

Year 12 – Independent Study Programme

Physics 2018-19

A Level Physics consists of six modules, which we have split into a number of booklets. For each booklet there are some questions in Isaac Physics (see below) that you are required to complete in your independent study time. You will be shown how to access and use Isaac Physics, which is an online resource. This will then provide you with immediate feedback.

Teacher 1:

Booklet Name	Isaac Physics Questions (Compulsory)	Extension Questions (Optional)
Booklet 1 – Foundations of Physics	A1 - A8 inclusive E1 - E4 inclusive	Temperature
Booklet 2 – Scalars, Vectors and Equilibrium	B1, B2, B5	Deep Water Divers
Booklet 3 – Kinematics and Linear Motion	B3, B4	Equation Without u
Booklet 4 – Work, Energy, Power and Newton's Laws	B8, F1, F2	Understanding Mass, Deriving $E_k=1/2mv^2$, Photons have Momentum
Booklet 5 – Springs and Materials	B6, B7, B9	Materials Selection Charts

Teacher 2:

Booklet Name	Isaac Physics Questions (Compulsory)	Extension Questions (Optional)
Booklet 1 – Electricity Basics, Resistance and Power	C1, C2, C3, C6	Superconductivity, Connecting Cells, Particle Accelerators
Booklet 2 – Kirchhoff's Laws and Potential Dividers	C4, C5	Loading a Potential Divider
Booklet 3 – Waves and Electromagnetic Waves	D1, D2, D3	Relating Position and Phase Difference, Intensity and LDR's
Booklet 4 – Refraction and Total Internal Reflection	D8	Optical Fibres
Booklet 5 – Superposition of Waves and Young Slits	D4	Thin Film Interference
Booklet 6 – Stationary Waves	D5	Holograms
Booklet 7 – Quantum Physics	D6, D7	Accelerated Particles

There are also a series of video clips on 'A Level Physics Online', which you are required to watch as part of your independent study. Links for these are below but be aware that some links contain videos for topics covered by another booklet.

Teacher 1:

Booklet Name	'A Level Physics Online' clips
Booklet 1 – Foundations of Physics	<ol style="list-style-type: none"> 1. https://www.alevelphysicsonline.com/quantities-and-units 2. https://www.alevelphysicsonline.com/practical-skills
Booklet 2 – Scalars, Vectors and Equilibrium	<ol style="list-style-type: none"> 1. https://www.alevelphysicsonline.com/scalars-and-vectors 2. https://www.alevelphysicsonline.com/forces
Booklet 3 – Kinematics and Linear Motion	<ol style="list-style-type: none"> 1. https://www.alevelphysicsonline.com/motion
Booklet 4 – Work, Energy, Power and Newton's Laws	<ol style="list-style-type: none"> 1. https://www.alevelphysicsonline.com/forces 2. https://www.alevelphysicsonline.com/work-and-energy 3. https://www.alevelphysicsonline.com/newtons-laws
Booklet 5 – Springs and Materials	<ol style="list-style-type: none"> 1. https://www.alevelphysicsonline.com/materials

Teacher 2:

Booklet Name	'A Level Physics Online' clips
Booklet 1 – Electricity Basics, Resistance and Power	<ol style="list-style-type: none"> 1. https://www.alevelphysicsonline.com/electricity
Booklet 2 – Kirchhoff's Laws and Potential Dividers	<ol style="list-style-type: none"> 1. https://www.alevelphysicsonline.com/electricity
Booklet 3 – Waves and Electromagnetic Waves	<ol style="list-style-type: none"> 1. https://www.alevelphysicsonline.com/waves
Booklet 4 – Refraction and Total Internal Reflection	<ol style="list-style-type: none"> 1. https://www.alevelphysicsonline.com/waves
Booklet 5 – Superposition of Waves and Young Slits	<ol style="list-style-type: none"> 1. https://www.alevelphysicsonline.com/waves
Booklet 6 – Stationary Waves	<ol style="list-style-type: none"> 1. https://www.alevelphysicsonline.com/waves
Booklet 7 – Quantum Physics	<ol style="list-style-type: none"> 1. https://www.alevelphysicsonline.com/quantum