

Science Curriculum Intent, Implementation and Impact Statement

Intent

Our Science curriculum:

- Enhances pupil's scientific knowledge and understanding of key concepts within the fields of biology, chemistry and physics
- Develops a solid understanding of the natural phenomena and scientific processes by consistently referring to examples in familiar settings and the wider world
- Values curiosity and allows pupils to ask questions, recognising that answers can be found in different ways and through different styles of enquiry
- Builds resilience and perseverance when endeavouring to pursue outcomes and teaches pupils to learn from errors in order to improve
- Equips all learners with the ability to understand the uses and implications of science today in their own lives and for the future development of their community

Implementation

- In the Early Years Foundation Stage (EYFS), children receive a science circle time session once a week and 1:1 interaction around an object or science stimulus which is recorded as an observation. They are also surrounded by opportunities to engage with scientific activities that they can access during free-flow times. An investigation table is always available for the children to explore and is changed weekly
- We use the EYFS Statutory Framework outcomes (Development Matters statements) as the basis for the teaching of science across the EYFS. The children are then assessed against the early learning goals at the end of Reception
- We use the National Curriculum Programme of study as the basis for the teaching of science across the KS1 and KS2
- In KS1 and KS2, pupils have a weekly dedicated Science lesson
- At Edward Wilson Primary School, we understand the interconnected nature of 'scientific knowledge and concepts' and 'working scientifically'. Therefore, each lesson taught encompasses both elements and is delivered through one of the five areas of enquiry
- Pupils designed characters to represent each of the five styles of scientific enquiry. The pupils' characters were given to an artist who produced cartoon characters that the pupils now use regularly in their lessons (please see separate 'enquiry styles' information)

- Each lesson begins with a revision activity that ensures the learning from the previous lesson/term has been retained and gives the teacher the opportunity to remedy any misconceptions
- The main part of the lesson begins with a question that the pupils are going to answer by working within one style of enquiry
- A range of resources are available to assist the pupils' conceptual understanding and allows for practical experimentation
- Pictures, diagrams, concept cartoons and other secondary sources such as videos and websites are used to support pupils' understanding
- Teachers regularly give pupils the opportunity to apply their mathematical knowledge to their understanding of science, including collecting, presenting and analysing data
- Pupils are encouraged to become 'excellent explainers' in order to develop a wide scientific vocabulary that will allow them to reason and articulate scientific concepts clearly and precisely. The skill of explaining is modelled to them constantly by teachers and the vocabulary for each unit is displayed and consistently referred to
- The Science curriculum is further enhanced with additional activities that follow the interests of the class and adapt to include the opportunities available within our local community, for example our school is fortunate enough to have access to Bloomfield Gardens (a school garden a short walk away). This garden allows the pupils considerable opportunities to experience the interactivity of scientific phenomena in their local environment, particularly within the discipline of biology
- We have a long-standing link with a local secondary school which provides lab session opportunities taught by subject specialists. This allows pupils access to a wider range of scientific equipment. This link works to promote the prominence of science within our community
- Annually, the whole school participates in a Science week to celebrate the subject and improve knowledge around a chosen theme; activities sometimes include outside speakers and workshops
- At the beginning of each new study unit, pupils complete a prior knowledge assessment which allows teachers to identify gaps in knowledge and establish appropriate pitch
- Assessment for Learning (AfL) strategies are used throughout the lessons to check pupils' understanding and correct misconceptions
- At the end of each unit, pupils complete an assessment activity which allow teachers to assess progress
- Feedback is given on pupils' learning in line with our marking policy
- At the end of each term, every class teacher assesses the learning that has taken place
- It is the expectation and our aim, that all pupils meet the statutory requirements of the National Curriculum. Therefore, when gaps in knowledge are apparent, the teachers use starter and recap activities in subsequent lessons to ensure these are addressed
- Summative assessments are reported to parents in the end of year report
- Whole staff INSET and staff meetings are held regularly. These focus on current scientific teaching and learning to ensure teachers are fully supported and have confidence in the skills and facts they are required to teach

Impact

- Regular book monitoring is undertaken to ensure quality, progression and consistency of teaching and learning across the school. Evidence from book monitoring show that all pupils are developing scientific knowledge and skills through the use of tailored activities that engage, motivate and challenge them to deepen their scientific knowledge and understanding
- Evidence from learning walks, pupil interviews, observations and pupil interactions in class lessons demonstrate that pupils have a keen interest in science and join in enthusiastically during lessons
- Teachers' feedback supports pupils to strive to be the best scientists they can be
- Challenge for pupils enables the majority of them to achieve the expected standard with many pupils exploring aspects of greater depth