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| **Topic/Skill**  | **Definition/Tips** | **Example****Topic: Angles**  |
| 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°. |  |
| 2. Angle Notation | Can use **one lower-case** letters, eg. $θ$ or $x$Can use **three upper-case** letters, eg. $BAC$ | Image result for angle notation |
| 3. Angles at a Point  | **Angles around a point add up to 360°**. |  |
| 4. Angles on a Straight Line | **Angles around a point on a straight line add up to 180°**. |  |
| 5. Opposite Angles | **Vertically opposite angles are equal**.  |  |
| 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 | **Co-Interior angles add up to 180°**. They look like C angles, but never say this in the exam.  |  |
| 9. Angles in a Triangle | **Angles in a triangle add up to 180°.** | Image result for angles in a triangle |
| 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°)**.**Scalene** Triangles have **different sides** and **different angles**.**Base angles in an isosceles triangle are equal.** |  |
| 11. Angles in a Quadrilateral | **Angles in a quadrilateral add up to 360°.** | Image result for angles in a quadrilateral |
| 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**. | http://withfriendship.com/images/i/40100/Regular-polygon-picture.png  |
| 14. Names of Polygons | **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** | Image result for irregular polygons |
| 15. Sum of Interior Angles | $$(n-2)×180$$where n is the number of sides. | Sum of Interior Angles in a Decagon = $\left(10-2\right)×180=1440°$ |
| 16. Size of Interior Angle in a Regular Polygon | $$\frac{(n-2)×180}{n}$$You can also use the formula: $$180-Size of Exterior Angle$$ | Size of Interior Angle in a Regular Pentagon = $$\frac{(5-2)×180}{5}=108°$$ |
| 17. Size of Exterior Angle in a Regular Polygon | $$\frac{360}{n}$$You can also use the formula: $$180-Size of Interior Angle$$ | Size of Exterior Angle in a Regular Octagon = $$\frac{360}{8}=45°$$ |

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| **Topic/Skill**  | **Definition/Tips** | **Example****Topic: Properties of Polygons**  |
| 1. Square | * **Four equal sides**
* **Four right angles**
* **Opposite sides parallel**
* **Diagonals bisect** each other at **right angles**
* **Four lines** of **symmetry**
* **Rotational symmetry** of **order four**
 |  |
| 2. Rectangle | **• Two pairs** of **equal sides • Four right angles • Opposite sides parallel** **• Diagonals bisect** each other**, not at right angles• Two lines** of **symmetry • Rotational symmetry** of **order two** |  |
| 3. Rhombus | **• Four equal sides • Diagonally opposite angles are equal • Opposite sides parallel • Diagonals bisect** each other at **right angles • Two lines** of **symmetry • Rotational symmetry** of **order two** |  |
| 4. Parallelogram  | **• Two pairs** of **equal sides • Diagonally opposite angles are equal • Opposite sides parallel • Diagonals bisect** each other**, not at right angles• No lines** of **symmetry • Rotational symmetry** of **order two** |  |
| 5. Kite | **• Two pairs** of **adjacent sides** of **equal** length **• One pair** of **diagonally opposite angles are equal** (where different length sides meet) **• Diagonals intersect** at **right angles, but do not bisect • One line** of **symmetry****• No rotational symmetry** |  |
| 6. Trapezium | * **One pair** of **parallel sides**
* **No lines of symmetry**
* **No rotational symmetry**

Special Case: Isosceles Trapeziums have one line of symmetry. |  |

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| **Topic/Skill**  | **Definition/Tips** | **Example****Topic: 2D Representations of 3D Shapes**  |
| 1. Net | A pattern that you can **cut and fold** to make a **model** of a **3D shape**. | Image result |
| 2. Properties of Solids | **Faces = flat surfaces****Edges = sides/lengths****Vertices = corners** | A cube has 6 faces, 12 edges and 8 vertices.Image result for cube |
| 3. Plans and Elevations | This takes 3D drawings and produces 2D drawings.**Plan View**: from **above****Side Elevation**: from the **side****Front Elevation**: from the **front** |  |
| 4. Isometric Drawing | A method for visually **representing 3D objects in 2D**. | Image result for math definition isometric drawing |

**Knowledge Organiser**