

The **Athena Learning Trust Primary Cluster** has adopted a robust approach to teaching **maths** using the NIFDI Connecting Maths Concepts (CMC) programme. This approach prioritises deep understanding and aims to ensure all students achieve mastery in mathematics.

#### **Key features of our approach:**

- **Comprehensive CPD:** All pupil-facing staff receive Continuous Professional Development (CPD) on the NIFDI CMC programme, equipping them to deliver high-quality instruction.
- **Small Group Instruction:** Children are strategically grouped by their current maths level, allowing for targeted teaching and differentiated learning.
- **Mastery-Based Learning:** The focus is on achieving mastery of each concept before moving on. Mastery is measured through independent work, with a benchmark of 85% accuracy.
- **Support and Remediation:** Students who don't meet the mastery benchmark receive targeted support and "remedies" to address misconceptions and gaps in understanding. This proactive approach prevents students from falling behind and needing interventions later.
- **Gradual Introduction of New Concepts:** New content is introduced incrementally (15% new information per lesson) and carefully scaffolded to support independent learning.
- **Harnessing the Power of Recaps:** Regular revisiting of prior learning ensures that students retain and build upon their knowledge.
- **Celebrating Success:** A positive learning environment that celebrates student achievements in mastery tests and throughout lessons fosters confidence and resilience in maths.

#### **Alignment with research and best practices:**

This approach aligns with the principles of mastery learning, which has been shown to be effective in improving student outcomes in maths. The Education Endowment Fund previously published research trials of similar mastery approaches, which have demonstrated accelerated progress in UK schools. By incorporating elements like conceptual understanding, connection-making, and problem-solving, the Athena Learning Trust leverages the strengths of NIFDI CMC to provide a comprehensive and effective maths education for all students.

#### **Ensuring coverage of the National Curriculum:**

Working with McGraw Hill, the publishers of the CMC maths materials, we have undertaken a comprehensive review of the maths delivery against the National Curriculum. We recognise that some concepts may be taught at a different point in a child's primary curriculum journey than the National Curriculum indicates, and note that some concepts are introduced earlier in DI maths, whereas others are introduced at a later point. Because of the large body of research behind the NIFDI maths programme, we are confident that the skills progression has been carefully aligned to support children's journeys to maths mastery, and maintain the programme delivery. We do ensure that children in Year 4 are fully prepared for the MTC check, through an additional focus on Times Tables skills. Preparation for Year 6 SATS also includes familiarisation with the layout of questions and materials.

## **Feedback from visiting practitioners:**

- The children clearly enjoy maths and are achieving in this area of their learning
- Lessons were engaging and a significant amount of learning was achieved
- Having the script enables teachers to fully focus on learning and in the moment assessment of pupils
- The program reduced 'wasted' language which fully supports children to focus on the core maths principles
- Staff have and are working hard to achieve fidelity to the program
- Teachers, ECTs and TA were all delivering DI maths effectively and to the same level
- We feel inspired and excited for the future of maths education
- I cannot believe how much maths is completed in a lesson, it is fantastic
- Lessons started so quickly, meaning the children were straight in to maths, no wasted learning
- The children really do enjoy maths (The head confessed he had really challenged children in his questioning if they really honestly liked maths!!)
- The program is expertly planned meaning teachers can really focus on pupil progress
- Amazing how much the reception children are achieving so early on
- Behaviour in lessons was really good and learning focused
- Factual recall was impressive

## **Frequently asked questions**

### **What is the NIFDI CMC Maths Programme?**

The NIFDI Connecting Maths Concepts (CMC) programme is a Direct Instruction (DI) programme designed to teach mathematical concepts. It prioritises deep understanding and aims to ensure all students achieve mastery in mathematics.

### **How does the NIFDI CMC Maths Programme align with the National Curriculum in England?**

The CMC programme is designed to align with the Department for Education (DfE) Mathematics standards of the National Curriculum in England for key stages 1 and 2. It is commensurate with the mathematics strands of the National Curriculum. A document is available that assists schools in using the CMC program to deliver the DfE Mathematics standards.

### **How does the NIFDI CMC Maths Programme ensure mastery of mathematical concepts?**

The programme uses a mastery-based learning approach. The focus is on mastering each concept before moving on. Mastery is measured through independent work, with a benchmark of 85% accuracy. Students who don't meet the mastery benchmark receive targeted support and "remedies" to address misconceptions and gaps in understanding.

### **How are the skills of problem-solving and reasoning developed through the NIFDI CMC Maths Programme?**

The NIFDI CMC Maths Programme actively develops problem-solving and reasoning skills in the following ways:

- **Problem-Solving:** The programme equips pupils with the fundamental skills and conceptual understanding necessary to become effective problem solvers. It supports pupils in developing the ability to solve a variety of routine and non-routine problems, and problem-solving is integrated throughout the programme, encouraging pupils to apply their mathematical knowledge in diverse contexts.
- **Reasoning:** A key aim of the programme is to ensure that pupils can reason mathematically. By focusing on conceptual understanding and fluency, the programme enables pupils to make connections between mathematical ideas. Carefully sequenced lessons and activities promote the development of logical thinking and analytical skills.

### **What does a typical lesson look like in the NIFDI CMC Maths Programme?**

In the NIFDI CMC Maths Programme, a typical lesson involves guiding children through a series of maths concepts, introducing a small amount (15%) of new content in carefully structured steps, and providing opportunities for children to demonstrate their understanding through independent practice.

For example, in DISTAR or CMC B, children are guided through maths exercises with a gradual introduction of new content, and they demonstrate understanding through independent practice.

In levels C, D, E, and F, the workbook contains fluency practice questions. The teacher script interleaves a range of concepts, building on prior knowledge through small steps of instruction, leading to independent work completed from the textbooks.

### **How does the NIFDI CMC Maths Programme cater to different learning needs?**

Children are strategically grouped by their current maths level, allowing for targeted teaching and differentiated learning. New content is introduced incrementally (15% new information per lesson) and carefully scaffolded to support independent learning.

### **How does the NIFDI CMC Maths Programme support retention and application of knowledge?**

The programme incorporates regular revisiting of prior learning to ensure that students retain and build upon their knowledge. It also focuses on developing conceptual understanding, fluency, and problem-solving skills.

### **What support and training are provided for teachers implementing the NIFDI CMC Maths Programme?**

All pupil-facing staff receive Continuous Professional Development (CPD) on the NIFDI CMC programme, equipping them to deliver high-quality instruction.

### **How is progress monitored and assessed in the NIFDI CMC Maths Programme?**

Mastery is assessed through independent work. There are also mastery tests every 10 lessons

and cumulative tests at the end of each level.

**How does the NIFDI CMC Maths Programme prepare children for the next stages of their education?**

The programme aims to ensure that all pupils:

- become fluent in the fundamentals of mathematics
- develop conceptual understanding
- are able to recall and apply knowledge rapidly and accurately
- can reason mathematically
- can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication