

# THE FLITCH GREEN

ACADEMY

*Learning for Life*

## **Science Subject Statement**

Science Subject Lead: Laura McCann

*'Science is the language of curiosity'*

*Professor Brian Cox*

### **Intent:**

We want our children to be curious scientists, fascinated about and questioning the world around them. Our science curriculum encourages the children to ask questions and want to find out more about natural phenomena through tasks such as research, performing tests, and making observations. They will learn key foundational knowledge and concepts and how to 'work scientifically' through a range of science enquiries that will enable them to discover, experiment and explore inside and outside the classroom. Our children will be inspired by science and encouraged to draw on their knowledge and skills to explain what is happening around them, predict how things will behave, and analyse causes. It is this foundation of knowledge that will also enable them to know how best to conduct themselves when they need to consider issues that might affect their lives and the lives of others: 'knowledge is power'. Science has changed our lives and will continue to have an impact on our future; we want our children to feel equipped with the scientific knowledge and skills to be able to take their science learning beyond the classroom and continue to engage with and understand the world around them as lifelong learners.

### **Implementation:**

At the Flitch Green Academy we use our own bespoke planning based on the National Curriculum for science, which covers the specific disciplines of biology, chemistry and physics. Our curriculum is designed to cover the teaching of key knowledge and concepts as well as the skills to 'work scientifically'. 'Working scientifically' specifies the understanding of the nature, processes and methods of science through different types of science enquiries and is embedded within the science content. These types of scientific enquiry include: observing over time; pattern seeking; identifying, classifying and grouping' comparative and fair testing (controlled investigations); and researching using secondary sources. Teachers will make cross-curricular links and teach science within meaningful contexts where possible, however, some science teaching is taught discretely.

At the start of each science unit, teachers question children through a range of activities to draw out prior knowledge and address any misconceptions about the content that is to be taught. They may look at science taught in previous years and will certainly be revisiting vocabulary from previous year groups to ascertain that they have retained what they have learnt in previous years. Lessons are carefully sequenced so that they build on the learning from previous lessons and any misconceptions are continually challenged and addressed throughout. Teachers ensure that pupils develop a secure understanding of the foundational knowledge and key concepts before more complex material is taught. Teachers will continue to revisit new language being taught and, where appropriate will plan a range of activities to ensure that children's use of new vocabulary is secure.

They use a range of high quality resources to engage children and support their learning of new concepts throughout.

Our science curriculum ensures that the needs of all pupils are met. Where appropriate, activities are scaffolded to ensure all learners can succeed and make progress in science lessons. A number of strategies are used such as visual prompts, pre-teaching and recording in more creative ways e.g. using an iPad to voice record. Children who are secure in their knowledge are given opportunities to work more independently by broadening their learning within a unit and taking more ownership through a range of open-ended tasks that require higher order thinking and applying learning to other contexts. This may involve them designing their own investigations to test a hypothesis of their own choosing or researching an element of their learning that they have found particularly interesting.

All science lessons include an element of 'The Bright Ideas Time'. This is introduced explicitly to children as a time for discussing their ideas in science and taking risks in their thinking. The Bright Ideas Time is often used as a whole class activity at the start or end of lessons and is linked to the science topic to be addressed in the main lesson. The discussion generated from the Bright Ideas Time gives our children the opportunity to be creative in their thinking, draw on their knowledge and understanding of different areas of the science curriculum and justify their answers.

Practical work and investigations are a key part of science teaching at the Flitch Green Academy. Our children learn from first hand practical experience and are given opportunities to answer questions within real life and relevant contexts such as 'Which of my many shoes are the best for me to wear on an icy day?' or 'Santa's trousers get ripped as he goes up and down the chimneys. Can we find a better material for them?' As children become more confident at conducting investigations, they are encouraged to suggest and perform their own investigations.

To encourage learning outside the classroom, our Science Ambassadors run a science club at lunchtime. They deliver these sessions to all pupils from EYFS to year 6. These lunchtime-run sessions allow pupils to explore scientific concepts through a range of fun activities that engage pupils and develop their thinking and talking about science.

As part of our science curriculum, children will learn about some key scientists from the past as well as contemporary scientists and understand the impact their work has had on our understanding of the key concepts in biology, chemistry and physics. They will also have opportunities throughout their time at primary school to meet and learn from people who work within the science industry. They will have a chance to learn about what they do and the qualities that they need to be a 'real life' scientist.

### **Impact:**

#### **How will teachers know that pupils have learnt the planned curriculum?**

Teachers will plan assessment opportunities within lessons through questioning, specifically designed tasks (e.g. 'What if' questions, the odd one out, concept cartoons) or quizzes to check pupil understanding and address misconceptions. Teachers will use the responses to these tasks as well as examples of work (in books or on iPads) to assess against the milestones based on the National Curriculum objectives. They will make judgements for a child at working towards, expected or greater depth.

#### **How will leaders assure themselves that the planned curriculum is helping pupils to learn more?**

Through work in books, other examples of pupils work (work on iPads such as iMovie and Book Creator) and end of unit assessments, the science lead will be able to see evidence of progress and attainment across science units in each class. The science lead will meet with small groups of pupils with examples of their work and use questioning to check pupils have learnt more and remember more. They will ask questions specific to the science they have been learning as well as checking what they can remember from previous years. Any feedback from these meetings with pupils will be given to teachers to inform any future planning.

