questions about the world around us.
- Science in action - uses and implications of science in the past, present and for the future.

Through following Rosenshein's principles, we are allowing our children to know more and remember more. Our science scheme is a spiral curriculum, with essential knowledge and skills revisited with increasing complexity, allowing pupils to revise and build on their previous learning. A range of engaging recall activities promote frequent pupil reflection on prior learning, ensuring new learning is approached with confidence. The Science in action strand is interwoven throughout the scheme to make the concepts and skills relevant to pupils and inspiring for future application. Cross-curricular links are included throughout each unit, allowing children to make connections and apply their Science skills to other areas of learning. Each unit is based upon one of the key science disciplines; Biology, Chemistry and Physics and to show progression throughout the school we have grouped the National curriculum content into six key areas of science: Plants Animals, including humans Living things and habitats Materials Energy Forces, Earth, and space. Pupils explore knowledge and conceptual understanding through engaging activities and an introduction to relevant specialist vocabulary. As suggested in Ofsted's Science research review (April 2021), the 'working scientifically' skills are integrated with conceptual understanding rather than taught discreetly. This provides frequent, but relevant, opportunities for

developing scientific enquiry skills. The scheme utilises practical activities that aid in the progression of individual skills and provides opportunities for full investigations.

Impact


We want our children at OLSH to develop a sense of excitement and curiosity about natural phenomena and an understanding of how the scientific community contributes to our past, present and future. We want pupils to develop a complex knowledge of Biology, Chemistry and Physics, but also adopt a broad range of skills in working scientifically and beyond. The scheme of work is inclusive and meaningful, so all pupils may experience the joy of science and make associations between their science learning and their lives outside the classroom. Studying science allows children to appreciate how new knowledge and skills can be fundamental to solving arising global challenges. Our curriculum aims to encourage critical thinking and empower pupils to question the hows and whys of the world around them. Our science scheme of work enables pupils to meet the end of key stage attainment targets in the National curriculum and the aims also align with those set out in the National curriculum.

When children leave OLSH, we want them to be competent and confident in their knowledge and be able to face real-world problems head on, finding new and inquisitive solutions to solve them.



Curriculum Planning

The curriculum provides children with opportunities to learn new scientific concepts and knowledge over the course of the year, as well as time to review and recap prior learning. The science curriculum is planned out in a way that ensures coverage of the national curriculum objectives, but also provides children opportunities to embed their learning and make connections cross-curricula as well as with wider concepts. Medium Term planning ensures that topics are being structured in a way as to ensure substantive knowledge is provided to children over the course of the half-term and any cross-curricular links are highlighted. Short Term planning should then develop the individual objectives within the topic and build upon them to ensure a progression and sequence of learning in taking place.

 OUR LADY AND ST. HUBERT'S PRIMARY Whole School Science Overview							
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	
	A Moment in Time	Wonderful World	Peace and Conflict	Nurturing Nature	Change and Continuity	Our Place in the World	
EYFS	All About Me*	Materials*	Animal adventures	I am a scientist	Our beautiful Planet	Changing Seasons	
Year 1	Seasonal Changes	Everyday Materials	Sensitive Bodies	Comparing Animals	Introduction to Plants	Making Connections	
Year 2	Habitats	Microhabitats	Use of Everyday Materials	Lifecycles and Health	Plant Growth	Making Connections	
Year 3	Movement and Nutrition	Forces and Magnets	Rocks and Soils	Light and Shadows	Plant Reproduction	Making Connections	
Year 4	Digestion and Food	Electricity and Circuits	States of Matter	Sound and Vibrations	Classification and Changing Habitats	Making Connections	
Year 5	Mixtures and Separation	Properties and Changes	Earth and Space	Lifecycles and Reproduction	Imbalanced Forces	Human Timeline	Making Connections
Year 6	Classifying Big and Small	Light and Reflection	Evolution and Inheritance	Circuits, Batteries and Switches	Circulation and Health	Making Connections	

*Not following Kapow Scheme for curriculum planning.

Scientific Enquiry

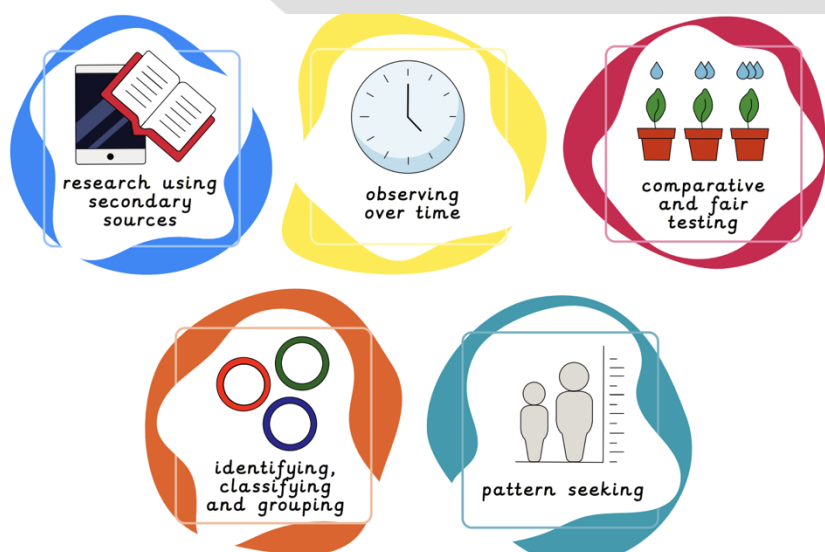
The 5 main types of Scientific Enquiry include research using secondary sources, observing over time, comparative and fair testing, identifying, classifying and groups, pattern seeking. Once children have had experience with these enquiry types, and are competent in their knowledge of them, they may encounter Problem Solving. Children will encounter questions which cannot be answered by using one of the 5 main types of scientific enquiry. In this event, children will use their scientific knowledge to support themselves in finding a solution using problem solving.

Over the course of each academic year, pupils will carry out several investigations which involve different types of enquiries.

KS1



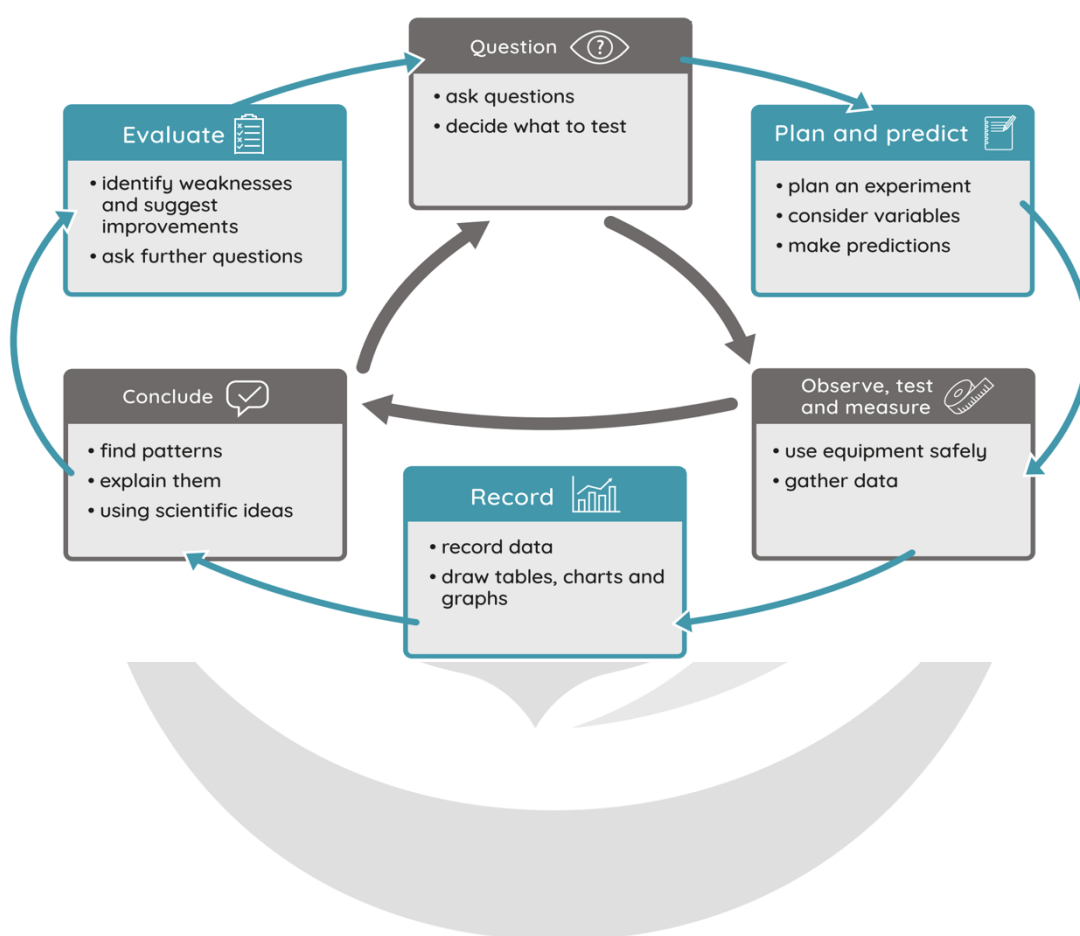
KS2



Scientific Enquiry Cycle – Working Scientifically Skills

This part of the curriculum is the area in which children will develop their disciplinary knowledge. Children will have opportunities to carry out practical investigations in science that help them to develop their scientific skills. The ways in which these skills are used will progress throughout year groups and become more independent. The use of each of these skills will be taught to children explicitly where necessary, before being used as part of a scientific investigation so that children can develop their understanding behind the use of each skill and how to use them appropriately.

The scientific enquiry cycle



6Cs

At Our Lady and St Hubert's, our lessons are underpinned by our 6Cs- '21st Century skills for effective learning'. These skills will support our children in being prepared for whatever they encounter when they leave education and enter society and the workforce.



Character

Children will develop perseverance and resilience, solving real-world problems and debugging their solutions.



Citizenship

Children will learn to use technology safely and responsibly. They will use technology to learn about issues affecting their community and the wider world. They will design technological solutions to real-world problems.



Communication

Children will use IT to present and communicate their learning. They will use internet technologies to communicate, adapting their modes of communication appropriately.



Collaboration

Children will work collaboratively to solve problems and design digital artefacts. They will make use of communications technologies to collaborate more effectively.



Creativity

Children will be given lots of opportunities to identify problems, and then have chances to design and make programs and digital artefacts that solve them, incorporating their knowledge of algorithms and programming.



Critical Thinking

Children will use the processes of Computational thinking to logically analyse and solve real-world problems. They will learn to evaluate the reliability of information they find online and analyse it critically.

Assessment

In Science, assessment is conducted in a variety of forms.

This is completed in a formative manner through marking and feedback in individual lessons to decipher children's understanding before moving on and addressing misconceptions and conducting reviews to assess children's retention of prior learning.

Pre-assessments and post-assessments are conducted at the beginning and end of each unit. These assessments allow teachers to gain an insight into children's prior knowledge of a topic as well as any misconceptions that already may be apparent. This will also support teachers in being able to monitor a child's progress throughout a unit of work.

Summative assessment also takes place termly to assess children's knowledge and understanding of topics, and to ascertain whether children are on track with their understanding of the science curriculum. It is the role of teachers to conduct these assessments and record them accordingly. It is the role of the subject leader to monitor this assessment.

Name: <input style="width: 90%;" type="text"/>	Quiz - KS1
Unit title: Habitats	
Q1	Which word describes how living things get rid of waste?
A	Reproduction.
B	Nutrition.
C	Excretion.
Q2	Which of these objects shows a living thing?
<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">A</div>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">B</div>
<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">C</div>	
Q3	What is it like in a woodland habitat?
A	Very warm with lots of rain.
B	Sandy with rock pools.
C	Cool and shady with lots of trees.
Q4	Something that hunts and kills its food is called...
A	a predator.
B	prey.
C	a producer.

Quiz - KS1	
Unit title: Habitats	
Q5	Give an example of how living things depend on each other in an ocean habitat.
<div style="border-bottom: 1px solid black; height: 20px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 20px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 20px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; height: 20px;"></div>	
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin: 5px;">clownfish</div> <div style="border: 1px solid black; padding: 5px; margin: 5px;">anemones</div> </div> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 150px; text-align: center;">tentacles</div>	
Score: / 5	

Arbor

Teachers will track summative assessment data for children on Arbor and this will be completed termly.

Monitoring/Reports

The science subject leader will conduct monitoring of teaching and learning to ensure all objectives are covered and offer support where necessary.

Progress and attainment are reported to parents through parents' evenings and reports throughout the year.

SEND, Pupil Premium and Inclusion for all

All children are given opportunities to develop their Scientific knowledge. To ensure all children can access learning, adaptations are put in place where necessary to support children, through differentiation of activities, support given to complete activities and further guidance given.

Children will have opportunities to develop their scientific knowledge as well as their skills for working scientifically, and adaptations will be put in place where necessary to support any barriers that are identified.

For those children who are identified as having strong subject knowledge and use of scientific skills, challenges will be provided to stretch and deepen their learning.

The Role of the Science Subject Leader

The role of the subject leader is to provide a vision of how science will be taught and delivered throughout school. They will provide guidance and support for good-quality teaching and be responsible for monitoring this. They will conduct monitoring through a range of forms to ascertain an overview for how Science is seen across school, including environment walks, curriculum coverage, book looks and learning walks. Where necessary, the subject leader will inform teachers of opportunities to complete CPD to enhance planning and teaching. The subject leader will also provide opportunities to promote science across the wider school.

Reviewed – October 2024 – Ellie Johnston (Subject Lead)

Date of next Review – October 2025