Science

Enjoy, Believe, Achieve




Intent

Through our Science curriculum at Ferncumbe, we aim to develop a culture of awe and wonder amongst our pupils, where they not only develop the skills to question and then investigate the phenomena they see in the world around them but do so with curiosity and excitement.

Working Scientifically skills are embedded within the 5 enquiry types, showing progression throughout the years, from questioning, planning, collecting data and measuring, to presenting results, making conclusions and evaluating the success of their investigations. As the world around us becomes more dependent upon scientific technologies to solve the global issues we face, our pupils will leave Ferncumbe with the wealth of science capital needed to progress successfully in their science education. We will also strive to deepen their respect for the natural world and increase their care and appreciation of it.

Implementation

At The Ferncumbe School, whilst ensuring that we are covering the curriculum and the essential knowledge we want our pupils to leave with, our aim is also to allow our teachers the freedom to be as creative as they can whilst delivering it. Currently, primary science is enriched by any number of incredible resources and we take time to explore these and use them to increase the Science Capital of all our pupils. We implement our curriculum in the following ways...

Our science topics are fixed and follow the same order each year, so topic statements and National Curriculum learning goals are year-group specific and progression of substantive knowledge from year group to year group is clearly visible.

Teachers ensure that each of the 5 Scientific Enquiry types are explored at least once a year. Within these, teachers allow opportunity for the disciplinary skills to be embedded. We ensure that these are not taught separately to substantive knowledge, but as part of it.

Teachers choose to extend their science topics across the curriculum and as creative homeworks should they choose to.

Teachers use the PLAN primary science assessment resources as a starting point to their planning. This helps them to be confident of the scientific vocabulary for each topic, what the pupils should already know from previous years, where the topic leads to further up the school and importantly, the common misconceptions children have for each topic.

From this point, teachers have a 'working' document for each topic. To this, they add lesson ideas, hooks, and how they have interwoven Working Scientifically skills, enquiry types and substantive content.

Knowledge organisers are also used with the children, as an introduction to the topic and a reference guide for future lessons and vocabulary, along with a famous scientist (either historical or modern day) to learn about.

Each topic begins with a 'Confidence Wall' - a place in the classroom where all the key vocabulary is displayed, initially on the 'unconfident' side. Each lesson, the wall is revisited, with words moved over to 'Confident' side when we feel we can define them and use them in context. This repetition is beneficial and acts as 'memorising by stealth'!

Big Books are used to record activities, photos, pupil comments and examples of pupils' rough work. They act as a class diary, especially for lessons where no, or very little written work is carried out, rather the focus was on science talk, skills and practical work (as with a PE lesson).

Stretching our more able pupils is embedded into our teaching. Teachers and their knowledge are the most vital resources we have. The National Curriculum states that there is no Greater Depth or Exceeding/Beyond targets for pupils. Challenging pupils happens within our Quality First Teaching, using resources such as pupil talk, teacher questioning, open ended challenges (such as odd-one-out/What if?) and most importantly, through the Working Scientifically strands. Teachers help pupils to deepen their thinking by bringing 'real world' problems/ideas into lessons, so the pupils can link their learning to the scientific world.

HeadStart assessment papers are used as an end of topic test, to allow the children to show their knowledge and the teachers to see what they have retained over the period of the topic. These are adjusted according to the needs of the pupils, in terms of quantity and level of support. Pupils must not be hindered in primary science by their ability to read or write.

Science Week is a high profile event every two years. A whole School theme is presented, and each class carries out investigations that week relating to it. Pupils also have half a term's homework to (with guidance) create a science project of their own. During the week, they bring these in, present them to their class and also visit other classes to see their projects too. There are visiting speakers, assemblies and a prize giving at the end of the week for the winners in each form. These pupils then take part in a science day out at a local secondary school.

We are a member of the Ogden Trust (Leamington grp): an organisation that aims to increase the uptake of physics post-16 by supporting physics education and engagement for all young people. Science Leads from around 8 other local schools, meet to receive training, moderation, organise competitions and events and a considerable amount of resources that we use across our Electricity, Forces, Sound and Light topics. Training is disseminated in Ferncumbe Science staff meetings by those who attended.

Pupils' Science Capital is increased by opportunities throughout the year, in Forest Schools, gardening club (where our teacher reinforces the 'Plants' thread of the curriculum), the RSPB Birdwatch, our hugely successful careers fair and through assemblies and talks from outside speakers.