# EMP CURRICULUM AT A GLANCE

## What is a scientist?

A scientist tries to understand the physical and natural processes of our world and beyond, through making observations, asking questions and proving or disproving theories.

## Early Years Scientists

In our Early years, our children are given the opportunity to explore the natural world around them, making observations and drawing pictures of animals and plants; know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class; understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

**Associated Document**: 'Detailed Science skills progression from Nursery'

## Assessment

Our assessment of science is robust, as we use progression statements to support both planning and assessment within each year group. These statements carefully weave together the **knowledge**, **skills** and **understanding** which we believe our learners require in order to become successful scientists of the future. At the beginning of each topic, a learning plan is shared with pupils which clearly states relevant prior learning, key knowledge, skills and understanding for the topic, the 'end point' of the learning journey and key vocabulary. In Year 1, learners are supported in completing a knowledge-based mind map as a class. In Year 2 and above, learners will complete an edited knowledge organiser based on the prior learning from an earlier year group where any misconceptions are then addressed before starting the new learning.

## Science at East Morton: Intent

At East Morton, we inspire learners to have a curiosity and fascination about the world whilst providing the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Through building up a body of key foundational knowledge and concepts, children are encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. Our science curriculum, which follows the National Curriculum, encourages children to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

## Science Curriculum: Implementation

The focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the world around them. They are encouraged to be curious and ask questions about what they notice. They are helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions. They begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways.
The focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them and continue to build up their schema of scientific knowledge. They should do this through exploring, talking about, testing, and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and be beginning to develop their ideas and functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways if answering them. The focus of science teaching in upper key stage 2 is to enable pupils develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas and asking their own questions about scientific phenomena. At upper key stage 2 they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates.

At East Morton each science unit is based on an overarching question, with additional learning questions providing a focus for each session. Where possible each unit begins with a hook to engage learners and spark their interests. Working scientifically is incorporated into every unit covering comparative/fair testing, research, observation over time, pattern seeking, identifying, grouping and classifying and problem solving. Science lessons are as practical/hands on as possible.

**Associated Documents:** Curriculum Learning guide and Year Group Long Term Plans

## Inclusion

Children who require additional support with their learning are supported through adaptive teaching and scaffolds. At the beginning of the lesson, there is explicit teaching of the most important scientific vocabulary.

An area of strength within the delivery of our curriculum is the adaptation to ensure that much of the learning is practical so that all learners can access the full curriculum.

## Impact

Our broad and balanced enquiry-based science curriculum ensures:

- That children know more, remember more and understand more.
- That children are inspired and have a curiosity and fascination about the world.
- That children develop and confidently use a range of scientific skills such as observation and measurement to explain what is occurring, predict how things will behave, and analyse causes.
- That children typically achieve or exceed age related expectations in science.

## Enhancement

Links are made with other subjects to deepen knowledge and to build a 'schema'. Key stage 2 children carry out Science research projects as homework.

Visits to the Science Museum in Bradford and our local Secondary school science department enhances our science offer. We use the outdoor classroom to support children's understanding of the natural world, starting in Foundation stage with 'Muddy Monday' and 'Welly Wednesday'.

Our Science Ambassadors champion science to their peers and run clubs.

STEM days are used to apply skills in context.

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**2023 (External Review)**

***"The science curriculum is planned in detail from nursery to Year 6.*** *The leader is ambitious and reflects well on the current state of the curriculum to identify further refinements. Teachers are skilled in putting the curriculum in place."*

"***Assessment is well thought-out*** *and designed around the key knowledge being learned. Teachers identify the various aspects of working scientifically. This is helping pupils to be able to describe how they are working as scientists. There is a good contribution to pupils' writing, reading, mathematics and opportunities for research"*

"***Practical science is at the heart of the curriculum***. *Pupils remember science well. They find science interesting and speak very positively about working scientifically. They have good opportunities to research and to pull their learning together using end of unit tasks."*

B11 Education


***Parent Comment:*** *"Just wanted to write a quick message to say how happy my child came home yesterday from school after his 'adventure'. He could not stop talking about it, even amid brushing his teeth this morning. You have created a passion in him for science, and as an optometrist myself, I approve! Very grateful for the wonderful support he's receiving at school."*