Y8 MATHS: KEY PERFORMANCE INDICATORS

The Purbeck School
Achieving Excellence Together

Age Related Expectations (ARE)	Working at Greater Depth (GD)
A student is achieving the standards expected for their age. This includes:	A student shows deeper understanding and more advanced reasoning. This includes:
• **Understanding the key concepts** for their year group. • **Using standard methods** to solve problems. • **Applying knowledge to familiar contexts**. • **Explaining their thinking** in straightforward situations. • **Following taught procedures** with some confidence.	• **Demonstrating deep conceptual understanding of the key concepts**. • **Choosing efficient strategies** and explains *why* they work. • **Applying knowledge flexibly** to unfamiliar or complex problems. • **Making connections** between different areas of maths. • **Justifying reasoning** and explores alternative methods.

	Unit of Work	KPIs
AUT1	CALCULATION	• use inequality notation to specify error intervals due to truncation or rounding • calculate with powers and roots • use the index laws • use the concepts and vocabulary of prime factorisation
AUT2	ALGEBRA	• substitute numerical values into scientific formulae • use the index laws • expand single brackets • factorise by taking out common factors
SPR1	FRACTIONS	• calculate exactly with fractions, using conventional notation for priority of operations, inc. brackets, powers, roots
	PERCENTAGES	• work with percentages greater than 100% • solve problems involving percentage change, inc. increasing/decreasing by a percentage
	RATIO & PROPORTION	• find an unknown part in a given ratio • divide a given quantity into parts in a ratio • use and interpret scale factors, scale diagrams and maps • apply ratio to real contexts and problems
SPR2	EQUATIONS	• understand and use the concepts and vocabulary of expressions, equations, identities and inequalities • solve linear equations in one unknown algebraically • represent the solution set to an inequality on a number line • solve linear inequalities in one unknown algebraically • rearrange formulae to change the subject
SUM1	SEQUENCES	• generate terms of a sequence from a term-to-term rule • recognise and use arithmetic/linear sequences • recognise and use quadratic sequences • recognise and use sequences of triangular, square and cube numbers • generate terms of a sequence from a position-to-term rule • deduce expressions to calculate the nth term of linear sequences
	GRAPHS	• work with coordinates in all four quadrants • solve geometrical problems on coordinate axes • understand and use lines parallel to the axes, y = x and y = -x • plot straight-line graphs
SUM2	PERIMETER AREA & VOLUME	• identify and apply circle definitions and properties, inc. centre, radius, chord, diameter, circumference • calculate perimeters and areas of circles • calculate exactly with multiples of π • calculate volume of right prisms, inc. cylinders