

Intent

At Christ Church School we aim to instil a love of science within our pupils. Science at our school supports our vision of *inspiring life in all its fullness* through its contribution to a wide breadth of curriculum and we believe that high-quality science education is essential for understanding and respecting the world around us. Science in our school aims to encourage curiosity and develop a sense of excitement, in order to make sense of the world in which we live and give children a strong understanding of the uses and implications of science, today and for the future.

Our science curriculum is designed with high expectations in mind and provides opportunities for children to acquire the knowledge and skills they need to make progress throughout their time here at Christ Church and prepare them for when they move on to secondary science. At Christ Church, we aim to build and expand every child's science capital, in the hope that more children will continue to enjoy science and progress into STEM careers in the future. Science learning begins in Early Years in 'Understanding the World' and our curriculum covers the specific disciplines of Biology, Chemistry and Physics and these are made explicit to children in upper Key Stage 2.



The key skills needed to work scientifically are embedded in all our science teaching and build sequentially through the school, ensuring that all children have the opportunity to question, observe, discover, conclude and evaluate (essentially an understanding of the nature, processes and methods of science). Children are taught how to use scientific equipment by working practically throughout both Key Stages and we aim to encourage the children to be enquiry-based learners who can pose their own questions and seek answers to these. Science is taught across the curriculum wherever possible, including within additional enrichment activities, providing essential exposure and understanding for the children of how science impacts our daily lives.

Implementation

- Y1-6 class teachers follow the National Curriculum and ensure the working scientifically skills are taught, revisited and embedded. This builds on the foundations for Science learning within the EYFS curriculum in Reception, such as through working towards the Natural World Early Learning Goal.
- In KS1 and KS2, the science skills are taught alongside and through learning the science content. Lessons are carefully planned to ensure skills and knowledge progression within each year group, as well as throughout the school. The curriculum is designed so that by end of Year 6, pupils have built solid working scientifically skills (disciplinary knowledge) and have secure knowledge of the science content (substantive knowledge).
- A range of enquiry types are planned, taught and built upon across the Science curriculum (grouping and classifying; noticing patterns, observations over time, fair and comparative testing, research and modelling).
- Class teachers deliver science lessons and help to draw out links between previous learning and other curriculum areas.
- Class teachers are supported by the science subject leader and receive CPD through staff meetings and tailored support. Teachers demonstrate strong subject knowledge.
- Both formative and summative assessment is used in science. Teachers will use formative assessment (including questioning, observing, feedback and marking) to help shape a lesson, direct learning, address misconceptions, provide feedback and adapt future lessons. Key learning for each year group is identified in our key learning sheets for each topic. This also includes key vocabulary. Using a range of evidence including observation, work sampling, discussion with pupils and questioning, teachers make summative assessments against key standards and statements for all pupils. This is shared with future class teachers and parents in end of year reports. This data is also analysed and used to decide on future targets or areas of improvement in science.



- Children use a wide range of relevant resources to help them with their learning and the curriculum is enriched through various trips and visits: e.g. Thames Explorer, Francis Crick Institute, Science Museum, Hampstead Heath Education Centre. These all help to enhance our children's science capital.
- Strong curriculum links with maths (handling data, light and reflection), geography (weather, seasons), DT (electrical circuits to build torches, forces to build cars), English (explanation texts, persuasive writing), history (fossils and evolution), art (pencil drawings of invertebrates and seeds) computing (fact pages, research), PSHE (healthy living) are utilised to consolidate prior science learning.
- All children are supported to acquire the intended knowledge and skills in science, through adaptive teaching in the classroom. Learning is adapted for children with SEND and scaffolded support is given where needed.
- Lessons are sequenced effectively, enabling progress throughout each topic within one year group and also across one topic over multiple year groups, where the topic is studied again and built on.

Impact

- Children enjoy science lessons in school and as homework activities. Children are interested in what they learn about and often continue to learn outside the classroom by doing their own research. Pupil voice shows that children find science exciting, interesting and relevant.
- All children develop their working scientifically skills to become better problem-solvers and work with increasing independence as they move through the school. Children learn to communicate effectively by presenting their findings in various different ways, with different audiences in mind.
- Children have a good knowledge of the key science curriculum content and can make connections across the curriculum. Children are able to identify topics that have been introduced in earlier year groups and understand how new learning builds on previous learning.
- Children have the opportunity to use a range of resources to carry out their work including scientific equipment and technology. Children's independence progresses throughout the school and they are given more opportunities to design their own investigations, select relevant equipment and consider how to record and present their findings.
- Children ask relevant scientific questions using subject-specific language. This Tier 3, subject-specific vocabulary is built on each year across the school, with opportunities to use this vocabulary orally, in their writing and through reading non-fiction texts.
- Science learning gives a chance for children to express views and opinions on topics which are important to them, e.g. climate change, plastics, sustainability, endangered animals.



Whole School Standards (three year trend):

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Response to the Ofsted Research Review and Subject Report

The **Ofsted curriculum research review for Science** (June 2021) reviews a wide range of relevant educational research into both primary and secondary science teaching and identifies factors which may contribute to high-quality science education. The Christ Church reflection on and response to the curriculum review is summarised in our Autumn 2022 curriculum leader report. The **Ofsted subject report for Science: Finding the Optimum**, was published in February 2023. The subject report built on the research review, shared strengths and weaknesses in Science in schools and identified factors which support effective curriculums, pedagogy, assessment and systems in Science. Please see the October 2024 curriculum report for some of the main recommendations and findings from the subject review, alongside our responses and, where relevant, next steps.



Last year's key developments and successes in 24/25:

1. Continue to ensure that science skills and knowledge continue to be focused on in first half of academic year.

Intended outcome: All children to continue building on and refining their working scientifically skills and recapping on prior learning, even when science lessons are not explicitly happening.

24/25 target achieved: All classes took part in trips during the first half of the year, acting as enrichment and spaced retrieval opportunities for the topics they covered in the previous year. Spaced retrieval sessions on prior learning took place and prior-topic non-fiction books were also available in classes

2. Continue refining and developing key vocabulary in science

Intended outcome: All children are able to discuss learning, using key vocabulary accurately.

24/25 partially achieved: Teachers were reminded to look through key learning sheets for specific key vocabulary to focus on. This is something we should continue working on during the next academic year.

3. Relate new learning to relevant, real-world contexts

Intended outcome: All children, with a particular focus on those with SEND/individual needs, should be able to see how learning in school can be applied to relevant, real-world contexts.

24/25 target achieved: STEM sessions were delivered by Camden Learning, showing how science is used in the real world. Teachers were also encouraged to make explicit links between prior and new learning, especially during topics where there is a lot of overlap and knowledge building, such as plants.



Additional successful development activities which have taken place in 24/25:

Trips

All classes went on science trips in the beginning half of the year, consolidating learning from the previous year and keeping science alive in the curriculum. Trips included The Natural History Museum, The Science Museum, and Hampstead Heath.

Science Club

Science club continued with an external provider, and was attended by a range of children throughout the year.

Eco Day and Clean Air Day

Our Eco Day this year focused on sustainable procurement and the circular economy. The children attended workshops with Veolia, who supply bins and organise rubbish collections. They learnt about what we should dispose of in general waste, food waste and recycling. They also learnt tips about how to store or use food in a way that is more sustainable.

We also held a Clean Air day with a range of activities for

classes and families learning about air pollution. Classes all completed a range of follow-up activities as well, building on science learning about sustainability and how to support plant and animal life.



Key targets and actions moving forward (development priorities for 2025/26):

Target and <i>intended outcome</i>	Planned actions (including dates where applicable)
<p>1. Review and refine Christ Church curriculum where needed in light of the government's Curriculum and Assessment Review <i>Intended outcome: Christ Church curriculum aligns with national curriculum and other statutory guidance.</i></p>	<p>Review the government's Curriculum and Assessment review, when published, and identify any areas for update or refinement in the Christ Church curriculum. Update planning and related documentation, including 'curriculum pack' and 'curriculum statement' for the subject, to reflect any updates. Ensure appropriate professional development and resources are in place for any changes or updates.</p>
<p>2. Take part in a range of national 'science days' throughout the year – e.g. Big Garden Bird Watch <i>Intended outcome: All children will enjoy enrichment opportunities and see science in real-life contexts</i></p>	<p>Develop a plan, looking at a range of different national science dates, for classes to take part in a range of activities. Set homework tasks to involve parents.</p>
<p>3. Continue embedding key vocabulary in science <i>Intended outcome: All children are able to discuss learning, using key vocabulary accurately.</i></p>	<p>Key vocabulary to be displayed in classes. Explicitly teach new vocabulary and its meaning, creating opportunities for repeated engagement and use over time Model the use of new words in context. Provide multiple opportunities to revisit and engage with scientific vocabulary over time. Use vocabulary approaches that promote rich language connections and help pupils understand the relationships between words and concepts. Visual aids combined with image creation, such as drawing pictures or diagrams, as well as discussing the origin of words (etymology) or the structure of words (morphology), may be useful.</p>

Professional development and links outside the school

Within Christ Church School during 2024/2025, science professional development was delivered via regular updates and reminders integrated into staff meetings, ensuring all teachers were current with curriculum changes and best practices. Furthermore, our Year 5 teacher benefited from targeted, external training specifically designed to deepen their knowledge of the science topics taught in that year group. The curriculum leader attended half-termly subject leader meetings to ensure staff are kept up to date with any changes or suggestions for the subject.

Beyond our own school, we successfully supported a local primary school by helping them to develop their science curriculum structure and assisted them to strategically slim down their science curriculum, advising them on how to prioritise the most essential substantive and disciplinary knowledge required for pupil progress and understanding.

Pupil voice

Pupil voice discussions in February 2025 demonstrated that

Children could talk about what they learnt in the previous year group:

Y2 – we learnt about the senses

Y3 – we learnt all about animals and plants

Y4 – we learnt different things about plants and animals.

Y5 – we learnt about electricity and remember thinking how fun y4 science was. I thought we learn too much about plants in every year group!

Y6 – we learnt about the growth of plants

Children enjoyed going on trips related to their science learning:

Y3 – we went to the wonder lab. It made us excited about science.

Y4 – we learnt about gravity and forces, which is what we learnt about in y3

Y5 – I liked the trip!

Y6 – we went to the science museum. We learnt new things about space

KS2 children could remember specific enquiry types they had carried out in previous year group:

Y3 – We watched plants grow and looked for patterns

Y4 – We compared rocks to see if they were permeable or impermeable

Y5 – Researching weather stations. Comparative test with melting. Observing eggs over time

Y6 – Fair testing. Observing over time

The children could discuss various things that help their learning in science:

Y2 – sharing it with our parents

Y3 – songs help us

Y4 – funny videos

Y5 – everyday experiences

Y6 – practical things

They had some ideas about how we could improve science even more going forward:

Y1 – being able to share what we learnt with our families even more

Y4 – using chemicals to do experiments. Have a bigger variety of what we learn

Y5 – doing experiments to recall what we learnt in the previous year. At the end of each topic we could do a big memorable thing to apply all our learning

Y6 – More people who work in science could come and do workshops



What makes our curriculum provision for Science exceptional and beyond the expected?

- Relationship with the Francis Crick Institute for resources, CPD and enrichment
- Use of Hampstead Heath education centre and Heath in general for enrichment, as well as use of world class museums such as Science Museum, Royal Observatory and Royal Institution
- Clear progression of skills taught in each year group, building on what children have previously learnt, for both substantive and disciplinary knowledge

Key points for discussion about this report

- Share work sampling with reference to where knowledge and skills have clearly been built on throughout the school
- Varied opportunity for enrichment through trips and Francis Crick provision
- Discussion of curriculum structure and how learning is recapped and kept up in first half of year (response to Ofsted subject report)
- Refined progression documents, with specific substantive and disciplinary knowledge and connections between them.

Work sampling - Disciplinary knowledge: Working scientifically

Planned progression in one enquiry type: Identifying, Grouping and Classifying.

Taught within the context of a range of science content.

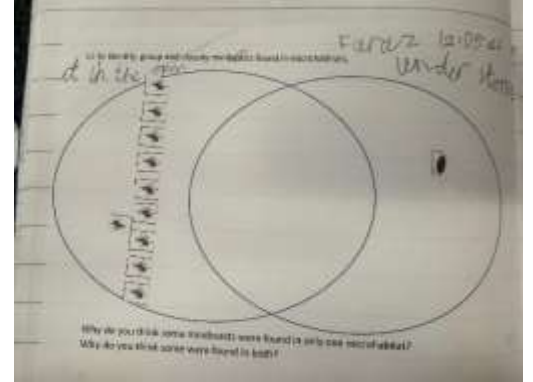
Reception – Will different objects float or sink?

Material	Floats	Sinks
plastic	X	✓
wood	✓	✓
leaves	X	✓
stone	X	✓
metal	X	✓

Year 1 – How can we group items based on their properties?



Year 2 – What minibeasts can be found in our playground?



Year 3 – Can you see through all items?

Material	Can you see through it?
glass	yes
plastic	no
paper	no
metal	no
wood	no
stone	no

Year 4 – Which materials are good conductors or insulators?

Material	Good conductor	Good insulator
metal	✓	
wood		✓
plastic		✓
rubber		✓
glass		✓
stone		✓
paper		✓
cloth		✓
air		✓
vacuum		✓

Year 5 – Are all powders soluble?

Substance	Water	Oil	Alcohol	Acetic acid	Ammonia
Salt	soluble				
Sugar	soluble				
Baking powder	soluble				
Starch	soluble				
Gum	soluble				

Year 6 – Can we classify animals according to their features?

