Year 9 Summer Term

Foundation	Higher
Angles	Graphs

Properties of shapes, Parallel Lines and angle facts	Basic and Real-life Graphs
- Estimate angles	- Plotting coordinates in all four quadrants
- Measure and draw angles	- Draw graphs from real-life situations including conversion graphs
- Use language of naming sides and angles	- Draw distance-time and velocity time graphs
- Understand clockwise and anti-clockwise	- Coordinates of the midpoint
- Identify perpendicular lines in shapes	- Length of a line segment
- Identify parallel lines in shapes	- Gradient of a line
- Properties of quadrilaterals	- Equation of a line
- Find missing angles from a quadrilateral	
- Angle properties of angles on a line, at a point, right angles and vertically opposite angles	
- Types f triangles	
- Derive and use the sum of angles in a triangle	
- Sum of angles in a triangle application	
- Angle properties of intersecting angles	
- Proof the exterior angle of a triangle equals the sum of the other two angles	

Interior and Exterior Angles of Polygons	**Linear Graphs and Coordinate Geometry**
- Name polygons	- Draw graphs of $y = a$, $x = a$, $y = x$ and $y = -x$
- Distinguish between regular and irregular polygons	- Gradient of a line
- Sum of angles in an irregular polygon	- Gradient as a rate of change
- Sum of interior angles of a polygon	- Equation of straight line: $y = mx + c$
- Derive formula for the sum of interior angle so n-sided polygon	- Plot and draw graphs $y = mx + c$
- Exterior angles of a polygon	- Drawing graphs of the form $ax + by = c$
- Congruent shapes	- Direct proportion and graphs
	- Gradient of parallel lines
	- Gradient of perpendicular lines

Statistics and Sampling	Quadratic, Cubic and Other Graphs
- Stages of investigation - Types of data - Collection of data - Data bias - Sampling and population	- Recognise linear, quadratic, cubic, circles, exponential and reciprocal graphs from its shape - Plot and draw quadratic graphs - Find solutions of quadratic equation using the graphs - Plot and draw cubic graphs - Find solutions from cubic graphs - Plot and draw reciprocal graphs - Draw circles: $x^2+y^2 = r^2$
Averages - Averages from discrete data - Averages from frequency table - Averages from grouped frequency table - Averages and stem-and-leaf diagrams - Justify the use of estimate in mean - Compare distributions - Advantages and disadvantages of the averages	

End-of-Year Exam and Review

Equations, Inequalities and Sequences	Perimeter, Area, Volume and Bounds
Perimeter and Area - Scale reading - Units of length, area and volume - Convert metric units - Perimeter of shapes by measuring the lengths - Perimeter of rectangle and parallelogram - Perimeter of trapezia - Perimeter of compound shapes - Area of a triangle - Area and perimeter of compound shapes made from rectangles and triangle - Estimating surface area - Surface area of prisms - Convert between area measures	- Calculate area and perimeter of 2Ds (triangle, rectangle, parallelogram, trapezium etc) - Area and perimeter of compound shapes - Estimate area and perimeter Perimeter, Area and Circles - Parts of a circle - Area and circumference of circles - Area and perimeter of circular compound shapes - Arc lengths - Sector of area - Area and perimeter and problem solving
3D Forms and Volume	**3D forms and Volume, Cylinder, Cones and Spheres**

- Name 3Ds: cubes, cuboid, cylinder, prism, pyramid, spheres and cones - Sketch nets of 3Ds - Volume of cuboid - Volume of prisms - Convert between volume measures	- Draw and sketch 3Ds - Surface area of prisms - Planes of symmetry - Volume of prisms - Convert between area and volume units - Volume and problem solving - Estimating volume - Volume and surface area of cylinder - Surface area of pyramid - Volume of a pyramid - Volume and surface area of cones - Volume and surface area of spheres - Volume of more complex shapes
	Accuracy and Bounds - Lower and upper bound of numbers - Error interval - Calculating with bounds - Lower and upper bounds of real-life situations - Lower and upper bounds involving area, perimeter and volume
	-