## STM Knowledge Organiser Year: 7 Subject: Maths

## **Topic: Angles**

<u>Core Knowledge</u>			
Topic/Skill	Definition/Tips	Example	
1. Types of Angles	<ul> <li>Acute angles are less than 90°.</li> <li>Right angles are exactly 90°.</li> <li>Obtuse angles are greater than 90° but less than 180°.</li> <li>Reflex angles are greater than 180° but less than 360°.</li> </ul>	Acute Right Obtuse Reflex	
2. Angle Notation	Can use <b>one lower-case</b> letters, eg. $\theta$ or $x$ Can use <b>three upper-case</b> letters, eg. <i>BAC</i>		
3. Angles at a Point	Angles around a point add up to 360°.	$\begin{vmatrix} d \\ c \\ b \end{vmatrix}$ $a+b+c+d=360^{\circ}$	
4. Angles on a Straight Line	Angles around a point on a straight line add up to 180°.	$\frac{x}{y}$ $x + y = 180^{\circ}$	
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	<b>Corresponding angles are equal</b> . They look like F angles, but never say this in the exam.	$y \xrightarrow{x} \rightarrow$	
8. Co-Interior Angles/Supple mentary angles	<b>Co-Interior/supplementary angles add</b> <b>up to 180°</b> . They look like C angles, but never say this in the exam.	$\begin{array}{c} y \\ x \\ y \\ \end{array}$	

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### Core Knowledge

9. Angles in a	Angles in a triangle add up to 180°.	A
Trangle		800
		B 45°
		550
10. Types of	<b>Right Angle</b> Triangles have a <b>90</b> ° angle in.	
Triangles	<b>Isosceles</b> Triangles have 2 equal sides and 2 equal base angles	
	Equilateral Triangles have 3 equal sides	
	and <b>3 equal angles</b> (60°).	
	Scalene Triangles have different sides and	Right Angled Bosceles
	unterent angles.	60
	Base angles in an isosceles triangle are equal.	60° 60° Scalana
11 Angles in a	Angles in a quadrilateral add un to $360^{\circ}$	Equinaciai Scareire
Quadrilateral	ringles in a quadratter and up to 500.	75°
		126°
		65° 93°
12 Dalars an		
	A ZID shahe with only straight edges	$\mathbf{P}$
12.101,501	The shape with only straight edges.	Rectangle, Hexagon, Decagon, Kite etc.
	A 2D shape with only straight edges.	Rectangle, Hexagon, Decagon, Kite etc.
13. Regular	A shape is regular if all the <b>sides</b> and all the <b>angles</b> are <b>equal</b>	
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13. Regular 14. Names of Polygons	A shape is regular if all the <b>sides</b> and all the <b>angles</b> are <b>equal</b> . <b>3</b> -sided = <b>Triangle</b> <b>4</b> -sided = <b>Quadrilateral</b>	
13. Regular 14. Names of Polygons	A shape is regular if all the <b>sides</b> and all the angles are equal.	Image: Area of the constraint o
13. Regular 14. Names of Polygons	A shape is regular if all the <b>sides</b> and all the angles are equal.	Image: Arectaligie, Hexagon, Decagon, Khe etc.       Image: Arectaligie, Hexagon
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13. Regular 14. Names of Polygons	A shape is regular if all the <b>sides</b> and all the <b>angles</b> are <b>equal</b> . <b>3</b> -sided = <b>Triangle</b> <b>4</b> -sided = <b>Quadrilateral</b> <b>5</b> -sided = <b>Pentagon</b> <b>6</b> -sided = <b>Hexagon</b> <b>7</b> -sided = <b>Heptagon</b> /Septagon <b>8</b> -sided = <b>Octagon</b> <b>9</b> -sided = <b>Nonagon</b>	Image: All of the second se
13. Regular 14. Names of Polygons	A shape is regular if all the sides and all the angles are equal.	Image: A constraint of the end of t
13. Regular 14. Names of Polygons 15. Sum of	A shape is regular if all the sides and all the angles are equal.	Rectangle, Hexagon, Decagon, Khe etc. A = A = A = A = A = A = A = A = A = A =
13. Regular 14. Names of Polygons 15. Sum of Interior Angles	A shape is regular if all the sides and all the angles are equal.	Rectaligie, Hexagon, Decagon, Khe etc. A = A = A = A = A = A = A = A = A = A =
<ul> <li>12. Forygon</li> <li>13. Regular</li> <li>14. Names of Polygons</li> <li>15. Sum of Interior Angles</li> <li>16. Size of</li> </ul>	A shape is regular if all the sides and all the angles are equal.	Rectangle, Hexagon, Decagon, Khe etc. A = A = A = A = A = A = A = A = A = A =
<ul> <li>12. Forygon</li> <li>13. Regular</li> <li>14. Names of Polygons</li> <li>15. Sum of Interior Angles</li> <li>16. Size of Interior Angle</li> </ul>	A shape is regular if all the sides and all the angles are equal. 3-sided = Triangle 4-sided = Quadrilateral 5-sided = Pentagon 6-sided = Hexagon 7-sided = Heptagon/Septagon 8-sided = Octagon 9-sided = Nonagon 10-sided = Decagon $(n-2) \times 180$ where n is the number of sides. $\frac{(n-2) \times 180}{n}$	Rectangle, Hexagon, Decagon, Khe etc.
<ul> <li>13. Regular</li> <li>14. Names of Polygons</li> <li>15. Sum of Interior Angles</li> <li>16. Size of Interior Angle in a Regular</li> </ul>	A shape is regular if all the sides and all the angles are equal. 3-sided = Triangle 4-sided = Quadrilateral 5-sided = Pentagon 6-sided = Hexagon 7-sided = Heptagon/Septagon 8-sided = Octagon 9-sided = Nonagon 10-sided = Decagon $(n-2) \times 180$ where n is the number of sides. $\frac{(n-2) \times 180}{n}$	Rectangle, Hexagon, Decagon, Khe etc. A = A = A = A = A = A = A = A = A = A =

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	180 – Size of Exterior Angle	
	2.12	
17. Size of	360	Size of Exterior Angle in a Regular
Exterior Angle	$\overline{n}$	Octagon =
in a Regular		360
Polygon	You can also use the formula:	
	180 – Size of Interior Angle	

Links to using trigonometry, area, bearings, four operations