

Science

At BTAM, we endeavour to spark the curiosity in our pupils by supporting them to explore and discover the world around them.

Science curriculum intent

Our science curriculum encourages our pupils to ask questions and support them in discovering ways to work scientifically to seek their answers. We want our children to love their learning, be ambitious and connect with science; to believe science as something they can excel in and see how science fits into everyday life and different professions.

We encourage our pupils to think like scientists, to understand that scientific questions can be answered in different ways, knowing that we all continue learning, no matter how much experience we have. This message is used to really support our pupils in building their resilience and curiosity. We want our pupils to remember their science lessons as BTAM and we aim to achieve this by providing practical, hands-on experiences that encourage curiosity and questioning. We aim for these stimulating and challenging experiences to help every pupil secure and extend their scientific knowledge and vocabulary. We use Switched on Science by Rising Stars, as a base for our planning and progression and draw on the expertise within this scheme. Our science curriculum is coherently planned and sequenced and carefully adapted to ensure that we can meet the needs of every pupil at our school and provide appropriate challenge.

Our aim is that the stimulating and challenging experiences we provide, help our pupils to secure and extend their scientific knowledge and vocabulary, as well as promoting a love and thirst for learning. We have a coherently planned and sequenced curriculum which has been designed and developed with the need of every child at the centre of what we do. Science is taught as a discrete subject and sequenced throughout the year, to ensure that children have opportunities to revisit learning across different contexts and make links with prior learning, for example through Forest School, in PE, Cooking and PSHE, or in STEAM learning projects. We want to equip our children so that they are prepared for the opportunities, responsibilities, and experiences of later life.

Implementation

At BTAM, our Science curriculum is aligned with the National Curriculum. Our topics are taught in blocks to allow our pupils the time and space to develop their knowledge and skills and study each unit in depth. Our curriculum is progressive and is designed to allow pupils to build on prior knowledge and although pupils at BTAM do not stay with us year-upon-year, as it is aligned with the National Curriculum, it still supports our pupils in building on their prior knowledge regardless of setting.

Our teachers promote enjoyment of the subject by creating opportunities for as many 'hands on experiences' as possible, where our pupils can explore, question, predict, plan, carry out investigations and observations, as well as conclude their findings. Our pupils learn to present their findings and learning in a range of ways, using subject specific vocabulary.

Cross curricular links are carefully planned, for example, presenting findings in a digital format using technology; consolidating mathematical skills of Venn diagrams, charts, and graphs; taking accurate and timed measurements of capacity, mass, temperature or even decibels using a range of instruments which create curiosity and intrigue. Forest School is also an area of the curriculum, which is closely linked; pupils can see the clear connection between the two, particularly when looking at seasons, the impact the change of season has on the natural environment, food chains, minibeasts in action, pupils build bug hotels and learn about the power of observation and asking questions. Literacy is also a key component of science; however, we use highly effective differentiation to ensure that pupils can access age-appropriate content regardless of their literacy levels to build and sustain high engagement and appropriate challenge of the subject content.

Retrieval practice at the start of every session provides opportunity for pupils to need to keep remembering key knowledge and vocabulary; these retrieval practice opportunities also enable pupils to see how what they are learning, now connects to prior learning in different topics. We provide our pupils with knowledge organisers at the start of every topic; these detail the key learning and vocabulary pupils will need to support them in their acquisition of knowledge and act as a retrieval practice tool, which supports with independence.

Effective modelling by teachers ensures that our pupils achieve their learning intention, we also model and address misconceptions. Modelling these misconceptions reinforces our whole school drive in feeling safe to make mistakes and demonstrating that we are all learning together.

We enhance our teaching of science with additional opportunities for enrichment and engagement. Science week is a big deal at BTAM! We celebrate British Science Week every year with numerous activities and competitions across the school, experiments, an on-site visit from 'Lab in a Lorry', visits to the Science Museum and other Exhibitions in museums in London. We end this week with a big event, where we also invite families in to enjoy the wonders of the exciting scientific performance.

Intended Impact

The impact of our immersive curriculum leads to pupils knowing more and remembering more. Pupils are more confident to engage in this area of the curriculum and are curious about the natural world, pupils ask questions and demonstrate wonder. Our pupils make good progress from their individual starting points and achieve well in lessons. We develop an understanding that Science is all around us and that discoveries and research change and improve lives every day.

How Parents and Carers can support at home

Here are some useful websites you can access at home to support and extend science learning:

Key stage 1

<https://www.bbc.co.uk/bitesize/subjects/z6svr82>

Key stage 2

<https://www.bbc.co.uk/bitesize/subjects/z2pfb9q>

All children:

<https://wowscience.co.uk/>

This website allows you to search by key stage and area of science for interactive games and activities online.

<https://www.topmarks.co.uk/>