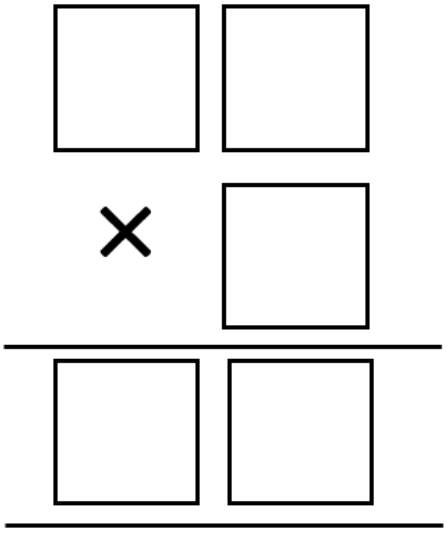
KS2 Problem

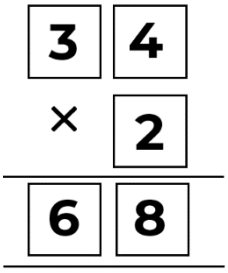
Multiplication Puzzle Part II

Place digits from 1 to 9 in the boxes to make the calculation correct.

No digit can be repeated and you cannot use zero.



This is one example:



How many different ways can you do it?

Support for Parents and Carers

Encourage your child to be methodical and systematic when trying to make all the possible multiplications. As the calculation is a two-digit number multiplied by a one-digit number which gives a two-digit answer, a useful system might be to start with the smallest value one-digit number, in this case, 1. Children should realise that a number multiplied by 1 gives the same number, which will mean they are repeated digits, so the one-digit number cannot be 1.

Trying the next single digit number, would mean multiplying by 2.

Encourage children to consider a system for these numbers too, such as:

13 × 2 = 26 (× the digit 2 is repeated)
14 × 2 = 28 (× the digit 2 is repeated)

Lancashire Mathematics Team (2020)

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15 × 2 = 30 (× there is no 0 digit)
16 × 2 = 32 (× the digit 2 is repeated)
17 × 2 = 34 (✓ no digits are repeated)
18 × 2 = 36 (✓ no digits are repeated)
19 × 2 = 38 (✓ no digits are repeated)

Children could then move onto two-digit numbers starting with 2, recognising that they cannot use any of these as the 2 would be repeated.

Children don't have to follow this system, but if they are struggling to organise their work, you could offer this as a suggestion.

Solutions

17 × 2 = 34
18 × 2 = 36
19 × 2 = 38
34 × 2 = 68
38 × 2 = 76
39 × 2 = 78
43 × 2 = 86
48 × 2 = 96

16 × 3 = 48
18 × 3 = 54
19 × 3 = 57
26 × 3 = 78
27 × 3 = 81
29 × 3 = 87

13 × 4 = 52
17 × 4 = 68
18 × 4 = 72
19 × 4 = 76

13 × 6 = 78

12 × 7 = 84
14 × 7 = 98

12 × 8 = 96