Teaching Science at Doubletrees School.

Context of school

Doubletrees school is a 2-19 provision. We have three learning pathways within school. The pre-formal learning pathway, known as Learning to Learn, where learners follow the Engagement Model. The Bridging to Learn cohort is a semi-formal learning pathway, where learners access the pre-requisites to learning and the early stages of the National Curriculum. The third pathway is our Ready to Learn pathway, where learners access the National curriculum through formal learning opportunities. We have an EYFS and Post 16 provision.

Our learners are complex and diverse and we take a personalised learning approach to our curriculum, making adaptations to ensure that learning is accessible to all.

Intent

The Primary Science Teaching Trust states that science literacy influences children's lives: for example managing their health and understanding issues such as climate change. 'Science […] is of vital importance to individuals and the nation's wellbeing.

Science teaching is fundamental to teaching our learners how to think, learn, solve problems and make informed decisions. Our aim is to inspire our learners to learn and engage in the work around them, whilst gaining skills that enable them to complete functional tasks within everyday life. These skills are fundamental to our learners developing increasing independence to support them in life after their time in school.

Achieve – We aim to support learners to achieve their potential by developing curiosity about the world around them, supporting aspirations and expanding their horizons.Through hands-on experiments, inquiry-based learning, and collaboration with their peers, students can develop a deep understanding of scientific concepts and build their confidence in the subject area.

Belong – We develop a sense of safety through the knowledge and skills We develop a sense of ourselves as humans and how we are part of a wider network of life

Communicate – developing questioning, reasoning and explanation skills. To learn about the world around us and how this works. We encourage open and honest communication and strive to create a welcoming and inclusive environment where everyone feels heard and valued, and where students can communicate their ideas and findings with confidence.

Develop – We aim to develop their knowledge and understanding of the world around them, and themselves so they know how to keep safe and healthy, how to look after others and how to seek help if they need it. By promoting a love of learning and exposing students to a diverse range of experiences, we help them to develop critical thinking skills, problem-solving abilities, and a lifelong passion for science.

Enjoy – We want our learners to have a broad, rich, inclusive and lifelong learning experience. By prioritizing student well-being and engagement, we foster a positive school culture that promotes academic success, social and emotional development, and overall happiness in the subject area.

Implementation

In the EYFS phase, Science is taught through one of the 4 Specific areas, namely Understanding the World. This is taught incidentally through an embedded 'Continuous Play' provision. The learners are supported to interpret and develop their environment, make choices for themselves and grow in confidence and understanding of personal and social skills and interactions. Every child is given the opportunity to succeed and develop at their own individual pace, ready for the curriculum pathway they will follow after leaving the Early Years Class.

After the Early Years our learners move to one of our three pathways.

The Learning to Learn (pre-formal learning pathway) is pre subject specific learning, however the cohort follow the same termly theme as the rest of their phase peers. Learning is focused through the four Areas of Need within their EHCPs, with the area of Cognition and Learning as the most relevant to science, where an understanding of cause and effect, their sense of agency and impact on their surroundings and others can be explored and developed using the Engagement Model.

Within the Bridging (semi-formal) and Ready (formal) learning pathways, Science is taught discretely. Again, a thematic approach is used. Learners in Key stages 1&2 broadly follow the primary curriculum. In Key stage 3, the long term scheme of work used the aspirational endpoints that are age appropriate, however there is a spiraling approach to the building of skills, therefore all topics are linked to those in the primary phase, to allow a continuation of the building of skills and embedding of knowledge. Where possible and meaningful, Science topics are linked with Design Technology, so learners can develop skills and understanding within a topic, then apply these in a practical way, through a technology project. This makes learning more meaningful for our learners.

Investigative Scientific skills: observing, comparing, classifying, predicting, estimating, measuring, communicating and concluding, remain a primary focus of development, with our offer supporting the key outcomes that learners must work towards to master these. A practical and experiential approach to Science, beginning with the learners own experiences is our main focus in the delivery of Science.

As learners progress into Key stages 4 & 5 the focus becomes more on the application of the skills they have developed. Science is delivered through the key thematic areas of Health & Wellbeing and Independence & Life skills alongside an increased participation in society. Skills such as knowing what healthy food is, how to select and cook a healthy diet and keeping physically healthy as well as how to stay safe and where to access help. These are of increased importance as our young people prepare for life beyond the school environment. Other areas of Science are also explored through personal hobbies, horticulture, which encourage cooperation skills, increased independence, persistence and resilience when overcoming challenges.

For all our learners, we adapt our approaches to support their personal pedagogies, ensuring a more sensory approach for learners who need it, using AAC/visuals to ensure all can access this curriculum. Our learners experience Science in a practical way, through experiments, the environment and 'wow' moments supporting the development of awe and wonder for the world around them and fostering a lifelong curiosity and appreciation of their world.

Impact - Assessment of outcomes (So what difference did it make – Include evidence)

Work samples and sequences of learning show that learners make progress over time. Learners enjoy their learning and show increasing independence and curiosity. Planning units provided by the subject lead also contain relevant assessment statements. These are taken from the B-squared Progression Steps assessment framework. This is to support more targeted assessment using the B-squared framework. The learners' progress is assessed

termly after each unit and where possible celebrated and shared with parents, through the EfL parent portal and in the thematic displays within the classroom environments.
As our learners leave Doubletrees, they are engaged, curious and respectful of the world around them and continue to show interest in the environment. They are aware of their own health and are equipped with the skills to manage this with as much independence as they are able.