Year 13 Mechanics Learning Journey

Curriculum Journey – Y13 Mechanics

When?	Chapter	Key Learning Objectives Key Questions	Unit Assessments
HALF TERM 1	**Ch 4 Moments**	• Calculate the turning effect of a force applied to a rigid body • Calculate the resultant moment of a set of forces acting on a rigid body • Solve problems involving uniform rods in equilibrium • Solve problems involving non-uniform rods • Solve problems involving rods on the point of tilting	**EOC 4 Test** covering • Turning effect • Resultant moment • Uniform rods in equilibrium • Non uniform rods • Rods on the point of tilting
HALF TERM 3	**Ch 5 Forces and friction**	• Resolve forces into components • Use the triangle law to find a resultant force • Solve problems involving smooth or rough inclined planes • Understand friction and the coefficient of friction • Use $F \leq \mu R$	**EOC 5 Test** covering • Resolve forces • triangle law • smooth or rough inclined planes • friction and the coefficient of friction • Use $F \leq \mu R$
HALF TERM 5	**Ch 6 Projectiles**	• Model motion under gravity for an object projected horizontally • Resolve velocity into components • Solve problems involving particles projected at an angle • Derive the formulae for time of flight, range and greatest height, the equation of the path of a projectile	**EOC 6 Test** covering • Model motion under gravity • Resolve velocity into components • particles projected at an angle • Derive the formulae for time of flight, range and greatest height, the equation of the path of a projectile
HALF TERM 6	**Ch 7 Applications of forces**	• Find an unknown force when a system is in equilibrium • Solve statics problems involving weight, tension and pulleys • Understand and solve problems involving limiting equilibrium • Solve problems involving motion on rough or smooth planes • Solve problems involving connected particles that require the resolution of forces	**EOC 7 Test** covering • unknown forces • statics problems • limiting equilibrium • rough or smooth planes