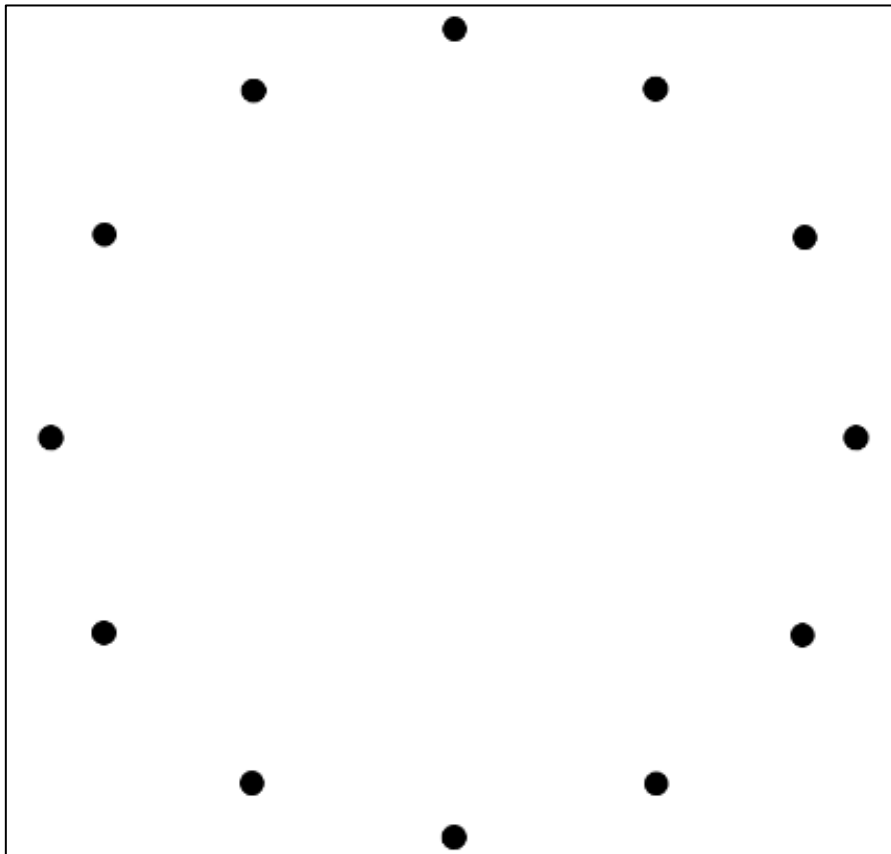


Twelve Pins

Can you draw an oblong rectangle by connecting some of the dots on the twelve pin template with straight lines?

Can you draw a square rectangle?



Challenge 1

How many different triangles can you draw?

Can you describe their properties?

Challenge 2

How many other shapes can you draw?

Can you name the shapes you make? Can you describe their properties?

KS2 Problem

Support for Parents and Carers

Encourage children to use the recording sheet to show their responses. They may choose to simply draw lines to make a shape before naming and describing it. A good mathematics dictionary can help with identifying shapes and their properties. There is a link to an example here: <https://www.mathsisfun.com/definitions/>

As a guide to the shapes and properties to work with for your child (include the examples from prior year groups too):

Reception: triangle, square rectangle, oblong rectangle

Years One and Year Two: pentagon, hexagon, heptagon; octagon; quadrilateral

Year Three: no new shapes

Year Four: equilateral triangle; isosceles triangle; right-angled triangle

Year Five: scalene triangle

Year Six: rhombus; kite; parallelogram; trapezium

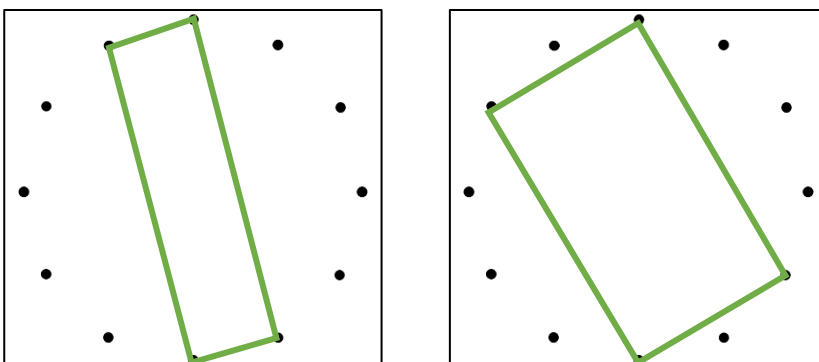
Children may describe their shapes using the following:

- number of sides
- number of vertices (corners)
- parallel and perpendicular sides [from Year 3]
- angles (acute (less than 90°); obtuse (between 90° and 180°); right angle (90°)) [from Year 4]
- angles (reflex (greater than 180°)) [from Year 5]
- line of symmetry (each half of shape reflected in a mirror line) [from Year 4]
- regular (all sides and angles are the same) / irregular [from Year 5]

Solution

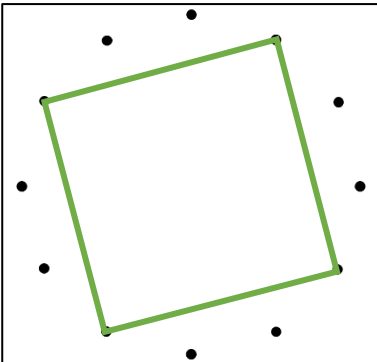
For all of these shapes, the position could be rotated.

Oblong rectangles:

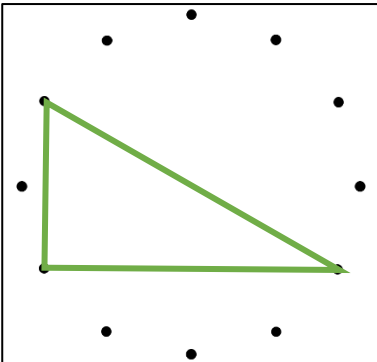


KS2 Problem

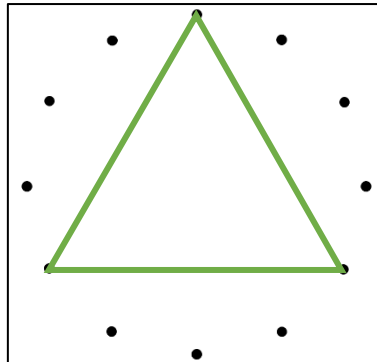
Square rectangle:



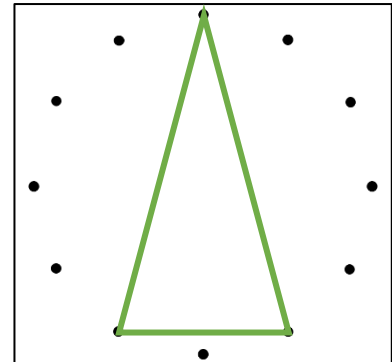
Triangles:



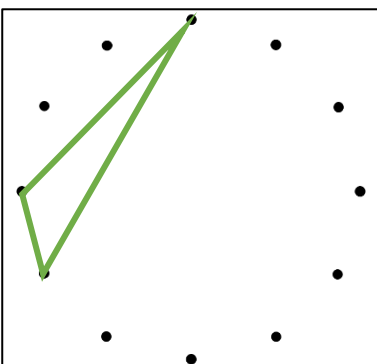
right angled triangle



equilateral triangle



isosceles triangle

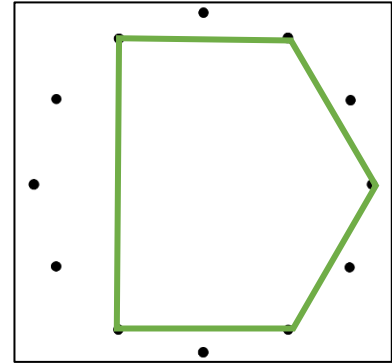
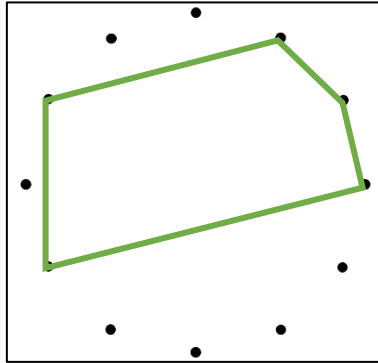
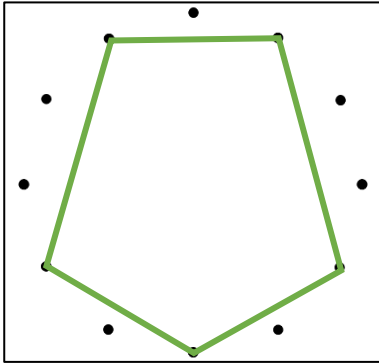


scalene triangle

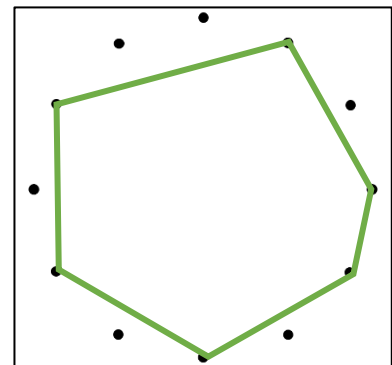
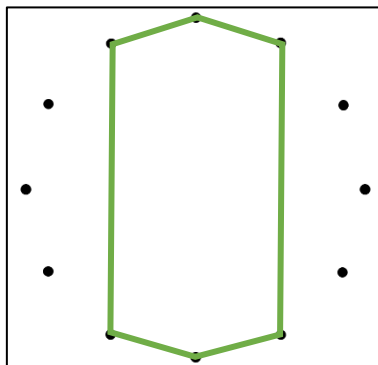
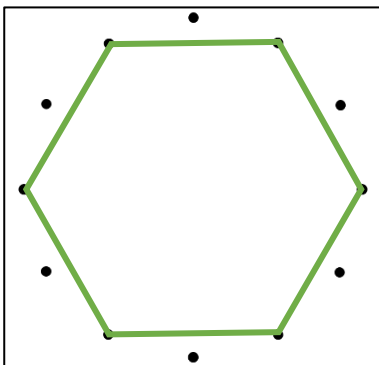
KS2 Problem

Additional shapes:

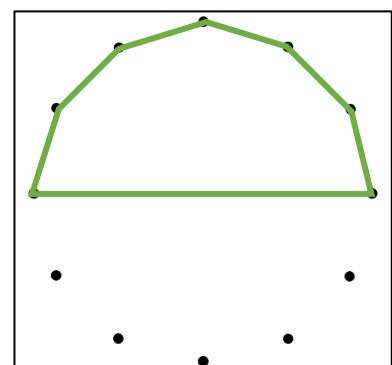
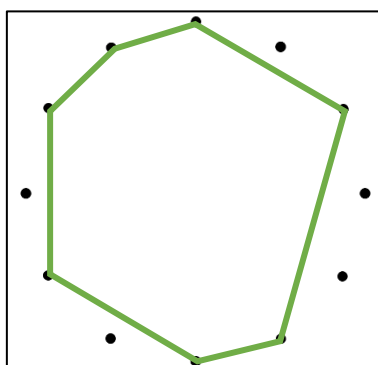
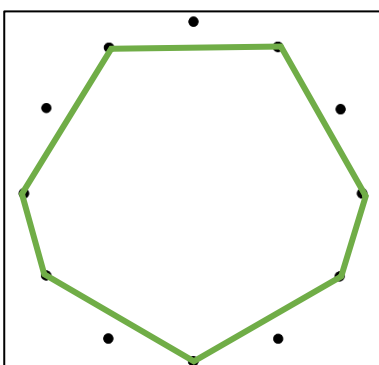
Pentagons (joining any five pins)



Hexagons (joining any six pins)

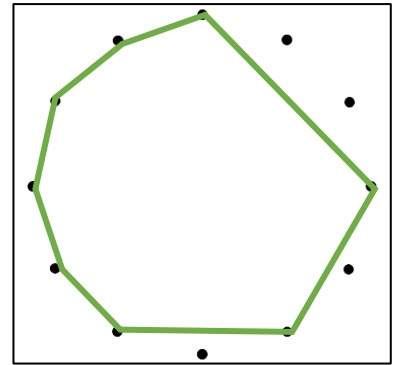
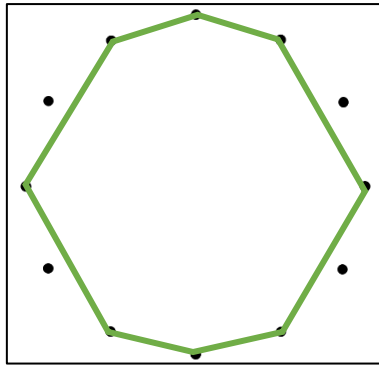
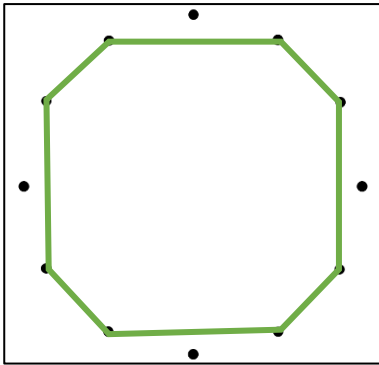


Heptagons (joining any seven pins)

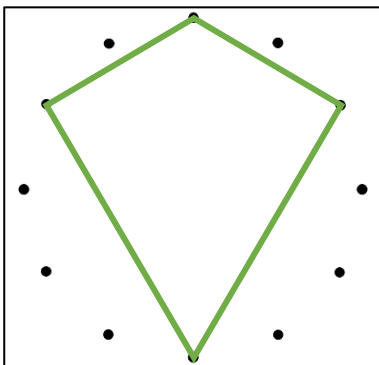
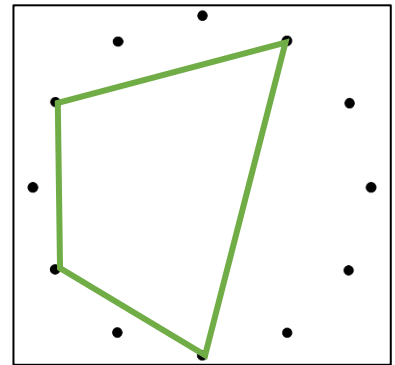
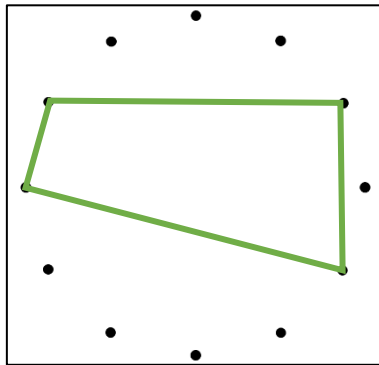
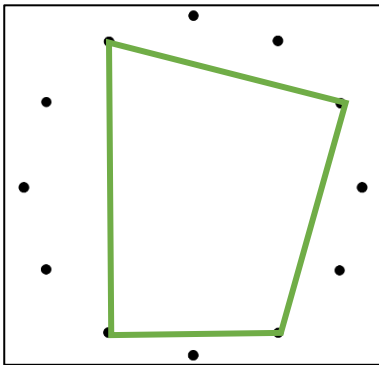


KS2 Problem

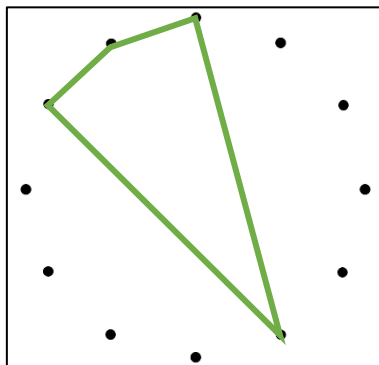
Octagons (joining any eight pins)



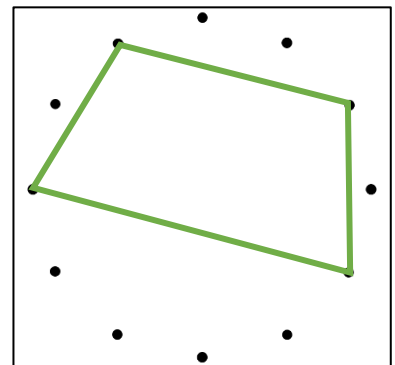
Quadrilaterals (joining any four pins)



kite



kite



trapezium

KS2 Problem

Twelve Pins

