



The three steps (or **representations**) are used so that **all** children of **all** ages develop conceptual understanding. A ‘hands on, minds on’ approach involving:

- Concrete** – manipulatives/objects to handle
- Pictorial** – drawings, diagrams and images
- Abstract** – mathematical notation



Making mathematical connections, rather than seeing mathematics as a series of unrelated facts to be learnt, supports learners’ schema development and embedded understanding. This may involve planning for:

- Coherence – breaking learning down into small sequential steps
- Conceptual and procedural variation



Mathematical vocabulary is used accurately by both the teacher and the children. Mathematics lessons have a focus on talk and discussion.



The aims of the mathematics national curriculum are for all pupils to:

- reason mathematically.
- solve problems by applying their mathematics to a variety of routine and non-routine problems.
- become fluent...through varied and frequent practice with increasingly complex problems over time.

Opportunities to problem solve and reason should be a feature of **every** mathematics lesson.



Misconceptions are planned for, exposed and openly discussed.



Open questions are asked that stimulate mathematical thinking and discussion e.g.

- Can you explain your thinking?
- Is there another way?
- Why did you...?

Children are encouraged to ask their own questions to help clarify their understanding.

Click or scan the QR code to access a range of literature which underpins the Perfect 6