



<p>Unit: Forces and Motion</p>	<ol style="list-style-type: none"> 1. Careers 2. Forces 3. Friction 4. Air and Water Resistance 5. Stretching Forces 	<ol style="list-style-type: none"> 6. Turning Forces 7. Balanced and Unbalanced Forces 8. Speed 9. Speed Traps (Reading) 10. Acceleration 	<ol style="list-style-type: none"> 11. Distance-Time Graphs 12. Magnets and Magnetic Fields 13. Magnets (Reading) 14. Electromagnets 15. Uses of Electromagnets
<p>LESSON TOPIC QUESTION(S)</p>			
<p>Knowledge & Skills Development</p>	<ul style="list-style-type: none"> - Explain what forces do. - Identify contact and non-contact forces in a range of situations - Explain how solid surfaces provide a support force (normal reaction force) - Make predictions about forces in familiar situations. - Describe the effect of friction. - Explain why friction arises. - Explain why friction can be useful - Suggest ways to reduce friction - Describe the effect of drag forces. - Explain why drag forces arise. - Explain the benefit of streamlining - Plan and carry out an experiment to investigate air or liquid resistance, selecting suitable equipment. - Describe how forces deform objects. - Use Hooke’s Law. - Present data on a graph and identify a quantitative relationship in the pattern. - Describe what is meant by a ‘moment’. - Calculate the moment of a force. - Describe the difference between balanced and unbalanced forces. 		<ul style="list-style-type: none"> - Calculate the resultant force on an object in a linear situation - Describe situations that are in equilibrium. - Explain why the speed or direction of motion of objects can change. - Calculate speed using the speed equation - Choose equipment to make appropriate measurements for time and distance to calculate speed. - Predict how changing an objects mass will affect its acceleration. - Predict how changing the force on an object will affect its acceleration. - Analyse given data and draw conclusions - Interpret distance–time graphs. - Calculate speed from a distance-time graph. - Plot data on a distance-time graph accurately. - Describe how magnets interact. - Describe how to represent magnetic fields. - Describe the Earth’s magnetic field. - Draw field lines round a magnet in detail. - Describe how to make an electromagnet. - Describe how to change the strength of an electromagnet. - Predict and test the effect of changes to an electromagnet. - Describe some uses of electromagnets.
<p>Assessment / Feedback Opportunities</p>	<p>Formative Assessment Teacher questioning Quizzes Mid topic assessment</p>	<p>Summative assessment End of topic assessment</p>	
<p>Key Vocabulary</p>	<p>Independent Variable, Dependent Variable, Control Variables, Method, Conclusion, Precaution, Evaluation, Reliable, Precision, Valid, Anomaly, Forces, Mass, Weight, Gravity, Air Resistance, Friction, Reaction, Force Diagram, Speed, Distance, Time, Moment, Pivot, Up Thrust, Resultant Force, Balanced, Unbalanced, Magnetic, Deformation, Elastic Potential, Hooke’s Law, Equilibrium, Contact, Non-Contact, Support</p>		

Literacy/Reading Opportunities	Dedicated reading lesson 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, significant figures
Personal Development (Including British Values, RSE, Citizenship)	None
Career Opportunities	Dedicated careers lesson at start of topic Engineers, Sports Analyst, Car Design, Crash Testing, Crash Investigation, Engineers