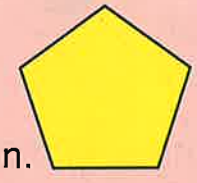
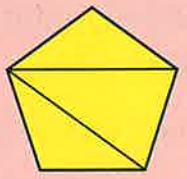
Polygon angles

Challenge



Draw, or trace around, a regular pentagon.

Choose any vertex and connect it to all the other vertices.



Count the number of triangles.

Multiply the number of triangles by 180° (the number of degrees in a triangle).

Investigate this method for calculating the sum of all the interior angles in other regular polygons.

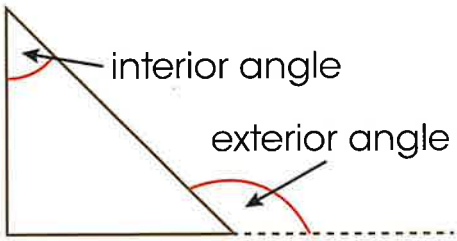
You will need:

- set of regular 2-D shapes
- ruler

Think about ...

Make sure that you find the sum of interior angles and the size of each angle in a square and a regular pentagon, hexagon, heptagon and octagon. Can you calculate the sum of the interior angles and the size of each angle of other polygons?

An interior angle is an angle inside a shape.



What if?

If n represents the number of sides of a polygon, investigate this formula for calculating the sum of all the interior angles: $(n-2) \times 180$

How do your results, using this formula, compare with your results from the 'Challenge' above?

To work out the size of each angle in a regular polygon, you use this formula. Use the formula to calculate the size of each angle in regular polygons.

$$\frac{(n-2) \times 180}{n}$$

When you've finished, turn to page 80.