

## **Intent**

The science curriculum at Marlborough Road Academy aims to provide children with a coherent, substantive knowledge of the scientific disciplines of biology, chemistry and physics that provides pupils with:

- a secure, deep understanding of the nature, processes and principles of science through clear instruction and deliberate practice.
- an ability to apply long-term knowledge to make predictions and connections between disciplines, and recognise the uses and implications of science in the wider world.
- gradual understanding of ‘vertical concepts in biology, chemistry and physics’.

It also aims to embed core disciplinary knowledge, and the ability to systematically approach challenging, scientifically-valid questions through:

- Scientific Attitudes & Planning

asking scientifically relevant scientific questions and designing controlled investigations.

- Measuring & Observing

learning how to use scientific apparatus like rulers and thermometers, and through making systematic observations.

- Recording & Presenting

setting up data collection tables and presenting this data in a variety of charts and graphs.

- Analysing & Evaluating

interpreting and analysing findings; drawing conclusions and evaluating the reliability of investigations.

We also aim to foster a curiosity and fascination about the natural and man-made worlds, and a respect for the environment that will remain with them for the rest of their lives.

## **Implementation**

Teachers are provided with an additional three planning days per year in addition to their PPA, to plan their curriculum. As part of this planning process, teachers plan the following:

- A knowledge organiser which outlines knowledge (including vocabulary) all children must master
- A sequence of learning which follows the Rosenshine Principles of Instruction
- A cycle of lessons for each subject, which carefully plans for progression and depth
- Low stakes quizzes which are used regularly to support learners’ ability to retrieve and recall knowledge and increase space in the working memory
- Longer writing opportunities to showcase pupils understanding of a topic
- Challenge questions for pupils to apply their learning in a philosophical/open manner
- Trips and visits from experts who will enhance the learning experience
- Verbal feedback during lessons to improve English standards

All children will have Quality First Teaching. Any children with identified SEND or in receipt of Pupil Premium funding have access to the same curriculum as non-SEND pupils and are assessed in the same way, however, their activity may be scaffolded in order to remove their barrier to learning. We believe that it is important to give every child the opportunity to show their understanding in science in a way that is appropriate for them, in order for them to demonstrate the depth and breadth of their understanding.

## **Impact**

Our Science Curriculum is high quality, well thought out and is planned to demonstrate progression. If children are keeping up with the curriculum, they are deemed to be making good or better progress. In addition, we measure the impact of our curriculum through the following methods:

- A reflection on standards achieved against the planned outcomes
- A celebration of learning which demonstrates progression across the school
- Tracking of knowledge in pre and post learning quizzes or extended writing opportunities
- Pupil discussions about their learning
- Verbal feedback during lessons to improve English standards