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A-Level Physics

Exam Board: AQA
Entry Criteria:

- **GCSE Physics: Grade 6 or above, or**
- **Combined Science: Grade 6,6 or higher, with at least Grade 6 in each Physics paper**
- **GCSE Maths: Grade 6 or above**

Overview

A-Level Physics delves into the foundational principles that govern our universe and equips students with analytical skills essential for future scientific or mathematical studies. The course revisits familiar areas such as **waves**, **mechanics**, and **electronics**, while introducing advanced topics like **quantum mechanics** and **relativity**. This combination deepens students' knowledge from atomic particles to the cosmic forces shaping galaxies, enhancing both their theoretical understanding and practical skills in physics.

Assessment Structure:

Paper 1 – 34% of A-Level

- **Duration:** 2 hours
- **Content:** Covers Sections 1–5 and 6.1 (Periodic motion)
- **Format:** 60 marks (short and long answer questions) + 25 marks (multiple-choice questions)

Paper 2 – 34% of A-Level

- **Duration:** 2 hours
- **Content:** Covers Sections 6.2 (Thermal Physics), 7, and 8; may require knowledge from Paper 1 topics
- **Format:** 60 marks (short and long answer questions) + 25 marks (multiple-choice questions)

Paper 3 – 32% of A-Level

- **Duration:** 2 hours
- **Content:** Includes practical experiments, data analysis, and an optional topic (usually "Turning Points in Physics")
- **Format:** 45 marks (practical questions) + 35 marks (optional topic)

Super-curricular resources

Additional media for broadening understanding and engagement with physics topics:

- **Podcasts**
  - *Inside Science (BBC)*
  - *The Infinite Monkey Cage*
  - *Curious Cases of Rutherford and Fry*

Suggested Reading List

These resources enhance understanding of key physics concepts and complement the course material:

General Physics & Quantum Mechanics

1. In Search of Schrodinger's Cat by John Gribbin
2. A Brief History of Time & The Universe in a Nutshell by Stephen Hawking
3. Six Easy Pieces & Six Not So Easy Pieces by Richard Feynman

Relativity and Thermodynamics

1. How to Teach Relativity to Your Dog by Chad Orzel
2. The Laws of Thermodynamics: A Very Short Introduction by Peter W. Atkins

Electricity & Particle Physics

1. Electric Universe by David Bodanis
2. The Particle at the End of the Universe by Sean Carroll

Science in Everyday Life

1. What If? & What If? 2 by Randall Munroe

Recommended Websites

These websites provide articles, resources, and updates in various physics disciplines:

1. Big Ideas in Physics | Institute of Physics (iop.org)
2. New Scientist | Science news and articles
3. Nature Physics | Research and developments in physics

Complementary Subjects

- Maths and other sciences are highly recommended to reinforce understanding and analytical skills in physics.

Career Progression

Physics at A-Level or higher is valued in diverse fields, including:

- **Business & Finance**
- **IT & Engineering**
- **Medicine & Research Science**

These sectors highly regard the analytical and quantitative skills developed in A-Level Physics.