



Aspiring Ashwood

Science

Science

Intent



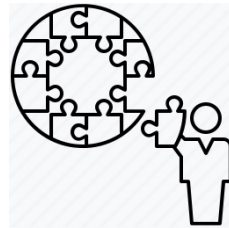
Science is important to us at Ashwood as it is a way for children to start exploring the world around them. Many of the children at our school have limited experiences outside of their local community of Allenton and Osmaston and often lack interest in natural phenomena. To address this, we provide learning experiences to excite our learners such as hooks, visits, visitors, practical activities and investigations in order to spark curiosity and demonstrate how science is relevant to them personally. We then build on this linking science to the children's local community and progress to the wider world and beyond. We believe it is important to learn about significant figures who have made discoveries throughout the years so that we understand how science has evolved over time and create curious learners who understand that information gained and technologies that we use to help us will continue to adapt as they get older.

Planning



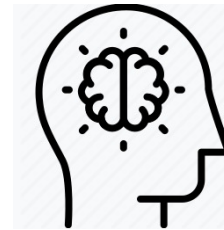
The knowledge, skills and understanding that the children will be taught on their Ashwood journey is clearly mapped out. Teachers use this to plan their sequences of learning. The Creative Curriculum subjects have an over-arching Global Theme each half-term and Science stems off this and is taught through conceptual lenses. The knowledge children will learn has been carefully selected for the children at Ashwood, and has been mapped out to ensure that knowledge, skills and understandings link across topics and year groups. The planning is progressive and engaging. The long-term planning is based on the National Curriculum and we ensure that all objectives are taught before children leave us in Year 6. Children begin EYFS and learning about themselves, the importance of healthy eating, exercise and hygiene and as they progress throughout the year and their time at Ashwood, this expands to look at their local environment (animals, plants, materials surrounding them) and by Upper Key Stage 2, builds upon all previous knowledge and skills and takes their learning to beyond our planet.

Implementation



Science is taught through an inquiry approach where possible. Each lesson begins with an 'Our Learning Question'. This allows the children to use their scientific enquiry skills and knowledge to arrive at a deeper conceptual understanding themselves; however this is guided when needed. It is this deeper understanding that is transferable across different branches of Science (Biology, Chemistry and Physics). Low-stakes quizzing is used to embed knowledge and make it sticky. Retrieval strategies are used throughout sequences of learning to ensure that the children know and remember more. Working scientifically is taught alongside the teaching of knowledge to ensure that the children have the opportunity to be scientists themselves.

Assessment



Science assessment has been broken down into 8 strands: questioning, testing, observing, measuring, identifying and classifying, recording, concluding and sources. The strands have been pulled from the aims of the National Curriculum and the PLAN assessment Working Scientifically document. Each term, teachers assess their children against these strand statements to determine whether they are meeting the year group expectation. The analysis of this informs future planning at child, cohort and whole school level. Knowledge is assessed through spaced retrieval strategies used weekly throughout their time at Ashwood. Activate sections of lessons also assess retention of knowledge.

Enrichment



The children at Ashwood are provided with lots of enrichment opportunities. For example, many school trips provide enriching science opportunities. For example, year 5 visit the Yorkshire Wildlife Park to link to the topic Animals including Humans; year 4 visit Darley Park to explore rivers and give their learning a real life context. We take part in lots of external STEM activities in order to raise cultural capital and give science a real purpose and show how it links to everyday life and future careers. We have been involved in the Leaders Award - this saw us link up with engineers from Network Rail. We also have meaningful links with Our Future Derby, who help match us with STEM professionals who come into school to provide enrichment activities for all learners.

Linking Learning



Each time science is taught, it contributes to one of our 'Global Themes'. This ensures that new knowledge is linked back to key concept for the children to deepen their understanding. Our science curriculum is knitted together with our other subjects which ensures that clear links are made between year groups, subjects and topics. Teachers use retrieval techniques to ensure children have the prior knowledge in which to link new learning so that can know more and remember more. Links in learning are made explicit to the children across subjects, terms and year groups.

Science

National Curriculum



Exceeding Curriculum



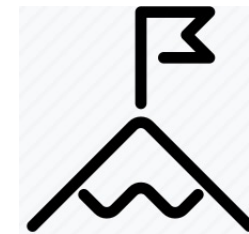
The Ashwood Children



Ambitious for DP, SEND and EAL



How is it challenging?



An Ashwood Scientist



Our science curriculum fulfils the requirements of the National Curriculum. All aims and subject content statements are met by the time the children have completed their Ashwood Journey.

The objectives are mapped out on our Long Term Plan to allow progression of knowledge and skills.

In order to become more curious about the world and how it and things work, we exceed the requirements of the National Curriculum. Whilst we used the programmes of study to guide and base our lessons, we provide the children with many enrichment and active experiences to bring science to life. This means that our children can link their learning to life beyond the classroom and spark a curiosity that inspires them to consider their future careers.

Deliberate curriculum choices have been made, where possible, to ensure the curriculum is relevant to the Ashwood children. Our science topics are determined by the National Curriculum, which sets out the content and the year group in which it should be taught. Our science curriculum begins in FS by centring around the child in the topic 'Marvellous Me', it then progresses to look at the child's wider family, then school and wider community. Our science topic choices are sequenced in order to ensure children know more and remember more through linked learning; therefore, many science topic choices go hand in hand with the sequencing of geography and history.

Our curriculum is ambitious for all children. All children have access to the curriculum and to ensure that children can access it, we ensure that for disadvantaged pupils, we include:

- Experiences of different places (visits/videos/photographs/technology)
- Bringing the outside world in (visitors)
- Celebrating science events such as British Science Week

For our SEND and/or EAL children we include:

- Visual representations
- Real-life experiences (through technology and field-trips)
- Acting things out through drama and song
- Dual-coding throughout lessons
- Communication in Print

Many children find working scientifically challenging. They are often very good at asking questions and carrying out methods of testing questions. However, when it comes to recording results in varying ways, for example, in graphs or tables, they sometimes struggle with this. This is where we have identified that science has important links with other subjects such as mathematics so that we can address these challenges.

Having studied our science curriculum, an Ashwood child will leave us:

- With an understanding of how science has changed our lives and is vital to the world's future prosperity, giving them the ability to recognise the power of rational explanation
- Able to form opinions based on observations
- With communication skills, collaborative skills, team working and perseverance, as well as analytical reasoning and problem-solving skills.