****

 **Mathematics Faculty**

 **Year 10 Higher – Autumn Term 2**

 **Unit 3 Overview - Area, Surface Area and Volume**

|  |  |  |
| --- | --- | --- |
| **Topic** | **Key Ideas** | **Progress** |
| **R** | **A** | **G** |
| **Area, Surface Area and Volume** | I can calculate arc lengths and sector areas. |  |  |  |
| I can calculate the surface area and volume of spheres, cones and pyramids. |  |  |  |
| I can calculate the surface area and volume of compound shapes. |  |  |  |
| I can calculate the surface area and volume of frustums. |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Lesson** | **Learning Focus** | **Assessment** | **Key Words** |
| **1** | **Calculating the length of arcs of circles** (CM clip 58) | Formative assessment strategies e.g. MWBs, whole class questioning, Diagnostic Questions, SLOP time with self-assessment, Live Marking etc.Assessment is also supported with our use of ILOs, set through Century Learning, Corbettmaths, Dr Frost Maths and Justmaths.Finally, units are assessed through skills checks and half termly assessments, as part of our Assessment Calendar in Mathematics. | circle, radius, diameter, circumference, arc, pi, angle |
| **2** | **Calculating the area of sectors of circles** (CM clip 46) | circle, radius, diameter, area, sector, pi, angle |
| **3** | Calculating the angle subtended at the centre, given the lengths of arcs or areas of sectors (CM clips 46 & 58) | circle, radius, diameter, circumference, arc, area, sector, pi, angle, subtended |
| **4** | Working out the surface area of spheres, pyramids and cones (CM clips 313 & 314) | surface area, face, curved, sphere, pyramid, cone, pi |
| **5** | Working out the surface area of compound solids constructed from cubes, cuboids, cones, pyramids, cylinders, spheres and hemispheres (CM clips 310 - 315) | surface area, face, curved, sphere, pyramid, cone, pi, cube, cuboid, cylinder, hemisphere, compound |
| **6** | **Working out the volume of spheres, pyramids and cones** (CM clips 359 - 361) | volume, cross section, area, sphere, pyramid, cone, pi |
| **7** | Working out the volume of compound solids constructed from cubes, cuboids, cones, pyramids, cylinders, spheres and hemispheres (CM clips 355 - 361) | volume, cross section, area, sphere, pyramid, cone, pi, cube, cuboid, cylinder, hemisphere, compound |
| **8** | Working out the surface area and volume of frustums (CM clip 360a) | surface area, face, volume, frustum, cone, similar  |