

KAA Curriculum Overview		PHYSICS	YEAR 12	EOY Exam	Sequencing and Progression	
Rationale Give an overview of what students are studying this year and why. Link directly to your overall curriculum intent. Particles, quantum Waves Electricity Mechanics & further mechanics Thermal These are all fundamental strands of Physics that are built on further on Year 13.				What content and skills will be assessed in the EOY exam? Particles, quantum Waves Electricity Mechanics & further mechanics Thermal Skills assessed: Knowledge recall, experimental techniques, explanation and multi-step calculations of unfamiliar scenarios Link to model exam papers here.	How does this year build on what they've learnt last year? Students should be able to rearrange equations, manipulate numbers between decimals / percentages / standard form, draw and interpret graphs. Students should have an understanding of basic principles of Forces, Energy, Waves and Electricity. This year is an extension of what they have learnt so far, apart from Particles & Quantum which are completely new topics. They should have a good understanding of basic principles in Physics and be able to confidently apply them to different scenarios.	How will it benefit them as they move forward next year? The mathematical skills learnt/developed in Y12 will continue to be used and developed. Particles tie in with Nuclear Waves and Electricity in with Fields Particles and waves tie in with astronomy Mechanics ties in with Further mechanics Thermal ties in with Ideal Gases
Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Sum 1	Sum 2
Link to MTP Overview						
Topic studied	Particles and Waves	Quantum and Optics	Electricity and Forces & suvat	Energy & Materials and Projectile motion & momentum	Thermal Physics and Further mechanics	Thermal Physics and Further mechanics
Adjustments following last assessments / evaluation.	Waves H/W packs – irrelevant questions edited out		Electricity – more focus and time spent on exam questions in class		Start thermal Physics as Easter H/W	
Key knowledge and skills students need to have gained by the end of the unit	Particles <ul style="list-style-type: none"> - Structure of atom - Decays - Photons - Standard model - Particle interactions and conservation laws Waves <ul style="list-style-type: none"> - Properties of waves - Polarisation and diffraction - Standing waves - Required practical - Using an oscilloscope 	Quantum <ul style="list-style-type: none"> - Photoelectric effect - Energy levels and spectra - Wave particle duality Optics <ul style="list-style-type: none"> - Refraction and Snell's Law - Optical fibres - Interference patterns (double slit, single slit, diffraction grating) 	Electricity <ul style="list-style-type: none"> - Current, p.d., resistance - Resistivity - Power - Components and their characteristics - Required practicals Forces & suvat <ul style="list-style-type: none"> - Resolving forces - Moments - Motion graphs - Suvat - Required practical 	Energy & Materials <ul style="list-style-type: none"> - Work - Energy stores - Power - Efficiency - Density - Springs - Hooke's Law and Young's Modulus - Required practical Projectile motion & momentum <ul style="list-style-type: none"> - suvat applied to projectiles - Conservation of momentum - Impact force 	Thermal Physics <ul style="list-style-type: none"> - Internal energy and Kelvin scale - SHC - SLH - Required practical Further mechanics <ul style="list-style-type: none"> - Angular speed/frequency for objects moving in a circle - Circular motion 	Thermal Physics <ul style="list-style-type: none"> - Required practical Further mechanics <ul style="list-style-type: none"> - Angular speed/frequency for oscillating objects - SHM - Resonance
How is understanding assessed at the end of the unit?	End of topic tests	End of topic tests	End of topic tests AP1	End of topic tests	End of topic tests AP2	End of topic tests AP3