Introduction

Missing Digit Puzzles can be used as starter activities, whole-class problem-solving or stretching activities to extend the more able. They are a perfect, easy way to help your classes achieve maths mastery, helping pupils to achieve greater depth.

The instructions for these puzzles are simple – students must fill in the gaps in the calculations using only the digits provided and using each digit only once. The puzzles are designed so that there is one solution, but thousands of possibilities. They cannot be solved by simply trying all the permutations – there are far too many. You have to really think about the problem and use your maths to decide which statements to fill in first.

Each sheet has two puzzles on it. The second, trickier puzzle is ideal for early finishers. Children who need a bit of help to get started can work through the first puzzle with an adult, then try the second puzzle independently.

When I introduce this type of puzzle to a class for the first time, I encourage them to write out the available digits and first look for places where you have to put certain numbers.

Here's a worked example:

Addition Puzzle A

Use each of the digits 1 to 9 once to complete the following calculations:

A.

__ + __ = 10

__ + __ = __7

__ + __ = 12

__ + __ = 5

- Start with line 2 because the only way to fill this in is with digits 8, 9 and 1. Cross these numbers off the list and write them in the spaces.
- Now you can fill in line 3 with digits 5 and 7. You can also fill in line 4 with digits 2 and 3. This means you can now cross off 2, 3, 5 and 7 from the list.
- You are left with only the digits 4 and 6, which go in line 1.

I hope you and your students enjoy using these puzzles.

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