The Purbeck School
Achieving Excellence Together

Y9 MATHS: KEY PERFORMANCE INDICATORS

Age Related Expectations (ARE)	Working at Greater Depth (GD)
A student is achieving the standards expected for their age. 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.	A student shows deeper understanding and more advanced reasoning. This includes: • **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	**ALGEBRA**	• expand double brackets • factorise quadratic expressions x^2+bx+c, including the difference of two squares
	FRACTIONS	• change recurring decimals into their corresponding fractions and vice versa • simplify algebraic fractions • add, subtract, multiply and divide algebraic fractions
AUT2	**PERCENTAGES**	• interpret percentages and percentage changes as a fraction or decimal multiplicatively • solve reverse percentage problems • solve financial mathematics problems, inc. simple interest • set up, solve and interpret compound interest, growth and decay problems
	RATIO & PROPORTION	• relate ratios to linear functions • understand and use proportion as equality of ratios • solve problems involving inverse proportion
	GEOMETRY	• derive and use the sum of angles in a triangle • deduce and use the angle sum in any polygon • understand and use alternate and corresponding angles on parallel lines • understand and use of bearings • construct and interpret plans and elevations of 3D shapes • use the standard ruler and compass constructions (perpendicular bisector of a line segment, constructing a perpendicular to a given line from/at a given point, bisecting a given angle)
SPR1	**EQUATIONS**	• solve linear equations and inequalities with the unknown on both sides of the equation • derive a linear equation, solve and interpret the solution
SPR2	**SEQUENCES**	• recognise and use Fibonacci type sequences • recognise and use quadratic sequences
	GRAPHS	• identify and interpret gradients and intercepts of linear functions graphically and algebraically • recognise, sketch and interpret graphs of simple quadratic functions • find approximate solutions to quadratic equations using a graph • plot and interpret distance-time graphs and speed-time graphs
SUM1	**TRANSFORMATIONS**	• rotate, reflect and translate shapes • describe translations as 2D vectors • apply the concepts of congruence • apply the concepts of similarity, inc. the relationships between lengths in similar figures • make links between similarity and scale factors • enlarge objects (positive integer scale factors)
SUM2	**TRIGONOMETRY**	• know and apply Pythagoras' theorem • know the trigonometric ratios and apply them to find angles and lengths in 2D