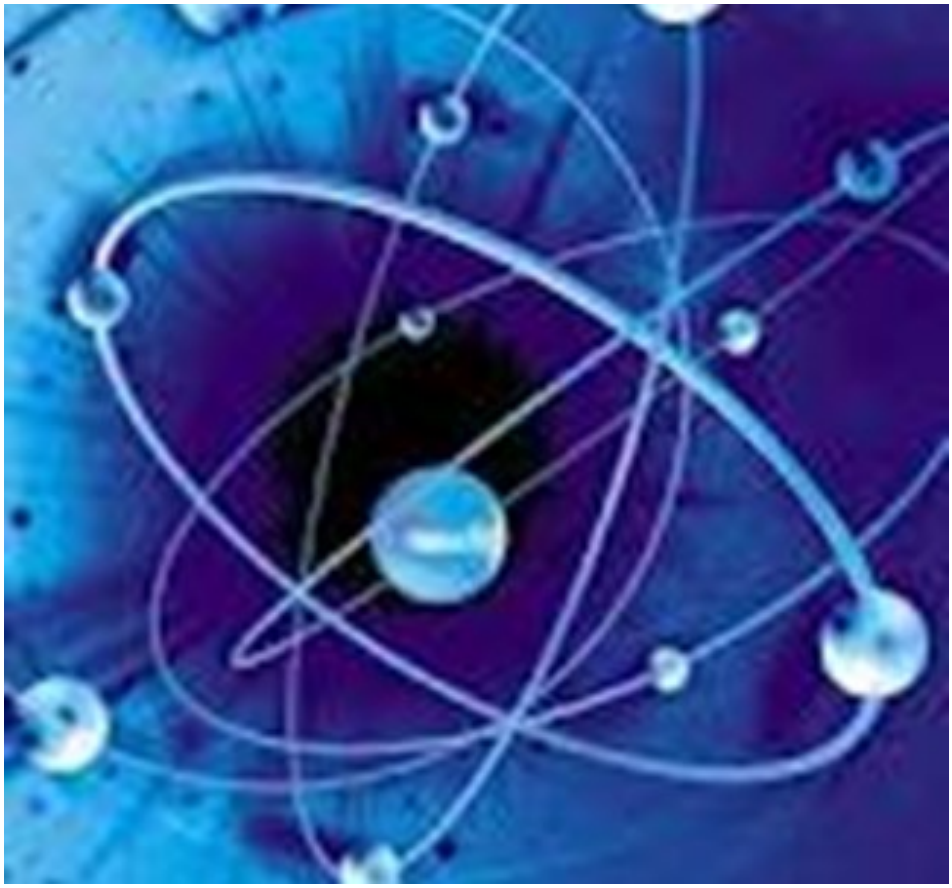
Physics A Level



A Level Physics at Southborough Sixth Form

Exam Board

- OCR Physics A
- Specification updated 09/09/16
- A Level in Physics A (H556)

http://www.ocr.org.uk/Images/171726-specification-accredited-a-level-gce-physics-a-h556.pdf

Assessment Overview	
Modelling physics (01) 100 marks 2 hours 15 minutes written paper	**37%** of total A level
Exploring physics (02) 100 marks 2 hours 15 minutes written paper	**37%** of total A level
Unified physics (03) 70 marks 1 hour 30 minutes written paper	**26%** of total A level
Practical Endorsement in physics (04) (non exam assessment)	Reported separately (see Section 5g)

Aims of the course

- To develop critical thinking skills and encourage students to apply scientific theories and mathematics contextually to solve problems
- develop interest in, and enthusiasm for, physics, including developing an interest in further study and careers in physics
- appreciate how society makes decisions about scientific issues and how the sciences contribute to the success of the economy and society
- develop and demonstrate a deeper appreciation of the skills, knowledge and understanding of *How Science Works*;
- develop essential knowledge and understanding of different areas of Physics and how they relate to each other.

www.southborough.kingston.sch.uk

Physics A Level

Outline of course

A Level content:

Module 1 – Development of practical skills in physics
1.1 Practical skills assessed in a written
examination
1.2 Practical skills assessed in the practical endorsement

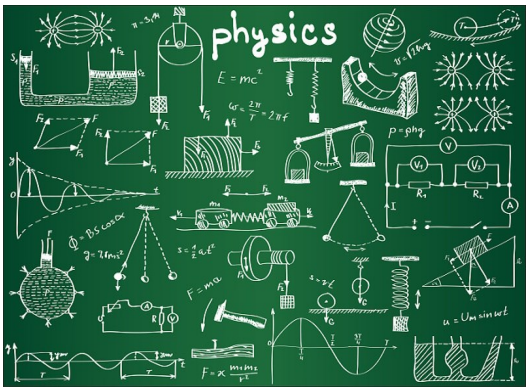
Module 2 – Foundations of physics
2.1 Physical quantities and units
2.2 Making measurements and analysing data
2.3 Nature of quantities

Module 3 – Forces and motion
3.1 Motion
3.2 Forces in action
3.3 Work, energy and power
3.4 Materials
3.5 Newton's laws of motion and momentum

Module 4 – Electrons, waves and photons
4.1 Charge and current
4.2 Energy, power and resistance
4.3 Electrical circuits
4.4 Waves
4.5 Quantum physics

Module 5 – Newtonian world and astrophysics
5.1 Thermal physics
5.2 Circular motion
5.3 Oscillations
5.4 Gravitational fields
5.5 Astrophysics and cosmology

Module 6 – Particles and medical



Entry Requirements

Due to the vast difference between GCSE and A-Level Physics, we require that students wishing to do this course achieve a **grade 6 in both Physics (triple science) and Maths at GCSE**. Students who have completed the GCSE Double Science qualification (Science and Additional Science) will need to have achieved a high B grade in the Additional Science exam and UMS marks may be referred to when making / confirming

Expectations

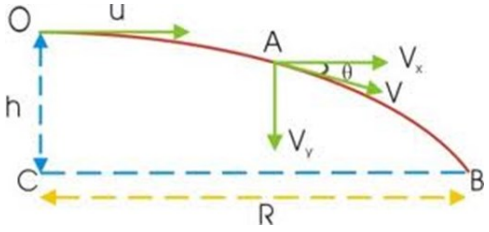
Develop an interest in Physics in the real work—read from the reading list, subscribe to pod-casts/journals/online lectures etc.
Nightly revision (Transforming and summarising notes and doing questions)
Independent research
Homework
Pro-active attitude to study (if you don't know something, ask a question or do research)

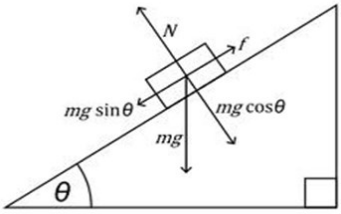
Careers in Physics *http://www.physics.org/careers.asp?contentid=381*

Acoustics; Aeronautical Engineer; Agricultural Engineer; Air Traffic Controller; Airline Pilot; Archaeologist; Architect; Astronomer; Audio Engineer; Broadcasting; Cartographer; Chartered Sur; eyor; Civil Engineer; Climatologist; Clinical Scientist; Computing; Designer; Doctor; Electrical Engineer; Energy; Engineering; Environment; Environmental Scientist; Forensic Scientist; Gas Engineer; Geologist; Health Services; Journalist; Laboratory Technician; Marine Engineering; Mathematician; Mechanical Engineer; Medical ; Physicist; Meteorologist; Naval Architect; Naval Career; Nuclear Scientist; Oceanographer; Operational Research; Patent Agent; Patent Examiner; Pharmacist; Radiation Protection; Radiographer; Scientific Officer (Government); Space and Remote Sensing; Teacher; Transport Water Management

Typical Employers

Aerospace and defence; education; energy; engineering; instrumentation; manufacturing; oil and gas; science and telecommunications.





$$\lambda t_{1/2} = \ln(2)$$

$$A = A_0 e^{-\lambda t}$$

$$N = N_0 e^{-\lambda t}$$

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