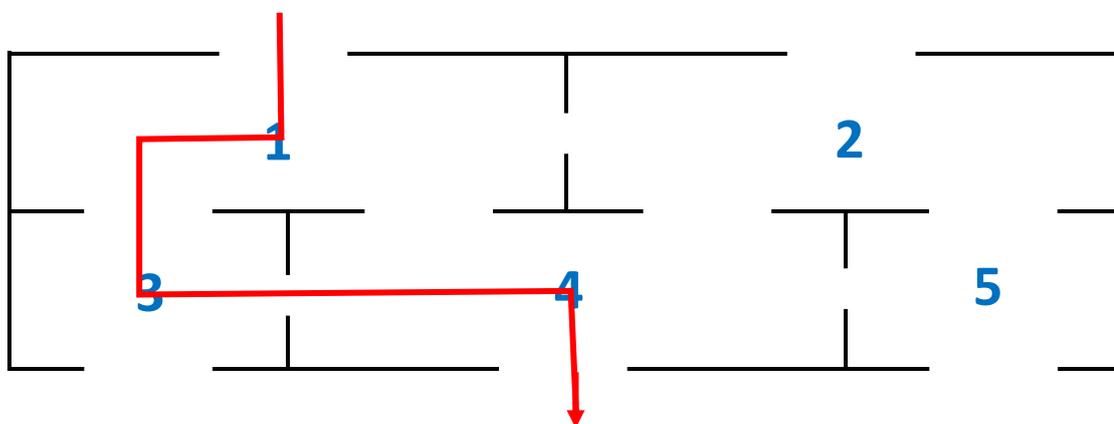# Mathematical investigation (2)

Investigating is a great way to learn to think mathematically, apply logic, spot patterns and improve our perseverance.

Rooms

How does it work?

- You start by entering any 'room' with an outside door.
  You travel through at least one more room, **adding** the numbers as you go, before leaving through an outside door.
  You are not allowed back in a room!
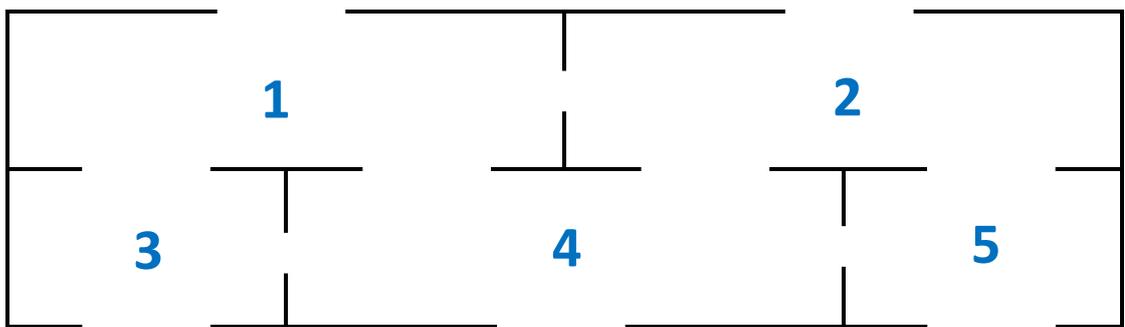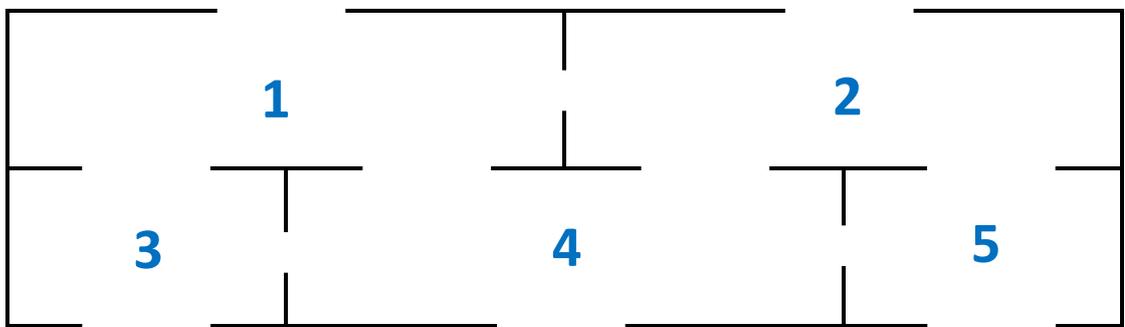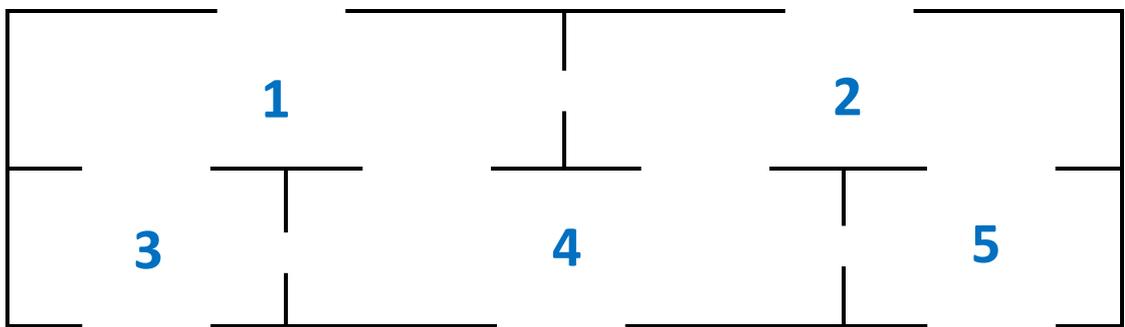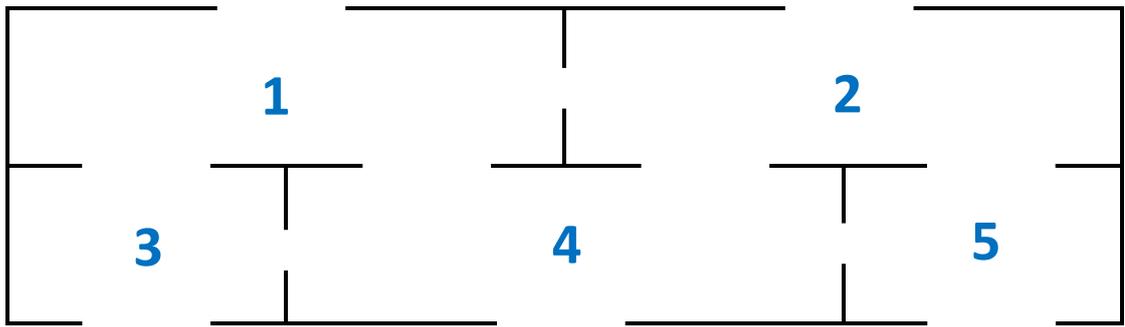 e.g. 1 + 3 + 4 = **8**

Now the challenge…

- Find at least two different routes through the rooms in House Number 1 (see below) to give a total of exactly 10. Remember you can enter and leave through any outside door, but you mustn't enter a room twice.
- Is it possible to pass through **every** outside and inside door <u>once only</u>, without crossing your own path, to make a total of 15?

Now for the next challenge

- Move onto the House Number 2. Find at least two different routes through the rooms to give a total of exactly 15.
- What other totals are possible between 10 and 20?

1
2
3
4
5

1
2
3
4
5

1
2
3
4
5

1
2
3
4
5

House number 2

1   2
3   4   5
6   7

1   2
3   4   5
6   7

1   2
3   4   5
6   7