|  |  |  |
| --- | --- | --- |
| **Topic/Skill** | **Definition/Tips** | **Example**  **Topic: Perimeter and Area** |
| 1. Perimeter | The **total distance** around the **outside** of a shape.  Units include: etc. | Image result for perimeter |
| 2. Area | The amount of **space** **inside** a shape.  Units include: | Image result for area |
| 3. Area of a Rectangle | **Length x Width** |  |
| 4. Area of a Parallelogram | **Base x Perpendicular Height**  Not the slant height. | Image result for area of parallelogram |
| 5. Area of a Triangle | **Base x Height ÷ 2** | Image result for area of triangle |
| 6. Area of a Kite | Split in to **two triangles** and use the method above. | Image result for area of kite |
| 7. Area of a Trapezium | “Half the sum of the parallel side, times the height between them. That is how you calculate the area of a trapezium” | Image result for area of trapezium |
| 8. Compound Shape | A shape made up of a **combination of other known shapes** put together. |  |

|  |  |  |
| --- | --- | --- |
| **Topic/Skill** | **Definition/Tips** | **Example**  **Topic: Volume** |
| 1. Volume | Volume is a measure of the amount of space inside a solid shape.  Units: etc. | Image result for math definition volume |
| 2. Volume of a Cube/Cuboid | You can also use the Volume of a Prism formula for a cube/cuboid. | Image result for volume cuboid |
| 3. Prism | A prism is a 3D shape whose **cross section is the same** throughout. | Image result for math definition prism |
| 4. Cross Section | The **cross section** is the **shape** that **continues** all the way **through the prism**. |  |
| 5. Volume of a Prism |  |  |
| 6. Volume of a Cylinder |  |  |
| 7. Volume of a Cone |  |  |
| 8. Volume of a Pyramid | where B = area of the base |  |
| 9. Volume of a Sphere | Look out for hemispheres – just halve the volume of a sphere. | Find the volume of a sphere with diameter 10cm. |
| 10. Frustums | A frustum is a solid (usually a cone or pyramid) with the **top removed**.  Find the volume of the whole shape, then take away the volume of the small cone/pyramid removed at the top. | **Topic: Geometry and Measures (H)** |

|  |  |  |
| --- | --- | --- |
| **Topic/Skill** | **Definition/Tips** | **Example**  **Topic: Circumference and Area** |
| 1. Circle | A circle is the locus of all points equidistant from a central point. | Image result for math definition circle |
| 2. Parts of a Circle | **Radius** – the **distance** from the **centre** of a circle to the **edge**  **Diameter** – the total **distance** across the **width** of a circle **through the centre**.  **Circumference** – the **total distance** around the **outside** of a circle  **Chord** – a **straight line** whose **end points lie on a circle**  **Tangent** – a **straight line** which **touches** a circle at exactly **one point**  **Arc** – a **part of the circumference** of a circle  **Sector** – the **region** of a circle enclosed by **two radii** and their intercepted **arc**  **Segment** – the **region** bounded by a **chord** and the **arc** created by the chord | Image result for parts of a circle |
| 3. Area of a Circle | which means ‘pi x radius squared’. | If the radius was 5cm, then: |
| 4. Circumference of a Circle | which means ‘pi x diameter’ | If the radius was 5cm, then: |
| 5. (‘pi’) | Pi is the circumference of a circle divided by the diameter. |  |
| 6. Arc Length of a Sector | The arc length is part of the circumference.  Take the **angle** given **as a fraction over 360°** and **multiply** by the **circumference**. | Arc Length = |
| 7. Area of a Sector | The area of a sector is part of the total area.  Take the **angle** given **as a fraction over 360°** and **multiply** by the **area**. | Area = |
| 8. Surface Area of a Cylinder | **Curved Surface Area =**  or  **Total SA =** or |  |
| 9. Surface Area of a Cone | **Curved Surface Area =**  where  **Total SA =**  You may need to use Pythagoras’ Theorem to find the slant height |  |
| 10. Surface Area of a Sphere | Look out for hemispheres – halve the SA of a sphere and add on a circle | Find the surface area of a sphere with radius 3cm. |

**Knowledge Organiser**