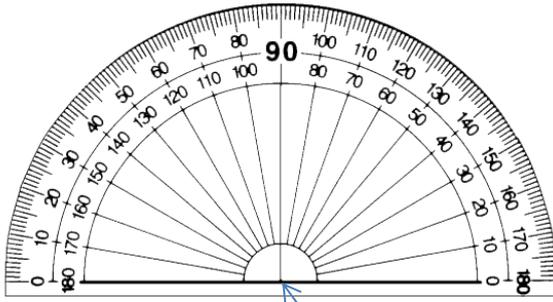




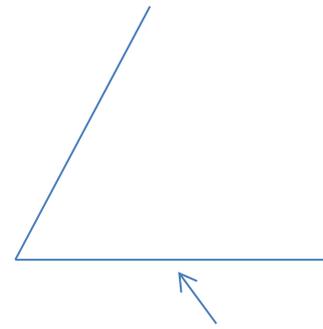
'How To' Guide – Using a Protractor



A **protractor** – a tool used to measure and draw angles



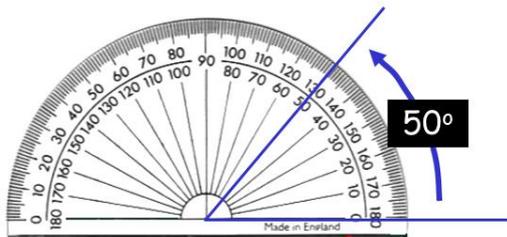
Crosshair – this is the centre of the protractor



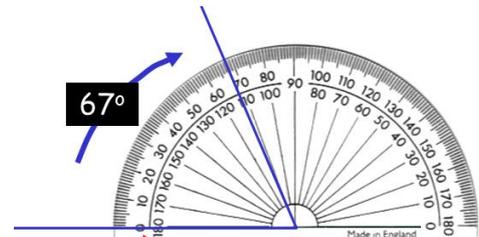
Turn your page so this line is horizontal

How we teach it – Measuring angles

- Turn the page so that one of the lines from the angle is horizontal on the desk.
- Place the crosshair so that it is in the corner of the angle as shown below.
- Look along the horizontal line to find 0 on the protractor. This will tell you if you use the inside or outside scale.
- Follow the set of numbers until you reach the other angle line.
- Read off the value – this is the size of your ANGLE.



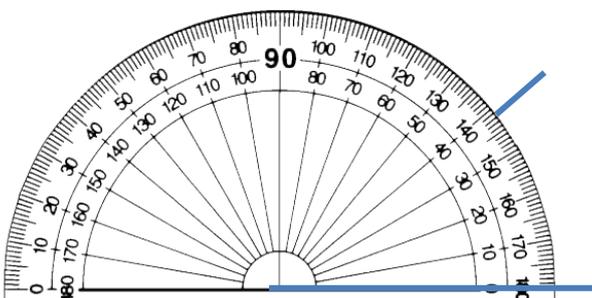
0 on the **inside** so use **inside** scale



0 on the **outside** so use **outside** scale

How we teach it – Drawing angles

- Make sure a pencil and ruler are used.
- Draw a baseline horizontally on your page. This will form part of your angle.
- Place the crosshair so that it is at one end of the horizontal line.
- Look along the line to find where it hits 0 on the protractor. (This will be the set of numbers you use).
- Read along this set of numbers until you reach the angle you want to draw.
- Make a little mark to show where this value is.
- Join up the end of the baseline (where you placed the crosshair) to the mark you made. This will make the angle.
- Label the angle you have drawn.



Example – Draw an angle of 38° .

- Make a mark at 38° .
- Connect your mark to the edge of your line (where the crosshair was).
- Label the angle.



'How To' Guide – Using a Protractor



Common mistakes

- Reading the wrong set of numbers (using the inside scale instead of the outside, or vice versa).
- Joining up the wrong end of the line to the mark to draw the angle (not the end where the crosshair was).
- Reading the scale incorrectly.
- Making mistakes with angles above 180° . The protractor only goes up to 180° , so anything larger than that has to be adapted for. Remember that there are 180° on a straight line. Anything extra can be measured.

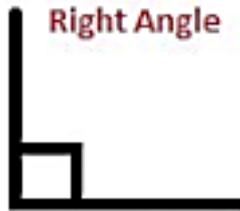
The following are examples of the different types of angles you can measure.

Acute Angle



Less than 90°

Right Angle



Exactly 90°

Obtuse Angle



Greater than 90° but
less than 180°

Straight Angle



Exactly 180°

Reflex Angle



Greater than 180°

Full Rotation



Exactly 360°