

OLOC Maths Statement of Intent, Implementation and Impact



Intent



At Our Lady of Compassion, we have very high standards. We would like to create an environment where children are positive and enthusiastic towards Maths and enjoy being challenged, whilst developing strong mathematical skills and **resilience** towards problem solving. Through this, we believe that children will be engaged with Mathematics and flourish to reach their potential.

We aim to do this by:

- Fostering and nurturing a curiosity towards the subject that will stay with the children for the rest of their lives.
- Providing 'real life' opportunities so pupils make links and understand its purpose.
- Providing opportunities to apply their mathematical knowledge to other areas of the curriculum confidently.

We want children to develop fluency, reasoning and problem solving skills across the mathematical curriculum and therefore creating children who are confident and competent mathematicians. Thus making their transition to high school seamless and also increasing their **employability** in the future.

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Implementation



To ensure our Mathematics curriculum is accessible for all pupils, at Our Lady's we use White Rose Maths scheme along with Classroom Secrets and Nrich to further challenge. Our Lady's is also fully engaged with the DFE funded North West Maths Hub programme, which ensures that staff at all levels understand the pedagogy of the approach

- Our scheme of work (White Rose Maths) - Teachers use WRM to guide their own daily planning and they use assessments based on their classes strengths and weaknesses to ensure that the scheme is unique to the class.
- Within every lesson, key vocabulary is shared, discussed and explained and children are encouraged to use it when discussing in lessons and reasoning in books.
- Within the lesson, pupils are encouraged to use resources and equipment (concrete manipulatives) and models and images, concrete, pictorial and abstract.
- Teachers use careful questions to draw out children's discussions and their reasoning. The class teacher then leads children through strategies for solving the problem, including those already discussed. Independent work provides the means for all children to develop their fluency further, before progressing to more complex related problems allowing them to reason and problem solve.
- Mathematical domains are taught in blocks, to enable the achievement of 'mastery' over time. Each lesson phase provides the means to achieve greater depth, with more able children being offered rich and sophisticated problems, as well as exploratory, investigative tasks, within the lesson as appropriate.
- Teachers plan lessons that utilise pupils quickly and consistently retrieving and using their previous learning of arithmetic facts, all of which, the EEF state as exemplary practise (Improving Mathematics review).
- Teachers teach a range of mental, calculator, and pencil-and-paper methods, and encourage pupils to consider when different methods are appropriate and efficient (EEF state as exemplary practices in their Improving Mathematics review).
- Staff recognise and understand of a Concrete, Pictorial, Abstract* (CPA) approach to maths teaching and learning. Objects, pictures, words, numbers and symbols are vital. The mastery approach incorporates all of these to help children explore and demonstrate mathematical ideas, enrich their learning

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experience and deepen understanding. Together, these elements help cement knowledge so pupils truly understand what they've learnt. As noted by OFSTED, they avoid creating a reliance on outsourced memory aids or physical resources, moving children on as soon as they are secure (OFSTED 2021). Teachers enable pupils to understand the links between the manipulatives and the mathematical ideas they represent. Teachers use manipulatives to develop pupils' independent understanding of the mathematics (EEF state as exemplary practices in their Improving Mathematics review)

- Discussions are a vital part of our lessons, both for teachers to model skills of reasoning, justifying and conjecturing and for children to be able to consolidate their learning through explanations. Discussions can also highlight misconceptions as well as being essential for building confidence in our children. Teachers are able to orchestrate productive classroom discussions. Pupils actively take part in discussions (EEF states this as exemplary practices in their Improving Mathematics review). Discussions also support the development of children's mathematical vocabulary. Teachers use precise mathematical language themselves. Teachers support pupils to recognise mathematical structure, for example by rephrasing pupils' responses that use vague, non-mathematical language with appropriate mathematical language (EEF state as exemplary practise in their Improving Mathematics review).
- When staff have identified misconceptions, they intervene as swiftly as possible to help pupils having difficulties to keep up. Teaching Assistants work within lessons to support targeted groups of children and intervention sessions are planned and delivered to fill any gaps identified in pupils' learning. Teachers have a good knowledge of the common misconceptions in maths and why they arise. They use this knowledge to inform their assessment (EEF state as exemplary practise in their Improving Mathematics review)
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- Assessment is used both formally and informally to review progress.
 - Three times a year, the children complete formal assessments (NFER) and these results are tracked to inform future teaching. Children who are judged not to be making their expected progress are then targeted for additional support both within lessons and intervention sessions.
 - Teaching staff are constantly assessing through observations, discussions and written work completed. Lessons are adapted in response to these assessments to ensure the children are being taught at the appropriate level and pace. Informal assessments, as stated by OFSTED as high quality maths education, are also used as
 - Teachers plan frequent, low-stakes testing to help pupils to remember content. Lessons incorporate timed testing to help pupils learn maths facts to automaticity.
 - When a pupil is identified as struggling teachers quickly identify the specific reason(s) why. Teachers use this information to intervene and address the aspect of maths that the pupils are struggling with (EEF state as exemplary practise in their Improving Mathematics review).

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Impact



In response to our teaching and their learning, our children will have:

- A quick and secure recall of facts and procedures
- The flexibility and fluidity to move between different contexts and representations of mathematics.
- The ability to recognise relationships and make connections in mathematics.

A mathematical concept or skill has been 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. Our children will, as far as possible, master our Curriculum.

We will have a school of confident, enthusiastic, resilient mathematicians who are equipped, not only for future learning but for future life and employability.

The education inspection framework (EIF) makes it clear that schools are expected to ensure that the mathematics curriculum 'helps pupils to gain enjoyment through a growing self-confidence in their ability'. OFSTED May 2019.

*Concrete – children have the opportunity to use concrete objects and manipulatives to help them understand and explain what they are doing.

*Pictorial – children then build on this concrete approach by using pictorial representations, which can then be used to reason and solve problems.

*Abstract – With the foundations firmly laid, children can move to an abstract approach using numbers and key concepts with confidence.

References:

1. OFSTED Research review series: mathematics Published 25 May 2021
2. School Inspection Handbook OFSTED May 2019

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3. EEF IMPROVING MATHEMATICS IN KEY STAGES TWO AND THREE A
self-assessment guide - exemplary