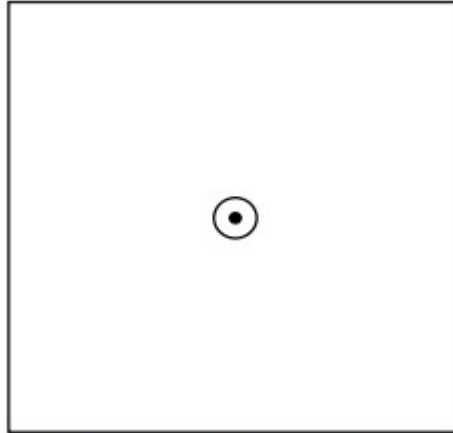


Let's look together.

2. Below is a circle with a radius of 0.5cm. The perimeter of the square is 24cm. Jane manages to fit six circles within the square, all with the same centre point. The circles increase in size each time, with the largest circle's edges touching the inside edges of the square.

Not drawn to scale



What could the radius of each of the six circles be?

If the perimeter of the square triples in size, investigate what will happen to the diameter of the circles within?

DP

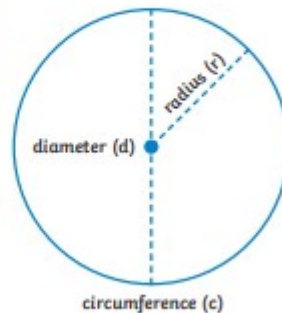
Parts of Circles

A circle is a 2D shape. The perimeter of a circle is called the **circumference** (c). The distance across the circle, passing through the centre, is called the **diameter** (d).

The distance from the centre of the circle to the circumference is called the **radius** (r).

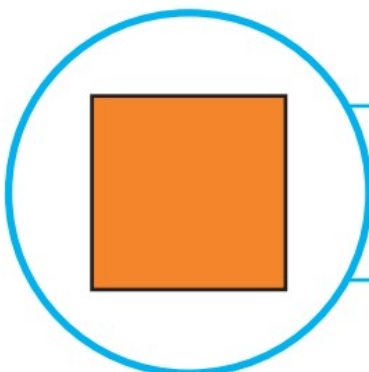
$$r \times 2 = d$$

$$\frac{d}{2} = r$$



You know we are dealing with a square so you know the sides are the same!

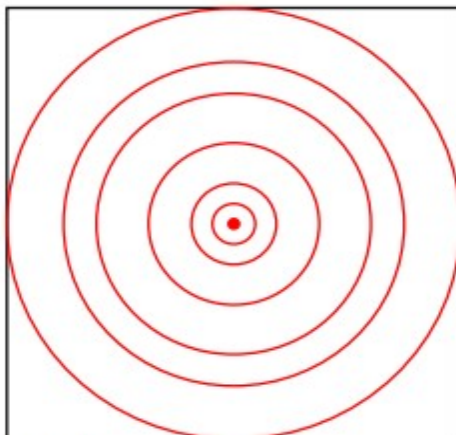
The biggest radius we can fit inside our square will be half the width.



To find the perimeter of any shape with straight sides, simply **add together the length of all the sides**.

2. Below is a circle with a radius of 0.5cm. The perimeter of the square is 24cm. Jane manages to fit six circles within the square, all with the same centre point. The circles increase in size each time, with the largest circle's edges touching the inside edges of the square.

Not drawn to scale



Our square has equal sides of 6cm.

So half = 3 cm.

Biggest radius inside the square is 3cm.

What could the radius of each of the six circles be?

Various possible answers, for example: the radius could increase equally each time but the largest circle would have a radius of 3cm.

If the perimeter of the square triples in size, investigate what will happen to the diameter of the circles within?

The diameter of the circles will also triple in size and the largest circle will have a diameter of 18cm.