

Science Rationale



April 2020

As a rights Respecting School we believe that all children have the right to an education, Article 28

The Pines Special School
Science Rationale

The purpose of this rationale is to set out a whole school approach to the teaching of Science. It provides guidance for all staff, new and experienced and it will underpin the continued development of the school as a learning community.

Definition of Science

What Is Science?

Why do bears have fur coats? Because they would look silly wearing jackets!

This is just a silly joke, but think about bears for a minute. Why do they have fur coats? Why do they hibernate in the winter? People answer questions like these ones about how the world works using Science.

'The process of Science starts with a question, but Science is more than just being curious about how things happen; it's a system of observations and experiments used to ask and answer questions about the natural world. Science is a way for us to gain knowledge about how and why things happen the way they do by using our senses to observe the world and experiments to investigate how it works.' (What is Science? - Lesson for Kids Dr Frazer January 2020)

Aims:

- To raise standards in Science including a focus on scientific enquiry and scientific language.
- To have a consistent approach to Science across the school.
- For all children to learn through practical and engaging lessons.
- To have fun whilst learning.
- To develop scientific knowledge and conceptual understanding
- To develop understanding of the nature, processes and methods of Science
- To ensure pupils are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.
- To ensure the teaching of Science is effectively planned, and responsive to learners' needs, through:
 - Planning and practicing outstanding teaching of Science in conjunction with Pre National Curriculum objectives and the National Curriculum objectives dependant on the learner's stage of development.
 - Planning clearly differentiated learning activities to enable all children to access the curriculum at their own level.
 - Employing effective assessment procedures and using these to plan progression for all learners.

Teaching and Learning

Teaching and learning Science is one of our main priorities at The Pines. Science is all around us, therefore it is an essential part of the curriculum. Children are encouraged to make sense of their community and physical world through given opportunities to explore, observe, find out about people, the environment, technology and places. Where possible lessons should be practical, fun and engaging as well as visual and interactive. Opportunities for cross curricular links are an essential part of learning, be it through Forest Schools, Mathematics, English and Creative Curriculum. At the Pines, we consider STEM and STEAM as a

significant part of science (as well as scientific enquiry and scientific language), it is an easy way to crosslink the other curricular areas.

At The Pines we follow the National Curriculum, when the children leave Early Years they are base lined using Solar. Science is taught weekly and there is an expectation that the children have a minimum of one hours teaching of Science. When the children move into Keys Stage 3 they then follow the secondary National Curriculum. We take part in British Science Week on a yearly basic, this gives the teachers and the children the opportunity to collaborate with wider communities.

Working scientifically and scientific enquiry

'Working scientifically' is described separately at the beginning of the programme of study, but must always be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.

Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word-reading and spelling knowledge. (National Curriculum 2015)

Resources

There is an abundance of resources in school to help in the teaching of Science. These are kept both in the classroom and in the Science cupboard in the KS3 area of the school. There is also a range of published materials including photocopiable sheets, big books and posters. We also have access to Twinkl, Education City, Discovery Espresso, Outstanding Science amongst other websites. Living Eggs are ordered every few years to encourage the children to care for living creatures as well as teaching them about life cycles. Access to Forest Schools, the school allotment and attention autism materials.

Parent/Carers & the Community

Class teachers engage with parents through dojo's and at parent's evenings. Parents are given regular updates on the progress their child is making in Science. Parents are given access to their child's Science books and support in helping their child is given where necessary. During British Science week parents are invited into school to share in their child's learning

Monitoring and assessment

The monitoring of Science within the school is carried out by the Science subject leader (Rachel Farmiloe). The Science subject leader examines samples of work to monitor progress of the children through book analysis and external moderation. Learning walks/lesson observations also take place yearly. She is also responsible for supporting colleagues in the teaching of the Science curriculum as well as ensuring there are sufficient resources to enable all children equal access to science.

Class teachers are required to have PNC/National Curriculum sheets in the front of every Science book. Every piece of work should have a learning intention sheet which needs to be dated and signed by the member of staff working with the child. Self-assessment should be completed by the child where applicable. Science is to be updated termly on Solar using PNC/National Curriculum sheets. Progress is monitored termly and reported to SLT during yearly meetings.

Conclusion

This rationale sets out the intentions of The Pines School with regard to the teaching of Science. Opportunities for discussion of any issue relating to this rationale will be made available and any concerns should be raised, in the first instance, with the post-holder.