Yr13 Physics – Unit 7.1

	Sequence		
TOPIC (S) **Gravitational Fields**	1. Newton's Law 2. Gravitational field strength	3. Gravitational potential 4. Orbits of planets and satellites	
Knowledge & Skills development	- Represent a gravitational field by the use of field lines - Determine the magnitude of force between point masses - Determine the magnitude of g in a radial field - Define gravitational potential, including zero value at infinity - Define the energy changes associated with moving an object between different equipotential surfaces - Graphical representations of variations of g and V with r - Derive the equation linking time period and orbital radius	- Describe uses of satellites in low orbits and geostationary orbits, to include plane and radius of geostationary orbit - Determine the escape velocity of objects leaving the surface of a planet - Estimate various parameters of planetary orbits, eg kinetic energy of a planet in orbit - Use logarithmic plots to show relationships between T and r for given data	

Assessment / Feedback Opportunities	Exam questions – teacher assessed	Exam questions – self assessed	Extended writing task – teacher assessed	Deep marking of required practical in lab books	Topic assessment

Cultural Capital	
SMSC / Promoting British Values (Democracy, Liberty, Rule of Law, Tolerance & Respect)	
Reading opportunities	Recommended Read: The Ascent of Gravity: The Quest to Understand the Force that Explains Everything – 5 Apr 2018 by Marcus Chown (Author)
Key Vocabulary	Independent Variable, Dependent Variable, Control Variables, Method, Conclusion, Precaution, Evaluation, Reliable, Precision, Valid, Anomaly, Describe, Explain, Compare, Analyse, Calculate, Suggest, Absolute, Uncertainty, Error Gravity, Directly Proportional, Inversely Proportional, Field, Potential. Equipotential, Derive, Period, Orbit, Geostationary, Geosynchronous
Digital Literacy	The use of excel to plot graphs and analyse data MSOffice365 apps including SharePoint
Cross-Curricular Links	Numeracy/Maths – averages (means), reading scales, graph plotting, lines of best fit, using and rearranging equations, using scientific calculators
Careers	Space Scientist, NASA Engineer, Satellite Engineerng