

Seven times seven

10 square tiles

25

Years 3 and 4

This is a maze. These are the rules.

Start from the 7. You have to move to one of the corners in exactly 9 steps. To move, you have to add **7** to the number you are on. Move on to a next-door square that has that total.

70	63	42	49	28	63	70
21	28	35	42	56	21	67
14	21	28	35	42	49	54
7	14	35	42	48	63	42
14	49	42	49	54	49	56
21	56	42	21	32	56	63
70	63	35	42	49	63	70

- You may not visit the same square more than once.
- You may not move in a diagonal.
- Use tiles to cover the squares you have been to.

Use squared paper to make your own maze for the 5 times table.

Remember to make false trails so that it is difficult to do!

Finding rules and describing patterns

Track the 7 times table over the grid and discover which 70 it ends on.

Learning objectives

- M** Add and subtract numbers below 100
- M** Use knowledge of multiples
- P** Work systematically: use one piece of information at a time to solve a puzzle
- P** Use knowledge of numbers to identify patterns, properties and relationships

Working on the problem

Getting started:

Tell the class that you are going to count in sevens and write up 7. Children suggest the next number for you to write on the board. Continue like this until you have a list of the multiples of 7 in order.

Having established the number sequence, children put a tile on the number 7 on their card. They then tell you what number comes next, choose one of the 14s and try going on from there. Children may find it helpful to record each attempt on the recording sheet to avoid trying the same route too many times.

Support questions:

What number comes next in the 7 times table? Can you find one of those next to where you are?

If you have to go back, where would be a good place to start from?

Problem-solving strategies

Although children are using the sequence of numbers in the 7 times table as a rule, they need to use trial and improvement because of the nature of the maze.

The recording sheet helps them record where they have tried already.

Extension problems

Children make another maze for any multiplication table they like.

Problem solutions

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7	14	35	42	48	63	42
14	49	42	49	54	49	56
21	56	42	21	32	56	63
70	63	35	42	49	63	70