

YEAR 7 — LINES AND ANGLES

Constructing, measuring and using geometric notation

@whisto_maths

What do I need to be able to do?

By the end of this unit you should be able to:

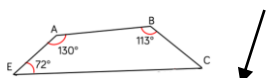
- Use letter and labelling conventions
- Draw and measure line segments and angles
- Identify parallel and perpendicular lines
- Recognise types of triangle
- Recognise types of quadrilateral
- Identify polygons
- Construct triangles (SAS, SSS, ASA)
- Draw Pie charts

Keywords

- Polygon:** A 2D shape made with straight lines
- Scalene triangle:** a triangle with all different sides and angles
- Isosceles triangle:** a triangle with two angles the same size and two sides the same size
- Right-angled triangle:** a triangle with a right angle
- Frequency:** the number of times a data value occurs
- Sector:** part of a circle made by two radii touching the centre
- Rotation:** turn in a given direction
- Protractor:** equipment used to measure angles
- Compass:** equipment used to draw arcs and circles

Letter and labelling convention

The letter in the middle is the angle
The arc represents the angle



Angle Notation: three letters ABC

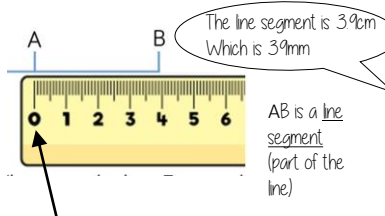
This is the angle at B = 113°

Line Notation: two letters EC

The line that joins E to C

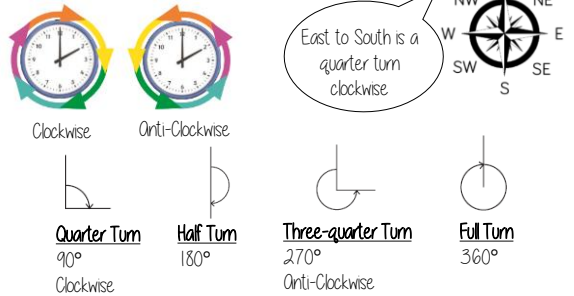
Draw and measure line segments

Conversions $1\text{cm} = 10\text{mm}$, $1\text{m} = 100\text{cm}$

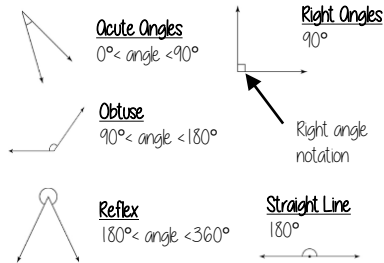


Make sure the start of the line is at 0.

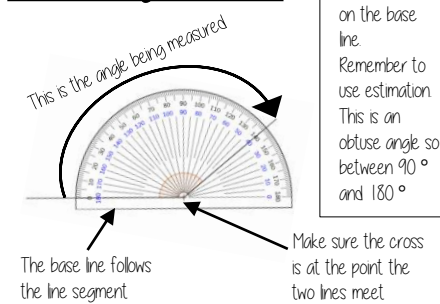
Angles as measures of turn



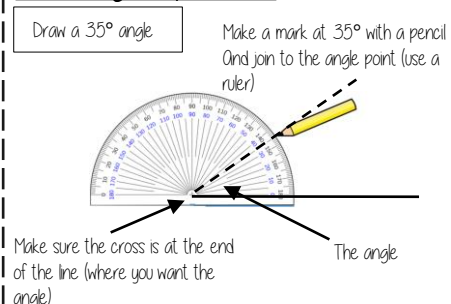
Classify angles



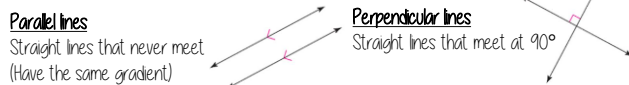
Measure angles to 180°



Draw angles up to 180°



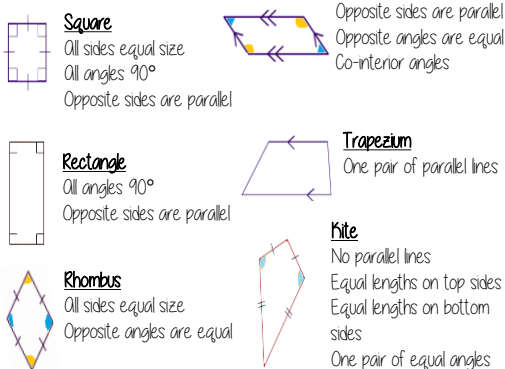
Parallel and Perpendicular lines



Angles over 180°



Properties of Quadrilaterals



Draw Pie Charts

Type of pet	Dog	Cat	Hamster
Frequency	32	25	3

$\frac{32}{60}$ "32 out of 60 people had a dog"

This fraction of the 360 degrees represents dogs

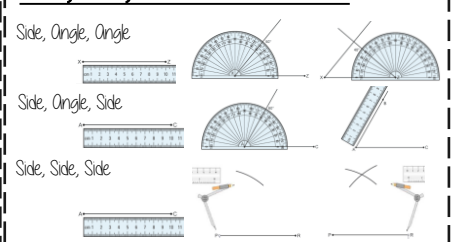
$\frac{32}{60} \times 360 = 192^\circ$

Use a protractor to draw This is 192°

Polygons

3	- Triangle	5	- Pentagon	8	- Octagon
4	- Quadrilateral	6	- Hexagon	9	- Nonagon
		7	- Heptagon	10	- Decagon

SAS, SSS, ASA constructions



If all the sides and angles are the same, it is a **regular** polygon