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| **What will we be learning?**  **Geometry:** Perimeter and area, Circumference and area of circles.  **Data handling:** Collecting and representing data, Scatter graphs. | **Why this? Why now?**  Students continue to deepen their understanding of the properties of shapes. Established through their application in solving increasingly complex problems, including exact calculations involving multiples of π.  Practical application brings together the elements of the data handling cycle showing how we can use real time data to make and test conjectures about the generalisations that underlie patterns and relationships. | **Key Words:**  Faces / Edges / Vertices  Cubes / Cuboids  Prisms  Cylinders  Pyramids  Cones  Spheres  Perimeter  Area  Surface area  Composite  Circles  Circumference  Radius  Diameter  Chord  Tangent  Sector  Segment  Arc  Pi (π)  Discrete/Continuous  Quantitative/Qualitative  Data set  Grouped data  Frequency tables  Bar charts  Pie charts  Vertical line charts  Cumulative frequency  Box plots  Histograms  Scatter diagrams  Correlation  bivariate |
| **What will we learn?**   * Identify properties of 2D and 3D shapes. * Calculate the perimeter of a 2D shapes and composite shapes. * Find the surface area of pyramids composite shapes. * Know and apply formulae to calculate area of: triangles, parallelograms, trapezia * Identify and apply circle definitions and properties. * Know and use the formulae for circumference of a circle and area of a circle. * Calculate surface area of spheres, cones and composite solids. Calculate arc lengths, angles and areas of sectors of circles. * Interpret and construct tables, charts and diagrams and know their appropriate use. * Interpret, analyse and compare distributions of data sets from univariate empirical distributions through appropriate graphical representation involving discrete, continuous and grouped data. * Use and interpret scatter graphs of bivariate data * Recognise correlation and know that it does not indicate causation * Draw estimated lines of best fit. * Make predictions. * Interpolate and extrapolate apparent trends whilst knowing the dangers of doing so | |
| **What opportunities are there for wider study?**  **Dr Frost Maths** is the primary resource that we use for homestudies and it has lots of useful revision tools. Alongside this, you can search for a specific topic and you can either practise some questions online or watch a video. Under the resources section, there is also a “Full Coverage” document for some topics that have a huge bank of exam questions on the topic in question.  <https://www.drfrostmaths.com/course.php?sid=-10>  **Corbett Maths** - video links, practice questions and textbook exercises with answers available.  <https://corbettmaths.com/contents/>  **MathsGenie** - videos and exam questions along with worked solutions.  <https://www.mathsgenie.co.uk/advance-information.html>  **Career Link**  Building – architect.  Data analyses, business projections, trends for finances.  Research scientist.  Engineer.  Economist. | |
| **How will I be assessed?**  Half Term assessments.  Home Study tasks  Quality of classwork | |