



Curriculum Overview for Science ~ November 2019

Intent

Science teaching at Birkwood Primary School aims to give all children a strong understanding of the world around them whilst acquiring specific skills and knowledge to help them think scientifically, to gain understanding of scientific processes and also an understanding of the uses and implications of Science, today and for the future.

The context of Birkwood Primary School necessitates us to focus on the development of key vocabulary relating to enquiry, investigations and conceptual understanding. We aim to enrich and develop the use of scientific vocabulary across all key stages.

Science provides the opportunity for our children to incorporate skills from other areas of the curriculum within Science and in turn apply their understanding in for example, mathematics and statistics.

We understand the value of Science within the curriculum and strive to provide the foundations for understanding the world through the specific disciplines of biology, chemistry and physics evident within the **Implementation** section.

We actively promote enjoyment and curiosity within Science by bringing the National Curriculum to life through active enquiry based learning, visitors and making learning meaningful for our children. It is this, along with the combination of rich and ambitious vocabulary, that we embed procedural knowledge into children's long-term memories; effectively leaving a lasting memory of both the importance and pleasure of Science.

Implementation

We aim to ensure that all pupils make progress in Science by:

- Ensuring teachers have excellent knowledge of the subject (science module overviews) and are supported by leaders to promote high quality teaching (termly science staff meetings)
- The year is divided termly into biology, chemistry and physics aims/objectives providing all children with the understanding of each area
- Presenting materials clearly and allowing discussion time to develop understanding (use of Explorify)
- Designing a curriculum that supports learners to embed knowledge in their long-term memory
- Providing children with the opportunity to revisit previously learnt material (science progression overview)
- Providing a key vocabulary list at the start of each module (evident in Knowledge Organisers)
- Implementing glossaries within Science books to allow children the opportunity to recap previously learnt vocabulary
- Teaching any misconceptions clearly and with repetition
- Using both formative and summative assessment to check understanding and inform next steps. Summative spreadsheets are available for the whole of the school to identify where the children are at a glance and the progress that is being made
- Showcasing Science through displays, special tab on the website and highlighting key words and facts relating to the current topic (rich and ambitious vocabulary)

- Using aspirational scientific vocabulary to further develop and promote knowledge of the curriculum which is evident in books; with appropriate adjustments for SEND children
- Providing children with a wide range of opportunities to work scientifically inc. cross-curricular (e.g. maths and statistics; grow-it/gardening strand)
- Make predictions, reviewing findings and drawing conclusions
- Promoting Science with annual visits from scientists during science week, providing opportunities to see science in action
- Continued work and support by Heather Greenwood within the Grow It strand of our curriculum, including after provision of after school clubs for both KS1 and 2 and enterprise by selling plants and vegetables to our community; school is committed to investing financially
- A community garden, poly tunnel and potting shed were established with funding from the Big Lottery and a Local Communities Grant from the Ward Alliance to provide a wider range of experiences for our children and community linked to the Biology elements of the curriculum

Impact

Children are keen to learn new skills and information and work hard to develop their understanding of the world around them. Children can use the skills and information learnt and apply it within their topic work and other curriculum areas. Understanding of Science investigations is promoted from an early age, skills and vocabulary are developed year on year. Children are prepared for the next stage in the education. We have been successfully awarded the Yorkshire in Bloom, Gold Award as a direct result of our Grow It Strand.

Summary Outcomes

- To ensure that everyone is celebrating Science and teaching it weekly across the school
- To further develop staff confidence in Science through enhanced subject knowledge and, in doing so, create consistency and quality across school
- To ensure children build on prior knowledge and follow a logical progression of skills
- Teachers assess children's knowledge, understanding and skills in Science by making ongoing observations/feedback which informs planning
- Children are encouraged to review their work, highlighting strengths and next steps
- At the end of each half term (each science module) a summative assessment of science is carried out and tracked on excel tracker
- Twice a year, foundation subject assessment grids are completed by class teachers and evaluated by the subject leader
- Lessons and activities are planned using a range of approaches to meet the needs of all children, especially the disadvantaged

Areas for Action

To ensure practical Science investigations are taught frequently and effectively across school
 Further develop key vocabulary (eg. Variables and independent variables), results and conclusions
 To upload 1 piece of scientific enquiry each half term onto the school's website