Mastery at SPJS

Maths teaching for mastery rejects the idea that a large proportion of people 'just can't do maths'.

- Everyone can learn, enjoy and achieve in maths at SPJS.
    - Learn, enjoy and achieve.

All pupils are encouraged by the belief that by working hard at maths they can succeed.

- Resilience, effort and thought are the expectations from every child in every maths lesson at SPJS.
    - Resilience and effort from all children.

Pupils are taught through whole-class interactive teaching, where the focus is on all pupils working together on the same lesson content at the same time, as happens in Shanghai and several other regions that teach maths successfully. This ensures that all can master concepts before moving to the next part of the curriculum sequence, allowing no pupil to be left behind.

- Pupils are grouped strategically to enable them to make full progress. More able children, who acquire key conceptual understanding at a greater pace, are stretched through conceptual variation and connectivity. Children who need time to acquire key concepts are taught as a whole class so they can work collaboratively at an appropriate pace and pitch.
    - Strategic grouping and pitch.

If a pupil fails to grasp a concept or procedure, this is identified quickly and early intervention ensures the pupil is ready to move forward with the whole class in the next lesson.

- Inteventions are strategic and timely to ensure progress and to allow each child to access whole-class teaching in sequences of lessons.
    - Strategic intervention.

Lesson design identifies the new mathematics that is to be taught, the key points, the difficult points and a carefully sequenced journey through the learning. In a typical lesson pupils sit facing the teacher and the teacher leads back and forth interaction, including questioning, short tasks, explanation, demonstration, and discussion.

- Units of work and learning objectives are broken down into micro-progressions. Lessons feature questioning, short tasks, explanation, demonstration, and discussion.
    - Sequenced, planned and good/outstanding teaching.

Procedural fluency and conceptual understanding are developed in tandem because each supports the development of the other.

- The curriculum is delivered through fluency, problem solving and reasoning (Curriculum 2014). Teachers use procedural and conceptual variation.
    - Fluency, problem solving, reasoning through procedural and conceptual variation.

It is recognised that practice is a vital part of learning, but the practice used is intelligent practice that both reinforces pupils' procedural fluency and develops their conceptual understanding.

- Teachers use a range of resources to provide intelligent, well-pitched practice opportunities.
    - Rich learning tasks and useful practice.

Significant time is spent developing deep knowledge of the key ideas that are needed to underpin future learning. The structure and connections within the mathematics are emphasised, so that pupils develop deep learning that can be sustained.

- Teachers develop link making and children are challenged to connect all the aspects of maths together.
    - Make links.

Key facts such as multiplication tables and addition facts within 10 are learnt to automaticity to avoid cognitive overload in the working memory and enable pupils to focus on new concepts.

- Children have regular opportunities to develop their recall of key number facts such as bonds, multiplication facts and associated division facts.
    - Known facts.