

Maths investigation

Starter 1

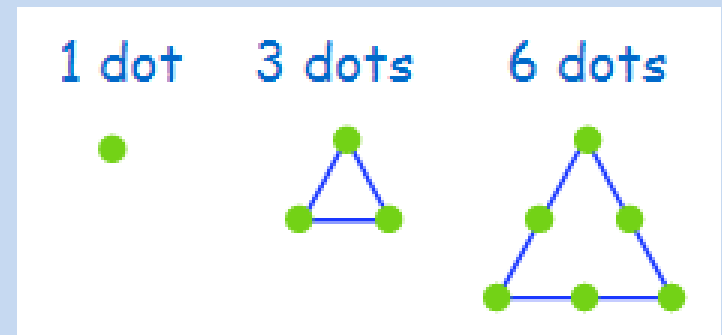
Square numbers are numbers you get when you times a number by itself. For example $2 \times 2 = 4$ so 4 is a square number. $3 \times 3 = 9$ so 9 is a square number.

Can you write down the next 6 square numbers?

Starter 2

Triangular numbers are the number of dots that you need to make triangles.

So the first 3 triangular numbers are 1,3,6.



What is the next triangular number?

And the next?

How many triangular numbers can you go up to?

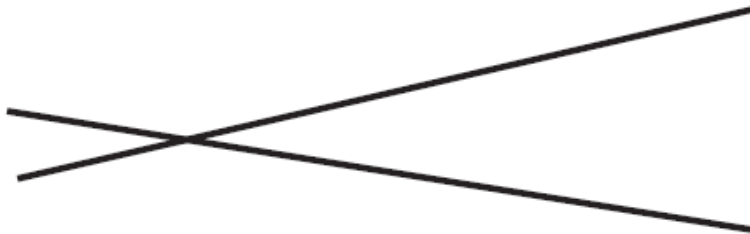
Main – ‘sticks’ investigation

Collect a number of sticks. The investigation is to find the maximum number of intersections as the sticks cross.

With one stick, no sticks cross.



With 2 sticks, there is one intersection.



With 3 sticks, how many intersections are there? _____

Record the maximum number of intersections for each number of sticks.

Main – ‘sticks’ investigation

Record your findings in a table like this

Number of sticks	Number of intersections
1	0
2	1
3	
4	
5	
6	
7	
8	

Main – ‘sticks’ investigation

Can you spot the pattern?

Can you explain the reason for the pattern?

Predict the next number of intersections and test your idea.
