GCSE Maths

Preparatory Sheet

Required preparation for the session on……

2D SHAPES, SYMMETRY, ANGLE BASICS, TESSELLATION

Aims of this session: Review your abilities in each of these areas, Green (feel confident..G), Amber (need to work more on..A), Red (Feel weaker at this..R)

G   A   R

1. Name two dimensional shapes eg. Circle, triangle, square…
2. Recognise 2D shape properties
3. Derive interior, exterior angles and formulae
4. Draw lines of symmetry on 2D shapes an quote order or symmetry
5. State names of types of angles
6. Find missing angles on parallel lines
7. Find missing angles at a point, in shapes and on 'Z' angles
8. Recognise tessellating shapes and draw a tessellating pattern

MOSTLY GREEN   MOSTLY ORANGE   MOSTLY RED

START

Watch the video/s, read and practice using the online

materials. Read your GCSE maths AQA book

https://padlet.com/mathsman230774/jy7csqz11rdx

S01 2D shape properties and lines

Write a comment about what you learned from the videos / materials below

1.

Name two dimensional shapes eg. Circle, triangle, square…

Q… Draw a right angled triangle, trapezium, kite, isosceles triangle and parallelogram in the box below.

HINT… just look up the names of the shapes, drawing them yourself will aid memorising them.

2.

Recognise 2D shape properties

Q… On the shapes below write down where you would find the following properties (if they appear).
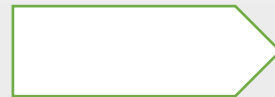
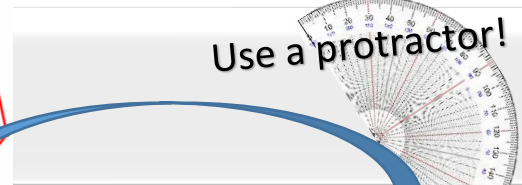CORNERS   SIDES   ANGLES   LENGTHS   WIDTHS

HINT… have a look on a website and read up on 2D shape properties before identifying where each property is if you need to.

3.

Derive interior, exterior angles and formulae

Q… Have a go with a protractor measuring the angle 'INSIDE' the 2D shape below. Can you figure out what all the interior angles add up to? Can you think of a way to find what any regular 2D shapes angles will add up to when only measuring one of them?
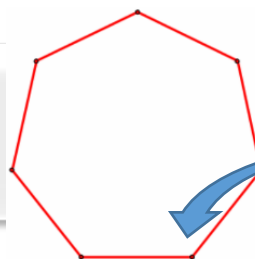
Use a protractor!

4.

Draw lines of symmetry on 2D shapes an quote order or symmetry

Q… Look at the shapes below and draw lines onto each so that you cut the shape up into two equal pieces where one piece is a 'reflection' of the other. Find as many lines you can draw through the shapes as possible (lines of symmetry).

HINT… draw a dashed line through one of the shapes, does it look the same on both sides of your line? Can you reposition your line in some other orientation to get another way of cutting in half? Count up all these different ways of doing it – this is call the 'order of symmetry'.
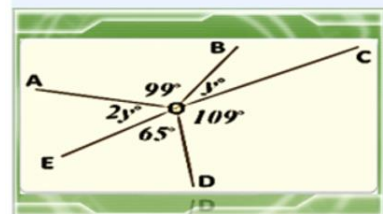
5. Read your book or look online, topic S10

State names of types of angles

S10 Angles on a line, at a point

Q… Angles of different sizes have different names. Look at angles

A, B, C and D in the diagram below. Research the names of each of the angle

type and write their names next to them

Angle A

71°

Angle B

90°

Angle C

120°

Angle D

308°

Hint… google search 'angle names' and look for the 4 different types, each is different due to its size (angle value) between 0 and 360 degrees around a circle.

6.

Find missing angles on parallel lines

Q…Look at the lines that are crossing in the diagram below. Two lines are 'Parallel' as they are the same distance apart. Another line crosses the parallel lines (drawn here a bit thicker so you can see it easier). Your job is to measure all the angles where the lines cross. Are any the same? Why do you think that happens?
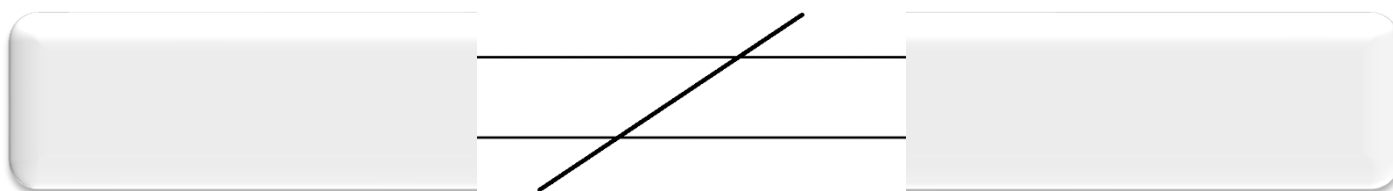

Hint… you will need to use a protractor for this question. Look up a quick video clip on this topic to discover some easy rules about this shape. Note: you should find some repeating angles, look for symmetry as to why things are the same!

7.

Find missing angles at a point, in shapes and on 'Z' angles

Q… Have a look at this next shape where angles are shown coming from a 'point'. Use your protractor again and measure angle 'A'. Can you figure out what the other angles will be without measuring them?
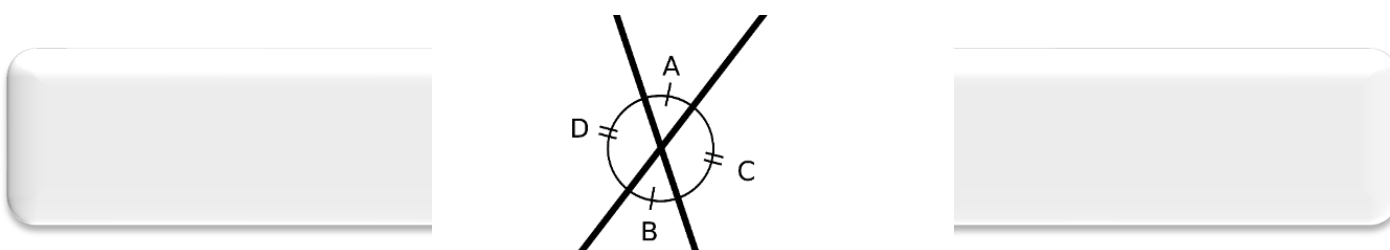

Hint… once you have measured angle 'A' have a think about the other angles and if any look the same size. Also think about the fact that there are 360 degrees all the way around a circle and that half way round is a straight line (180 degrees).

8.

Recognise tessellating shapes and draw a tessellating pattern

Q… Nice and simple here, if you know give it a go! Tick the patterns below that 'DO' tessellate.
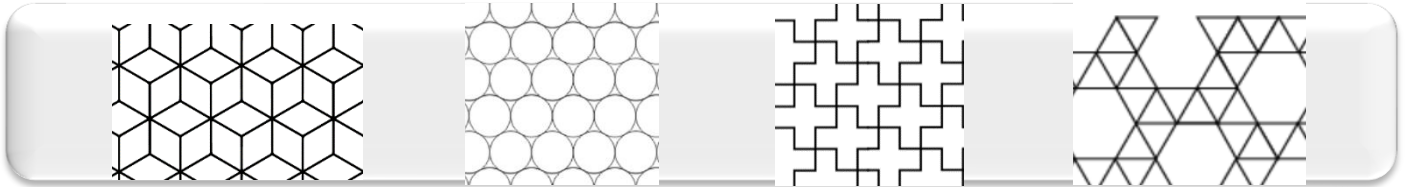
Hint… a tessellating pattern has no gaps between each shape!

END OF PREPATORY ASSIGNMENT

What to do now….

1. **Ensure you have marked in each box if you feel confident in each topic or not (this will inform you and your tutor which activities you should do in the session)**
2. **Bring this yellow assignment with you to your next session and check with your tutor answers given**
3. **Add this to your folder of work IN ORDER YELLOW…GREEN…RED… (and any BLUE you achieve)!**