



Year 5 – Maths – Geometry: Properties of Shape

Key vocabulary

angle
right angle
acute
obtuse
reflex
protractor
horizontal
vertical
parallel
perpendicular
polygon
regular
irregular
two-dimensional
three-dimensional
flat face
curved surface
edge
curved edge
vertex
apex

Properties of 3D shapes

Name	Surfaces		Edges		Vertices	Picture
	Flat	Curved	Flat	Curved		
cube	6	0	12	0	8	
cuboid	6	0	12	0	8	
square-based pyramid	5	0	8	0	5	
tetrahedron	4	0	6	0	4	
triangular prism	5	0	9	0	6	
pentagonal prism	7	0	15	0	10	
hexagonal prism	8	0	18	0	12	
octagonal prism	10	0	24	0	16	
octahedron	8	0	12	0	6	

A cone has an apex. This is because a vertex is the point where two straight edges meet and a cone has no straight edges.

Key questions

Can you describe the difference between a regular polygon and an irregular polygon?

How do you identify an obtuse angle?

If angle A on a straight line is 112 degrees, what is angle B?

Polygons

Regular	Irregular
  	  
  	  

A polygon is any two-dimensional shape formed with straight lines.

In a regular polygon, all the sides and angles are equal.

In an irregular polygon, the sides and angles are not equal.

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Identifying angles

twinkl visit twinkl.com

Acute Angles

Any angle that measures less than 90° is called an **acute** angle.



Obtuse Angles

Any angle that measures greater than 90° and less than 180° is called an **obtuse** angle.

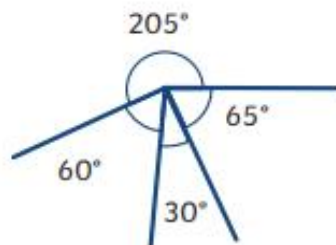


Reflex Angles

Any angle that measures greater than 180° is called a **reflex** angle.



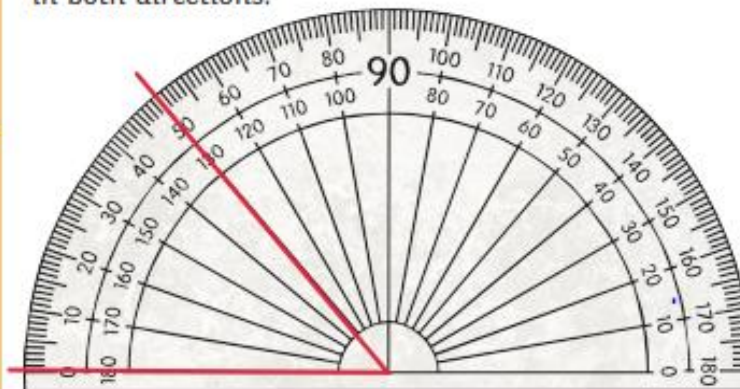
Angles on a straight line always total 180° .



Angles around a point always total 360° .

Measuring and Drawing Angles

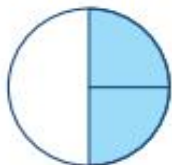
To measure angles, we use a protractor. Look carefully at how the numbers on the scale count from 0° to 180° in both directions.



Multiples of 90° can be used as descriptions of a turn.



$\frac{1}{4}$ turn - 90°



$\frac{1}{2}$ turn - 180°



$\frac{3}{4}$ turn - 270°



1 turn - 360°

Links to other learning

Year 4 – Compare and classify geometric shapes, including quadrilaterals and triangles; Identify acute and obtuse angles and compare and order angles up to 2 right angles by size; Identify lines of symmetry in 2-D shapes presented in different orientations; Complete a simple symmetric figure with respect to a specific line of symmetry.

Year 6 – Draw 2-D shapes using given dimensions and angles; Recognise, describe and build simple 3-D shapes, including making nets; Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons; Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius; Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.