JOHN 10:10 LIFE IN ALL ITS FULLNESS

Growing Together on Our Learning Journey

Maths Policy

July 2024

Reviewed by	Approved by	Date Approved	Next Review Date
Headteacher / FGB	Headteacher / FGB	September 2024	September 2025

Signed: Chair of Governors

Signed: Headteachers

Maths….The Albourne Way

Everything we do at Albourne Church of England School is underpinned by our vision, ***The Albourne Way – living life to the full****. Children in our school will achieve highly because our expectations for pupil outcomes are ambitious.*

We have a broad and ambitious Maths programme of study which meets the requirements of the National Curriculum. Children are taught a coherent progression of skills and are given opportunities to answer a range of fluency, reasoning and problem solving questions. We teach content through a mastery approach following concrete, pictorial and abstract representations. Number sense and place value is vital for our learners to be efficient problem solvers who are able to reason and justify their thinking. Recalling basic number facts helps our children to think faster and more clearly, giving them the energy, attention and focus to tackle more complex questions.

We believe that maths is achievable for all and we teach through mainly flexible groupings. Often children work within mixed ability groups but at times more targeted challenge and support is beneficial and children may be grouped accordingly. We strive for every learner to feel motivated, empowered and capable so they are confident to apply their learning independently and in real life contexts. With this solid foundation, children have the skills and experience to enable them to develop a love for maths and the resilience to persevere when needed. Challenge to all is provided through deepening understanding rather than acceleration of content. By the end of their time at our schools, children are well equipped with a range of mathematical skills and strategies, which can be effectively transferred in different areas of the curriculum and prepare them for future successes.

Fluency: the ability to recall and apply knowledge rapidly and
accurately.

Reasoning: explaining their mathematical thinking

Maths is not always about 'big' numbers and times tables – it is about being able to apply concepts to different situations, problem solve, and find different strategies to check working.

INTENT

- To ensure all pupils are fluent mathematicians who are confident in the fundamentals of mathematics through varied and frequent practice with increasingly complex problems over time. In order that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- To promote mathematical reasoning by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- To solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.
- To encourage a sense of enjoyment and curiosity about mathematics.
- To make sure that all children leave Albourne Church of England Primary as confident mathematicians.

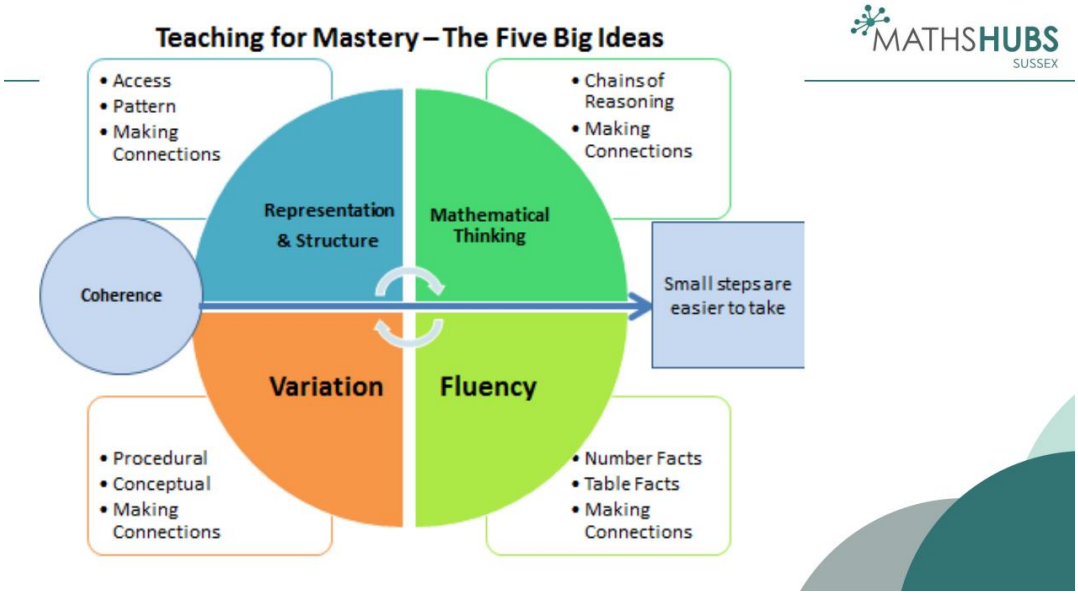
Curriculum planning and organisation

We follow the White Rose Maths scheme of learning. Teachers follow the units of work in order outlined by White Rose, but being flexible and spending more or less time on a topic as needed by each cohort. The two exceptions to this are: Year 6, where the order of topics has been adjusted slightly to match how we feel will best prepare the children for the end of Key Stage 2 assessments, and EYFS where NCETM's Mastering Number is used as the main maths resource (see below), with White Rose being used for non-number based units. This is set out in the Long Term Plan, which also details the timing of reflection weeks (where learning is assessed, consolidated and extended) and the problem solving focus for each half-term. To ensure working mathematically skills are taught systematically and consistently, each half-term children will have at least one stand-alone problem solving lesson which focuses on a specific problem solving strategy.

Mastering Number at Reception and Key Stage 1 is used in Reception, Year 1 and Year 2. In Year 1 and 2 this is an additional daily teacher-led session of 10 to 15 minutes, designed to ensure that pupils develop fluency with, and understanding of, number that is crucial to future success in maths and academic progress more generally. As of 2024/25 we will also be taking part in Mastering Number at Key Stage 2.

To further support fluency with number facts and times tables, the school use 'Mighty Multiples'. Starting in Year 1 children practise and take challenges in number bonds and multiplication and division facts. Certificates are awarded when children reach key milestones:
Bronze: Number bonds to 10 and 20, including word problems.
Silver: 2, 5, and 10 times tables, multiplication and division facts and word problems and well as the 'Mixed 1' challenge including all 3 times tables learnt so far.
Gold: 4, 3, and 8 times tables, 'Mixed 2' (2, 5, 10, 4, 3 and 8), all including multiplication and division facts and word problems.
Platinum: 6, 7, 9, 11 and 12 times tables, multiplication and division facts and word problems, finishing with 'Mixed 3' (all times tables 12 x 12).
In addition to this Times Tables Rocks Stars used as a way for children to practise their fluency at school and at home.

While teachers use White Rose resources as the basis for their planning, they are encouraged to add to these with additional resources as they see fit. Teachers will carefully select which parts of maths resources are used to ensure a teaching for Mastery approach, which includes the five big ideas.



We are part of the Sussex Maths Hub Maths Mastery Programme. We are taking part in the 'embedding' programme in 2023/2024 and will move to 'sustaining' in 2024/2025. This has provided excellent CPD and support for teachers across the school.

Other resources that support the planning and teaching of a Mastery approach are:

- Albourne Progression in Calculation document
- NCETM, Teaching for Mastery https://www.ncetm.org.uk/teaching-for-mastery/
- Nrich, http://nrich.maths.org/teacher-primary
- Other problem solving and reasoning resources to be found in each class: I see reasoning, Talk it, Solve it.

IMPLEMENTATION

Teaching

The main features of a maths lesson at Albourne include:

- The lesson starting with a **'Magic 10'.**
  This is a 10-minute session designed to recap and revisit prior learning. Activities in a Magic 10 might include: practising key fluency skills with activities such as the counting stick for times tables, answering questions from content covered last week, last month, last year (or Flash Back 5), active maths activities where children are putting into practice skills they have already learnt or tasks designed to promote mathematical thinking.

https://www.topmarks.co.uk/maths-games/daily10 Daily 10
https://wodb.ca/ Which one doesn't belong
https://whiteroseeducation.com/resources/digital-tools One Maths Minute

- Children working through the **curriculum content at the same pace**. Differentiation is achieved by extending children by emphasising deep knowledge and through individual support and intervention.

- A **'ping-pong'** style lesson where teachers introduce learning in small steps, giving children opportunities to practice, before introducing the next step. This goes side by side with an **'I do'** (teacher), **'We do'** (teacher and children) and **'You do'** (children) approach. This approach increases classroom engagement, enables children to make rapid progress through modelling and scaffolding, and reduces cognitive load as steps are manageable, achievable and guided.

- Use of **working walls** to support children's learning, these will be referred to and added to during lessons.

- Teachers use precise **questioning** in class to test conceptual and procedural knowledge, and assess pupils regularly to identify those requiring intervention so that all pupils keep up.

- Teachers will use the **concrete, pictorial and abstract approach (CPA)** to ensure that procedural and conceptual understanding are developed simultaneously.

- Use of precise **vocabulary, definitions, stem sentences and generalisations**. Verbalised by the children through 'I say, you say, you say, we say'.

- Opportunities for extension activities for 'rapid graspers' that do not move on to new content but **deepen knowledge** within the content they are working on.

- Opportunities for **problem solving and reasoning** for all

- Teachers and teaching assistants monitoring all pupils during a lesson, and providing support for those children who need it as identified in each lesson.

- Children being involved in their own assessment through **'purple pen' marking** and self-assessment of their confident in the small steps of the lesson.

- Teachers noticing **misconceptions,** either through planned activities to highlight common misconceptions or through identifying them in a lesson and responding accordingly.

The structure of a maths lesson will generally take the following format:

- **Magic 10** – recap prior knowledge/practice key skills (including Mastering Number)
- **Main Teach** – ping pong style lesson with children working at the same pace for the majority – some may need adult support to access. This could include short tasks with a partner/on a whiteboard /independently in books.
- Longer **independent task** that all access – everyone should start on the same activity
- There will also be **extension activities,** which may be 'Chilli' challenges
- Purple pen mark/**feedback** as a whole class

Marking

When considering marking in Maths we take into account evidence based research (Black et al 2003) which shows that the most effective and beneficial forms of assessment are ones which support learning (i.e. are formative) and are built-in to lesson design.

In primary mathematics they require:

- well-structured classroom activities (involving conceptual and procedural variation and intelligent practice);
- regular opportunities for discussion of answers and strategies to support pupils' reasoning skills and check and deepen their understanding;
- interaction and dialogue (between teacher and pupils, and between pupils themselves), focusing in particular on key ideas and concepts (including misconceptions and difficult points) and effective, efficient strategies of working mathematically.

The most important activity for teachers is the teaching itself, supported by the design and preparation of lessons. Marking and evidence-recording strategies should be efficient, so that they do not steal time that would be better spent on lesson design and preparation. Neither should they result in an excessive workload for teachers.

It is important for teachers to distinguish between a pupil's simple slip and an error that reflects a lack of understanding. For slips, it is often enough to simply indicate where each slip occurs, particularly when the teacher's/school's approach is to encourage pupils to correct them;

- If errors demonstrate lack of understanding, the teacher may decide to take alternative courses of action. For instance, with a small number of pupils, the teacher may arrange same-day intervention while for a large number of pupils, the errors will be addressed in the next lesson.

Evidence shows (Black and Wiliam 1998) that pupils benefit from marking their own work. Part of this responsibility is to identify for themselves the facts, strategies and concepts they know well and those which they find harder and need to continue to work on.

IMPACT

Assessment

Teachers use informal daily assessment based on a specific activity. It centres on the learning intentions and informs the teacher's future planning for individuals or groups. Outcomes are measured against the success criteria from teacher planning. Support staff are also involved in the assessment process through their observations, annotations, feedback to the teacher and feedback to the children. Children are encouraged to self-assess their work against learning intentions and success criteria. Verbal feedback and live marking during the lesson is particularly important to support children's progress.

During 'reflection week' in the second half of each term, children take part in a range of assessment activities that help build a picture of their progress and attainment. Children will take the PUMA assessment for their year group (unless they are working significantly below their year group level in which case a more appropriate assessment will be given). In addition, children will complete a 'diving deeper' page on one element of their learning form that term, where they show their learning in different ways: definition, draw-it, prove, make a mistake, tell a story. Teachers will also use this week to reteach any areas they have identified as needing extra practice.

At the end of this week, teachers will use all of this information to assess children's progress towards the year group statements from the National Curriculum (entered into Insight) and make a judgement about whether each child is currently working at greater depth, the expected standard or are working below their year group level. This overall judgement is inputted into termly Windscreen Assessments.

These windscreens are then analysed by the Assessment Lead and discussed at termly pupil progress meetings. Internal is checked by the Maths lead to look for strengths and weaknesses across year groups or subgroups of children. External data is tracked to evaluate progress against school and national targets. Both of these inform the development of the Maths Action Plan.

The staff moderate maths in planned meetings to ensure consistency in practice as well as an understanding of whether the child is on track to meet/meeting the end of year expectations.

Monitoring, evaluation and professional development

Monitoring of the standards of the children's learning and of the quality of teaching in Maths is the responsibility of the Maths Subject Leader. The monitoring of Maths is fed back to teachers regularly and whole school development points are discussed and actioned in staff meetings. The work of the subject leader also involves supporting colleagues in the teaching of Maths. The subject leader meets regularly with the Headteacher and gives governors a updates on developments in Maths and ways forward.

Monitoring activities undertaken by the subject lead for Maths are planned across the year and can include the following:

- staff meetings to analyse samples of pupils' work in Maths to moderate standards to ensure consistency and to inform colleagues of subject developments at local and national levels;
- lesson observations to ensure that learning and teaching is appropriately engaging and challenging and that appropriate progress is being made by all pupils;
- the sampling of pupils' work to ensure that expectations in terms of subject standards are being maintained through the curriculum;
- meetings and discussions with pupils from across year groups
- analysis of data

An important outcome of this ongoing monitoring and evaluation will be the identification of professional development needs amongst colleagues. The subject lead will, in the context of whole school priorities seek to address these through engaging appropriate external and internal support.

The subject lead uses the intelligence gained from monitoring and evaluation provision to update and inform the priorities for the annual Action Plan.