

# Key Factor 6: Automatic Response (Fluency)

Number fluency is one part of four main Mathematical strands: **Understanding, Fluency, Problem Solving and Reasoning**

## What is Number Fluency?

Number fluency is the ability to recall basic facts in all four operations accurately, quickly and effortlessly. When students have automatic recall of facts, they can quickly retrieve answers from memory without having to rely on strategies, such as counting on their fingers or using concrete aids.

## Why is it important?

Number fluency is the building block needed to be able to solve more difficult maths problems and concepts. It allows the students to free up their working memory so they can progress to higher-level thinking (problem solving and reasoning skills).

Also, having basic number facts at their fingertips helps to build up confidence (a necessary mindset for all learning) and relieves anxiety.

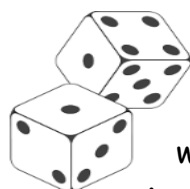
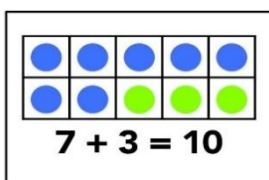


## How do we achieve it?

The key to developing number fluency is to start with gaining an **understanding** of each of the operations. Trying to learn random number facts by rote is extremely difficult. A solid understanding of number is the key. The facts become meaningful and are more likely to 'stick' in the long-term memory, when paired with a real scenario. For example, when learning the times table  $3 \times 6$ , it makes more sense (and is easier to visualise) a picture of 3 bugs with 6 legs (3 groups of 6), rather than recalling the fact 'three sixes are eighteen'. Making connections is important here too, so they can also see that it really is just  $6 + 6 + 6$ .



Next, the students need to be taught strategies in a sequential order, using the right materials and mathematical language. Helping them make connections and linking the strategies to other learning is also important. Using concrete materials and visual aids (10



frames, counters etc) helps the student gain an understanding of the concept, by recognising patterns. An essential skill for students is being able to see amounts without counting - known as subitising. This plays a big part in the development of fluency.

## How can we help?

Practise, practise, practise. Playing games and making the learning fun is always a successful way to get children to learn. Board games, card games and even online games, help keep them interested. Talking about number in the 'real world' also builds on their concept of number.