



Y13 Learning Journey. Subject: Physics A Level

Exam Requirements: Your A-level in Physics is structured, and examined, in the following way:

Paper One: Paper 1 will be 1 hour 45 minutes (90 marks) – this accounts for 30% of your overall grade	Paper Two: Paper 2 will be 1 hour 45 minutes (90 marks) – this accounts for 30% of your overall grade	Paper Three: Paper 3 will be 2 hours and 30 minutes (120 marks) – this accounts for 40% of your overall grade
<ul style="list-style-type: none"> ○ Working as a Physicist ○ Mechanics ○ Electric Circuits ○ Further Mechanics ○ Electric and Magnetic fields ○ Nuclear and Particles Physics 	<ul style="list-style-type: none"> ○ Working as a Physicist ○ Materials ○ Waves and Particle Nature of Light ○ Thermodynamics ○ Space ○ Nuclear Radiation ○ Gravitational Fields ○ Oscillations 	<ul style="list-style-type: none"> ○ All topics listed in papers 1 and 2 ○ This paper will contain synoptic questions that may draw on multiple topics ○ This paper will include questions that assess conceptual and theoretical understanding of experimental physics (including practical skills) that will draw on student experiences of the core practicals.
<p>There is also a CPAC core practical endorsement – your teacher will pass or fail you on this according to the following criteria;</p> <ul style="list-style-type: none"> ○ You will need to have completed at least 12 of the 16 core practical experiments ○ You will need to have shown sufficient evidence (to the judgement of your teacher) that you have gained the following skills; 		
1a – Correctly follows investigative procedure		
2a – Correct use of specialist equipment, such as ICT or specific physics apparatus		
2b – Carries out techniques or procedures methodically, identifying potential issues and making adjustments when required		
2c – Identify and control significant qualitative variables where applicable and plan approaches to take account of variables that cannot be easily controlled (“sources of uncertainty”)		
2d – Selects appropriate equipment and measurement strategies in order to ensure suitably accurate results		
3a – Identify potential hazards and assess associated risks, making safety adjustments as necessary.		
3b – uses appropriate safety equipment to mitigate potential risks		
4a – Makes accurate observations relevant to the experiment		
4b – Obtain accurate, precise and sufficient data for investigative procedures and records this correctly with appropriate units and conventions		
5a – Use appropriate software, tools or techniques to process data, carry out research or report findings		
5b – Any researched sources of information are correctly referenced.		

Overview of the Year:

Week Beginning	The focus of your learning or revision this week:	Key assessment pieces or specific homework tasks (including deadlines of any coursework/NEAs)
18/09/22	7.4 (capacitors) 7.6 (the capacitor equation)	
25/09/22	CPAC 11 – Use an Oscilloscope or datalogger to display and analyse the potential difference across a capacitor as it charges and discharges through a resistor	
02/10/22	7.7 and 7.8 (electromagnetic interaction) 7.9 (A.C and D.C)	
09/10/22	7.3 (Millikan's oil drop experiment) Further electronics end of topic exam and feedback if appropriate	
16/10/22	Revision for Assessment Week 1	
Half Term		
30/10/22	Assessment Week One	
06/11/22	8.1 (the Rutherford model and atomic theory recap) 8.2 (particle acceleration)	
13/11/22	8.3 (sub-nucleonic structure) 8.4 (particle decay and interaction)	
20/11/22	8.5 (particle detection) 8.6 (particle energy calculations)	
27/11/22	Topic 8 end of topic exam <u>Revision for A-level Summative Assessment 1</u>	
04/12/22	<u>Y13 Summative Assessment 1 (2023 adapted A-level Paper 1)</u>	
11/12/22	Particle physics end of topic exam and feedback	

	9.1 (internal energy)	
18/12/22	CPAC 12 – Calibrate a thermistor in a potential divider circuit as a thermistor	
Christmas Break		
08/01/23	CPAC 13 – Determine the specific latent heat of a phase change	
15/01/23	9.4 (internal energy of an ideal gas)	
	9.6 (black body radiation)	
22/01/23	CPAC 14 – Investigate the relationship between pressure and volume of a gas at a fixed temperature	
29/01/23	11.1 (radiation and half-life)	
	11.2 (half-life calculations)	
05/02/23	CPAC 15 – investigate the absorption of gamma radiation by lead	
Half Term		
19/02/23	11.3 (fusion and fission)	
26/02/23	Thermodynamics and radiation end of topic exam and feedback	
04/03/23	Revision for Assessment Week 2	
11/03/23	Assessment Week Two	
18/03/23	12.1 (gravitational fields)	
	12.2 (orbiting systems)	
25/03/23	10.1 (star distances)	
	10.2 (star formation and types)	
Easter Break		
15/04/23	10.3 (the universe)	
	Space end of topic exam and feedback	
22/04/23	13.1 (simple harmonic oscillations)	
	13.3 (energy and dampening)	
29/04/23	CPAC 16 – Determine the mass of an object using resonant frequencies of oscillation for known masses	
07/05/23	A-Level Revision	
13/05/23	Provisional: A-level Exams Start	

<p>Exam Practice:</p> <p>You can find past papers to help support your revision and develop your exam technique here:</p> <ul style="list-style-type: none">○ www.physicsandmathstutor.com	<p>Revision Materials:</p> <p>We advise that you use the following revision materials:</p> <ul style="list-style-type: none">○ past papers from physics and maths tutor○ revision of key ideas can be done from the SENICA revision platform○ checklists, formulae sheets and other materials can be gained from the excel website; AQA Find past papers and mark schemes
<p><u>Glossaries:</u></p> <p>Vocabulary lists to support your revision can be found here:</p> <ul style="list-style-type: none">○ Edexcel A-Level Physics definitions Flashcards Quizlet – quizlet of glossary key terms	<p><u>Advice and Guidance for Revision</u></p> <p>Include any other helpful tips, guidance or advice about how to approach revision in your subject here:</p> <ul style="list-style-type: none">● revise short and often – maximum 45 mins to an hour at a time (unless doing a past paper) once or twice a week● PAST PAPERS ARE KEY – these are the best way to revise <p>Ask your teachers for resources and revision help</p>