

## Key Vocabulary

angle right

angle acute

obtuse

reflex

protractor

horizontal

vertical

parallel

perpendicular

polygon

regular

irregular

two-dimensional

three-dimensional

flat face

curved surface

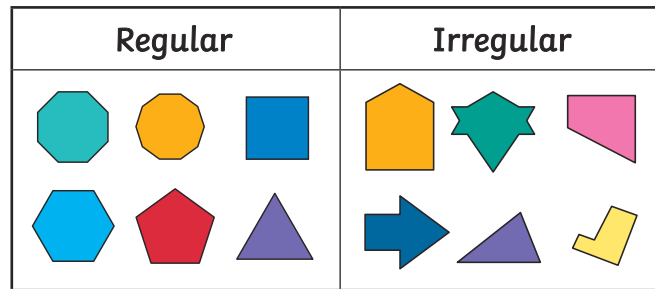
edge

curved edge

vertex

apex

## Regular and Irregular Polygons



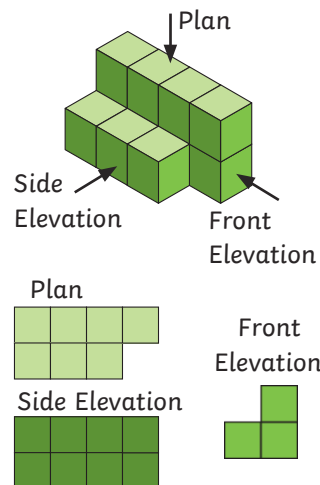
A polygon is any two-dimensional shape formed with straight lines.

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

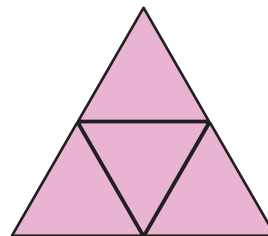
In an irregular polygon, the sides and angles are not equal.

## Representations

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















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.



Shape net of a tetrahedron.

## Properties of 3D Shapes

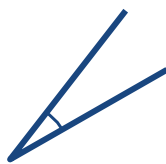
Name	Surfaces		Edges		Vertices	Picture
	Flat	Curved	Flat	Curved		
sphere	0	1	0	0	0	
cube	6	0	12	0	8	
cuboid	6	0	12	0	8	
cone	1	1	0	1	0	
cylinder	2	1	0	2	0	
square-based pyramid	5	0	8	0	5	
tetrahedron	4	0	6	0	4	
triangular prism	5	0	9	0	6	
pentagonal prism	7	0	15	0	10	
hexagonal prism	8	0	18	0	12	
octagonal 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  $90^\circ$  is called an **acute** angle.



### Obtuse Angles

Any angle that measures greater than  $90^\circ$  and less than  $180^\circ$  is called an **obtuse** angle.

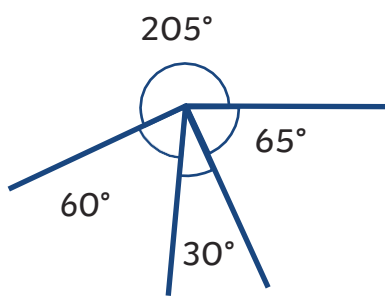


### Reflex Angles

Any angle that measures greater than  $180^\circ$  is called a **reflex** angle.



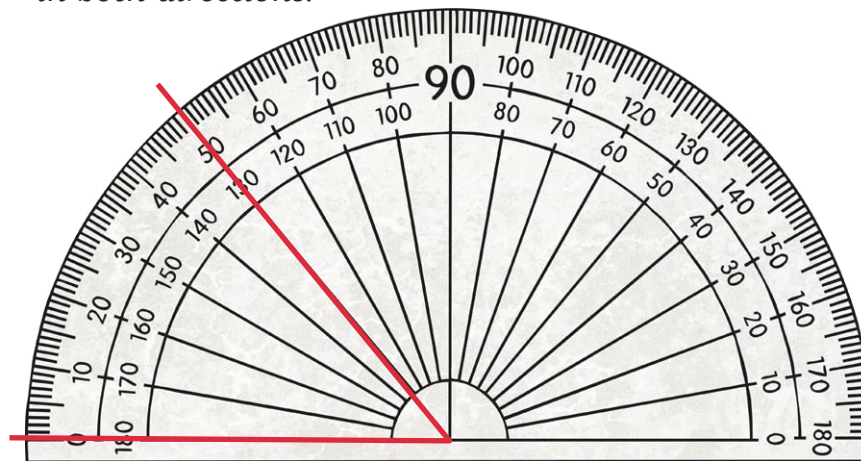
Angles on a straight line always total  $180^\circ$ .



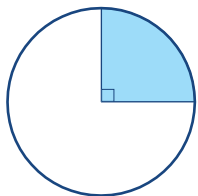
Angles around a point always total  $360^\circ$ .

## Measuring and Drawing Angles

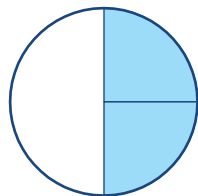
To measure angles, we use a protractor. Look carefully at how the numbers on the scale count from  $0^\circ$  to  $180^\circ$  in both directions.



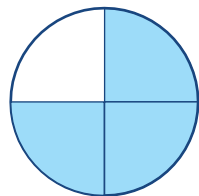
Multiples of  $90^\circ$  can be used as descriptions of a turn.



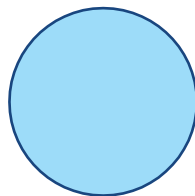
$\frac{1}{4}$  turn =  $90^\circ$



$\frac{1}{2}$  turn =  $180^\circ$

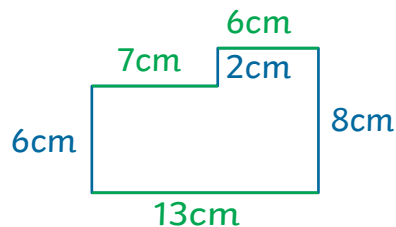


$\frac{3}{4}$  turn =  $270^\circ$



1 turn =  $360^\circ$

## Using Properties of Rectangles



$$6\text{cm} + 2\text{cm} = 8\text{cm}$$

$$7\text{cm} + 6\text{cm} = 13\text{cm}$$