The British School
Working together for our children's future

Science Curriculum Intent, Implementation and Impact

Updated February 2025
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Introduction:

Science is a core element of the National Curriculum, alongside mathematics and English, and is subsequently highly valued and regarded here at The British School. We believe that a high-quality science education provides the foundations for children to understand the world around them.

Science has shaped and influenced all of our lives and is vital to the world's future prosperity. Thus, at The British School we strive to show our children the importance of this subject, both in the past (for example, by eradicating smallpox and discovering penicillin), in the present and in the future (for example, to solve global challenges such as climate change, food availability, controlling disease and access to water). We aim to foster a sense of excitement and curiosity about science, whilst promoting its use and significance - globally, to society, to our communities and to the children's own lives. In addition, we aim to provide children with the tools and enthusiasm to pursue a range of diverse and valuable scientific studies and careers, which are crucial for economic, environmental and social development.

Gaining real-life experience of science is important to us here at The British School. We endeavour to provide all children with a wealth of enrichment experiences in addition to their curriculum science lessons, including visits, visitors and activities with a scientific focus. Our vibrant and exciting outdoor spaces further enhance this.

INTENT:

The aims of our science curriculum at The British School:

We aim to ensure that:

- Children develop scientific knowledge and conceptual understanding, in line with the National Curriculum.
- Children learn to answer scientific questions about the world around them, by carrying out different types of scientific enquiries.
- Children understand the uses and implications of science, in the past, present and future.
- Children develop an excitement for and enjoyment of science and an appreciation of its relevance to their daily lives.
- Children participate in a variety of enrichment activities throughout their time with us.

Equality, diversity and inclusion in science:

At The British School, we create an inclusive culture of achievement, high standards and high expectations. Children of all ethnic and cultural groups, races, genders, sexual orientations and abilities have equal access to the science curriculum and we have high expectations of all pupils. We provide equal opportunities for **all** pupil's to learn science and we have high expectations of all pupils. We ensure that positive images of all groups are promoted throughout the school, both in the use of language, in the provision of resources and through displays.

We ensure that all children have equal access to effective, quality-first teaching and learning, in all areas of the science curriculum. In lessons, pupils are taught through whole-class interactive teaching, where the focus is on everyone working together on the same lesson objective(s), at the same time, to master the content of the national curriculum.

As a school, we ensure that we meet the needs of each pupil, promoting the active participation and progress of all. Class teachers - in collaboration with the SENDCO - ensure that any specific needs are addressed promptly. In science lessons, pupils with SEND are supported in a number of ways. Strategies may include:

- Targeted support from an adult;

- High-quality modelling;
- Appropriate scaffolding;
- Varied questioning strategies;
- The use of peer support;
- The provision of different/additional resources;
- Additional support with practical work;
- The provision of coloured paper and overlays (dyslexia)

Teachers provide feedback and marking to all pupils, in line with our school marking and feedback policy. We prioritise oral feedback and live marking wherever possible, because we know that immediate, "in the moment" feedback has been proven to be the most effective.

Content of the curriculum:

The fundamental skills, knowledge and concepts that children at The British School learn in science are set out in the National Curriculum and the EYFS Statutory Framework. In the National Curriculum, the programmes of study for each key stage and year group are broken down into units focusing on biology, chemistry and physics, along with the key skills of working scientifically. Our yearly overview outlines what will be taught and when. The science units have been carefully arranged to meet the needs of our school, to align with learning in other subjects and to ensure units are taught during the appropriate season (where applicable).

At the British School, we use PZAZ, along with a variety of additional resources, to support the delivery of the science National Curriculum. This provides each teacher with the activities and resources to deliver high quality, age-appropriate, engaging science lessons. In EYFS, the teacher uses the EYFS Statutory Framework (Understanding the World) to foster scientific understanding.

EYFS:

In EYFS, children's scientific understanding is developed through the specific area of the EYFS framework "Understanding the World". Children develop their interest in and understanding of the world around them, and are encouraged to make sense of and build familiarity with their surroundings. Opportunities to learn outdoors and visit sites of scientific interest - for example our Forest School, pond dipping, traffic surveys, or exploring the local stream - are encouraged, in order to provide children with first-hand experiences. A focus on

developing and widening children's scientific vocabulary is also prioritised as part of our EYFS curriculum.

Key Stage 1:

At The British School, the principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly constructed world around them. Children are encouraged to be curious and ask questions about what they notice. Children are helped to develop their understanding of scientific ideas, by using different types of scientific enquiry to answer questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. Children begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences and in a variety of ways. The majority of children's learning about science is done through the use of first-hand practical experiences, but also includes opportunities to use secondary sources, such as books, photographs and videos. Opportunities to learn outdoors - for example by making use of our Forest School and pond - as well as local visits to sites of scientific interest, are encouraged, to provide children with a wider variety of first-hand experiences.

Lower Key Stage 2:

The principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. Children do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. Children ask their own questions about what they observe and make decisions about which types of scientific enquiry are likely to provide the best method of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. Children draw simple conclusions and use scientific language to write about what they have found out.

Upper Key Stage 2:

The principal focus of science teaching in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. Children do this through exploring and talking about their ideas, asking their own

questions about scientific phenomena and analysing functions, relationships and interactions more systematically. In upper key stage 2, children encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. Children also begin to recognise that scientific ideas change and develop over time. Children select the most appropriate ways to answer scientific questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.

Health and safety:

In lessons, pupils are taught:

- About hazards and risk control.
- To recognise hazards, assess risks and take steps to control risks to themselves and others.

All staff are aware of any medical conditions or food allergies that pupils may have, which may impact upon the activities they participate in.

See our Health and Safety Policy and School Risk Assessment for more guidance on working with tools, equipment and materials.

IMPLEMENTATION:

At The British School, science is taught weekly (in Key Stages 1 & 2), with up to five units taught throughout year. These units are specifically arranged in our yearly overview.

Pupils in EYFS develop their Understanding the World knowledge, understanding and skills through both focused teaching and high-quality, explicit continuous provision activities.

Teaching and learning:

At the British School, we use the PZAZ scheme of learning, along with a variety of additional resources, to support the delivery of the science National Curriculum. This provides each teacher with the activities and resources to deliver high quality, age-appropriate, engaging science lessons. In EYFS, the teacher uses the EYFS Statutory Framework (Understanding the World) to foster scientific understanding.

PZAZ provides planning for each year group. For each lesson, the planning clearly outlines the learning objective, the required prior knowledge, opportunities for retrieval, the vocabulary to be taught, whole-class, suggested activities, assessment opportunities, safety considerations and a list of the required resources. Emphasis is placed on the development of pupils' skills in working scientifically. Teachers supplement this resource with others - for example Twinkl - at their discretion.

All lessons have a clear learning objective, which explained orally, as well as stuck into pupils' books. Teacher ensure that pupils know and understand what they are learning. The use of knowledge organisers is encouraged to support learning. Lesson activities encourage pupils to investigate the world around them and to ask questions. Pupils learn to "work scientifically" by observing, locating sources of information, selecting appropriate equipment and using it safely, measuring and checking results, making comparisons and communicating results and findings.

Pupils have opportunities to independently and collaboratively plan their own scientific enquiries, selecting relevant resources, making decisions about sources of information, carrying out activities safely and deciding on the best form of communicating their findings. Pupils revisit prior learning in every lesson (retrieval), ensuring that knowledge becomes embedded in their long-term memories. Teachers use a variety of resources to support this.

Assessment:

At The British School, children's prior knowledge and understanding are assessed before each unit of work, using a KWL grid, or similar resource. This information is used constructively, for example to refine the starting point of a topic and the level of challenge for the activities that follow. KWL grids are revisited at the end of the unit, so that pupils can add what they have learned and so that teachers are aware of the impact of their teaching.

A variety of assessment strategies are used throughout each unit, including retrieval tasks, questioning, discussion, practical and written work, feedback in

both oral and written format and end of unit assessments. This information is used to assess individuals and plan what will be taught next. Gaps in learning are identified and this informs future planning. Insight is used for the collection and monitoring of pupil data.

Practical materials/resources:

All practical science resources are stored in one place, clearly organised by topic and theme. Adultss collect the resources as required and ensure that they return them in a clean and tidy state. Staff should notify the subject leader when extra resources are required, or of any breakages or losses that occur. We encourage regular use of our Forest School and pond area to support scientific learning. All pupils have one term of Forest School lessons per year.

Display:

At The British School, each classroom must have a display relevant to the science topic currently being taught. Key scientific vocabulary must displayed on this and teachers and pupils must refer to this throughout. Displays may also include relevant prompts, diagrams and examples of children's work. Displays in communal areas help to further promote interest in, and enthusiasm for, science across the school. These are often linked to a particular theme or activity, such as Science Week.

Enrichment activities:

At The British School, we highly regard and value all STEM subjects and endeavour to instil a love of these amongst all pupils. In order to do this, we arrange a wide variety of enrichment opportunities for all pupils, including:

- Celebrating British Science Week annually.
- Themed days/weeks.
- Visitors coming into school.
- Visits with a STEM focus.
- Workshops and activities.
- Recent enrichment activities have included a STEM day at Wycliffe College, The KNEX Challenge, a Science Fair at KLB, Virtual Reality workshops, our school Eco Council.

Cross curricular links:

Lessons make effective links with other curriculum areas and subjects, where possible. The teaching of maths, DT and computing is promoted strongly in science, as part of our school's drive to raise the profile of STEM (science, technology, engineering and maths). Other curriculum subjects are also linked to the teaching of science where applicable.

Examples include:

- The use of technology in lessons; programming and controlling products (computing)
- Presenting the data gathered through scientific enquiry in various ways (maths)
- Teaching children about the importance of environmental issues (Geog/PSHE)
- The use of recycled materials for construction, sculpture and modelling (art/DT)
- Understand the principles of a healthy diet and develop an awareness of where their food comes from (DT)
- Creating musical instruments using recycled materials (DT/Art/Music)

SEND:

At The British School we have high expectations of **all** pupils and our curriculum is fully inclusive. We recognise the importance of providing children with SEND the same opportunities and experiences as all children, wherever possible. SEND pupils are supported to access science lessons through the use of:

- Additional adult support.
- Scaffolded tasks
- Varied teaching methods.
- Additional resources.
- Peer support.
- Scribing.

More-able children are challenged, through the use of extension activities, open-ended tasks, opportunities for further research and more challenging study.

Leadership:

The science subject leader is responsible for identifying staff development needs and, where appropriate, these are built into the school's staff development programme (e.g. staff meetings and inset). The needs of individual

members of staff are identified as a result of the subject leader's monitoring activities, as well as the school's performance management programme. The subject leader attends CPD and networking events on a regular basis and keeps other staff members informed of developments and resources. The science subject leader is responsible for the direction of the subject across the school. Time is allocated for the subject leader to monitor the standards and quality across the school. The subject leader is expected to review the curriculum as necessary. The subject leader is responsible for evaluating the overall impact of the science curriculum.

IMPACT:

At the British School, we provide a high-quality, engaging science education, providing children with not only with age-appropriate skills and knowledge as outlined in the National Curriculum, but also the foundations for understanding, appreciating and being inspired by our world. We strive to develop inquisitive and confident scientists, who can apply the skills and knowledge they have learned in a range of contexts. Our teachers enjoy teaching science and pass this enthusiasm on to pupils.

Our children know and understand the science national curriculum, regularly revisit prior knowledge to ensure that it becomes embedded in their long-term memories and make connections between what they have previously learned and what they are currently learning. They have regular opportunities to work scientifically - this important strand of science occupies a prominent part of our school science curriculum.

All children access our science curriculum, including those with additional needs. Lessons are inclusive, with appropriate support in place as necessary.

All children will leave our school with:

- A wide variety of skills, knowledge and understanding.
- The ability to work scientifically, both independently and collaboratively.
- Opportunities to revisit prior learning in every lesson.
- A rich scientific vocabulary, which will enable them to articulate their understanding through taught concepts.
- Confidence and a love of learning about science!

We understand the importance of effectively monitoring our science curriculum and the subsequent impact this has. Monitoring children's progress begins with

the class teacher. Teachers monitor children's progress against the learning objective for each lesson, using a variety of strategies, including retrieval tasks, questioning, discussion, practical and written work, feedback in both oral and written format and end of unit assessments. This information is used to plan subsequent lessons and also to inform assessments on Insight.

In addition, the subject leader consistently monitors the quality of teaching and learning in science through a combination of the following:

- Drop ins.
- Book Looks.
- Learning Walks.
- Pupil Voice.
- Informal discussion with staff.
- Staff and pupil questionnaire.
- The subject leader is given time to carry out these activities.
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Through effective monitoring of the subject, the subject leader will have a clear overview of the attainment and progress of pupils across the school.

Next review date February 2026