



Whitehall Nursery and Infant School

Mathematics Policy

Introduction:

This policy is a statement of the aims, principles and strategies for the teaching of Mathematics here at Whitehall Nursery and Infant School. This policy has been written with the statutory requirements of the National Curriculum for the teaching of Mathematics firmly in mind as well as the statutory EYFS Framework for Mathematics.

Our Aims:

Mathematics is key to all aspects of life and, here at Whitehall, we aim for our children to develop positive and enthusiastic attitudes from an early age so that they can carry this enthusiasm forward into their next stage of their education.

We aim to provide our children with the necessary skills needed to reason and problem solve mathematically to help support abstract thinking.

We want to:

- promote enjoyment of learning and self-confidence through practical activity, exploration and discussion;
- promote confidence and competence with numbers and the number system;
- develop the ability to solve problems through decision-making, reasoning and challenge; working systematically, co-operatively and with resilience;
- develop understanding in the appropriate underlying skills, concepts and knowledge of using and applying Maths, number, measurement, and shape and space;
- help children understand the importance of Maths in everyday life;
- develop the cross-curricular use of Maths in other subjects;
- enable the effective communication of ideas, experiences and questions, clearly and fluently, using accurate mathematical language to explain their thinking;
- provide the opportunity for all to experience a sense of achievement regardless of age or ability.

Aims of the National Curriculum:

The school's mathematics policy is based on the National Curriculum for Maths (2014) which aims to ensure that all pupils:

- Become **fluent** in the fundamentals of Maths, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **Reason** mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- 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.

Aims of the EYFS Statutory Framework:

- Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.

Implementation of Mathematics at Whitehall:

To help support the teaching and learning of Mathematics at Whitehall, teachers in Reception and KS1 follow, but are not limited to, the White Rose Maths Scheme termly overview plan from White Rose Maths Hub. Teachers are encouraged to use resources from the NCETM too.

The structured small steps from the White Rose Maths Scheme help lessons have a clear progression and help support our children develop a clear conceptual understanding. All teachers are actively encouraged and recommended to adapt and adopt the small steps where they see necessary to meet the needs of the children in their class.

In Nursery, Master the Curriculum Nursery Scheme is used to start off our young learners' mathematical journey. This scheme is also matched closely with White Rose Maths so that there is a smooth progression into Reception.

Across both EYFS and KS1 the use of concrete, pictorial and abstract approaches must be considered and should be progressive in its approach to ensure that children can develop their understanding and fluency. Concrete resources must also be available at all times to ensure that children know and feel supported when working and solving problems.

The Daily Maths Lesson in KS1:

In line with the whole school approach from the book, Every Primary Lesson Counts, all teachers should be grounded in the principles of: **challenge, explanation, modeling, questioning and feedback** in their delivery of math's lessons.

In KS1, the teaching of Mathematics happens daily with sessions lasting between 45-60mins each day. Year groups should be discussing weekly as to how their children are progressing within the maths sessions taught, so that it informs staff of the next steps needed to ensure that the children's knowledge progresses continually.

Staff should be delivering lessons with four key elements in mind: **Retrieval** (this should be discrete and separate from the main body of the lesson and based upon non-number work from the separate retrieval scheme developed by the Maths leader); **Re-cap** (opportunity to re-visit knowledge from the previous small steps that are currently being delivered from WRM scheme); **Main Input** (modelling new learning to children using concrete-pictorial-abstract approach where relevant); **Adaptive Teaching** (adopt and adapt to ensure ALL learners access new concepts successfully with independence).

It is advised that number facts and mental oral work is taught or revised at the beginning of the lesson in order to promote the ability to recall and apply knowledge rapidly and accurately. Staff are

encouraged to use ICT/visualizer or other resources to assist with the engagement of pupils during such activities.

During the main part of the lesson, pupils are taught the step from the White Rose Maths scheme that is closely linked to the needs of the National Curriculum for their age. The teacher should carry out this whole class teaching, using a range of questions to develop their mathematical thinking and to provide justified evidence for their opinions and answers. Pupils should be given opportunities to explain their methods and develop a range of mathematical language, communication and reasoning as this is an important part of the learning process. Pupils may also have opportunities to work in groups, pairs and individually during this time, supported by teaching assistants.

Direct teaching of the whole class is followed by a range of pupil activities to meet individual needs and varied in style in order to appeal to and cater for a wide range of learning styles. While pupils are engaged in these activities the teacher will focus on a specific group, and then use their professional judgment as to which children require further teacher input. Pupils should be encouraged to work independently, in pairs, in groups and with an adult. The skills for such different ways of working should be promoted in assisting a continually high level of expectation from the teacher. These activities should be steps that lead up to the children 'using and applying' their knowledge from the lesson to a problem solving activity. All activities are supported by concrete resources where appropriate.

Mini-plenaries are encouraged to be used throughout lessons to ensure that the teacher can have check in times. This is to ensure that misconceptions can be corrected as well as to ensure good understanding of the children's understanding of a particular math's concept being learnt in that moment of time.

The Daily Maths Lesson in EYFS:

In line with the whole school approach from the book, Every Primary Lesson Counts, all teachers should be grounded in the principles of: **challenge, explanation, modeling, questioning and feedback** in their delivery of math's lessons.

Nursery will base their teaching and learning of mathematics from Master the Curriculum Nursery Scheme to support the progression and content outlined in the EYFS Development Matters age 3-4. This scheme is useful as it links to White Rose Maths well and acts as a good transition into the White Rose Maths scheme for Reception.

Sessions in Nursery take place 4 times a week in a small group format and the teacher will differentiate their teaching depending on the groups being taught on a rotation basis across a 30 minute session (3 groups x 10 mins each).

Reception will also base their teaching of mathematics using the newly updated version 3 of White Rose Maths scheme. This is also closely linked to the EYFS Development Matters Curriculum Guidance and supports in the transition into KS1.

Sessions in Reception typically take the structure of a 10-15 minute input as a whole class with groups taken by the teaching assistants if the class teacher feels a group or individual children need extra support. Following this, children enter into a free flow format but class teachers will be calling out focus groups to complete maths learning linked into the main input of the lesson.

Retrieval and its importance:

“Retrieval practice is the act of recalling a piece of information without having anything to help prompt you. If we don’t have opportunities where we have to try to remember something, that memory will become weaker. Retrieval practice is a strategy teachers can use to give pupils opportunities to have to try and remember things they have learnt previously; things they have begun to forget.” – Clare Sealy, 2022

With this in mind, it is vital that the teaching of Mathematics here at Whitehall must contain retrieval elements in every lesson to ensure that our pupils know and remember more and maintain that understanding of all concepts taught.

At the beginning of each session taught, there must be a retrieval element to work on previously taught content to drip-feed continually. Teachers should ensure that their retrieval sessions are planned in a way which requires children to be in the “struggle” zone where it requires them to remember content that has been delivered previously and not what they have just remembered in the lesson just taught.

Number work takes a large portion of the coverage when using the White Rose Maths Scheme and so retrieval of number work is planned in often by class teachers. The Mathematics leader has identified, however, that non-number work such as money, shape, time does not have an equal weighting of coverage when using the White Rose Maths scheme solely and so has devised a non-number retrieval curriculum that looks back on the previous year’s learning. These sessions are in addition to the content to be covered in that year group so that the children do not just get a 2 week block on non-number related content and that is it for the year. It has been devised to ensure it is revisited at various points **throughout** the year.

Mathematics and Inclusion for All:

To help support our children with SEND, and to ensure inclusivity for all in mathematics, we will use the principles around Maths: No Problem! SEND inclusion jigsaw model. This will help us as teachers to inspire and focus on making sure that all learners are catered for to succeed in mathematics. This model focusses on 9 key areas:

1. High expectations
2. Developing relationships and knowing pupils well
3. Inclusive learning environment
4. Age, interest, and ability appropriate curriculum
5. Quality feedback
6. Engagement through hands-on approach
7. Questioning and modelling for challenge
8. Scaffolding learning
9. Developing independence

More detailed information on these 9 key areas can be found under our SEND Support – Maths guidance provided by the Maths leader and inspired by Maths: No Problem!

For those children who are deemed as More Able/Gifted and Talented, teachers are encouraged to provide greater challenge and should use support and resources from NCETM and NRICH problem solving and reasoning examples to achieve a greater clarity of understanding.

Resources:

In all classrooms there is a dedicated Maths working wall with a range of resources such as number lines, hundred square, number patterns (including multiples) and mathematical vocabulary, that

pupils can refer to in order to support their learning. Maths working walls should be current and up to date in relation to the topic being covered at the given time.

Each classroom also has a supply of concrete apparatus which include, but are not exhaustive to, counters, dice, multi-link, rulers, number cards, digit cards, place value cards, Numicon, Cuisenaire, unifix, and money. Further resources are available in the classrooms and the maths lead has responsibility to ensure resources are relevant and up to date.

Assessment:

Teachers use day-to-day assessments to review their lessons and adjust them as required. Children are encouraged to make judgements about how they can improve their own work, as well as following up on close the gap marking and next steps marking from teachers and TA's with the groups they are teaching. This formative assessment is closely matched to the teaching objectives and further practice and challenge is expected to form next steps.

The Maths leader has created a termly assessment step checklist that is closely linked to the coverage that is supported by the White Rose Maths scheme. This ensures that children can be assessed against what has been covered and will provide teachers with an accurate judgement for an end point after that term rather than end points of a year.

This is recorded on the school tracking system and used to identify gaps in learning. The Maths leader will check termly assessments and make a note of those children who are deemed to be working below and support teachers in providing intervention and catch-up sessions so that they can progress. Teachers meet to moderate teacher assessment judgements in school to support each other and aid in consistency. The Maths subject leader keeps a portfolio of internally and externally moderated work.

The Role of the Maths Subject Leader and Monitoring:

- Ensures teachers understand the requirements of the National Curriculum and helps to plan lessons
- Leads by example; setting high standards in their own teaching
- Monitors and evaluates Maths throughout the whole school
- Observes lessons and identifies support required
- Discusses with SLT and governors regarding progress
- Organises and leads Continual Professional Development (CPD)
- Works with SENDCO and SLT ensuring equal opportunities for all

Last updated October 2023 by Maths Leader, Dale Gardner