Newall Green Primary School
"Aiming High to Reach Our Goals"

Cherry Tree Trust

School Policy Document for Maths

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Review	Annually

Contents

OUR INTENT, IMPLEMENTATION AND IMPACT STATEMENT FOR MATHS

MATHS INTENT STATEMENT:

The curriculum that we teach has been planned to promote the (Manchester) five key skills for life: problem-solving, teamwork, self-management (initiative, organisation, accountability), self-belief (confidence, resilience, positive attitude), and communication.

Maths is a skill that we use daily and is an essential part of everyday life. Therefore, mathematics forms an important part of our broad and balanced curriculum where we endeavour to ensure that children develop an enjoyment and enthusiasm for maths that will stay with them throughout their lives and empower them in future life. We believe that unlocking mathematical fluency is an essential life skill for all learners and is a prerequisite to being able to reason and solve problems mathematically. Our aim is to develop a positive culture of deep understanding, confidence and competence in maths that produces strong, secure learning.

As a school, we recognise that the key to unlocking the potential in our children is through the development of basic mathematical skills and the understanding of mathematical concepts. We therefore place great emphasis on the use of concrete resources and pictorial representations at all ages, to enable children to fully understand the concepts and principals, when presented with abstract calculations and questions. Our maths curriculum is progressive; at KS2 it is designed to develop competencies to equip pupils for KS3 where they will build on KS2, make connections and solve increasingly sophisticated problems.

MATHS IMPLEMENTATION STATEMENT:

Our Maths curriculum provides breadth and balance, is relevant and engaging, and meets the needs and abilities of all our children to ensure that all pupils are able to excel. As a school, we believe in the importance of following the concrete-pictorial-abstract approach as a means to developing a solid understanding of mathematical concepts, which can be applied in a variety of contexts through reasoning and problem-solving challenges.

Children receive a minimum of 5 hours maths tuition each week with additional sessions devoted to number proficiency and times tables. From Reception to Year 6, we adhere to our calculation policy, which outlines the progression of strategies and methods to be taught, and we have an accompanying vocabulary progression document. We have developed our medium-term plans in line with White Rose small steps, but have altered the order to suit the needs of our children, so that connections between units of learning are easier to recognise.

From Reception to Year 6, children follow the framework of 'White Rose Maths', which supports children in learning the fundamentals behind the meanings of numbers and exploring other key mathematical areas. Our maths curriculum is also supported through the implementation of a variety of resources including Planpanion, Oak Academy and the NCETM framework. These frameworks use the 'mastery approach' which enable children to make 'small steps' to break down the teaching sequence into small achievable chunks of learning. Where children require additional support, 'scaffolds' are used to support children to ensure that they have secured the small step before moving on. These 'scaffolds' may be in the form of returning to concrete resources or through presenting problems as pictorial representations. For children who understand a concept quicker, challenges are used to deepen and challenge learners further within the curriculum area.

Progression documents such as our calculation policy are carefully used to ensure that children are not rushed onto content outside their year group but rather deepened within it. Within daily teaching, children will be reminded/taught fact sentences linked to previous/current learning which will constantly be referred to within the lesson. They will have many opportunities to apply these fact sentences; modelling will support children in developing their ability to reason and explain their answers using them.

Daily assessment is incorporated throughout the lesson through live and verbal feedback. End of unit White Rose and termly NTS assessments are used as a diagnostic tool to ensure that teachers are adapting learning to meet the needs of all children and ensure that any necessary interventions are targeted specifically to meet the needs of children.

Times tables play an important part in our maths learning, with children developing their fluency in rapid recall of tables up to 12 x 12 by the end of year 4. Times tables are taught through the Maths curriculum and also through the KS2 Mastering Number Programme in Years 4 and 5. While the rapid recall of times tables is being developed through teaching and online platforms such as Times Table Rock stars, children are also learning how to apply and manipulate their understanding of this to reason and solve problems.

MATHS IMPACT STATEMENT:

PUPIL VOICE - Through discussion and feedback, children talk enthusiastically about their maths lessons and speak about how they love learning about maths. They can articulate the context in which maths is being taught and relate this to real life purposes. Children show confidence and believe they can learn about a new maths area and apply the knowledge and skills they already have.

EVIDENCE IN KNOWLEDGE - Pupils know how and why maths is used in the outside world and in the workplace. They know about different ways that maths can be used to support their future potential. Mathematical concepts or skills are mastered when a child can show it in multiple ways, using the mathematical language to explain their ideas, and can independently apply the concept to new problems in unfamiliar situations. Children demonstrate a quick recall of facts and procedures. This includes the recollection of the times table.

EVIDENCE IN SKILLS - Pupils use acquired vocabulary in maths lessons. They have the skills to use methods independently and show resilience when tackling problems. The flexibility and fluidity to move between different contexts and representations of maths. Children show a high level of pride in the presentation and understanding of the work. The chance to develop the ability to recognise relationships and make connections in maths lessons. Teachers plan a range of opportunities to use maths inside and outside school.

OUTCOMES - At the end of each year we expect the children to have achieved Age Related Expectations (ARE) for their year group. Some children will have progressed further and achieved greater depth (GD). Children who have gaps in their knowledge receive appropriate support and intervention.

Mastery: All children secure long-term, deep and adaptable understanding of maths which they can apply in different contexts

AIMS

- To ensure that all pupils are enthusiastic, confident and fluent in the fundamentals of Maths so that pupils have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems.
- To ensure that all pupils reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- To ensure that all pupils can solve problems by applying their Maths 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 increase the confidence of each pupil in Maths to enable them to apply the knowledge and master skills with assurance across the curriculum and in real life.
- To develop pupils' initiative and ability to work both independently and in cooperation with others enabling pupils' communication.
- To develop pupils' ability to calculate accurately and efficiently, both mentally and in writing, drawing on a range of calculation strategies
- To promote the teaching of Maths and literacy within all subjects.
- To share good practice within the school.
- To continue to engage with the Maths Hub and implement strategies based on research and evidence within school.

SCHOOL POLICY AND THE NATIONAL CURRICULUM

At KS1 and KS2, teachers deliver the National Curriculum 2014 and follow White Rose Maths scheme.

SCHOOL POLICY AND BREADTH OF STUDY

Through careful planning and preparation, we aim to ensure that throughout the school children are given opportunities for:

- practical activities and mathematical games
- problem solving and reasoning
- individual, group and whole class discussions and activities
- open and closed tasks that apply skills across the curriculum
- a range of methods of calculating e.g. mental, pencil and paper and using a calculator
- working with computers as a mathematical tool

TEACHERS' PLANNING AND ORGANISATION

Each class teacher is responsible for the Maths in their class. Teaching and learning that take place within their classroom are supported by guidance from Maths co-ordinators through regular learning walks and feedback from relevant training courses.

The planning for Maths is organised into Long term/Medium Term and short-term weekly planning.

The approach to the teaching of Maths within the school is based on the following expectations:

- a Maths lesson is taught every day
- in KS1 and KS2, problem solving and reasoning opportunities are provided throughout the Maths curriculum to promote mastery skills
- a clear focus on direct, instructional teaching and interactive oral work with the whole class and group.
- an emphasis on pupils mastering an area before moving on.
- lessons are organised so that pupils engage with Maths for between 45 and 60 minutes per day.

Short term planning is taken from the White Rose Maths small steps as guidance and this should be adapted to suit the needs of the class. Additional representations and teaching materials can be used from NCETM, Oak Academy, Planpanion and NRICH. Teachers plan lessons using a range of resources for the curriculum specific for the age range being taught and in accordance with the school's calculation policy.

STRUCTURE OF A LESSON

1. Counting (KS1)/number bonds (KS1)/times tables practice (Y2 + KS2)
2. 4-a-day (Recap of previous topics learnt: Addition & Subtraction; Multiplication & Division; Fractions, Percentages & Decimals; Measures, Geometry and Statistics)
3. New learning with teacher modelling (I do)
4. Develop learning (we do)
5. Independent task (you do)
6. Plenary – to include a guided problem solving/reasoning question.

10 minutes of arithmetic practice is done daily in KS2. This is at a separate time to the maths lesson.

SPECIAL EDUCATIONAL NEEDS

Children with SEN are taught within the daily Maths lesson or within a provision room. Where appropriate, children receive additional support through TA support and interventions in areas identified by the NTS assessments/PIVATS assessment. Where applicable, children with learning plans will have suitable targets. Teaching Assistants are deployed to work with small groups across both Key stages.

EQUAL OPPORTUNITIES

We incorporate Maths into a wide range of cross-curricular subjects and seek to take advantage of multi-cultural aspects of Maths. In the daily Maths lesson, we support children with English as an additional language in a variety of ways.

e.g. repeating instructions, speaking clearly, emphasising key words, using picture cues, playing mathematical games, encouraging children to join in counting, chanting, finger games, rhymes etc.

MATHS IN EARLY YEARS

Children in Nursery and Reception are taught Maths through delivery of the Mathematics area of learning in the Early Years Foundation Stage framework (updated in 2021). The teaching of Maths in the EYFS provides children with the skills they need to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. Children use a range of resources to support their number work including small counters/pebbles and tens frames for organising counting. The curriculum in Early Years also provides opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures.

We believe it is essential to have a balance between adult and child-led learning in Early Years. This allows children to practise new skills and take ownership of their learning by applying it in different situations. Carefully planned adult-led activities are important to ensure children learn specific skills and knowledge. During play, they can practise these skills and we can then see how much of this learning children have embedded. Both Reception and Nursery follow daily timetables which provide set times for adult-led sessions and time for children to learn through continuous provision. All children have a daily whole class/group maths input which is between 10-15minutes long. Teachers plan for both adult-led and child-led sessions based on children's needs and any gaps in their learning. Teachers also make on-going assessments of the progress and attainment of each child and use this information to aid future planning.

Teachers follow a long-term Maths plan which sets out the objectives children will be taught each term. Most of these objectives come from Development Matters which is non-statutory curriculum guidance for Early Years. To support their planning in Reception, teachers use resources from the White Rose Maths scheme. Both Nursery and Reception teachers also use the Numberblocks videos and support materials from NCETM.

Listed below are the two Mathematics Early Learning Goals which children are expected to achieve by the time they leave Reception:

ELG: Number

Children at the expected level of development will:

- Have a deep understanding of number to 10, including the composition of each number;
- Subitise (recognise quantities without counting) up to 5;
- Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

ELG: Numerical Patterns

Children at the expected level of development will:

- Verbally count beyond 20, recognising the pattern of the counting system;
- Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity;
- Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

PUPILS' RECORDS OF THEIR WORK

Children are taught a variety of methods for recording their work and they are encouraged and helped to use the most appropriate and convenient method of recording. For further guidance, see the school's calculation policy.

Children are encouraged to use mental strategies before resorting to a written algorithm.

Children are encouraged to show all "working out" in their exercise books, crossing out any mistakes rather than rubbing them out. Whiteboards should mainly be used for activities where the teacher is assessing whole-class responses such as counting activities and/or mental/oral warm-up activities.

In Year 1, as children move from the EYFS setting, there is a greater emphasis on teaching maths through practical activities which develop skills of written calculation. As children move from the EYFS curriculum and onto the National Curriculum, children will be encouraged to record as much work as possible in their maths books and workbooks even when carrying out practical activities.

In Year 2, children will still be encouraged to learn through practical activities, however, there is an expectation that children begin to become more familiar with formal written methods.

In KS1 and KS2 there is an expectation of recorded work **every day** unless a practical (group/whole class) investigative lesson is planned. These may be recorded in the class 'Day in the life of' files.

BOOKS FOR RECORDING WORK

Squared exercise books are the main resource used for recording daily maths. It is school policy that the following pattern is used:

- KS1: 15mm squares
- Year 3: 10 mm squares
- Year 4: 10 mm squares
- Year 5: 7 mm squares
- Year 6: 7 mm squares

All children are encouraged to work tidily and neatly when recording their work. When using squares, one square should be used for each digit.

MARKING

Work in Maths can generate a great deal of marking and it is recognised that it is not always desirable to mark every piece of work in detail. The children themselves can mark exercises which involve routine practice with support and guidance from the teacher. They are also encouraged to peer mark where possible. Where appropriate, children are encouraged to check computational exercises with a calculator. This can foster independence in the children, who can seek help if they are unable to locate and correct their errors.

Feedback is provided usually with a dot next to any incorrect answers and then the children are given time to revisit this through their 'Next Steps' the next day. 'Next steps' may include corrections from the previous day's work or further questioning to help support the mastery of the area being taught.

Marking should be both diagnostic and summative and feedback will either be verbal or written.

ASSESSMENT AND RECORD KEEPING

Teachers are expected to make regular assessment of each child's progress and to record these systematically. The following is the school policy for assessment in Maths:

Ready to progress

The Ready to Progress tests are taken at the beginning of each academic year. The results are analysed and used to plan interventions.

Formal Tests of Basic Skills

In KS2 each class participates in the Times Tables Challenge. These are differentiated accordingly. Key number fact trackers are used as formative assessment throughout the year to identify gaps in children's knowledge. These are used to support with intervention, and passed up to the next teacher. Teachers keep electronic copies. Each half term, Years 2-6 complete a times table check (Y2-3 paper version, Y4-6 complete soundcheck on times table rockstars). These scores are recorded on SIMS and used for monitoring and intervention.

Formal Assessment

Using NTS (or previous SATs papers for Year 6), children are tested on a termly basis and results are recorded on NTS and Sims as part of the School's Assessment Policy.
Children complete an end of unit quiz to check on progress, attainment and identify gaps for further intervention.

Termly Evaluation

Pupil Progress Meetings are held termly. Progress in Maths is recorded for each child. Any areas of concern / lack of progress are noted, along with any recommendations for accelerating progress.

REPORTING TO PARENTS

Parents are given opportunity to discuss their child's progress and look at their children's work at two parents' evenings. Reports are completed at the end of the summer term.

Teachers use the information gathered from their half termly assessments to help them comment on individual children's progress.

PARENTAL INVOLVEMENT

- Parent workshops are held at the beginning of the year in Nursery and Reception to introduce parents to the use of Numicom and other Structured Maths Apparatus that they can support their children with using.
- Target setting mornings take place termly whereby parents are invited into the classroom to see the new targets that their children have been set to enable parents to support their children with their progress.
- Parent Meetings take place in every year group at the start of the year to introduce techniques used to teach Maths in school.
- SATS Meetings are held for parents of children in Year 6.
- When significant changes have been/are made to the Maths curriculum, parents are invited to a meeting or sent information via the half termly newsletter.

ADAPTIVE TEACHING:

Adaptive teaching is a way of differentiating by focusing on the whole class together whilst still responding to individual need. This should be evident in maths lessons in a number of different ways as appropriate.

- Stepped Activities which become more difficult and demanding but cater for the lower attaining pupils in the early sections.
- Common Tasks which are open ended activities/investigations.
- Resourcing which provides a variety of resources e.g. counters, cubes, 100 squares, number lines, mirrors to scaffold learning and encourage independence.
- Questioning techniques to meet the needs of different pupils within the class.

MONITORING AND EVALUATION

The Maths Focus Group Leads carry out regular Teaching and Learning Reviews together with a member of SLT and an external advisor. The Maths Focus Group carry out book scrutinies and pupil voice interviews. This time is used to monitor and evaluate the quality and standards of Maths throughout the school and enables the team to support teachers in their own classrooms.

Opportunities for teachers to review the scheme, policy and published materials are given as needed during staff meetings. The Maths Focus Group also meet every other week to monitor Maths teaching in school and develop and support the teaching and learning of this subject through focussed discussion and then allocation of tasks.

RESOURCES

Teachers should organise an interactive area within the classroom dedicated to Maths. This area is easily accessible to all children and allows them to become familiar with all resources. Manipulatives are available to all children to promote independent learning, support and extension when necessary. Use of manipulatives are encouraged through a CPA approach.

HOMEWORK

It is our school policy to provide parents and carers with opportunities to work with their children at home. These activities may only be brief, but are valuable in promoting children's learning in Maths.

Activities are sent home on a regular basis (see the separate school Homework Policy) and take the form of number games and tasks with some formal exercises for older children. The focus of homework will be to learn and practise key number facts and times tables.

Written by: The Maths Subject Co-ordinators**:** A.Pattenden and J.Edwards Updated 19.3.25