**A Level Physics Study Period Guide – Autumn Term 2022**

**This guide is designed to help students with their independent revision for Year 12 Physics in their study periods this term.**

**Which topics will you be studying?**

|  |  |
| --- | --- |
| **Electricity** | **Mechanics** |
| * **Basics of electricity**
* **Current–voltage characteristics**
* **Resistivity**
* **Circuits**
* **Potential divider**
* **Electromotive force and internal resistance**
* **CORE PRACTICAL Determination of resistivity of a wire using a micrometer, ammeter and voltmeter.**
* **CORE PRACTICAL Investigation of the EMF and internal resistance of electric cells and batteries by measuring the variation of the terminal p.d. of the cell with current in it.**
 | * **Scalars and vectors**
* **Moments**
* **Motion along a straight line**
* **Projectile motion**
* **Newton’s laws of motion**
* **Momentum**
* **Work, energy and power**
* **Conservation of energy**
* **CORE PRACTICAL Determination of g by a Free-fall method.**
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**Which exam board?**

In Physics, we follow the **AQA** exam board. For a detailed look at the specification click the below link:-

<https://filestore.aqa.org.uk/resources/physics/specifications/AQA-7407-7408-SP-2015.PDF>

**What useful revision activities should I be doing?**

* Construct a summary sheet (A3) for each topic - some content you may wish to include:-
	+ Do not include the formulae from the sheet. Although you may wish to write them down in words to remind yourself of the relationship,
	+ Definitions and relationships not included in the formula sheet,
	+ Pictures of the various diagrams, and graphs you might use, such as Force diagrams for mechanics topic, etc.
	+ Worked solutions of problems you have found difficult,
	+ Concept maps linking your ideas together.
* Make sure you read through your class notes from previous lesson/s before your attending your next lesson
* Use some of the links below to access and solve as many exam type questions as you can to build up your problem solving skills.

**Useful Resources:**

Practice questions and going over previous papers and mark schemes is one of the key and best revision techniques for Physics. [AQA past papers](http://www.aqa.org.uk/subjects/science/as-and-a-level/physics-7407-7408/assessment-resources)

Written by Bob Eagle, the [Physics A Level Playlist](http://www.youtube.com/playlist?list=PL5D99A319E129A5B7) is an excellent set of video tutorials.

[s-cool.co.uk](https://www.s-cool.co.uk/a-level/physics) has plenty of A and AS level Physics revision resources including not only notes but also practice questions and guides.

[physicsandmathstutor.com](http://www.physicsandmathstutor.com/physics-revision/) contains a huge amount of detailed revision notes for AQA as well topic based exam questions.

[physicsnet.co.uk](http://physicsnet.co.uk/a-level-physics-as-a2/) - A great resource with revision notes applicable to AS and A2 Level courses.

[alevelphysicsonline.com](https://www.alevelphysicsonline.com/video-index) - Provides plenty of revision aides including revision checklists, videos and past papers.

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| **Gravitational and Electric Field Theory** | **Thermal Physics and Magnetic Fields** |
| * **Concept of a field**
* **Newton’s law of gravitation**
* **Gravitational field strength**
* **Gravitational potential**
* **Orbits of planets and satellites**
* **Coulomb's law**
* **Electric field strength and electric potential**
* **Capacitance**
* **Parallel plate capacitor**
* **Energy stored by a capacitor**
* **Capacitor charge and discharge**
* **CORE PRACTICAL: Investigation of the charge and discharge of capacitors.**
 | * **Thermal energy transfer**
* **Ideal gases**
* **Molecular kinetic theory model**
* **Magnetic flux density**
* **Moving charges in a magnetic field**
* **CORE PRACTICAL: Investigation of Boyle's law (constant temperature) and Charles’s law (constant pressure) for a gas.**
* **CORE PRACTICAL: Investigate how the force on a wire varies with flux density, current and length of wire using a top pan balance.**
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