Science

Curriculum Intent

What is our Intent? What are we trying to achieve with our Science curriculum?

A high-quality Science education provides a foundation for understanding the world, the opportunity for pupils to pose their own questions, make scientific links and a have sense of enjoyment and curiosity about the subject. At Apley, we believe that Science is an interconnected subject where pupils can make links and connections across different scientific topics and through other subjects like Technology, Maths and the Arts.

The expectation is that the majority of pupils will move through each year group following the programmes of study that are age-related, at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Our Science curriculum focuses on giving the children opportunities to overlearn throughout the key stages and ensures that they develop their scientific enquiry skills and deepen their scientific knowledge. Within our planning, we provide a mastery curriculum that allows all children opportunities to apply their scientific enquiry skills and develop their scientific knowledge. Pupils who grasp concepts rapidly should be challenged by being offered rich and sophisticated scenarios or investigations before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding through additional support and practice.

Curriculum Implementation

How do we deliver and assess our curriculum? How do we accomplish this?

At Apley, we aim to enthuse children in order to develop their thirst for scientific knowledge. We do this by teaching Science through real-life contexts and providing frequent opportunities to investigate across the curriculum. Science is broken down into substantive and disciplinary knowledge. Substantive knowledge is referred to as scientific knowledge and conceptual understanding and disciplinary knowledge is outlined through our working scientifically enquiry skills.

Science is taught over a whole morning, once a week, where the children experience a broad and balanced scientific curriculum including topics like animals including humans, materials and plants. During our lessons, all children will be able to develop their scientific enquiry skills, as within these topics, children are encouraged to make predictions, take accurate measurements and evaluate their findings, along with many other skills. Scientific vocabulary is crucial to develop children's understanding, therefore we ensure the children are exposed to specific language for each topic

and allow it to become more challenging throughout the Key Stages. We assess children's vocabulary understanding at the start and end of topic by completing a RAG rated vocabulary quiz. Alongside this, we assess the children's understanding of the topic by completing a quiz, which identifies what the children already know, and what they have remembered. Within EYFS, children are taught Science by exploring the natural world around them, describing what they see and hear and many other objectives within their Understanding the World topic.

Alongside our weekly Science lessons, we hold an annual STEM week, where children are given the opportunities to generate their own questions to investigate. During this week, we have visitors from local STEM related businesses, who spend their time with the children and provide them with a range of STEM experiences. This week allows children to work off timetable, but we ensure high levels of writing and links to maths are evident in their work. To begin the week, the children are invited to dress up as a STEM related career and often we have children dressing up as something they aspire to be, like palaeontologists, astronauts or engineers. In addition to our STEM week, children experience educational visits linked to their Science topics, which enhance the subject. We regularly visit our new forest school area within our school grounds or visit our neighbouring Apley Woods and also have visitors into school to conduct Science related workshops.

We aim for each child to be confident in each yearly objective and develop their ability to use this knowledge to develop a greater depth understanding. We use a range of resources throughout the school to ensure a curriculum that is specific to each child's learning needs. Each term, a homework project is set for classes and this, on occasion, is linked to the topic the children have been learning in Science.

Curriculum Impact

What is the Impact of our curriculum? What difference is our curriculum making to our pupils?

Throughout each lesson, formative assessment takes place and feedback is given to the children through written or verbal feedback, close the gap and extension tasks. Children will be assessed at the start of the topic, on their scientific knowledge linked to that topic and then teacher's use this assessment to influence their planning and ensure they are providing a Scientific curriculum that will allow each child to progress. At the end of each term during assessment week, children will complete a summative 'HeadStart' test which enables teachers to identify what the children have learned and remembered from year group specific topics throughout each year and previous years, whilst highlighting gaps and misconceptions that teachers need to address. Scientific enquiry skills are assessed throughout the topics and are marked against the objectives in the

back of each individual Science book. The teaching of Science is also monitored on a termly basis through book scrutinies, learning walks or pupil voice activities. At the end of each unit, children are assessed based on the objectives that they have covered. Gaps and misconceptions can then be addressed in follow up lessons and future units when children revisit units of work. In EYFS, observations and assessments are completed regularly throughout the week.