Maths Curriculum Intent, Implementation and Impact

Updated February 2025
Francesca Amigoni

Introduction:

Mathematics is a universal language that enables understanding of the world; it is also a network of concepts and relationships that is vitally important in our daily lives. Mathematics is therefore an integral part of the school curriculum and is a subject that is highly valued and celebrated here at The British School. Beyond the study of numbers, shapes and patterns, mathematics provides important tools for work in fields such as engineering, physics, architecture, medicine and business. We therefore recognise that attainment in mathematics is the key to opening new doors to further study and employment. Importantly, mathematics helps to cultivate problem solving and reasoning skills that are crucial in day-to-day life, as well as developing thinking and oracy skills that are invaluable in every subject area. This core and fundamental subject nurtures the development of a logical and methodical mindset, as well helping to inculcate focus and the ability to solve all manner of problems.

INTENT

The aims of our maths curriculum at The British School:

We aim to:

- Implement the legal requirements of the National Curriculum and the EYFS Framework.
- Develop children's mathematical skills and understanding, through high-quality teaching.
- Develop depth of knowledge and understanding, via a **mastery approach** to teaching.
- Prioritise the development of fluency in arithmetical skills and calculation.
- Prioritise the development of problem solving and reasoning skills.
- Constantly revisit children's prior knowledge, to ensure that they continue to build on this as they develop new skills and understanding.
- Promote correct and consistent use of age-appropriate mathematical vocabulary.
- Instil a positive, enthusiastic attitude towards maths across the school – at The British School, **we love maths!**
- Develop children's confidence.
- Ensure that all children achieve success in, and pleasure from, mathematics.

- Promote the development of oracy, through use of discussion, correct use of mathematical vocabulary and appropriate questioning.
- Develop children's abilities to work both independently and cooperatively.
- Provide opportunities for children to investigate, enquire and experiment mathematically.
- Ensure that children recognise the importance of mathematics in our daily lives.
- Provide an insight into how mathematics can shape future study and career choices.
- **Ensure that all children leave our school as competent mathematicians, who are able to use and apply maths confidently in a range of contexts and in their daily lives.**

Equality, diversity and inclusion in maths:

At The British School, we create an inclusive culture of achievement, high standards and high expectations. We provide equal opportunities for all pupils to learn maths, irrespective of race, gender, class or ability 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 mathematics curriculum. In lessons, pupils are taught through whole-class 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 diverse needs of each individual pupil, in order to ensure the active participation and progress of all pupils. Class teachers, in collaboration with the SENDCO, will ensure that any specific needs, requiring specialist resources, are addressed promptly. In maths lessons, pupils with SEND will be supported in a number of ways. Strategies may include:

- Targeted support from an adult.
- High-quality modelling.
- Scaffolding.
- Varied questioning.
- Peer support.
- The use of resources.
- The provision of different or additional resources.
- 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.

Curriculum structure:

At The British School all classes follow a '4-1' approach to the teaching of mathematics, prioritising secure foundations in number and calculation. This means that children are taught number/calculation four times a week and GSM once a week.

Maths lessons take place at the same time of day in all classes (11:15am). There may be some variation on days where classes are taught PE by Atlas Sports coaches. Problem solving and reasoning are incorporated into all lessons - although the skills to enable children to problem solve and reason are also taught and modelled explicitly - through the use of high-quality, varied resources and activities.

Our school follows a Mastery approach to the teaching of maths and we are currently engaging with the NCETM's Teaching for Mastery development programme. Mastering maths means pupils of all ages acquiring a deep, long-term, secure and adaptable understanding of the subject. The phrase 'teaching for mastery' describes the elements of classroom practice and school organisation that combine to give pupils the best chances of mastering maths. Achieving mastery means acquiring a solid enough understanding of the maths that's been taught to enable pupils to move on to more advanced material. Please see the NCETM's guidance for more information on the Mastery approach Mastery Explained | NCETM

In addition to the maths lesson, all classes take part in a daily 'Maths Surgery', lasting around 15-20 minutes. This takes place daily at 8:45am. There are multiple aims of this session, including revisiting and consolidating prior learning, focusing on arithmetical and fluency skills, explicitly teaching problem solving strategies and preparing for national tests. These activities aid fluency, proficiency and long-term retention of all aspects of the mathematics curriculum. Teachers select activities based upon the needs of their own class.

In EYFS and KS1, we also follow the NCETM Mastering Number programme. This short, number-focused activity takes place at the start of each maths lesson, before the day's new learning input begins. Please see the NCETM's guidance for more information about this programme: Mastering Number at Reception and KS1 | NCETM

Although a range of progressive strategies for calculation are taught across the school - supported by the use of appropriate manipulatives - children must ultimately learn the most efficient methods of calculation. Teachers use the White Rose calculation guidance to inform their teaching. Strategies are practised and revisited regularly, in order to cultivate fluency and proficiency. Details of the most efficient written

methods of calculation can be found alongside the Programme of Study for Mathematics in the National Curriculum 2014.

In most classes, GSM is taught by the PPA teacher. Children have separate exercise books for *Number* and *GSM* (both yellow) - this makes evidence of progression clear.

IMPLEMENTATION

The role of the subject leader at The British School:

The current subject leader is a maths specialist, who is currently undertaking the National Professional Qualification for Leading Primary Maths (NPQLPM) and also holds the MaST qualification. This ensures that she has the knowledge, expertise and skill to effectively design and implement the maths curriculum, whilst supporting staff across the school.

The role of the subject leader includes:

- Improving the quality of maths teaching and learning throughout the school, through an effective monitoring process.
- Supporting colleagues with planning, teaching and assessment.
- Monitoring pupil progress and attainment, alongside the HT.
- Action planning.
- Attending network meetings and informing staff about developments/resources.
- Undertaking CPD.
- Providing relevant CPD to staff.
- Promoting collaborative working within the school.
- Encouraging parental involvement.
- Purchasing, maintaining and organising teaching resources; managing the maths budget.

Teaching and learning:

At The British School, we use **the White Rose schemes of learning and small steps** as the basis for sequencing our curriculum. These schemes of learning match the National Curriculum requirements for each year group and the EYFS Statutory Framework. We make adaptations to these schemes as necessary, for example to support our 4-1 teaching structure (see above). Our curriculum is designed to enable coherent learning progression, providing access for all pupils to develop a deep and connected understanding of mathematics that they can apply and communicate in a range of contexts.

Each class teacher is responsible for the maths planning for their class. Planning begins with a thorough understanding of children's individual needs, gleaned through regular

formative and summative assessment. Teachers follow the appropriate White Rose scheme of learning for their class, using the **small steps** to structure their planning. In most cases, PPA teachers deliver GSM lessons and they undertake their own planning for these lessons. Teachers carry out a daily Maths Surgery session in addition to the maths lesson – see above for the rationale behind this. In EYFS and KS1, the NCETM Mastering Number programme is delivered daily at the start of each maths lesson. We have high expectations of **all pupils** to achieve age-related expectations.

Each lesson should include the following key elements:

- The specific small step for each lesson, linked to the relevant National Curriculum objective – this is communicated orally as well as stuck in pupils' books.
- Whole-class teaching, using supporting resources.
- Opportunities for independent learning.
- Opportunities to learn collaboratively and engage in partner-talk.
- Opportunities to develop fluency.
- Opportunities to develop problem-solving and reasoning skills.
- Opportunities for all pupils to use physical resources and manipulatives.

Children should be encouraged to apply their mathematical skills and understanding in a variety of contexts and across the curriculum.

Early Years Foundation Stage:

- The mathematics undertaken in the EYFS is guided by the requirements and recommendations set out in the Early Years Foundation Stage Statutory Framework.
- The class teacher the NCETM Mastering Number programme as the basis for maths teaching in this class. The White Rose Reception scheme of learning is also used.
- The classroom is organised into defined areas, to support the development of mathematical understanding and to provide ample opportunities for children to learn and explore mathematics through play.
- All children are given ample opportunity to develop their understanding of number, measurement, pattern, shape and space, through a combination of short teaching episodes and a variety of well-planned, structured, adult-led and independent activities. These must allow all children to use, enjoy, experiment, explore, practise and talk confidently about maths.
- Continuous provision opportunities are well-organised and explicit; these are modelled for the children, in order to ensure that high-quality learning opportunities take place.
- There are opportunities for pupils to consolidate new learning, as well as revisit prior learning.

Planning lessons:

At The British School, we follow a mastery approach to teaching maths. Teaching for mastery assumes everyone can learn and enjoy mathematics. Mathematical learning behaviours are developed, so that pupils focus and engage fully as learners who reason and seek to make connections. Our curriculum design ensures a coherent and detailed sequence of essential content to support sustained progression over time.

White Rose is the primary resource used to sequence our curriculum and plan our lessons. In addition to this, the subject leader has signposted all teachers to further high-quality resources and has modelled selecting and adapting resources to meet the needs of each class.

For the daily Maths Surgery, the subject leader has provided suggested focus areas and resources for teachers to use when planning these sessions - for example: Flashback 4 in KS1, Mastering the MTC in Y4, MathsBot arithmetic tests in Y6 and the modelling of specific problem solving strategies - e.g. trial and improvement - in all year groups. There must be an element of direct teaching during these sessions and strategies must be explicitly modelled.

In EYFS and KS1, the NCETM Mastering Number programme is delivered – appropriate training and planning resources have been provided for teachers.

Lesson design:

Lesson design always links to prior learning - thus ensuring that all pupils can access the new learning - and identifies carefully sequenced steps in progression to build secure understanding. Examples, representations and models are carefully selected to expose the structure of mathematical concepts and emphasise connections, enabling pupils to develop a deep knowledge of mathematics. Procedural fluency and conceptual understanding are developed in tandem because each supports the development of the other. It is recognised that practice is a vital part of learning, but the practice must be designed to both reinforce pupils' procedural fluency and develop their conceptual understanding.

In the classroom:

Pupils are taught through whole-class interactive teaching, enabling all to master the concepts necessary for the next part of the curriculum sequence. In a typical lesson, the teacher leads back and forth interaction, including questioning, short tasks, explanation, modelling and discussion, enabling pupils to think, reason and apply their knowledge to solve problems. Consistent and accurate use of precise mathematical language enables all pupils to communicate their reasoning and thinking effectively.

All children learn together, with time spent deepening understanding, rather than accelerating pupils through new content. If a pupil fails to grasp a concept or procedure, this is identified quickly and gaps in understanding are addressed systematically to prevent them falling behind. Significant time is spent developing deep understanding of the key ideas that are needed to underpin future learning. Key number facts are learnt to automaticity, and other key mathematical facts are learned deeply and practised regularly, to avoid cognitive overload in working memory and enable pupils to focus on new learning.

Marking and feedback:

At The British School, we recognise the key role that marking and feedback play, in allowing children to learn from their misconceptions and take their next steps for learning. The goal of marking and feedback is always to move learning forwards.

We understand the importance and benefit of providing immediate feedback and this is prioritised throughout lessons. 'Live marking' and verbal feedback is prioritised in all classes. We also encourage the use of self and peer marking, which is reviewed by the teacher as necessary. During marking sessions, the focus is on discussion and providing pupils with the opportunity to explain their reasoning, as well as to identify and correct misconceptions.

When marking books, teachers use pink and green marking, as outlined in the school's marking and feedback policy. Pink is used to identify where children have been successful, specifically making reference to the school's Learning Values. Green marking is used to move learning forwards and may include the following strategies:

- Self-correcting – *'Check your place value in question 5.'*
- Consolidation – '*Have another go at these.'*
- Extension – '*Now try this one.'*
- Deepening understanding – *'Prove it!' or 'Convince me!'*
- Asking for an explanation – '*How do you multiply a number by 10?'*
- Reminder – *'Don't forget to line up the decimal point.'*
- Encouraging reflection – *'Is there a better/quicker way of doing this?'*

All children respond to their marking in purple. Teachers are expected to provide time for children to do this, but it should not be onerous and should always be carried out with the aim of moving learning forwards.

Teachers and pupils use the learning objective slip to indicate whether pupils have had any of the following: teacher support, TA support, peer support and use of resources. In addition to this, VF (verbal feedback), WCF (whole class feedback) and TAIV (TA intervention) may be included in the books.

Assessment:

At The British School we use both formal and informal assessment in maths, to assess the progress and attainment of pupils. We recognise that assessment lies at the heart of promoting learning and raising levels of attainment. Ongoing assessment should occur throughout the entire lesson and across a unit of work, enabling both the teacher and teaching assistant to adapt their teaching and/or the lesson design to meet the needs of individuals, groups or the class as a whole.

Assessment strategies may include retrieval tasks, questioning, discussion, practical and written work, feedback in both oral and written format, end of unit assessments, information gathered during assessment week and statutory tests. This information is used to assess pupils 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. The subject leader monitors this closely across the whole school, as well as focusing on specific groups of pupils.

An outline of the assessment procedures within our school:

- We use Insight to track progress and attainment.
- Teachers make judgments about pupils' attainment six times per year - pupils are deemed as working below (WB), working towards (WT), secure (S), or greater depth (GD).
- We have three assessment weeks per year – we use White Rose Autumn, Spring and Summer assessments to inform teacher judgements.
- We use White Rose end of unit assessments to further inform teacher judgements.
- Summative (ongoing) assessment takes place throughout lessons and across a unit of work.
- Marking and feedback is used effectively – teachers use live marking and immediate verbal feedback wherever possible. Feedback can be verbal or written.
- Number Stacks maths interventions (see below) are used across the school.
- Teachers use all of the above to inform their planning, by identifying gaps in learning, as well as groups and individuals who may require specific support.

Parents are informed of their child's progress at parent's evenings and in a written report three times per year, as well as informally as and when required.

Interventions – Number Stacks:

We use Number Stacks across both Key Stages. Teachers use their professional judgement to identify pupils who will benefit from having an intervention. Pupils' starting points are identified using a baseline diagnostic assessment and the

intervention begins from this point. At the end of the intervention, the assessment is repeated and progress can be clearly measured. Number Stacks interventions run daily during the afternoon and are led by two teaching assistants, who have received training and support from the maths subject leader. Number Stacks interventions last from 4-6 weeks.

In addition to Number Stacks, same-day interventions and/or pre-teaching may be used to address pupils' misconceptions.

Displays and resources:

In every classroom there must be a maths display relevant to the children's current learning. Visual aids, key mathematical vocabulary and important prompts or reminders that link to the current maths topic should be displayed and referred to.

All teachers must have appropriate maths manipulatives and other concrete resources in their classrooms. Teachers carefully select manipulatives and resources in order to represent the mathematics they are teaching and expose mathematical structure. The intention is to support pupils in 'seeing' the mathematics, rather than using the representations as a tool to 'do' the mathematics. These representations become mental images that students can use to think about and discuss mathematics, supporting them to achieve a deep understanding of mathematical structures and connections. All pupils should be encouraged to use these resources and their use should be modelled by the teacher/TA as part of the teaching sequence. Pupils should ultimately be encouraged to access resources independently and they must therefore be clearly labelled and easily accessible.

Cross-curricular opportunities:

At The British School we aim to promote cross-curricular learning wherever possible. Examples may include:

- **English:** Maths actively promotes the skills of reading, writing and oracy.
- **ICT:** The effective use of ICT can enhance the teaching and learning of maths when used appropriately. ICT can help children achieve something more effectively e.g. databases, graphing etc.
- **Science:** Almost every scientific investigation is likely to require one or more of the mathematical skills of classifying, counting, measuring, calculating, estimating and recording in tables and graphs.
- **Art and DT:** Measurements are often used in art and DT. Many patterns and constructions are based on properties of shapes, symmetry and tessellation. When preparing food, a great deal of accurate measurement occurs, including estimating and weighing ingredients, working out times and calculating costs.

- **History:** In history children will collect data and make use of measurements. They may use timelines, dates and other measures of time.
- **Geography:** The study of maps may involve the use of coordinates and the language of direction, position and scale. Children may carry out surveys and create tables, charts and graphs of their findings.
- **PE:** Athletic activities require measurement of height, distance and time. Games may require children to use the language of position and direction, or to use time. Counting, time, symmetry, position and direction may be used in gymnastics and dance.
- **Music:** Counting, time, symmetry, position and direction are used in music.

IMPACT

Our vision is for all children to leave The British School as confident and competent mathematicians, who have met or exceeded age-related expectations and who are therefore able to use and apply their skills and knowledge in a variety of contexts. Our pupils are curious, interested and appreciate the value of mathematics in their daily lives. We endeavour to instil a love of mathematics in all children.

Monitoring:

Monitoring our mathematics curriculum - and the impact it has - are of key importance. Monitoring children's progress begins with the class teacher. Teachers monitor children's progress against a daily learning objective(s). This information is used to inform planning and to adapt subsequent lesson design. It is also used to inform teacher judgements. Teachers must quickly identify those not making progress and put strategies in place to address this.

Teacher judgements are added to Insight six times per year. The subject leader analyses whole-school data and ensures that any areas for concern are addressed.

Pupil Progress meetings take place three times per year with the HT. In these meetings, various groups of children are identified, including:

- Those not making progress.
- Those working below age-related expectations.
- Those working at greater depth.

Teachers are also expected to provide a prediction of the percentage of children who will reach age-related expectations by the end of the academic year.

In addition, the SLT and maths subject leader consistently monitor the quality of teaching and learning in mathematics using the following strategies:

- Monitoring data.
- Drop ins.
- Book Looks.
- Learning Walks.
- Pupil Voice.
- Staff and pupil questionnaires.
- Targeted CPD.
- Outcomes from CPD.
- Informal discussion with staff.

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: February 2026

Glossary:

- GSM – Geometry, Shape & Measure
- PPA – Planning, Preparation and Assessment.
- NCETM – National Centre for Excellence in the Teaching of Mathematics.
- SLT – Senior Leadership Team.
- STEM – Science, Technology, Engineering and Mathematics.