



Year 12 Mechanics Learning Journey

Curriculum Journey – Y12 Mechanics

When?	Chapter	Key Learning Objectives Key Questions	Unit Assessment (End of Chapter Test)
HALF TERM 1	Ch 8 Modelling in Mechanics	<ul style="list-style-type: none"> • Understand how the concept of a mathematical model applies to mechanics • Understand and be able to apply some of the common assumptions used in mechanical models • Know SI units for quantities and derived quantities used in mechanics • Know the difference between scalar and vector quantities 	EOC 8 Test covering <ul style="list-style-type: none"> • Mathematical models • Mechanical models • Units of measure • Scalar and vector quantities
HALF TERM 3	Ch 9 Constant Acceleration	<ul style="list-style-type: none"> • Understand and interpret displacement-time graphs • Understand and interpret velocity-time graphs • Derive the constant acceleration formulae and use them to solve problems • Use the constant acceleration formulae to solve problems involving vertical motion under gravity 	EOC 9 Test covering <ul style="list-style-type: none"> • Displacement-time graphs • Constant acceleration formulae • Solve problems involving vertical motion under gravity
HALF TERM 5	Ch 10 Forces & Motion	<ul style="list-style-type: none"> • Draw force diagrams and calculate resultant forces • Understand and use Newton's first law • Calculate resultant forces by adding vectors • Understand and use Newton's second law, $F=ma$ • Apply Newton's second law to vector forces and acceleration • Understand and use Newton's third law • Solve problems involving connected particles 	EOC 10 Test covering <ul style="list-style-type: none"> • Force diagrams • Resultant forces • Newton's first law, second law, third law • Acceleration • Connected particles
HALF TERM 6	Ch 11 Variable acceleration	<ul style="list-style-type: none"> • Understand that displacement, • Use differentiation to solve kinematics problems • Use calculus to solve problems involving maxima and minima • Use integration to solve kinematics problems • Use calculus to derive constant acceleration formula 	EOC 11 Test covering <ul style="list-style-type: none"> • Displacement, velocity and acceleration may be given as functions of time • Calculus (differentiation and integration) to solve problems (kinematics, max/min, constant acceleration formula)