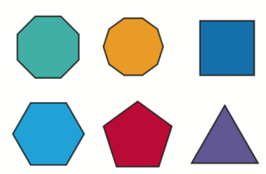
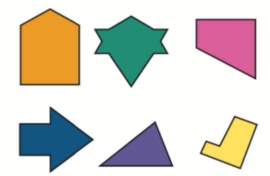
Year Five
Properties of Shape

Vocabulary

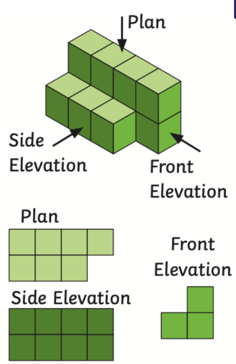
angle
right angle
acute
obtuse
reflex
protractor
horizontal
vertical
parallel
perpendicular
polygon
regular
irregular
two-dimensional
three-dimensional
flat face
curved surface
edge
curved edge
vertex
apex

Regular and irregular polygons

Regular	Irregular
	

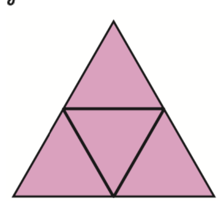
A polygon is any two-dimensional shape formed with straight lines.
In a regular polygon, all the sides and angles are equal.
In an irregular polygon, the sides and angles are not equal.

Representations



A shape net is a 2D drawing of an unfolded 3D shape. When you are drawing or reasoning about shape nets, think carefully about where the edges of the faces meet.

Cube models can be drawn as 2D representations using different elevations.



Shape net of a tetrahedron.

Properties of 3D shapes

Name	Surfaces		Edges		Vertices	Picture
	Flat	Curved	Flat	Curved		
sphere	0	1	0	0	0	
cube	6	0	12	0	8	
cuboid	6	0	12	0	8	
cone	1	1	0	1	0	
cylinder	2	1	0	2	0	
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.

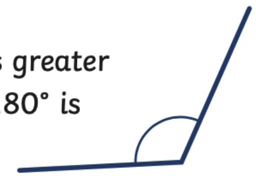
Identifying angles

Acute Angles

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

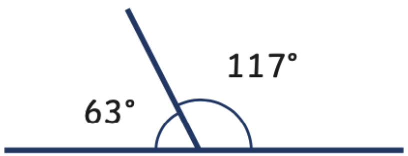
Obtuse Angles

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

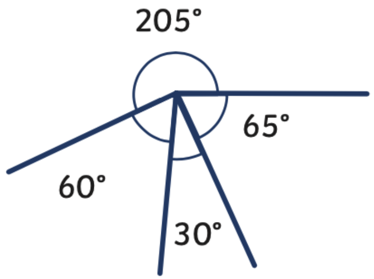


Reflex Angles

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



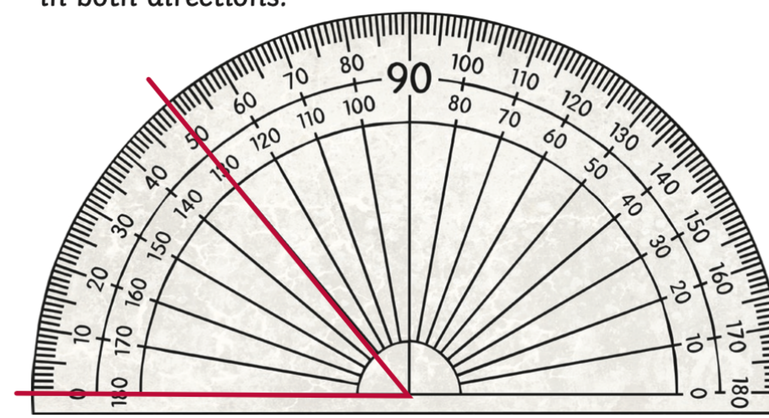
Angles on a straight line always total 180°.



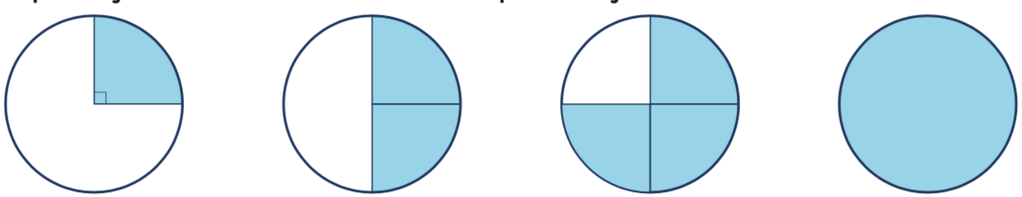
Angles around a point always total 360°.

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.

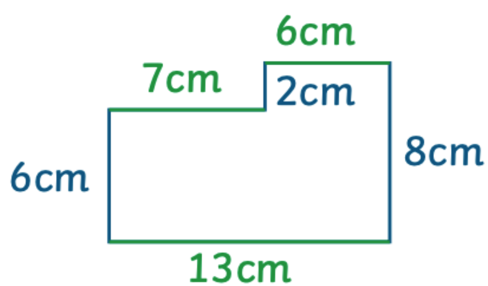


Multiples of 90° can be used as descriptions of a turn.



$\frac{1}{4}$ turn = 90° $\frac{1}{2}$ turn = 180° $\frac{3}{4}$ turn = 270° 1 turn = 360°

Properties of rectangles



6cm + 2cm = 8cm

7cm + 6cm = 13cm