

# Year 5 Maths: Properties of Shape Collectable (1)





 St Margaret's Academy

### 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

Regular	Irregular
	

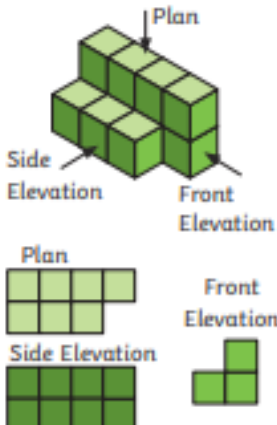
A polygon is any two-dimensional shape formed with straight lines.

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

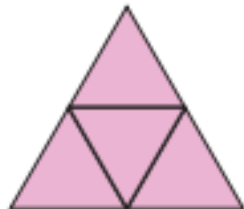
In an irregular polygon, the sides and angles are not equal.

### Representations

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		
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.

# Year 5 Maths: Properties of Shape Collectable (2)

## Identifying Angles

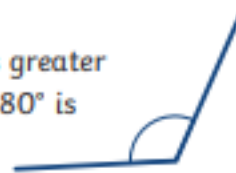
### Acute Angles

Any angle that measures less than  $90^\circ$  is called an **acute** angle.



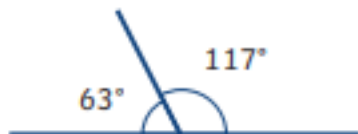
### Obtuse Angles

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

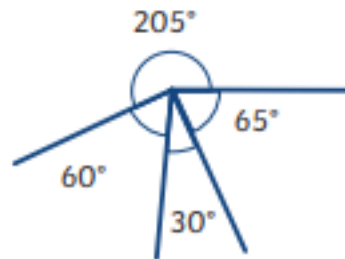


### Reflex Angles

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



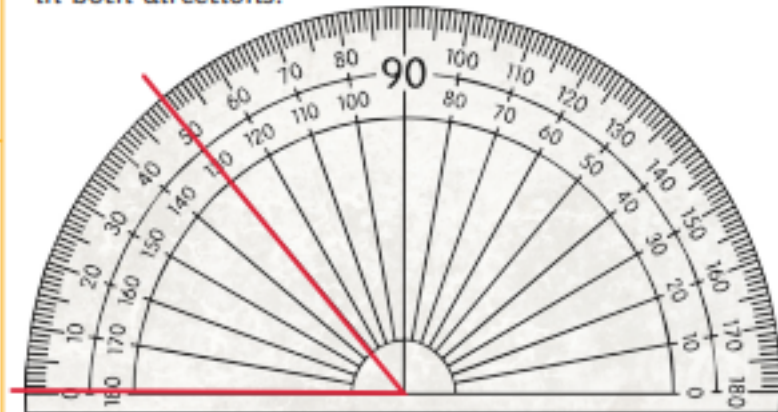
Angles on a straight line always total  $180^\circ$ .



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 =  $180^\circ$

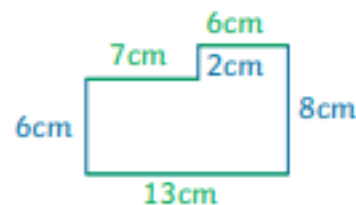


$\frac{3}{4}$  turn =  $270^\circ$



1 turn =  $360^\circ$

## Using Properties of Rectangles



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

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