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 **Mathematics Faculty**

 **Year 9 Autumn Term 2 – Alpha Scheme**

 **Unit 3 Overview - Area and Volume**

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| **Topic** | **Key Ideas** | **Progress** |
| **R** | **A** | **G** |
| **Area and Volume** | I can solve problems involving the area and perimeter of squares, rectangles, parallelograms, triangles and trapezia. |  |  |  |
| I can calculate the circumference and area of a circle. |  |  |  |
| I can calculate the length of an arc and area of a sector. |  |  |  |
| I can calculate the perimeter and area of compound shapes involving part-circles. |  |  |  |
| I can calculate the volume and surface area of prisms and cylinders. |  |  |  |
| I can calculate the volume and surface area of pyramids, cones and spheres. |  |  |  |

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| **Lesson** | **Learning Focus** | **Assessment** | **Key Words** |
| **1** | Solving problems involving the area and perimeter of squares, rectangles, parallelograms, triangles and trapezia (CM clips 44, 45, 48 & 49) | 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 and Corbettmaths.Finally, units are assessed through skills checks and half termly assessments, as part of our Assessment Calendar in Mathematics. | perimeter, area, square, rectangle, length, width, parallelogram, triangle, base, height, trapezium, parallel, unit, cm² |
| **2** | Calculating the circumference and area of a circle, including in terms of pi (CM clips 40, 60 & 61)  | circle, radius, diameter, circumference, area, unit, cm, cm² |
| **3** | Calculating the length of an arc (CM clips 58 & 62) | circle, radius, diameter, circumference, arc, fraction, unit, cm  |
| **4** | Calculating the area of a sector (CM clip 46) | circle, radius, diameter, sector, area, fraction, unit, cm² |
| **5** | Calculating the perimeter and area of compound shapes involving part-circles (CM clips 40, 41, 60, 61 & 62) | perimeter, circumference, area, rectangle, triangle, parallelogram, trapezium, length, width, base, height, parallel, radius, diameter, unit, cm, cm² |
| **6** | **Calculating the volume of prisms and cylinders** (CM clips 355, 356 & 357) | volume, capacity, cube, cuboid, triangular prism, length, width, depth, cylinder, area, cross section, radius, diameter, circle, unit, cm3 |
| **7** | **Calculating the surface area of prisms and cylinders** (CM clips 310, 311, 312 & 315) | surface area, face, square, rectangle, triangle, cube, cuboid, prism, length, base, height, circle, radius, diameter, circumference, height, unit, cm² |
| **8** | Calculating the volume of pyramids, cones and spheres (CM clips 359 – 361) | volume, pyramid, cone, sphere, area, length, height, face, circle, radius, unit, cm3 |
| **9** | Calculating the surface area of pyramids, cones and spheres (CM clips 313 & 314) | surface area, pyramid, cone, sphere, face, area, rectangle, triangle, circle, length, base, height, radius, unit, cm² |