



"I learnt column addition at school. Why isn't my child being taught the same way?"

Understanding how children develop mathematical understanding before formal written methods.

Using real objects to explore and understand mathematical ideas.

Concrete



Pictorial

Using pictures and diagrams to represent mathematical thinking.

Using numbers and symbols to solve calculations.



Abstract



Why do children need all three?

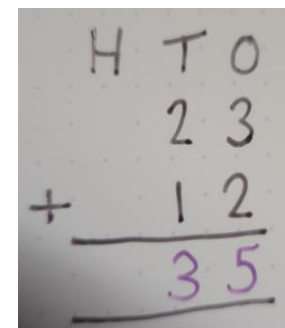
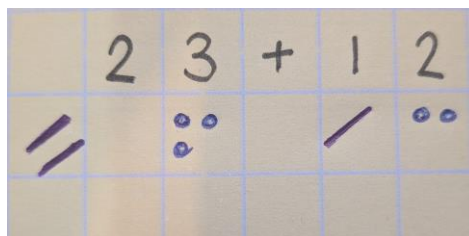
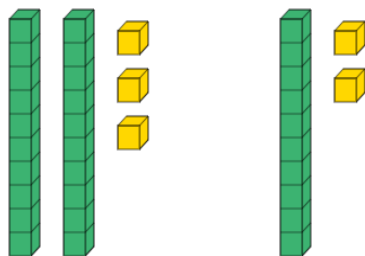
Moving from concrete resources to pictures and then to numbers helps children develop a deep understanding of maths, rather than simply memorising procedures.



The same calculation, different representations

All three examples below represent $23 + 12 = 35$

Children move between concrete resources, pictures and abstract symbols to develop a secure understanding of maths.



Use concrete objects



Draw pictures or make jottings



Abstract

Although these methods look different, they all represent the same mathematics. The aim is to help children understand what is happening, not simply memorise a procedure.



Why not teach column addition first?

The aim is not for children to use column addition for every calculation. The aim is for children to choose an efficient strategy and understand why it works.

To use formal methods successfully, children also need to understand:

- Place value
- Relationships between numbers
- Why the method worked
- How to identify and correct mistakes

How can parents help?

Ask...

- “How did you work it out?”
- “Can you show me another way?”
- Encourage children to explain their thinking
- Focus on understanding as well as getting the correct answer

Key message

Children are taught a range of mental and written methods.

As their understanding develops, they learn to choose the most appropriate and efficient strategy for the calculation they are solving.