

Applecroft School



Science Policy

Person Responsible:	Science Leader
Review Cycle:	Annually
Date of Issue:	March 2025
Review Date:	March 2026

Science Policy

1) Introduction:

School Vision:

'To be a positive and inspiring community that nurtures each individual and empowers leaders for life.'

School Mission Statement:

'Nurturing Potential, Inspiring Minds, Changing Lives'.

School Values:

- Ambition and Leadership
- Kindness and Supportiveness
- Respect and Honesty
- Determination and Resilience.

2) Our aims and objectives including breadth of study:

Science is a core subject in the National Curriculum. The CUSP scheme is used to teach Science, the foundations of which are cemented in the EYFS through learning within the Natural World and People, Culture and Communities. It is taught from Year 1 to Year 6. The scheme pays close attention to guidance provided by the National Curriculum sequence and content. It is infused with evidence-led practice and enriched with retrieval studies to ensure long-term retention of foundational knowledge. CUSP is an ambitious interpretation of the National Curriculum, and it places knowledge, vocabulary, working and thinking scientifically at its heart. CUSP Science precisely follows the units outlined in the National Curriculum.

Through studying CUSP Science, pupils become 'a little more expert' as they progress through the curriculum, accumulating, connecting and making sense of the rich substantive and disciplinary knowledge.

3) Science Curriculum Intent:

At Applecroft School, we aim to deliver a curriculum which is ambitious, broad, balanced and inspiring for all pupils. The Science curriculum is coherently planned and sequenced and is adapted, designed and developed for pupils with special educational needs and or disabilities. Science is taught weekly and the aim is to provide a stimulating environment where practical activities are meaningful and challenging. Moreover, we encourage the children to have respect for all living things and to understand the effects of our actions on the environment.

At Applecroft we want all children to be given the opportunity to learn and develop a sense of wonder and curiosity about the world around them through the development of their scientific knowledge and through practical experience. Their knowledge and thinking scientifically skills will enable them to understand the uses and implications of Science now and to become scientifically literate adults in the future. Through Science, we want the children to ask questions and seek answers which will enable them to develop the skills of open-mindedness, objectivity and critical thinking. The overarching aim of Science is to promote confidence and ambitious standards in the communication of scientific ideas, facts and data.

We aim for all pupils to:

- Develop confidence and ambitious standards in the communication of scientific ideas, vocabulary, facts and data.

4) Science Curriculum Implementation:

Science is taught weekly at Applecroft School. A principle of each lesson is that this builds on prior learning; this makes it easier to cognitively process, helping to accelerate new learning as children integrate prior understanding.

Each unit begins with a vocabulary module which focuses on roots, prefixes, suffixes and spelling rules pupils should know. Definitions and examples of Tier 2 and Tier 3 vocabulary are also taught during this unit.

Each lesson will make use of cumulative tasks which follow the "teach, task, teach, task" model, which draws on the six phases of the lesson: connect, explain, example, attempt, apply, challenge. Each lesson will contain elements of developing the children's substantive knowledge (subject knowledge) and disciplinary knowledge (this is knowing how to collect, use, interpret, understand and evaluate the evidence from scientific processes).

From Year 2, CUSP cumulative quizzes are used as a learning tool to support recollection of content taught. Weekly CUSP quizzes inform formative and summative assessment practice and identify misconceptions.

5) Science Curriculum Impact:

Science at Applecroft results in purposeful, engaging, high-quality education, which provides children with the foundations and knowledge for understanding the world. Children have the understanding that Science has changed our lives and that it is vital to the world's future prosperity. Children at Applecroft overwhelmingly enjoy Science and this results in motivated learners with sound scientific understanding.

6) Pedagogical approaches (include approaches for disadvantaged children including SEND):

To ensure progress and continuity, both Key Stage 1 and Key Stage 2 use the National Curriculum, with "Working Scientifically" underpinning the children's work. The EYFS curriculum follows the CUSP Early Foundations scheme, which uses structured story time to introduce key language and themes. It then gives children the opportunities and experiences to further learn through play and guided activities. Both in Key Stage 1 and Key Stage 2, Science is taught as a discrete subject.

The emphasis in our teaching of Science is on first-hand experience and we encourage children increasingly to take control of their own learning. Children are regularly given the opportunity to undertake practical investigations and resources are accessible and readily available to the children. Pupils are encouraged to communicate their scientific findings to others using a range of methods. A variety of teaching and learning styles is used in our Science lessons. The lessons offer opportunities for children to learn in different ways. These include:

- *Whole class teaching*
- *Group, paired and independent work*
- *Shared Reading*
- *Oral rehearsal*
- *Dual coding on Knowledge Notes and Knowledge Organisers*
- *Use of ICT resources*
- *Tactile and visual approaches*
- *Fieldwork and Educational visits*
- *Investigative and problem-solving work*
- *Research and explorative work.*
- *Asking and answering scientific questions.*

- *Use of LSAs to support the work of individual children and targeted groups, as well as to monitor the progress of disadvantaged children*

We set high expectations and provide the opportunity for all children to succeed, taking account of pupils with SEND and EAL needs. We recognise that there are children of different scientific abilities in all classes and ensure that we provide suitable learning opportunities for all children by matching the task to a child's ability. We use our Learning Support Assistants (LSAs) to support individual children and targeted groups.

7) How do we plan and organise our lessons?

- The Foundation Stage spend approximately 1 hour 30 minutes a week covering Knowledge and Understanding of the World topics.
- Key Stage 1 continue to use the cumulative approach and spend approximately 1 hour 30 minutes a week on the Science curriculum.
- Key Stage 2 have adopted the modular approach to learning whereby approximately 2-3 lessons are taught per week. Therefore a whole module is taught across 2-3 weeks.

8) How do we make Science inclusive?

At Applecroft School we ensure that our Science curriculum is accessible for all pupils. We do this by:

- Recognising and celebrating small steps in progress
- Ensuring that tier two and tier three vocabulary is on display in each classroom and available in each child's science book. Children celebrate when they successfully use T2/3 language by highlighting it in pink.
- Making sure pupils have regular opportunities for real experiences, with hands on learning
- Ensuring that children have the opportunity to investigate both the familiar and unfamiliar
- Providing opportunities for children to explore the difference and development between concrete and abstract reasoning
- Ensuring that children are given opportunities to explore different types of enquires - Using and developing their "Working Scientifically" skills.
- Carefully considering grouping in classrooms to ensure the best outcomes
- Carefully targeted questioning to extend children's understanding
- Reducing cognitive load, using templates and scaffolds and faded examples with partially completed sentences/tables etc.
- Providing alternative methods of recording, voice recorders and chrome books.

9) Contribution of Science to teaching in other curriculum areas:

Computing is a major resource in Science for communicating information. It is used for handling information, modelling and recording data. Children are given experiences which include the use of graphics, databases, spreadsheets, sensors, simulations and the internet for research. ICT is also used in conjunction with the digital microscopes and digital cameras and digital data loggers.

Many scientific skills are transferable across the curriculum, including observational, comparative, evaluation and critical thinking skills.

10) What is our approach to equal opportunities (considering disadvantaged)? How do we ensure equal opportunities in Science?

At Applecroft School we are committed to providing all children with an equal entitlement to scientific activities and opportunities regardless of race, gender, culture or class. Quality First

teaching is embedded in all classrooms to ensure all children are included in the lesson, with explicit modelling and demonstration. In addition, clearly chunked instructions are supported with visuals and demonstrations, using the model, "I do, we do, you do". Teachers frequently check the understanding of the pupils and make adaptations as a result. The CUSP curriculum is built around retrieval practice and spaced retrieval practice, combined with evidence-led teaching and generative learning tasks that are appropriately scaffolded to all learners. Teachers make use of editable knowledge notes which allows for scaffolding of information.

11) How do children record their work?

Children record their Science work in a variety of ways at Applecroft School. From the spring term of Year 1, children each have their own Science books and most work is recorded there. In Autumn term, Year 1 use a class shared book. Adults can write a brief synopsis of discussions they have had with children (to show understanding even if writing skills are below expectations). Each unit of work begins with a Knowledge Organiser and a vocabulary unit and a record of these is kept in each child's book. Recording may include the planning of investigations, making and recording observations, drawing conclusions and evaluating practical work, as well as answering the key learning question in each lesson e.g., "How does light travel?"

12) How do we use feedback to support children's progress?

In Science, the 'Feedback Policy' is used to support children's progress. On completion of a piece of work, it is marked, according to the school policy, and relevant questions asked to provide 'next steps' where appropriate.

In KS2 children self-mark cumulative quizzes and any appropriate answers in class with purple pen and are given the opportunity to edit and improve.

13) How do we assess and report children's progress and attainment in Science?

We frequently check children's understanding in Science, we assess children's work by making formative judgements through observation and discussion. In addition, we report on End Points at the end of each unit of work (end points are the knowledge children will be expected to understand and be able to do by the end of each unit of work).

A child's progress in Science is indicated every year in an individual annual report. Comments are made on their scientific knowledge and application. Feedback on pupil application in Science is also provided at parent / carer consultations.

Using the Teacher assessment guidance; a child can be awarded EXS (Working at the expected standard for their age) or HNM (Has not met the expected standard for their age). As a school, we have decided to add an * if a child were to show indicators to be able to achieve GDS if an external assessment or moderation were to be carried out.

14) How do we set home learning?

Pre-reading using Curriculum Visions is set for home learning in Y5/6. There are no Science investigations or homework questions set. This is in-line with our homework policy.

15) How do we monitor Science across the school?

It is the responsibility of all teachers to monitor standards of children's work and the quality of teaching in Science. The Curriculum Leader will keep staff informed of any local and national developments in the subject and monitor the standards of science education, provision, attainment and progress across the school. They will share this information with the other members of the Senior Leadership Team and Board of Trustees and discuss further improvements, developments and

initiatives when necessary. They will provide support for all who teach Science, therefore improving the quality and continuity of Science teaching and learning throughout the school.

Science moderation will be held termly in staff meeting time, led by the Science Curriculum Leader.

16) How is Science resourced?

Physical resources are stored in boxes in the Science Resource Cupboard. Online resources are available via the CUSP website and Curriculum Visions subscription, which support the CUSP scheme through high quality non-fiction texts which can be accessed both at home and at school. Other online resources, such as Explorify and the STEM learning hub, can be used to further enrich the curriculum. Some year group appropriate resources are kept in the classrooms. All materials are relevant to the units of work. Any resources that need replacing, such as perishables, should be reported to the Curriculum Leader. In addition, the KS1 and KS2 libraries contain books relevant to the Science units.

17) How do we develop the CPD of staff?

Annually, the Science Curriculum Leader will take a staff meeting to share science expectations. Staff also meet with local group of schools who follow the CUSP curriculum to share best practise. Additionally, staff have access to the CUSP CPD online library.

The Curriculum Leader will feedback to staff any insights from courses or CPD undertaken.

18) How do we involve parents/carers in Science learning?

Parental input is highly valued and respected at Applecroft School. We share Science topics taught each term through our curriculum letters and encourage parents to discuss them regularly with their children. On our school website, there are links which parents can use to support their child's Science learning at home.

19) How are the Board of Trustees involved (include curriculum committee, faculty and lead trustees?)

Link trustees attend faculty meetings each term, the Science curriculum leader reports progress made against their action plan and share the next areas to develop.