Mathematics KS3

At the Palmer Catholic Academy, the Mathematics department we believe that mathematical knowledge and understanding is expandable and that every child can learn and appreciate Mathematics given the appropriate learning experiences. We are committed to developing student's curiosity about the subject and an appreciation of the beauty and power of Mathematics. Our aim is to encourage students to embrace and enjoy Mathematics and experience success in the subject at all levels. We treat students as individuals and through setting and differentiation within the groups we aim to provide a curriculum that is tailored to meet the needs of all students and abilities.

	AUTUMN TERM	*SPRING TERM*	*SUMMER TERM*
Year 7	**UNIT 1: DATA** ▪ Mode, median and range ▪ Displaying data ▪ Grouping data ▪ Averages and comparing data ▪ Line graphs and bar charts **UNIT 2: NUMBER SKILLS** ▪ Mental maths ▪ 4 operations with number ▪ Money and time ▪ Negative numbers ▪ Factors, multiples and primes **UNIT 3: EXPRESSIONS, FUNCTIONS & FORMULAE** ▪ Functions ▪ Simplifying expressions ▪ Expanding brackets ▪ Substitution ▪ Writing formulae	**UNIT 4: DECIMALS AND MEASURES** ▪ Decimals and rounding ▪ Length, mass and capacity ▪ Scales and measures ▪ Working with decimals ▪ Perimeter ▪ Area ▪ More units of measure **UNIT 5: FRACTIONS & PERCENTAGES** ▪ Comparing fractions ▪ Simplifying fractions ▪ Fractions and decimals ▪ Percentages of amounts **UNIT 6: PROBABILITY** ▪ Language of probability ▪ Calculating probability ▪ Experimental probability ▪ Expected Outcomes **UNIT 7: RATIO AND PROPORTION** ▪ Direct proportion	▪ Ratios, proportions and fractions ▪ Proportions and percentages **UNIT 8: LINES AND ANGLES** ▪ Measuring and drawing angles ▪ Lines, angles and triangles ▪ Drawing angles accurately ▪ Calculating angles ▪ Angles in a triangle ▪ Quadrilaterals **UNIT 9: SEQUENCES AND GRAPHS** ▪ Sequences ▪ Pattern sequences ▪ Coordinates and midpoints ▪ Extending sequences ▪ Straight line graphs ▪ Position to term rules **UNIT 10: TRANSFORMATIONS** ▪ Congruency and enlargements ▪ Symmetry ▪ Reflection

	- Writing ratios - Using ratios	- Rotation - Translations and combined transformations
End of unit assessments and end of term assessments	**End of unit assessments and end of term assessments**	**End of unit assessments and end of term assessments**

	AUTUMN TERM	*SPRING TERM*	*SUMMER TERM*
Year 8	**UNIT 1: NUMBER** - Calculations - Divisibility and division - Calculating with negative numbers - Powers and roots - Multiples and primes **UNIT 2: AREA AND VOLUME** - Area of a triangle - Area of a parallelogram and trapezium - Volume of cubes and cuboids 2D representations of 3D solids - Surface area of cubes and cuboids - Measures **UNIT 3: STATISTICS, GRAPHS AND CHARTS** - Pie charts - Using tables - Stem and leaf - Comparing data	**UNIT 5: REAL LIFE GRAPHS** - Conversion graphs - Distance time graphs - Line graphs - Real life graphs - Curved graphs **UNIT 6: DECIMALS AND RATIO** - Ordering decimals and rounding - Place value calculations - Calculations with decimals - Ratio and proportion with decimals **UNIT 7: LINES AND ANGLES** - Quadrilaterals - Alternate angles and proof - Angles in parallel lines - Exterior and interior angles - Solving geometric problems	**UNIT 8: CALCULATIONS WITH FRACTIONS** - Ordering fractions - Adding , subtracting, multiplying and dividing fractions - Calculating with mixed numbers **UNIT 9 : STRAIGHT LINE GRAPHS** - Direct proportion on graphs - Gradients - Equations of straight lines **UNIT 10: PERCENTAGES, DECIMALS AND FRACTIONS** - Fractions and decimals - Equivalent proportions - Writing percentages - Percentage of amounts

▪ Scatter graphs ▪ Misleading graphs **UNIT 4: EXPRESSIONS AND EQUATIONS** ▪ Algebraic powers ▪ Expressions and brackets ▪ Factorising expressions ▪ 1 step and 2 step equations ▪ Balancing method		
End of unit assessments and end of term assessments	**End of unit assessments and end of term assessments**	**End of unit assessments and end of term assessments**

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	AUTUMN TERM	SPRING TERM	SUMMER TERM
Year 9	**UNIT 1: INDICES & STANDARD FORM** • Indices • Estimating Calculations • More Indices • Standard Form **UNIT 2: EQUATIONS & FORMULAE** • Solving Equations • Substitution • Writing Formulae • Rearranging Formulae • Laws of Indices • Expanding Double Brackets **UNIT 3: DEALING WITH DATA** • Planning a Survey • Collecting Data • Calculating Averages • Displaying Data • Interpreting and Comparing Data **UNIT 4: MULTIPLICATIVE REASONING** • Enlargement • Negative & Fractional Scale Factors • Percentage Change • Compound Measures • Direct & Inverse Proportion	**UNIT 5: CONSTRUCTIONS** • Using Scales • Basic Constructions • Constructing Triangles • Using Accurate Scale Diagrams **UNIT 6: SEQUENCES, INEQUALITIES, EQUATIONS & PROPORTION** • nth term of Arithmetic Sequences • Non-linear Sequences • Inequalities • Solving Equations • Proportion **UNIT 7: CIRCLES, PYTHAGORAS & PRISMS** • Circumference of a Circle • Area of a Circle • Pythagoras' Theorem • Prisms & Cylinders • Errors & Bounds **UNIT 8: GRAPHS** • Using $y = mx + c$ • Simultaneous Equations • Graphs of Quadratics Functions • More Non-linear Graphs	**UNIT 9: PROBABILITY** • Mutually Exclusive Events • Experimental & Theoretical Probability • Sample Space Diagrams • Two-way Tables • Venn Diagrams **UNIT 10: COMPARING SHAPES** • Congruency and Similar Shapes • Similar Triangles • The Tangent ratio • The Sine ratio • The Cosine ratio • Using Trigonometry to find Angles • Translations and combined transformations
	End of unit assessments and end of term assessments	End of unit assessments and end of term assessments	End of unit assessments and end of term assessments

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