Physics KS3 Curriculum

Year 7: Physics				
	Forces	**Electricity**	**Space**	**Global Warming**
Content: What will students know	Students will learn what forces are and how they effect real life scenarios. They will explore friction and weight in greater detail and understand how we can carry out experiments in science.	Students will learn what charge is and how and why charge moves. They will learn what the key terms of potential difference, current and resistance are and how they all impact how a charge moves. Students will learn how we can use moving charges and learn to build and analyse simple series and parallel circuits.	Students will gain an understanding of humanities place in the immediate solar system and learn what the key components are. Students will learn about space exploration from the past and understand the importance of it in the future. Students will also learn about how the moon and sun effects life on earth.	This is the module that students will do for several lessons at the end of the year. They will learn about humanities need for energy and will gain an understanding of where it comes from. Students will learn the pros and cons of different energy sources and will look at the carbon cycle in greater detail. Students will finish by carrying out a small presentation project on a single impact of greater carbon emissions.
Skills: What will students be able to do	Identify forces and give examples. Carry out investigations on friction and density. Draw force diagrams for objects. Calculate speed and density. Draw simple distance-time graphs.			
Other: Literacy/Numeracy/ Ethos	**Literacy:** Learn the names for forces. **Numeracy:** Calculate density and speed. Be able to work out the units from the equation.	**Literacy:** Learn key words of potential difference, current, resistance, charge.	**Literacy:** Learn mnemonics as a way to remember. Learn the names of different solar system objects.	**Literacy:** Learn definitions for key words such as carbon, emitter, absorber, energy.
Assessment:	End of topic test on Forces. Multiple marked Educake's throughout module and a graded Badger homework task.	End of topic test on Electricity. Multiple marked Educake's throughout module and a graded Badger homework task.	End of topic test on Space. Multiple marked Educake's throughout module and a graded Badger homework task.	Marked presentation at the end of the module.

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Year 8: Physics			
	Heat	**Magnets**	**Space**
Content: What will students know	Students will learn about the importance of energy and heat in their daily lives. They will understand the difference between the particle model and how the particle model effects the mode of heat transfer. Students will carry out a number of investigations to embed their experimental skills.	Students will learn about magnets and how they can pick up certain materials and not others. Students will be introduced to the idea of a force field and how to draw field lines around magnets. Students will learn how electricity leads to magnetism and vice-versa, starting to understand how they are intertwined. Students will learn some uses of electromagnets and investigate what effects them.	Students will build on from Year 7: Space but learn more about humanities place in the universe at large. Students will understand how past theories get disproved and how future theories might get proved. Students will build on from space exploration in Year 7 but go one further with learning about aliens, the big bang and finishing with designing their own lander on the Moon.
Skills: What will students be able to do	Learn difference between heat and temperature. Draw the particle model. Draw conduction, convection and radiation. Identify what heat transfer is occurring. Investigate conductors, insulators and changes of state.	Identify magnetic materials. Draw simple magnetic field lines. Describe how to increase magnetic field strength. Explain how some electromagnets work.	Draw old sun models. Identify different lifecycles of stars. Calculate weight on different planets.
Other: Literacy/Numeracy/ Ethos	**Literacy:** Difference between heat and temperature. Comprehension task on Antarctic exploration. Definitions for conduction, convection and radiation. **Numeracy:** Calculating averages	**Literacy:** Definitions of domains, fields, force and electromagnetism.	**Literacy:** Definitions for different stages in a lifecycle. Definition of the word theory.
Assessment:	End of topic test on Heat. Multiple marked Educakes throughout module and a graded Badger homework task.	End of topic test on Magnets. Multiple marked Educakes throughout module and a graded Badger homework task.	

Physics KS3 Curriculum

Year 9: Physics						
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Content: What will students know	Sound and hearing - what is sound - how hearing works - wave motion - ultrasound - The decibel scale - applications of the above. Based on module 8L in the old KS3 framework.		The electromagnetic spectrum - follows on from Sound and links to the wave concepts in that topic in a novel context. Making rainbows - colours you cant see - Lenses and magnification - dangers and uses of the above. Additionally waves in other contexts (earthquakes and Tsunamis - links to KS3 Geog.) - this is a GCSE module that occurs in both triple and double courses. This is NOT the first module of the GCSE but a carefully selected set of content that avoids using maths content not yet covered elsewhere AND fits with content covered in Chemistry in yr9.			Radioactivity introduction IF time - 4 lesson intro to the radioactivity content from GCSE - but NOT the practicals as these should only be done ONCE per student for safety reasons - so we do them in yr11. Links to Chemistry C1 in Sept yr9 and then into Physics P1 in Autumn Yr10.
Skills: What will students be able to do	Use of the wave equation and concepts of frequency - build simple musical instruments - understand how their ears work and how to protect them		Continued use of wave equation with more complex numbers (see below) - 2 of the standard GCSE PAGs are covered here (ripple tanks and refraction) - rearranging equations - graph drawing (sine waves) - practical lab skills.			No new skills covered here - these 4 lessons are content / knowledge based
Other: Literacy/Numeracy/ Ethos	Terminology of a wave - mathematical equations and rearrangements (yr7/8 level maths) - Non linear scales (decibel is a logarithmic scale)		Powers of ten and Standard form (maths link) - GCSE level 6 mark questions - writing a structured longer answer - Graph drawing (lines of best fit etc.)			Graph drawing (non linear graphs)
Assessment:	Ongoing educake Homeworks throughout term - one end of topic assessment in the run up to Xmas.		Ongoing Educake homeworks - 2 assessments (wave properties and Wave applications - can be done in any order) and then an end of year exam covering the whole of the years work.			End of Year formal assessment.