



Subject Report 2023-2024

Subject	Maths	Report prepared by	Becky May and Issy Soane
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Overview of the year:

As a growing school with an above-average number of new staff members each year, it is vital that the way we teach maths is clear and uniform throughout the school. As a result of the maths action plan, the subject monitoring and feedback from staff, the messages from this year are:

- We have continued to make high-quality, consistent education in maths, particularly early maths, by the sharing of best practices across the school.
- A strong monitoring programme to ensure that resources are used to support maths understanding throughout the school. Use of concrete resources as evidence in books and as adaption to aid learning.
- A continued emphasis on maths fluency to develop skills that help learners become more efficient and process understanding at a faster and clearer rate.

Curriculum: Intent, implementation, Impact

Intent

At The Cambridge Primary School, we want our pupils to enjoy maths, enjoy the thrill of problem solving, and look forward to the challenges it brings. Through the Maths No Problem initiative, we provide interactive and engaging lessons that develop curiosity, creativity, resilience, and a growth mindset. We endeavour to incorporate as many real-world scenarios as possible into our maths classes to help learners understand the function of mathematics in the world around them and to motivate them to become lifelong learners and problem solvers. Maths is taught in whole-class settings across the school, with included support and chances for deeper knowledge to ensure that learning is accessible to all students. Fluency is a crucial part of the maths curriculum; it is used in all lessons and is explicitly taught every day. This is also used outside of mathematical sessions to help students develop, improve, and extend their number knowledge and fluency skills. This allows students to completely explore a problem-solving task without being limited by number facts.

We encourage our learners to discover how mathematics aids our understanding of the world. It enables us to understand and appreciate patterns and relationships in both number and space in everyday life. As our knowledge and understanding grow, we realise how essential many roles' individuals played in the creation and use of mathematics.

In Maths, A Cambridge Pupil will leave with:

Key Skills	Qualities
<ul style="list-style-type: none">• To approach problems with a 'can do' attitude and resilience whilst applying skills using prior knowledge• Become confident in the fundamentals of mathematics, developing conceptual knowledge and an ability to recall and apply knowledge rapidly and accurately• Use a wide range of models, visual manipulatives and practical resources to develop a deep understanding alongside procedural fluency• Use reasoning skills to be curious and investigate number• Use and understand mathematical language and recognise its importance as a language for communication and thinking To work collaboratively and independently to problem solve , discuss ideas and justify reasoning.	The Cambridge pupil is brave , using appropriate methods to be curious, and a growth mind-set to solve problems. They are equipped with a range of innovative methods to resolve problems with more than one-step and use prior knowledge to support their enquiries and explain their methods and thinking process. They have developed resilience to face challenges and embraced that they learn through making mistakes. They take ownership in justifying their reasoning and are open to work collaboratively to investigate number and prove their understanding.

Implementation

Across the school mixed ability classes are used in order to foster the development of mathematical language and provide opportunities for sharing and debating methods in order to increase understanding. Lessons are adapted to suit the needs of learners through having resources available to deepen and support understanding.

In order to improve children's problem-solving fluency, we must first help them remember, use, and manipulate numbers. Children learn number recall, number bonds, and times tables through fluency, which grows over the course of their education. This is taught through a programme called 'Mastering number' from Reception through to Year 2. In KS2 fluency is taught in a 15-minute starter 'fluent in 5' giving children 5 minutes to recall skills from the previous year, month, week and day. This is then discussed as a class and misconceptions are addressed. All daily maths classes at the school have the same format. The lesson begins with an explore element where there is an opportunity to investigate a question that is in relation to the skill being taught that day. They then move onto a guided practice where questions are provided that embed the skill

they are looking at, this is done independently with the support of their peers allowing the class teacher to move around the room and assess understanding. Children to mark their own answers with their partner using this as an opportunity to reflect on any marvellous mistakes. The children utilise their understanding of the topic to finish their Maths No Problem workbooks, which contain problems that must be solved in a variety of methods, this works the same as the guided practice where children support each other and mark their own work identifying their mistakes and writing where they went wrong in their books for anyone to understand their thought process. This allows children to practice methods and show understanding. Challenges are then accessible, providing mastery style questions to extend learning.

Topics taught across each year group:

	AT1	AT2	SP1	SP2	SU1	SU2
EYFS	Baseline Assessments Recognising number Sorting/comparing Number bonds to 5 2D Shape	Comparing quantities Counting/recognition to 10 One more/One less Addition and subtraction within 5 Pattern with common shapes Money Measuring/comparing Positional language Length, weight and height	Counting/recognition to 10 Number bonds to 5 Addition and subtraction to 5 Counting to 10 2D and 3D shapes Number bonds to 10 Ordering by weight, height and capacity Ordering by length and height Halving and sharing	Counting/recognition to 10 Counting irregular arrangements within 10 Number bonds to 5 Counting to 10 Length and height Size, weight and capacity 2D and 3D shapes	Adding more Taking away Counting to 20 Number bonds to 20 Doubling Halving Odds and evens Length, height and distance Capacity 2D and 3D shapes	Adding more Taking away Counting to 20 Number bonds to 20 Doubling Halving Odds and evens Length, height and distance Capacity 2D and 3D shapes
Y1	Numbers to 10 Number bonds Addition within 10 Subtraction within 10	Numbers to 20 Shape and pattern Add/subtract within 20 Number families Summative Assessment	Length and Height Numbers to 40 AS Word problems	AS Word problems Multiplication Days of the week, months and year Summative Assessment	Multiplication Division Fractions Numbers to 100 Time	Space - Whole/half turns Money Volume and capacity Mass Geometry Summative Assessment
Y2	Weeks 1, 2, 3, 4 and 5- Place Value Week 6 and 7- Addition	Week 1- Addition Weeks 2, 3 and 4- Subtraction Week 5, 6 and 7- Multiplication	Weeks 1 and 2- Division Weeks 3 and 4- Length Weeks 5 and 6- Money	Week 1- Picture Graphs Week 2 and 3- Mass and Temperature Weeks 4 and 5- 2D Shapes	Week 1- 3D Shapes Week 2- More Word Problems Week 3, 4 and 5- Time and Volume Week 6- Revisit	Weeks 1, 2 and 3- Fractions REVIST
Y3	Weeks 1 and 2- Place value Weeks 3, 4, 5, 6 and 7- Addition and subtraction	Weeks 1, 2 and 3- Multiplication and division Weeks 4, 5 and 6- Further multiplication and division	Weeks 1 and 2- Length Weeks 3 and 4- Mass Weeks 5 and 6- Volume	Weeks 1, 2 and 3- Money Weeks 4, 5 and 6- Time	Week 1- Time Week 2- Picture graphs and bar graphs Weeks 3, 4, 5 and 6 - Fractions	Weeks 1 and 2- Fractions Week 3- Angles Weeks 4 and 5 - Geometry: lines and shape Weeks 6 and 7- Measurement: Perimeter of figures
Y4	Weeks 1, 2 and 3- Place value: Numbers so 10 000 Weeks 4, 5, 6 and 7- Addition and subtraction within numbers to 10 000	Weeks 1, 2, 3 and 4- Multiplication and division Weeks 5 and 6- Further multiplication and division	Weeks 1, 2 and 3- Further Multiplication and division Weeks 4- Statistics: Graphs Weeks 5 and 6- Fractions, decimal and percentages	Weeks 1- Fractions, decimal and percentages: Fractions Weeks 2 and 3- Measurement: Time Weeks 4, 5 and 6- Fractions, decimal and percentages: Decimals	Week 1 and 2 - Money Week 3, 4 and 5- Measurement: Mass, length and volume Weeks 6 and 7 - Measurement: Area of figures	Week 1 and 2 - Geometry: Properties of shape Week 3- Geometry: Position and direction Weeks 4 and 5- Place value: Roman Numerals Week 6 and 7- Review and revise place value
Y5	Week 1- Numbers to 1 000 000 Week 2- Whole Numbers: Addition and Subtraction Week 3, 4, 5 and 6- Whole Numbers: Multiplication and Division	Week 1- Graphs Week 2, 3, 4, 5 and 6- Fractions	Week 1, 2 and 3- Decimals Week 4 - Percentages Week 5 and 6- Geometry	Week 1 - Position and Movement Week 2 and 3 - Measurements Week 4- Area and Perimeter Week 5- Volume	Week 1 and 2- Roman numerals Week 3, 4, 5 and 6- Consolidation in areas that have been identified as gaps focusing on place value and the four operations addition and subtraction, multiplication and division.	Weeks 1, 2, 3, 4, 5 and 6- Consolidation in areas that have been identified as gaps focusing on place value and the four operations addition and subtraction, multiplication and division.

Rationale for curriculum organisation:

We provide the mastery method curriculum "Maths no problem". Children investigate number using a variety of techniques and resources. In KS1 and KS2, maths is taught daily for an hour with an additional 15 minutes of fluency, which connects prior learning to present learning, creating 'sticky learning'. In Early Years, Maths is taught through a 20-minute input alongside continuous provision activities, which explore number and shape. Teachers evaluate and provide feedback on students' comprehension of a topic during lessons using probing questions and assessments.

What have you done to ensure that every skill is covered?

The Maths No Problem scheme ensures learning is cyclical by revisiting skills and methods throughout each topic and building upon prior knowledge. Our skills progression document ensures that every skill is taught within this subject. Subject leaders supervise planning, conduct student feedback sessions, review books, and observe classes to ensure that all skills are taught across the school. We follow a scheme and classes are organised; this is consistent throughout the school and can be seen clearly on planning notebooks and in books. Teachers use the skills progression document, curriculum coverage document, and MNP internet hub to identify and feel confident with what has been taught in past years and how to build on those abilities when preparing for lessons.

Impact

Monitoring shows that children are confident and understand the structure of our maths classes; they can use skills from prior years to assist them when faced with new topics; this is evidenced in books and pupil conferencing. This year it has been clear to see that there is strong consistency in the structure of lessons and that children are building on previous knowledge, which is having a positive impact on learning. It has also shown that teachers are confident to deliver the scheme and adapt to support learning where necessary.

What does marking and assessment look like in your subject? How do you know this has been effective for children's progress?

Across the school we have a live marking approach, in maths this is used to assess and support rapid progress in all lessons. During lessons through questioning and feedback teachers identify children who need support and who they can challenge in that moment. In order to challenge children during lessons, challenge slips are accessible for children to collect and have a go at, they stick this into their workbooks to show their teacher their understanding. During the lesson children also have the opportunity to consolidate their learning with an orange slip with practice questions on that mirror the learning applied in that lesson. This is also stuck into their workbook for the teacher to review either during or after the lesson. At the end of the lesson, children mark their own work using a purple pen. They assess their confidence of their own learning by adding a dot of green (understood and applied knowledge), amber (understood but struggled to apply) or red (did not understand). This allows them to reflect on their own learning and have a voice in their learning journey. At the end of the lesson the teacher will then look through the books and initial their coloured dot if they agree with it. Teachers will take this time to identify any children who need some extra practice on the subject taught and stick an intervention sheet into their books, which they will then complete the same day with either the class teacher or another adult to ensure that they are confident to continue the learning the next day.

What Performance Information is monitored? What are the 3 questions you are considering for future developments?

Progress in maths is good, through monitoring it is evident that children are making progress and with further implementation and consistent use of same day interventions.

The subject leader monitors regularly (weekly) using a variety of strategies:

- Learning walks focusing on displays and resources
- Book looks
- Pupil conferencing (during the day and reflecting on feedback after school)
- Check ins with staff regarding subject knowledge questions and queries
- Lesson observations and feedback (during the day)
- Looking through planning
- Researching other schools' maths ideas and strategies
- Governor maths mornings where the subject lead completes a learning walk alongside the governors

Monitoring leads to feedback to staff to ensure that it has an impact and good practice and new strategies are shared.

What CPD have you received / research have you carried out in your subject area? What has been the impact of this on the children?

The subject leader was able to identify areas for further CPD in order to support staff through regular monitoring and feedback from staff members. In order to support their colleagues, the subject leader has watched all of the maths no problem training videos that are offered as part of the initiative and has directed them to colleagues as well when necessary. The subject leader has contacted other Maths leads within the academy trust for guidance and assistance, which they have then shared with their staff. We have also had staff meetings within school to discuss how to support adaptations and support all learners in maths. This has increased staff confidence, resulting in greater quality teaching throughout the school. Teachers are more secure in their ability to alter their plans and where to seek support if necessary. A member of staff from Early Years and KS1 was sent on a Maths hub course that focused on problem solving and expanding understanding which was extremely beneficial. They were able to share their findings with the subject's lead and other school practitioners. Phase leaders also team taught with new members of staff to support their understanding of Maths at the Cambridge and how to best support a range of learners.

How are Fundamental British Values, the Cambridge Learning Characteristics and personal development promoted within your subject?

Fundamental British Values

In maths we ensure that we show mutual respect children behave appropriately, allowing everyone involved the opportunity to work to the best of their ability. In addition, they take turns, sharing equipment, reviewing each other's work respectfully and working collaboratively on projects whilst helping others.

The Cambridge Learning Characteristics (BICO)

In maths, children at the Cambridge are **brave** enough to solve problems, make marvellous mistakes and take risks to develop and deepen their understanding of number and investigation. Children are **innovative** by trying, creating and exploring different methods, thinking outside of the box and working with others.

In maths children work **collaboratively** to solve problems and investigations, support and challenge their peers and discover new ways to improve their understanding. Children **take ownership** for their learning by utilising

<p>Key Questions:</p> <ol style="list-style-type: none"> 1. How are practical resources being used to support adaptive teaching and learning? How could CPD support this? 2. How can the quality, consistency and capacity for same day interventions, by skilled staff, be improved? 3. How will the Y6 curriculum be written / adapted to ensure gaps are closed and children are 'secondary ready' at the end of KS2? 	<p>resources that support them best, using their environment and peers to develop strategies and approaches when it comes to challenges and critical thinking.</p> <p><u>Opportunities for Personal Development</u></p> <p>Maths has many cross-curricular links, it is heavily linked to Science when reading and interpreting statistics. We have a coding club that relies heavily on the use of maths to create games, programmes and positioning of elements to design and create interactive materials. This shows and inspires children how maths is used in everyday life and future careers.</p>
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What have we done in 2023?	
Implementation	Impact
<p>Purchased the MNP Maths scheme (for 360 pupils)</p> <p>Workbooks (book A and B)</p> <p>Year 1 – 130</p> <p>Year 2 – 130</p> <p>Year 3 – 130</p> <p>Year 4 – 130</p> <p>Year 5 – 130</p> <p>- Alpha: The 1st book of Mathsteasers- Year 4</p> <p>- Alpha: The 2st book of Mathsteasers- Year 5</p> <p>- Alpha: The 2st book of Mathsteasers- Year 6</p> <p>- Access to MNP Hub (16 staff)</p> <p>- Access to Video tutorials (10 staff)</p>	<p>Reduced teacher workload. Consistent and systematic approach to teaching Maths across the school. Growth mind-set and greater depth problem solving.</p> <p>Improved pupil confidence in approaching maths problems.</p> <p>Mathsteasers books are there to support teachers with challenges and adapting learning, currently in utilised in Year 5 as challenges. These are books with a range of mastery questions in each area of the curriculum to deepen understanding and a way to develop problem solving skills.</p>
<p>Purchased Maths NTS Assessment papers (3 points during the year (CP2, CP4, CP6)</p> <p>GAPS – 6 packs for each term (18 per year) 1 administering manual KS2</p>	<p>Informing teacher assessments, identifying gaps in knowledge from school closures and enable teaching to be adapted to plug gaps.</p> <p>Shine Programme is used alongside the NTS papers to identify and plug gaps addressed in the papers.</p>
<p>Purchasing of maths resources set up new classes (Year 6 x 2) and to top up established year groups that are currently sharing resources.</p> <p>New resources needed for Year 6: Time, fractions, percentages and decimals, money, shape and place value to millions, position and movement and measurement.</p>	<p>MNP is based on the theory that children need to work through concrete, pictorial and then abstract stages. Every lesson is introduced with concrete materials. Children do not move on to the next stage until they are secure with the previous stage. It is essential that the children have concrete objects to explore and problem solve with. It is also important that children are exposed to a variety of ways to problem solve to deepen there understanding. The continuous provision room enables learners to embed their learning through play.</p>
<p>Purchase practical maths resources for whole school and ensure that are used or can be used daily to support practice.</p>	<p>Support for teachers to scaffold learning. Impact practical learning and development of practical, pictorial and abstract learning to challenge and embed learning. This will also support teachers assess and implement support actively rather than acting after the lesson.</p>
<p>Renew whole school access to Times table rock stars (online times table platform) Unlimited teachers and students and NumBots.</p>	<p>Engaging and interactive method of learning times tables and beneficial for preparation for the Year 4 times table test.</p>
<p>Monitoring planning, teaching and books to ensure a consistent approach and standard to the teaching of maths across the school focusing on fluency and how this is consistent across the school yet progressive.</p>	<p>Quality maths teaching across the school and pupil progress at expected or above.</p>
<p>Continue to ensure that time is made for pupil conferencing and maths intervention in order for children to keep up and not catch up.</p>	<p>Gather feedback from teaching staff. Learning walks and book monitoring.</p>

Supporting parents (parent maths workshop) and working collaboratively to understand and feel confident with teaching maths in a reasoning style.	Supporting parents, which will in hand, support children in their understanding of reasoning and developing mathematical language. This will also create an avenue for communication and discussions regarding maths.
What is the action plan for 2024?	
Implementation	Impact
<p>Purchased the MNP Maths scheme (for 420 pupils):</p> <p>Foundations: workbook journal A, B and C:</p> <p>Year R- 140</p> <p>Workbooks (book A and B):</p> <p>Year 1 – 140</p> <p>Year 2 – 140</p> <p>Year 3 – 140</p> <p>Year 4 – 140</p> <p>Year 5 – 140</p> <p>Workbooks and Textbook (book A and B):</p> <p>Year 6 - 140</p> <p>- Access to MNP Hub (14 staff)</p> <p>- Access to Video tutorials (10 staff)</p>	<p>Reduced teacher workload. Consistent and systematic approach to teaching Maths across the school. Growth mind-set and greater depth problem solving.</p> <p>Improved pupil confidence in approaching maths problems.</p> <p>Mathsteasers books are there to support teachers with challenges and adapting learning. These are books with a range of mastery questions in each area of the curriculum to deepen understanding and a way to develop problem solving skills.</p>
<p>Purchased Maths NTS Assessment papers (3 points during the year (CP2, CP4, CP6)</p> <p>GAPS – 6 packs for each term (18 per year) 1 administering manual KS2.</p>	<p>Informing teacher assessments, identifying gaps in knowledge from school closures and enable teaching to be adapted to plug gaps.</p> <p>Shine Programme is used alongside the NTS papers to identify and plug gaps addressed in the papers.</p>
Purchase practical maths resources for Year 6 and ensure that are used or can be used daily to support practice and use in booster groups.	Support for teachers to scaffold learning. Impact practical learning and development of practical, pictorial and abstract learning to challenge and embed learning. This will also support teachers assess and implement support actively rather than acting after the lesson.
Renew whole school access to Times table rock stars (online times table platform) Unlimited teachers and students and NumBots.	Engaging and interactive method of learning times tables and beneficial for preparation for the Year 4 times table test.
Monitoring planning, teaching and books to ensure a consistent approach and standard to the teaching of maths across the school focusing on fluency and how this is consistent across the school yet progressive.	Quality maths teaching across the school and pupil progress at expected or above.
Continue to ensure that time is made for pupil conferencing and maths intervention in order for children to keep up and not catch up.	Gather feedback from teaching staff. Learning walks and book monitoring.
Supporting parents (parent maths workshop) and working collaboratively to understand and feel confident with teaching maths in a reasoning style.	Supporting parents, which will in hand, support children in their understanding of reasoning and developing mathematical language. This will also create an avenue for communication and discussions regarding maths.
Supporting year 6 teachers in preparation for SATS. Monitoring and deepening understanding of filling gaps in order to address any areas for support.	Meeting with all teachers to collate subject knowledge and support to have a 'team' approach to year 6's SATS so the responsibility is shared and all children are supported where necessary.
Implementation of Year 6 booster groups before and after school run by various staff members as a result of strengths.	Identify gaps and support children where necessary. Utilise staff strengths to fill gaps and develop confidence.
<p>Use of different resources to support with planning, challenges and interventions for the year 6 curriculum:</p> <ul style="list-style-type: none"> - Classroom secrets subscription - White rose subscription 	To support with gaps in the curriculum and teacher subject knowledge to challenge and practice.

