

INTENT

The ambitious curriculum in Mathematics will provide students with opportunities to develop skills linked to numerical thinking, as well as an awareness of the application of numerical, geometric and abstract algebraic

Bilton School Planning for Progress over Time Programme of Study

The bigger picture:

We look to develop the following skills in our mathematicians:

FLUENCY • Quick and accurate recall of key facts • Knowledge/selection of appropriate techniques/strategies.

REASONING • Applying logical thinking to a situation to derive the correct problem solving strategy • The bridge between fluency and problem solving.

PROBLEM SOLVING • Finding a way to apply knowledge and skills to answer unfamiliar types of problems.

This skill sets allows our learners to flourish with the skills needed to function in an ever evolving world.

IMPLEMENTATION

Year 13	2-P	3-P	4-P	12-P	1-M	2-M	3-M	4-M	6-M
Topic	Functions and Graphs	Sequences and Series	Binomial Expansion	Vectors	Moments	Forces and friction	Projectiles	Applications of Forces	Further Kinematics
Progress and assessment	End of topic assessments completed using end points as the assessment criteria.								
Homework	Set on Classcharts and will re-enforce the work completed in class.								
Literacy (including reading)	Problem solving questions integrated into lessons.								
Social, Moral, Spiritual and Cultural Development	To model real world situations using mathematics								
British Values and Cultural Capital	Use MWB in classrooms to develop independence, self-esteem and build confidence. Within lessons, respect is encouraged and anything other than this is challenged. Mistakes are welcomed and used as discussion points to address misconceptions. A variety of approaches to solving problems are taught and discussed. Students are encouraged to develop resilience (linked to developing life long learners). Students are given a choice of tasks in lessons (red, amber, green/bronze, silver, gold) often linked to their levels of learning. E-safety is promoted through blended learning opportunities (MathsWatch)								
End Points	The modulus function	Arithmetic sequences	Expanding $(1+x)^n$	3D Coordinates	Moments	Resolving forces	Horizontal projection	Static particles	Vectors in kinematics
	Functions and mappings	Arithmetic series	Expanding $(a+bx)^n$	Vectors in 3D	Resultant moments	Inclined planes	Horizontal and vertical components	Modelling with statics	Vector methods and projectiles
	Composite functions	Geometric sequences	Using partial fractions	Solving geometric problems	Equilibrium	Friction	Projectile at any angle	Friction and static particles	Variable acceleration in one dimension
	Inverse functions	Geometric series		Application to mechanics	Centres of mass		Projectile motion formulae	Static rigid bodies	Differentiating vectors
	$y= f(x) $ and $y=f(x)$	Sum to infinity			Tilting			Dynamics and inclined planes	Integrating vectors
	Combining transformations	Sigma notation						Connected particles	
	Solving modulus problems	Recurrence relations							
		Modelling with series							