YEAR 10 SCIENCE: PHYSICS

Half Term 5 & 6

MAGHULL HIGH SCHOOL – CURRICULUM MAP

Unit: **Forces** **LESSONS**	1. Scalars and vectors, contact and non-contact 2. Gravity 3. Resultant forces	4. Work done 5. Forces and elasticity (including required practical)	6. **Moments, Levers and Gears** 7. **Pressure in fluids** 8. **Atmospheric Pressure**
Knowledge & Skills Development	• Identify scalars and vectors and describe the difference between them • Identify contact and non-contact forces and describe the difference between them • Recall, use and rearrange the equation to calculate weight • Calculate the resultant of two forces that act in a straight line • Use free body diagrams to describe qualitatively examples where several forces lead to a resultant force on an object, including balanced forces when the resultant force is zero • Use vector diagrams to illustrate resolution of forces, equilibrium situations and determine the resultant of two forces, to include both magnitude and direction • Recall, use and rearrange the equation to calculate work done • Describe the difference between elastic deformation and inelastic deformation caused by stretching forces	• Recall, use and rearrange the equations for spring constant and elastic energy • Describe the difference between a linear and non-linear relationship between force and extension • **Describe examples in which forces cause rotation** • **Calculate the size of a force, or its distance from a pivot, acting on an object that is balanced** • **Explain how levers and gears transmit the rotational effects of forces** • **Recall, use and rearrange the equation to calculate pressure** • **Explain why, in a fluid, pressure at a point increases with the height of the column of fluid above that point and with the density of the liquid** • **Explain why atmospheric pressure varies with height above a surface**	
Assessment / Feedback Opportunities	**Formative Assessment** Teacher questioning Quizzes Exam style questions	**Summative assessment** End of topic assessment Exam questions in future end of topic assessments to assess recall	
Key Vocabulary	Independent Variable, Dependent Variable, Control Variables, Method, Conclusion, Precaution, Evaluation, Reliable, Precision, Valid, Anomaly, Describe, Explain, Compare, Analyse, Calculate, Suggest Scalar, Vector, Contact, Gravity, Weight, Mass, Resultant, Work, Elastic, Inelastic, Magnitude, Direction, Deformation, Linear, Rotation, Moment, Gears, Levers, Pressure, Atmospheric, Fluid		
Literacy/Reading Opportunities	Subject specific vocabulary introduced before reading of related texts Word etymology from Latin and Greek roots Reading of simple and complex sentences, paragraphs, articles Scientific writing including structuring methods, comparisons and evaluations		

Cross Curricular Themes	Numeracy/Maths – averages (means), reading scales, graph plotting, lines of best fit, using and rearranging equations, using scientific calculators
Personal Development (Including British Values, RSE, Citizenship)	None
Career Opportunities	Engineering, Sports scientists, Pilots, Aerospace Engineers