

Loughton School's maths vision

'We believe that every child can achieve in mathematics. 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.'

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. To be able to achieve this, we use the [Power Maths yearly and termly overviews](#), which break the curriculum into core concepts for each year group, taught in units. A unit is divided into smaller learning steps – lessons. Step by step, strong foundations of cumulative knowledge and understanding are built.

Throughout the year, the children will continue to build upon concepts they have learnt. For example, addition and subtraction is taught in the autumn term in year 3, built upon in the spring term within their money, statistics and length unit and then progressed to in the year 4 National Curriculum outcomes in the autumn term of year 4. Teachers and children make links to prior learning, which is made explicit on their working walls; via discussions and within the beginning of their planning units.

Lessons are designed to expose the underlying mathematical structure behind concepts. Children use stem sentences within the lesson to expose the core concepts. This supports children's ability to build upon prior knowledge by recalling stem sentences from the lessons and retrieve prior knowledge when revisiting learning. The children use their knowledge found in lessons to justify and reason using precise mathematical language modelled by the teachers.

Delivery of a Power maths lesson at Loughton school

Each lesson will include a range of explanation, modelling, scaffolding and practice as outlined below.

Power up:

- Retrieval activity, which supports the fluency of key number facts and checks on retention of prior knowledge.
- Each unit begins with a check on pre-requisite skills, supported by the DfE document, '[Teaching mathematics in primary schools \(2020\)](#)'.

Discover:

- Instead of 'Let me teach you...', children are encouraged to explore a real-life problem themselves to see what they already know, explore language and discuss possible approaches or representations that can be used.

Share (teacher modelling):

- The teacher will organise findings from the discover activity, comparing and contrasting methods and guiding them towards efficiency and the approach being taught today.
- Teachers will model methods using key representations, built upon throughout their maths journey to expose underlying mathematical structures.

Think together (scaffolding and practice):

- During this stage, the children will work in pairs to practise the concept being taught in a scaffolded, supportive manner.
- Mixed-ability seating here is crucial, to allow precise mathematical language to be used to explain and justify methods with one another.

Practice:

- All children independently practise the concept that has been taught in their practice books.

Reflect:

- Unpicks misconceptions and draws the learning together, clarifying succinctly their findings for the day.

Personalisation (scaffolding):

- Children deepen their learning in lessons through the use of rich and sophisticated problems, carefully planned questioning and variation within activities that make children stop and think flexibly about concepts.
- To strengthen children's understanding, teachers use a range of practical resources, carefully planned questioning and representations to allow children to see the maths structure along with adult support.

Formative assessments include the use of planned assessment questions supported by the teacher guides and a RAGing system where the LSA and Teacher support to identify children who are not understanding the concept being taught. RAG sheets are completed at the end of the lesson to inform interventions.

Retrieval questions, which include the prior concepts that have been taught are planned so that teachers can identify whether their children have retained knowledge/understanding weeks or months after it was last taught. Teachers then make notes on the RAGing sheets of concepts and children who have not retained the knowledge to support for interventions. Teachers will pay particular attention to the fluency of children's number facts and understanding.

Interventions are delivered on the same day where possible. Over the years, this has become more flexible to also include teacher's tuition times, carefully planned home works to targets gaps and in lesson reviews.

Summative assessments are completed half-termly to identify the children's retention and understanding of concepts. Test results are then uploaded to Active Learn where a gap analysis is provided for the whole class and individual pupils. From this, targets are designed to adapt fluency within lessons to review knowledge, individual children are discussed in pupil progress meetings alongside the maths subject leader and communications of targets are reported to parents during parents' evenings and school reports.