

Polygons and Circles

Measure the distance in mm from the centre to (a) a corner and (b) the middle of a side on each of the regular polygons on the attached sheet. Write the results below. These are two different ways of measuring the size of the polygon.

Each of the polygons has the same perimeter. Measure one of the polygons to find out what the perimeter is. Write the answer here:

PERIMETER = _____

<i>Number of Sides</i>	<i>Centre to Corner</i>	<i>Centre to Side</i>
1		
2		
3		
4		
5		
6		
7		
8		

What do you notice about the measurements? There are (at least) three important observations you may be able to make.

If we kept increasing the number of sides without changing the perimeter our polygon would look more and more like a circle. What could you say about the measurements you have made above if you tried to make the same measurements on a circle?

It's easy to measure the perimeter of a polygon: you just measure one side and multiply by the number of sides. But how do you measure the *circumference*¹ of a circle?

¹ When we talk about circles, we use the word circumference instead of perimeter.

