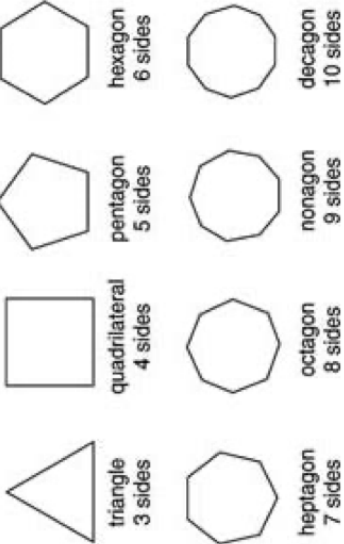
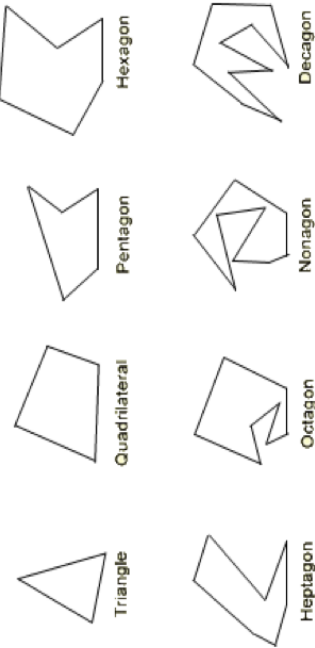


Year 8 Maths – Mastery Unit 11 – Angles in Polygons

Regular Polygons

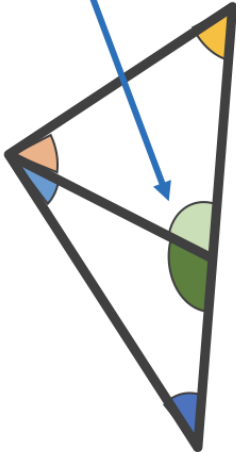
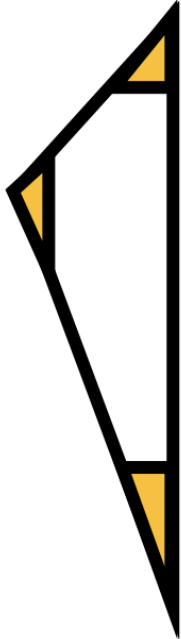


Irregular Polygons



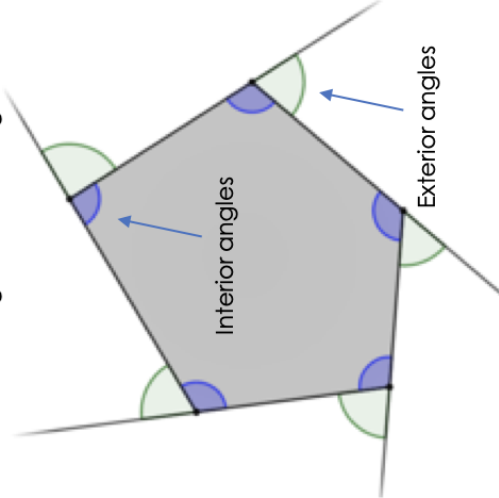
Interior & Exterior Angles

The **interior angles** of a triangle sum to 180° .



In the diagram, the green angles are **not interior angles** of the large triangle as they are not at a **vertex** of the triangle.

Exterior angles and interior angles lie on straight line.
Therefore: **Exterior angle + Interior angle = 180°**



Keyword/Skill	Definition/Tips
Quadrilateral	A shape that has four straight sides
Polygon	A 2D shape with only straight edges .
Regular	A shape is regular if all the sides and all the angles are equal .
Irregular	A shape is irregular when the sides and angles are not all the same size
Interior Angles	An angle inside a shape, joined by two sides
Exterior Angles	The angle between any side of a shape, and a line extended from the next side.
Acute Angles	Angles less than 90°
Right Angles	Angles that are exactly 90° .
Obtuse Angles	Angles greater than 90° but less than 180° .
Reflex Angles	Angles greater than 180° but less than 360° .
Sum	Adding numbers together
Vertex	A point where two or more line segments meet. A corner.

Other Topics/Units this could appear in:

- Mensuration
- Properties of 2D Shapes
- Area & Perimeter, 3D Forms & Angle Facts
- Interior & Exterior Angles

Year 8 Maths – Mastery Unit 11 – Angles in Polygons

Sum of Interior Angles

If we separate a polygon into triangles like these examples, the number of triangles is 2 fewer than the number of sides.

So the sum of the interior angles is:

$(n - 2) \times 180$

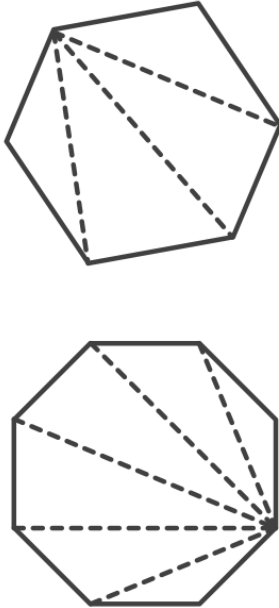
(Where n = the number of sides)

Example:

To find the sum of interior angles in a heptagon.

There are 7 sides on a heptagon.

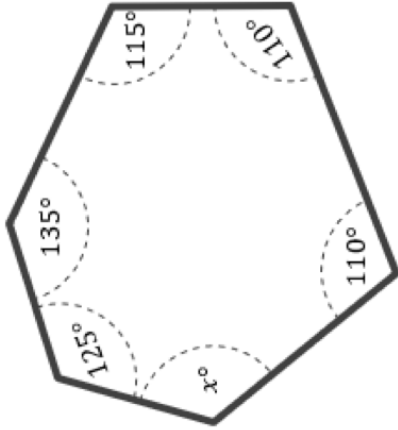
$(7 - 2) \times 180 = 5 \times 180 = 900^\circ$



Sum of Interior Angles

We can figure out specific angles by using the sum of interior angles.

Sum of interior angles = $(6 - 2) \times 180 = 4 \times 180 = 720^\circ$



125	135	115	110	110	x
720					

Therefore, $x = 125^\circ$

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