Science at Thornhill Primary

Intent, Implementation, Impact

Science Curriculum Rationale

At Thornhill Primary, we have a love of science and want to promote children's curiosity for it as best we can, making sure that the children have range of opportunities to develop their science knowledge and to link these into real life experiences. These should fuel children's ambitions helping children to know that there is world of opportunity in front of them, especially in aspiring towards science careers moving into the future.

We are developing our new site to incorporate many outdoor learning opportunities linked to science, creating wildlife areas to attract a more diverse range of animals and insects; allotments on which we will grow vegetables to use in our kitchen and which will teach the children about self-sufficiency; and chicken coops which will help to bring the teaching of lifecycles to life. We hope to develop these areas with support of our Eco-Warriors team and to develop links with our local community.

Curriculum Intent

While our curriculum covers the minimum statutory requirements of the Science National Curriculum, we also want our children to be prepared for opportunities, responsibilities and experiences later in their lives.

The science curriculum promotes curiosity and a love and thirst for learning. It is ambitious and empowers our children to become independent and resilient – like all curriculum areas.

We want to equip our children with not only the minimum statutory requirements of the science National Curriculum but to prepare them for the opportunities, responsibilities and experiences of later life. **For example,** *with our new site in development, we will look for pupils to cultivate and harvest what they grow every year. The crops may be used to provide food for our lunchtime menu to promote the idea of self-sufficiency in the school. The children may also prepare their harvest and invite parents into school to enjoy a delicious afternoon tea.*

We want our children to use the vibrancy of our area to learn from other cultures, respect diversity, co-operate with one another and appreciate what they have. We achieve this by providing a strong SMSC curriculum, with British Values and our core values placed at the heart of everything we do. This often feeds into the science curriculum. **For example,** *in the autumn term the whole-school celebrated British Science Week and used this as an opportunity to explore inspirational scientists like Marie Curie, Jane Goodall and Howard Lewis Latimer.*

We aim to enrich their time in our school with memorable, unforgettable experiences and provide opportunities which are normally out of reach – this piques their interests and passions. **For example,** *by providing a science club for the children to participate in after school; by looking to collaborate with businesses, such as Dyson, to build on the children's science capital; and to encourage school visits and trip where possible.*

Curriculum Implementation

In September 2021, the school embarked on completing the PSQM (Primary Science Quality Mark). This included an initial audit which looked at all elements of teaching and learning in science and identified areas for development. As part of ensuring that key objectives, knowledge and skills are being covered, and that there is progression of topics covered across year groups, knowledge matrices and milestones document have been implemented to ensure coverage and so that previous learning can be built upon.

As a school, we have a set of shared science principles which are on display in every classroom. These have been co-created by pupils and staff. These statements are to underpin the lessons being taught and show what makes science great at Thornhill:

- When children's interest is sparked through practical investigations
- When children are being curious and asking questions
- When everyone is included and we work together
- When everyone is participating and having fun
- When there are exciting new experiments
- When we come up with our own questions to investigations
- When pupils are eager to learn about new things
- When it's linked in with real life or children's interests

Teachers and staff are empowered to prepare their own science curriculum, under the guidance of the subject lead and progression documents. Long term maps are used to plot out lesson ideas and, while the majority of science is taught discretely, teachers try to make links to each term's history topics where possible. Additionally, teachers try to link lessons to real life experiences to make them more meaningful for pupils.

Our short-term plans are produced individually by teachers. We use these to set out the learning objectives for each lesson, identifying engaging activities and resources which will be used to achieve them.

We encourage staff to teach a weekly science lesson and to ensure sufficient time is allocated to science, frequently revisiting scientific subject matter. We do this with the aid of vocabulary boxes and banks, and through knowledge cards which can be passed on to the next year group teacher to recap and review. We believe that by practising and interleaving learning this way, we improve the potential for our children to retain what they have been taught, to alter their long-term memory and thus improve the rates of progress they make.