STM Knowledge Organiser Year: 9 Subject: Maths

Topic: Angles

Core Knowledge		
Topic/Skill	Definition/Tips	Example
1. Types of Angles	 Acute angles are less than 90°. Right angles are exactly 90°. Obtuse angles are greater than 90° but less than 180°. Reflex angles are greater than 180° but less than 360°. 	Acute Right Obruse Reflex
2. Angle Notation	Can use one lower-case letters, eg. θ or x Can use three upper-case letters, eg. <i>BAC</i>	
3. Angles at a Point	Angles around a point add up to 360°.	$\frac{d}{c} a$ $a+b+c+d = 360^{\circ}$
4. Angles on a Straight Line	Angles around a point on a straight line add up to 180°.	$\frac{x}{y}$
5. Opposite Angles	Vertically opposite angles are equal.	$\frac{x/y}{y/x}$
6. Alternate Angles	Alternate angles are equal. They look like Z angles, but never say this in the exam.	
7. Corresponding Angles	Corresponding angles are equal . They look like F angles, but never say this in the exam.	
8. Co-Interior Angles/Supple mentary angles	Co-Interior/supplementary angles add up to 180° . They look like C angles, but never say this in the exam.	y x x y
9. Angles in a Triangle	Angles in a triangle add up to 180°.	B 45 0 55°
10. Types of Triangles	Right Angle Triangles have a 90° angle in. Isosceles Triangles have 2 equal sides and 2 equal base angles . Equilateral Triangles have 3 equal sides and 3 equal angles (60°).	Right Angled Isosceles

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	Scalene Triangles have different sides and different angles. Base angles in an isosceles triangle are equal.	60° 60° Equilateral Scalene
11. Angles in a Quadrilateral	Angles in a quadrilateral add up to 360°.	
12. Polygon	A 2D shape with only straight edges .	Rectangle, Hexagon, Decagon, Kite etc.
13. Regular	A shape is regular if all the sides and all the angles are equal .	
14. Names of Polygons	3-sided = Triangle 4-sided = Quadrilateral 5-sided = Pentagon 6-sided = Hexagon	Trangle Guadriateral Pentagon Hexagon
	 7-sided = Heptagon/Septagon 8-sided = Octagon 9-sided = Nonagon 10-sided = Decagon 	Heptagon Oclagon Nonagon Decagon
15. Sum of Interior Angles	$(n-2) \times 180$ where n is the number of sides.	Sum of Interior Angles in a Decagon = $(10 - 2) \times 180 = 1440^{\circ}$
16. Size of Interior Angle in a Regular Polygon	$\frac{(n-2) \times 180}{n}$ You can also use the formula: 180 – Size of Exterior Angle	Size of Interior Angle in a Regular Pentagon = $\frac{(5-2) \times 180}{5} = 108^{\circ}$
17. Size of Exterior Angle in a Regular Polygon	$\frac{360}{n}$ You can also use the formula:	Size of Exterior Angle in a Regular Octagon = $\frac{360}{8} = 45^{\circ}$
Links to us	<u>180 – Size of Interior Angle</u>	

Links to using trigonometry, area, bearings, four operations, quadrilaterals,