The Willows Catholic Primary School

Mathematics Policy

Updated: Spring 2025

Intent

At The Willows, through a positive, caring environment, we strive to develop a love of all things mathematical. Every child is equally important and so our children are fully supported to enable them to develop at a level that is appropriate to them. As well as engaging our children in appropriate practical activities, our lessons focus on developing deeper thinking, rehearsing methods and learning new facts. Through challenging word problems, missing number tasks and open-ended problem solving, where they are encouraged and supported to use stem sentences to explain their understanding, we challenge our children to become masters of the subject. Children explain their answers rather than just giving a numerical answer and are encouraged to challenge others if they disagree and argue their case if they are convinced that they are correct.

- Pupils are expected to move through the programs of study at broadly the same pace.
- Pupils who grasp concepts rapidly are challenged through being offered rich and sophisticated problems before any acceleration through new content.
- Those who are not sufficiently fluent with earlier material consolidate their understanding through small steps learning.

Our aim is that our children:

- develop a positive attitude and approach to maths.
- become fluent in the fundamentals of mathematics so that they develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- are competent and confident in taking risks to apply mathematical knowledge, concepts and skills.
- are able to solve problems, reason mathematically and think logically and systematically using the correct mathematical language and vocabulary.
- can follow a line of enquiry, develop and present a justification, argument or proof using mathematical language.
- are able to work independently and in cooperation with others.
- challenge and are challenged by others in a safe environment.
- appreciate that maths is fundamental to all areas of the curriculum and the real world and understand the application of mathematics in real life contexts and scenarios.
- develop a secure understanding of the objectives being taught.

Implementation

Our Mastery Journey

We strongly believe that a mastery approach is the best way for our children to learn maths. We feel that every child can achieve in maths and is able to develop a secure knowledge and understanding of the many areas covered in this subject. By striving to master maths, children will develop a deep, secure and adaptable understanding, feeling confident to problem solve and face new situations independently, without immediately needing adult support.
We use the White Rose Small Steps to begin or learning journeys and implement them with documentation from the NCETM website. Staff plan their learning journeys in a way that is

relevant to the class of children that they are teaching and use any appropriate materials that will benefit the learning of their children. Learning does not move on until staff believe that the children have a sound and secure understanding of a concept which allows the mastery small step approach to develop successful mathematicians.
Children who struggle with a concept are supported through practical resources, appropriate models and adult support. Children who quickly grasp a concept are challenged to think deeply and reason about their learning.
The mastery approach applies the five big ideas to the teaching of maths and our staff work hard to sustain these ideas in their delivery. We are continually undergoing training through our Maths Hub and are excited to see our children develop and grow in confidence and ability.

The Five Big Ideas

The Five Big Ideas, drawn from research evidence, underpin teaching for mastery.

- Coherence
  Lessons are broken down into small, connected steps that gradually unfold the concept, providing access for all children and leading to a generalisation of the concept and the ability to apply the concept to a range of contexts.
- Representation and Structure
  Representations used in lessons are used to support the children in building up mathematical understanding and allowing them to apply their learning to a range on contexts and models. The overall aim is that children will eventually (when they are ready) use abstract ideas to solve their maths.
- Mathematical Thinking
  Children need to work hard to develop an understanding through reasoning, discussing with others, explaining their thinking and trying out new things.
- Fluency
  Quick and efficient recall of facts and procedures will ensure that children are not hindered by the simple mathematical knowledge such as times tables and bonds of numbers.
- Variation
  Variation is twofold. It is firstly about how the teacher represents the concept being taught, often in more than one way, to draw attention to critical aspects, and to develop deep and holistic understanding. It is also about the sequencing of the episodes, activities and exercises used within a lesson and follow up practice, paying attention to what is kept the same and what changes, to connect the mathematics and draw attention to mathematical relationships and structure.

Our lessons

Each class teacher is responsible for the mathematics in their class in consultation with and with guidance from the mathematics subject leader.
The approach to the teaching of mathematics within our school is based on three key principles:

- a mathematics lesson every day.

- a clear focus on direct, instructional teaching and interactive oral work with the whole class.
- an emphasis on mental calculation and fluency.

Each lesson consists of:

- a definite phase of quality teaching and learning of an objective through guided learning, modelling and independent work.
- a definite focus on learning times tables facts.
- a definite section that revisits or consolidates key concepts/fluency needed for the objective of the lesson.
- a definite section following the Mastering Number which may be at a separate time in the day.

The whole class is taught mathematics together expecting every child to master the key concept.
Repetition is used to consolidate a concept or embed knowledge of a fact.
Precise mathematical language is used by teachers so that mathematical ideas are conveyed with clarity and precision. Children are supported to use accurate mathematical language through the use of sentences structures that form part of the lesson. (These are called STEM sentences by White Rose).
Sufficient time is spent on key concepts to ensure learning is well developed and deeply embedded before moving on.
When introduced to a new concept, pupils are given the opportunity to build competency through the following approach:

- Concrete – children have the opportunity to use concrete objects and manipulatives to help them understand what they are doing.
- Pictorial – pupils then build on this concrete approach by using pictorial representations. These representations can then be used to reason and solve problems.
- Abstract – with the foundations firmly laid, learners move to an abstract approach using numbers and key concepts with confidence.

Differentiation in our school takes on many forms:

- Children are seated in mixed ability groups, doing the same work at the same time, with there being no differentiation by acceleration to new content. Children are encouraged to support each other's learning and challenge their thinking throughout the lesson. This is done through giving them short bursts of time to discuss with others and allowing them to 'teach' each other during the lesson.
- Although practical resources are used regularly throughout all lessons, all children have access to resources at any time that they can freely choose to use. Practical equipment is seen as supporting understanding for all and is not just for lower ability children.
- A wide range of models are used to help children to understand and explain a concept.
- Some children need more time to calculate which is given in an appropriate way during a lesson, where it is necessary.

- Higher ability children are challenged to respond to more demanding problems, which deepen their knowledge of the same content. They are also supported to make links within their thinking (such as finding more efficient methods or explaining how the concept relates to everyday life).
- Further differentiation can be seen through targeted questioning and the feedback and scaffolding individual pupils receive in class, as they work through problems.
- Depth of understanding and readiness for the next stage (whether it is the next lesson, next unit of work, year or key stage) is prioritised alongside high expectations of every child.

Cross Curricular Links

Throughout the whole curriculum, opportunities exist to extend and promote mathematics. Teachers seek to take advantage of all opportunities making links to subjects such as Science, Geography and Computing. We have mathematical days where there is a clear mathematical focus around a theme or idea such as Mathemagical Day – maths is magic, Mathemartical Day – arty maths and Mathletics Day – maths in PE.

Special Educational Needs and Disabilities

Within the daily mathematics lesson, all children are seen as able to succeed with maths and are given equal opportunities to do so.
Children with SEND are taught within the daily mathematics lesson and are part of the lesson with all of the children, apart from where extreme circumstances show that it is better for small groups and 1 to 1 teaching. Staff consider whether the class teacher or teaching assistant has the greater knowledge and ability to support SEND children and higher ability children.
Where applicable, children's IEPs incorporate suitable objectives and teachers keep these objectives in mind when planning work.

Equal Opportunities

We incorporate mathematics into a wide range of cross-curricular subjects and seek to take advantage of multi-cultural aspects of mathematics.
In the daily mathematics 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
Additional information can be found in our EAL Policy.

Pupil Records of their Work

The WALT (We are learning to) and date are clearly written before the work carried out, or are on a sticker put on the appropriate page.
There are occasions when it is both quick and convenient to carry out written calculations. It is also important to record aspects of mathematical investigations. 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.

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

Exercise Books for Recording

It can be seen in the presentation policy that the following pattern is used:

- EYFS: Various papers, plain, squared, lined, malleable etc.
- KS1: 2 cm squares
- Year 3: 1 cm squares
- Year 4: 1 cm 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. Children are encouraged to work across their page so that pages are not wasted with single columns of work.

Impact

Marking and Feedback

Work in mathematics can generate a great deal of marking and it is recognised that it is not always necessary for the teacher to individual mark every piece of work. In fact, we believe that it is more beneficial for children to receive instant feedback during a lesson so that any errors or misunderstandings can be rectified as part of the lesson. The children themselves often mark their own work or their partners with guidance from the teacher. Where appropriate, children in Years 5 and 6 may check computational exercises with a calculator. We believe that this approach can also foster independence in the children who can seek help if they are unable to locate and correct their errors. Children are supported in being honest in our school and admit to the mistakes that they have made, knowing that this will enable them to improve.
More detail can be found in the School Marking Policy.

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 mathematics:

Informal Assessment

Teachers are allowed to make their own use of informal assessment to guide their judgements and support or raise questions about termly formal assessments.
Each class carries out a weekly times tables test based on the table that has been focused on for that week. This is also set as homework.

Formal Assessment

Once per term, the children are formally assessed as part of our School's Assessment Policy. This involves an arithmetic test and a reasoning test that link to the objectives taught in that term. Year 6 may be given more regular tests to support the teacher in ensuring that their learning is on track.

Reporting to Parents

Reports on progress are completed once per term in written form as well as at a termly parental consultation. There is opportunity for a comment to be made about a child's mathematical progress in the Autumn and Spring reports, but there is a dedicated comment and achievement section on our Summer term report.
Parents are given the opportunity to discuss their child's progress on two separate occasions at Parent's Consultation Meetings and once in the summer in the form of a drop-in session.
Teachers use the information gathered from their daily informal assessment and termly formal assessments to help them comment on individual children's progress.
Other information is gathered from:

- end of Foundation Stage Assessments.
- results from the Termly Assessments.
- end of Key Stage 2 SATs.

Parental Involvement

- Parents are invited into school twice yearly to look at their children's work.
- An open evening is held once a year.
- Our website contains lots of videos to support parents with the methods that we use.
- We operate an open-door policy and gladly talk to parents about any concerns or questions they have at a convenient time.

Monitoring and Evaluation

The mathematics subject leader regularly carries out a book look and pupil voice as well as having informal discussions with both teaching staff and support staff. Termly assessments are available for the subject lead to scrutinise.

Resources

Due to the nature of the Mastery approach, practical resources are used as much as possible to their support in the understanding of mathematical concepts. Children are encouraged to use resources to support their learning whenever they require them and are given access to them without question. Resources are not just seen as something to be used by low ability children.

Times tables

Times tables are fundamental to many aspects of mathematics and it is therefore extremely important for children to work hard to learn their times tables. Times tables form an integral part of the learning in our maths lessons.
The Government has set out the following times tables that children should know in each year group.
Year 1 – count in multiples of 2, 5 and 10.
Year 2 – recall and use multiplication and division facts for the 2, 5 and 10 times tables.
Year 3 – recall and use multiplication and division facts for the 3, 4 and 8 times tables.
Years 4, 5 and 6 – recall and use multiplication and division facts for all times tables.
The Government has requested that all pupils in Year 4 take a Times Tables Check to determine whether children can recall their times tables efficiently.

Homework

Our aim with mathematical homework is to give our children the chance to consolidate a skill or facts through repetitive, fun games and activities or through practicing calculation strategies. We use Seesaw – an online learning platform – so that we can support children with their learning at home and communicate with parents where necessary.
Homework builds up throughout the year alternating weeks in Years 2 and 4 until regular weekly maths homework is set in Years 5 and 6.