Caslon Primary Community School, Beecher Bear Daycare and Nursery, Beech Tree SEMH Base and Tree Acre (Early Years Inclusion Hub)

Science Policy.

September 2025

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1. Subject Statement

Intent

The 2014 national curriculum 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 skills required to understand the uses and implications of science, today and for the future. We understand that it is important for lessons to have a skills-based focus, and that the knowledge can be taught through this.

At Caslon, we encourage children to be inquisitive, asking and answering their own questions through scientific enquiry. With a current focus on experiments, the planned experiments in our curriculum overviews support teachers and children to learn through interesting and fun enquiry-based ways.

The Science curriculum also fosters a healthy curiosity in children about the universe we live in. Our new focus is to ensure that the Working Scientifically skills are built-on and developed throughout children's time at the school so that they can apply their knowledge of science in everyday life and be curious about their surroundings. We believe science encompasses the acquisition of knowledge, concepts, skills and positive attitudes. Throughout the programmes of study, the children will acquire and develop the key knowledge that has been identified within each unit and across each year group, as well as the application of scientific skills.

Implementation

Teachers create a positive attitude to science learning within their classrooms and reinforce an expectation that all pupils can achieve their best. Across school the approach to teaching science is as follows:

- Science is planned in the curriculum overviews in topic blocks for teachers to use a guide when teaching.
- Science enquiry questions are planned into each topic to encourage children to use and develop their science enquiry skills and working scientifically skills are imbedded into the lessons.
- We build upon the knowledge and skill development of the previous years. As the children's knowledge and understanding increases.
- Children take part in events such as such as Science Week which allow all pupils to come off-timetable, to provide broader provision and the acquisition and application of knowledge and skills.
- Learning through Nature science links are planned into the curriculum overviews to support teacher to make the link with the outdoors.

Impact

With a higher focus on scientific enquiry, here at Caslon we hope that children will become more engaged and focussed in science lessons and get a lot more enjoyment from them. With the ongoing work with teachers to support the teaching and learning of science, more fun, engaging, and high-quality science lessons are being provided giving children the foundations and knowledge for understanding the world around them. The work in Learning Through Nature also ensures that children gather scientific skills and knowledge through varied and first-hand experiences of nature.

2. Teaching and learning

The development of science is ongoing here at Caslon and with regular monitoring, these aspects of teaching and learning are encouraged:

- Children asking their own questions and being given opportunities to use their scientific skills through carefully planned experiments.
- Questioning by teachers which enables all children to take part and answer questions after being given time to think, taking their learning forward.
- Planned plenary questions to ensure children are challenged to demonstrate their learning at the end of each topic.
- Adapting planning to suit the needs of all children, allowing all to access learning.
- Engaging lessons, often involving new and exciting resources to aid understanding.
- New vocabulary is introduced through direct teaching. This is developed through the years, in-keeping with the topics and is planned on our topic overviews. Vocabulary is displayed on working walls to aid learning.
- Working Scientifically skills are embedded into lessons and developed across year groups.
- Teachers demonstrate how to use new scientific equipment to aid scientific knowledge and understanding.

Taken from the National Curriculum, Science Programme of Study document:

<u>Scientific knowledge and conceptual understanding</u>

The programmes of study describe a sequence of knowledge and concepts. While it is important that pupils make progress, it is also vitally important that they develop secure understanding of each key block of knowledge and concepts in order to progress to the next stage. Pupils should be able to describe associated processes and key characteristics in common language, but they should also be familiar with, and use, technical terminology accurately and precisely. They should build up an extended specialist vocabulary. They should also apply their mathematical knowledge to their understanding of science, including collecting, presenting and analysing data. The social and economic implications of science are important but, generally, they are taught most appropriately within the wider school curriculum:

teachers will wish to use different contexts to maximise their pupils' engagement with and motivation to study science.

The nature, processes, and methods of science

'Working scientifically' specifies the understanding of the nature, processes, and methods of science for each year group. It should not be taught as a separate strand. The notes and guidance give examples of how 'working scientifically' might be embedded within the content of biology, chemistry and physics, focusing on the key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions. These types of scientific enquiry should include: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources. Pupils should seek answers to questions through collecting, analysing and presenting data.

Spoken language

The national curriculum for science reflects the importance of spoken language in pupils' development across the whole curriculum – cognitively, socially and linguistically. The quality and variety of language that pupils hear and speak are key factors in developing their scientific vocabulary and articulating scientific concepts clearly and precisely. They must be assisted in making their thinking clear, both to themselves and others, and teachers should ensure that pupils build secure foundations by using discussion to probe and remedy their misconceptions.

3. Assessment

Children's progress is monitored throughout lessons through observation and questioning and is used to inform teaching and learning. Children receive effective feedback through teacher assessment, both orally and through written feedback in line with the success criteria. Children are guided towards achievement of the main objective which is stated in their 'I Can' which is provided by and explained by the teacher and assessed against at the end of each lesson. Assessment for learning is continuous throughout the planning, teaching and learning cycle and teachers use National curriculum statements on the topic overviews to ensure correct teaching has taken place. Children are also formally assessed termly in KS1 and KS2 on our online tracker. 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 as set out in the National Curriculum.

In EYFS, we assess the children's 'Understanding the World' according to the Early Learning Goals through observation and questioning during practical activities and experiments.

4. Planning and Resources

When planning lessons, teachers at Caslon use and adapt Kapow Science. This scheme of work supports teachers with resources and lesson ideas. Teachers also follow a curriculum overview to ensuring all skills and National curriculum statements are taught. This overview also outlines ideas and questions for scientific enquiry for each science module.

We have sufficient science resources to aid and support the teaching of all units and topics taught. These are kept in a central store, labelled in topic boxes for each year group and easily accessible to all staff. EYFS have a range of resources kept in classes, for simple access for children during exploration and have access to the central store. The library also contains a good supply of science topic books to support children's research and learning. If anything is missing or needed, teachers are encouraged to let the science lead know so resources can be purchased and replenished.

5. Organisation

Science is taught weekly following the curriculum overview for each year group. Work is recorded in individual science books covering all National Curriculum statements for each topic, with at least one experiment covered every half term/topic. Working walls are used to display current topic titles, useful materials and vocabulary.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Daycare	The Human Body	Weather	Light	Plants	Fossils and Rocks	Materials
Nursery	Materials	Healthy Eating/ The Human Body	Investigation Skill	Senses	Animals	Seasons/Sun Safety
Reception	Light and Dark	Growth and Change	Floating and Sinking	Plants	Space	Animals Including Humans
Year 1	Comparing Animals	Introduction to plants	Seasonal Changes	Everyday Materials	Sensitive Bodies	Investigating science through stories
Year 2	Use of Everyday materials	Plant Growth	Life Cycles and Health	Habitats	Plant based materials	Micro-habitats
Year 3	Light and Shadow	Forces and Magnets	Movement and Nutrition	Rocks and Soils	Plant reproduction	Does hand span affect grip strength
Year 4	Classification and changing habitats	Electricity and Circuits	Digestion and Food	States of Matter	How does the flow of liquids compare?	Sound and Vibration
Year 5	Human Timeline	Properties and Changes	Mixtures and Separation	Earth and Space Does the size of an asteroid affect the diameter of an impact crater?	Life Cycles and Reproduction	Unbalanced Forces
Year 6	Circulation and Health	Classifying big and small	Circuits, batteries and switches	Are some sunglasses safer than others?	Light and reflection	Evolution and Inheritance Puberty

6. EYFS

The Early Years Foundation Stage deliver science content through the EYFS Outcomes. This involves guiding children to make sense of their physical world and their community through opportunities to explore, observe and find out about people, places, technology, and the environment. They are led through dialogue and questioning and are assessed according to the Early Learning Goals with evidence collected on Tapestry.

7. KS1 and KS2

Taken from Science programmes of study: key stages 1 and 2 document:

KS1

The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.

'Working scientifically' is described separately in the programme of study, but must always be taught through and clearly related to the teaching of substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.

Pupils should read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

Lower key stage 2 – years 3 and 4

The principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing

changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out. 'Working scientifically' is described separately at the beginning of the programme of study, but must always be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content. Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.

Upper key stage 2 – years 5 and 6

The principal focus of science teaching in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. At upper key stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings. 'Working and thinking scientifically' is described separately at the beginning of the programme of study, but must always be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content. Pupils should read, spell and pronounce scientific vocabulary correctly.

8. Equal Opportunities

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

9. Inclusion (eg EAL/SEND/PPG/Provision for HA)

In school, we aim to meet the needs of all our children by adapting science planning to suit the needs of our pupils and differentiating activities providing a variety of approaches to tasks appropriate to ability levels. This

involves providing opportunities for SEND children to complete their own projects, with support, to develop speech and language skills, as well as scientific skills and knowledge. This will enable children with learning and/or physical difficulties to take an active part in scientific learning and practical activities and investigations and to achieve the goals they have been set. Some children will require closer supervision and more adult support to allow them to progress whilst more able children will be extended through differentiated activities and challenges. These more challenging activities will ensure the more able are given opportunities to progress to a higher level of knowledge and understanding appropriate to their abilities.

Beech Tree SEMH Base Curriculum Delivery

Within Beech Tree SEMH Base, pupils will be taught a broad curriculum which will cover age and stage appropriate skills. Staff direction will be used to determine the approaches used to teach these skills and always aim to build on prior learning. Although it will be the intention to cover as much of the National Curriculum content as possible, meeting the pupils' SEMH needs will take priority.

10. Role of the Subject Leader

It is the responsibility of the subject leader to monitor all aspects of a subject. The subject lead monitors the standards of children's work, supports colleagues in their teaching, monitors assessment across the school, are informed about current developments in the subject, and provide a strategic lead and direction for science in the school ensuring consistency across year groups. The subject leader monitors resources, science topics and extra-curricular activities involving science, such as Science Week. The subject leader reviews samples of children's work, looks at planning and goes on training to support their subject.