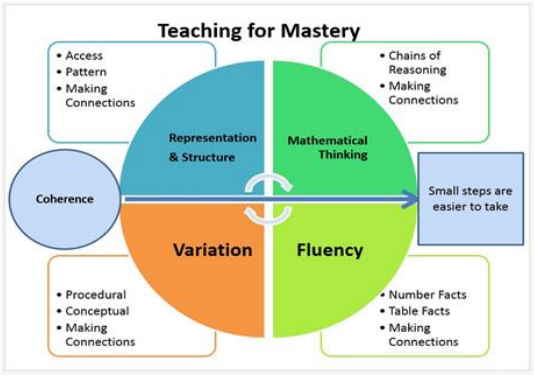
Loughton School's maths vision

At Loughton school, **we believe that every child can achieve in mathematics**. We use Power Maths as a coherent tool to allow children to revisit prior learning, build upon knowledge and ensure every child has a deep understanding within each mathematical concept. **We want every child to leave Loughton school enjoying maths, developing a set of mathematical skills that they can build upon in their future education.**

Big Ideas

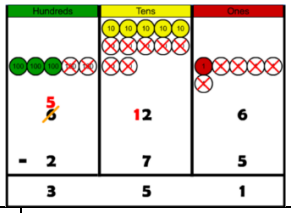


Fluency:

- Daily Power ups
- Rolling numbers
- All children have TT Rockstar and Numbots access
- Year 4 multiplication test

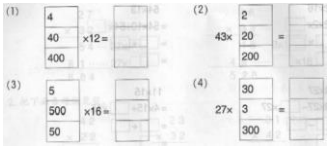
Representation and structure:

- Representations are used to allow children to see the mathematical structure underlying each concept.
- A common misconception is that resources are used to support the 'low ability'. At Loughton school we use resources with all children, across each class and in each year group to expose the structure of the mathematics.



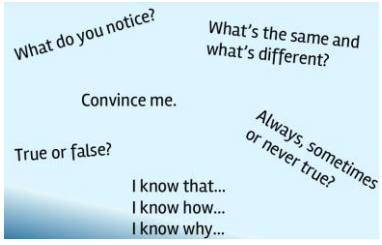
Variation:

- 'Choosing to vary one aspect to expose a mathematical structure or connection.'
- Variation is displayed between the examples of questioning in the practice books.



Mathematical thinking:

- Carefully planned questioning to enable children to reason:



- Teachers ask children to explain, convince, draw diagrams or use manipulatives to illustrate an idea, strategy, reason and conjecture as a natural part of all activity within the mathematics classroom.

Coherence:

- Each Power Maths lesson is focused on one key learning point in depth.
- The learning has been planned out into careful steps.
- 'Going to slow to go quicker,'

Mixed ability seating:

- At Loughton school the children are sat in mixed ability places, which are carefully planned out to allow children to share ideas and strategies.
- For some children they will be part of an additional support group, which will be smaller, working through the curriculum at a slower more manageable pace.

Speaking in full sentences:

- We expect the children to answer in full sentences 'I think the answer is ____ because.'
  This moves the emphasis away from a performance culture, where we are merely looking for the answer, to a culture that allows for exploration and deep mathematical understanding of the process to get to an answer.

Stem Sentences:

- Stem sentences are used throughout lessons to expose key mathematical concepts. There are examples of these on the calculation policy.

Precise mathematical language:

- Teachers model precise mathematical language throughout their maths lessons.
- Children are encouraged to use precise mathematical language across all year groups.
- Key language can be found on the website and in the calculation policy

Teaching for Mastery at Loughton

Loughton School have invested in Power Maths as a tool to support Teaching for Mastery.

What is Power maths? Power maths is a DFE Government approved scheme to support the teaching for mastery. It is aligned to match the National Curriculum (2014) and is a whole-class resource to empower every child to understand and succeed.

What does Power maths look like at Loughton?

- Daily rolling numbers for each year group (Year 3: 2, 5, 10 (recap Yr 2) then 3, 4, and 8s)
  (Years 4, 5 and 6: all time tables to be practiced up to 12x)

Delivery of a Power maths lesson at Loughton:

Power up:

- 5 minute activity, which supports the fluency of key number facts.
- We are flexible with these and use other resources to support the retention of procedural and number facts.

Discover:

- Practical real-life problem to arouse curiosity. Children find the maths through story-telling.
- A real life scenario is provided for the discover section to begin the taught concept for the lesson.
- This is a chance to discuss the problem, explore language and discuss possible approaches or representations that can be used.

Share:

- Teacher led, interactive session, follows the discover activity and highlights the variety of methods that can be used to solve a single problem.
- Teachers will share children's methods they have thought about or used during the discover stage.

Think together:

- Children work in groups on the carpet or at tables using the activities from the textbooks.
- The structure allows children to have a go with the teacher, with their peer, then independently.

Practice:

- All children have their own practice books and will use these independently to practise the concept that has been taught.
- Feedback is given by the adults in the classroom during this stage.

Reflect:

- Unpicks misconceptions
- Allows for assessment
- The reflect task is in the practice books.

Assessment:

- We use half termly tests in arithmetic and reasoning to identify what the children have understood and retained during the half term.
- From this. teachers use gap analysis to adapt future planning.

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Personalisation:

- There are several opportunities for the children to deepen their learning throughout the lesson. Power Maths already offer many challenges and teachers also seek extra resources to supplement this. We use variation

within the lessons to stop the children in their tracks and make them think, avoiding mechanical repetition and gaining deep understanding.

- To strengthen children's understanding, teachers use a range of resources, carefully planned questioning, representations to allow children to see the maths and teacher or adult support.

Feedback Marking

During the lesson adults will often mark with the children to allow instant feedback. This is often through whole group feedback, group discussions or individual 'over the shoulder' marking.

We use:

Green for answers that are correct

Yellow for answer that are incorrect

We celebrate mistakes and use these as a vehicle to enhance learning. Children use purple pens to make corrections in their work.

Impact:

We assess our maths across the school by analysing internal data, ensuring progression against the children's key stage one data but most importantly by speaking to the children and seeing their attitudes towards maths rise. We want our children to leave feeling confident, with firm foundations and being equipped with a set of life long skills to be able to become mathematicians across many different walks of life.

How do we do this?

We promote this ourselves and we actively encourage everyone around the child to do this as well. We ensure we listen to children and will continue to refine and tweak our approaches from this.