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| **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 | $A=πr^{2}$ which means ‘pi x radius squared’. | If the radius was 5cm, then:$$A=π×5^{2}=78.5cm^{2}$$ |
| 4. Circumference of a Circle | $C=πd$ which means ‘pi x diameter’ | If the radius was 5cm, then:$$C=π×10=31.4cm$$ |
| 5. $π$ (‘pi’) | Pi is the circumference of a circle divided by the diameter.$$π≈3.14$$ |  |
| 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 = $\frac{115}{360}×π×8=8.03cm$ |
| 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 = $\frac{115}{360}×π×4^{2}=16.1cm^{2}$ |
| 8. Surface Area of a Cylinder | **Curved Surface Area =** $πdh$ or $2πrh$**Total SA =** $2πr^{2}+πdh$or$2πr^{2}+2πrh$ | $$Total SA=2π(2)^{2}+π\left(4\right)\left(5\right)=28π$$ |
| 9. Surface Area of a Cone | **Curved Surface Area =** $πrl$ where $l=slant height$**Total SA =** $πrl+ πr^{2}$You may need to use Pythagoras’ Theorem to find the slant height | $$Total SA= π\left(3\right)\left(5\right)+π(3)^{2}=24π$$ |
| 10. Surface Area of a Sphere | $$SA=4πr^{2}$$Look out for hemispheres – halve the SA of a sphere and add on a circle $(πr^{2})$ | Find the surface area of a sphere with radius 3cm.$$SA=4π(3)^{2}=36πcm^{2}$$ |

**Knowledge Organiser**