# Equivalent perimeters

What shapes can you draw on 4x4 dotty paper, using only perpendicular lines? Find the perimeters of your shapes.

## Key questions

* How many of them have a perimeter of 12 cm?
* Why do the cross and the square (3cm x 3cm) have the same perimeter?
* Which type of shape has a different perimeter?
* Which shape has the largest perimeter?
* What are the angles inside the shapes?

### Square areas

Using 5x5 dotty paper, how many different squares can you draw?

(*There are 8: four aligned vertically, 4 ‘skewed’. Note that many children would wish to call the skewed squares diamonds. But they are still squares!)*

## Key questions

* What are the areas of these squares?
* What are the lengths of the sides of your squares?
* Tabulate your results, showing side length and area.
* The numbers 1, 4, 9, 16 are known as square numbers. Why? Why not the others?
* Why can’t you make an area of 3 squares on this paper?

### Shapes on dotty paper

On 4x4 dotty paper, try to draw these:

1. Five different sized squares
2. A rhombus that isn’t a square
3. Nine different parallelograms
4. Four different rectangles
5. Four different kites
6. Five different trapezia
7. Four different arrowheads
8. Five different shapes with two lines of symmetry
9. The polygon with the largest possible number of sides
10. As many different isosceles triangles as you can

## Key questions

* + Can you show the lines of symmetry on these shapes?
  + Can you find the areas of each of these?
  + What makes a rhombus different from a parallelogram /square?
  + How many of these shapes could be drawn on 3x3 dotty paper?