



How Science is taught at Swindon Village Primary School.



Intent, Implementation and Impact

Science at Swindon Village Primary School

Curriculum Intent

At Swindon Village, we have chosen to follow the Kapow Science scheme. Kapow Primary's Science scheme of work aims to inspire pupils to become curious, inquisitive and analytical thinkers with a broad understanding of the natural world – in other words, to think like scientists. The intention is for pupils to develop the confidence to ask questions, make observations, carry out investigations, record data in a variety of ways and analyse and present their findings.

The scheme aims to build an awareness of how science influences everyday life and drives progress in society. The hope is to encourage pupils to become reflective, responsible individuals who use scientific knowledge and skills to make informed decisions and contribute positively to the world around them.

The scheme supports teachers in developing their subject knowledge and skills, enabling the delivery of engaging, well-informed lessons with confidence. The curriculum is designed to be both accessible and ambitious, ensuring all learners' full participation and potential achievement.

Key areas

The National curriculum for Science sets out the importance of developing scientific knowledge and conceptual understanding across the disciplines of biology, chemistry and physics. It also emphasises the role of scientific enquiry in helping pupils understand the nature and methods of science.

To support this, Kapow Primary's Science curriculum is organised into the following seven key areas:

- Plants
- Animals, including humans
- Living things and their habitats
- Materials
- Energy
- Forces, Earth and space
- Making connections

These areas are revisited across year groups to ensure that pupils build a secure and connected understanding of key scientific concepts while developing their ability to think and work scientifically.

The three strands

Based on the National curriculum, the following three strands have been identified, which run throughout the Science curriculum:

1. Scientific knowledge and understanding.
2. Working scientifically.
3. Science in action.

The Science curriculum has been planned with these strands running through each unit, ensuring balanced coverage of the different areas of Science and both substantive and disciplinary knowledge.

Scientific knowledge and understanding

Developing scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.

Working scientifically

Developing an understanding of the nature, processes and methods of science through different types of enquiry that help pupils answer questions about the world around them.

Science in action

Equipping pupils with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Spiral curriculum

Kapow Primary's Science scheme of work has been designed as a spiral curriculum with the following key principles in mind:

Cyclical – pupils return to the key knowledge and skills again and again during their time in primary school.

Increasing depth – each time a skill is revisited, it is covered with greater complexity.

Prior knowledge – pupils build upon previous foundations rather than starting again.

Broadening horizons

The process of broadening horizons involves starting with familiar contexts, such as the pupils' local area, and concrete experiences with materials, animals and plants, before learning to explain phenomena using scientific language, models, and evidence.

Kapow Primary's Science scheme supports pupils' development from direct observation and exploration towards a deeper understanding of abstract scientific concepts and the nature of scientific enquiry.

Inclusion and diversity

Kapow Primary's Science scheme has been designed to represent a wide range of cultures, communities and perspectives.

- Where appropriate, the contributions of scientists from diverse backgrounds and the historical context of scientific discoveries are explored.
- The scheme's visual and textual content is inclusive and representative of diverse people and fields of study, challenging stereotypes and outdated ideologies.
- Within sensitive units, are included questions to support pupils' lived experiences and backgrounds.

- Resources and case studies are carefully selected to encourage children to think about their role in society and to respect the many ways in which Science has shaped and continues to shape people's lives.

Implementation

This section outlines how the Science curriculum is taught in the classroom – including teaching strategies, learning activities and the use of resources. It also includes details on how the curriculum can be adapted to suit Swindon Village Primary School

Timetabling

Kapow Primary's Science scheme is designed to be taught for one hour and a half per week. This ensures that National curriculum requirements are met.

CPD

Kapow Primary supports teachers in delivering the Science curriculum effectively through clear and informative CPD videos.

The videos are designed to help teachers feel confident in their role by providing guidance on key concepts, teaching strategies and best practices.

SEND

The Kapow Primary Science scheme of work is designed to be fully adaptable for pupils with SEND. Every lesson includes an adaptive teaching section, providing clear guidance on how activities can be modified to meet the needs of all learners.

Children learn in various ways. As such, Kapow Primary Science lessons include a range of strategies to support and challenge every pupil, such as:

Scaffolding – activities are designed with flexibility in mind, allowing for additional support or challenge where needed.

Multi-sensory approaches – lessons incorporate different elements to engage all learners.

Clear instructions and structured tasks – ensuring clarity and reducing cognitive load for pupils who benefit from additional support.

Opportunities for collaborative and independent learning – allowing pupils to work at their own pace while building confidence and independence.

By embedding adaptive teaching throughout, the scheme ensures that all pupils, regardless of their starting points, can access and succeed in their learning.

In addition, the step-by-step curriculum design supports pupils with SEND, avoiding sudden jumps in complexity at transition points and allowing for steady, manageable progression.

Assessment through the lesson

Formative assessment is embedded throughout Kapow Primary Science lessons to enable teachers to gauge pupils' understanding in real-time and adapt their teaching accordingly.

- Questioning – lesson plans include targeted and open-ended questions to check understanding, promote critical thinking and address misconceptions.
- Observation – teachers are supported to observe pupils during tasks, noting how they approach activities, collaborate and apply scientific skills.
- Discussion and peer interaction – pair and group discussions are built into lessons, providing opportunities for pupils to articulate their thinking and for teachers to assess understanding through dialogue.
- Lesson pauses – plans include strategic pause points for checking comprehension, summarising learning and addressing any common errors before progressing.
- Retrieval practice – recap activities such as short recall tasks and oral explanations are embedded to reinforce prior knowledge and assess retention.
- Use of success criteria – success criteria are shared within lessons, allowing pupils to self-assess or peer-assess their work and reflect on their progress.
- Short reflections in the Wrapping up – lessons conclude with brief written or verbal reflections, enabling pupils to consolidate their learning and teachers to gauge their understanding.

Impact

Assessment

Formative

Kapow Primary Science lessons include ongoing assessment opportunities, such as questioning, retrieval practice and interactive activities.

These enable teachers to assess understanding in real time and adapt their teaching accordingly.

Summative

Each unit provides an Assessment quiz and Knowledge catcher, which allow teachers to measure pupils' understanding at key points.

These tools help gauge how well pupils have retained key knowledge and skills over time.

Evidencing progress

Written outcomes

Pupils demonstrate their learning and provide tangible evidence of progress through a variety of activities, including structured written work, annotated diagrams and creative responses.

Pupil voice

Lessons encourage discussion, reflection and verbal explanations. This allows teachers to capture pupils' understanding through questioning, class discussions and recorded responses, supporting a broader view of progress beyond written work.