





Big Ideas of Mastery: Fluency

Messages

- 1. Fluency demands more of learners than memorisation of a single procedure or collection of facts. It encompasses a mixture of efficiency, accuracy and flexibility.
- 2. Quick and efficient recall of facts and procedures is important in order for learners' to keep track of sub problems, think strategically and solve problems.
- 3. Fluency also demands the flexibility to move between different contexts and representations of mathematics, to recognise relationships and make connections and to make appropriate choices from a whole toolkit of methods, strategies and approaches.

For example:

Quick and accurate recall of all multiplication facts up to 12×12 is important in order to free working memory to see the big picture and make decisions about when to use this knowledge to solve certain problems.

However, if a pupil only knows these facts as an unconnected collection of memorised phrases and does not know:

- that 8 x 6 is the same as 6 x 8 or twice 4 x 6 or 12 less that 10 x 8;
- does not know the connection between 6 x 8 and 16 x 8 or 6 x 80 or 0.6 x 8;
- when faced with a problem of finding how many books are in a bookcase with 8 shelves and 6 books on each shelf, does not know what mathematics to use
 ... then they have not attained fluency.

What I have tried		
What I found:		