Ambergate Primary School

Maths

TEACHING FOR MASTERY

The Essence of Teaching for Mastery

- Whole Year Group kept together
- All children can succeed
- Same day intervention
- Conceptual and procedural variation
- Depth, not acceleration
- 5 big ideas
- Concrete-pictorial-abstract
- Response partners
- Intelligent practice
- Automatic recall of facts
- Emphasis on the structure and connections within the maths

The 5 Big Ideas

- Small, **coherent steps** throughout the lesson
- **Variation** – a balance between conceptual and procedural understanding
- **Mathematical thinking**
- **Fluency** – application of efficient methods and flexibility with Maths
- **Representation and Structure** – use of a range of ways both to represent a concept or non-concept, and to expose structures

Questioning

Teachers skilfully employ a range of questioning techniques to delve into the children's understanding.

Bloom's questions provide a variety of levels of questioning.

Mastery Behaviours

Explain it *— use of Mathematical language and calculations to demonstrate understanding.*

Evaluate it *— use reasoning to check if answers make sense*

Teach it *— demonstrate learning to others or model.*

Invent it *– create own questions to fit the learning of the day, or invent own word problems.*

High Expectations

All children are taught age related expectations. The whole group is kept together and everyone moves through the lesson at the same pace. Depth is achieved by the inclusion of reasoning and problem-solving activities, with carefully considered variation throughout teaching, to check the understanding of a concept.

What do lessons look like?

- Small coherent steps in learning
- Quick response questions to sharpen focus and/or to practice previous skills.
- In focus tasks — all children attempt to find a way to answer the problem. Teacher assesses and addresses misconceptions.
- Different methods are explored, modelled and discussed to depth. Children rehearse, reason and refine.

Intervention

When possible same day interventions will occur related to the day's learning objective

Teaching and Learning
Intervention
Independent Practice

Group interventions during afternoons to work on specific targets/areas with focus children.

Assessment Opportunities

These are ongoing throughout the lesson. During the 'in focus' task, the teacher will look for misconceptions and initial ideas. Successes are shared and teaching points are addressed.
After the input, those who need further advice receive same day intervention. During independent practice, the teacher decides which children have been successful and which children still have misconceptions. These are to be addressed at the start of the next lesson. Summative assessments are carried out each term.

Lesson Design

Teachers strive to design lessons in which the pupils are carefully guided, step by step, through Mathematical fluency, reasoning opportunities and are given problems to solve. Lessons include rehearsal and automatic recall of facts. The lessons incorporate the 5 Big Ideas of teaching for Mastery. Particular attention is paid to developing conceptual understanding in tandem with procedural competency. Children are challenged to explain their reasoning, evaluate their own (and the work of others), model their ideas and invent their own questions. Presentations are clear, concise and coherent. The creation of lesson design incorporates material from the National Curriculum and NCETM resources. Ready to Progress materials.

Response Partners

Children have a dedicated response partner for their Maths learning. Partners are matched, partly by chemistry and partly by their previous attainment. Matches have been made through mixed ability pairings (ensuring that any gaps between partners isn't too wide).

SEND Personalised Provision

Pupils with a high level of special needs receive individual provision, set out in a personalised provision map. Their needs have been thoroughly discussed and agreed with the SENDCo. In many cases, the children will be able to access part of the class learning. However, those children will have smaller steps of specific, targeted learning.

Whiterose – a tool to support

In Focus task — all pupils 'have a go'. **Let's Learn –** teaching time, modelling, questioning, reasoning, solving the problem. The teacher carefully unpicks the problem with the children. **Guided Practice –** subtle variation through one question at a time approach. **Independent Practice —** children answer a range of questions independently in a workbook. Further challenge in the form of tasks related to Explain, Teach, Evaluate or Invent.