

Switching to OCR from AQA

The content within the [OCR Physics A specification](#) covers the 'Big Ideas' of physics and will be very familiar. We've laid it out in a logical progression to support co-teaching the AS level and teaching the A level in a linear way.

OCR Physics A	AQA Physics
<p>Module 1: Practical skills</p> <p>Planning, implementing, analysis and evaluation</p> <p>Plus all the skills to be covered in the Practical Endorsement</p>	<p>The same practical skills, as mandated by the DfE, are listed in Chapters 7 and 8 of the AQA specification</p>
<p>Module 2: Foundations of physics</p> <ul style="list-style-type: none"> Physical quantities S.I. units Measurements and uncertainties Scalars and vectors 	<p>3.1.2 Measurements and their errors</p> <ul style="list-style-type: none"> Use of S.I. units and their prefixes Limitation of physical measurements Estimation of physical quantities Scalars and vectors (section 3.4.1.1)
<p>Module 3: Forces and motion</p> <ul style="list-style-type: none"> Kinematics and dynamics Linear motion Projectile motion Motion with non-uniform acceleration Equilibrium Density [and pressure] Work, energy and power Springs Mechanical properties of materials Newton's laws of motion Momentum 	<p>3.4 Mechanics and materials</p> <ul style="list-style-type: none"> Moments Motion along a straight line Projectile motion Newton's laws of motion Momentum Work, energy and power Conservation of energy Bulk properties of solids The Young modulus



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<p>Module 4: Electrons, waves and photons</p> <ul style="list-style-type: none"> • Charge and current • E.m.f. and p.d. • Resistivity and resistance • Power • Series and parallel circuits • Internal resistance • Potential dividers • Wave motion • Electromagnetic waves • Superposition • Stationary waves • Quantum physics • Photons • The photoelectric effect • Wave particle duality 	<p>3.2 Particles and radiation</p> <ul style="list-style-type: none"> • Particles, antiparticles, and photons • [Particle interactions] • Classification of particles [strange particles] • Quarks and antiquarks • Application of conservation laws • Electromagnetic radiation and quantum phenomena • Energy levels and photon emission • Wave-particle duality <p>3.3 Waves</p> <ul style="list-style-type: none"> • Progressive waves • Longitudinal and transverse waves • Superposition and stationary waves • Refraction, diffraction and interference <p>3.5 Electricity</p> <ul style="list-style-type: none"> • Basics of electricity • Current voltage characteristics • Resistivity • Circuits • Potential divider • E.m.f. and internal resistance
<p>Module 5: Newtonian world and astrophysics</p> <ul style="list-style-type: none"> • Temperature • Solid, liquid and gas • Thermal properties of materials • Ideal gases • Circular motion • Centripetal force • Simple harmonic oscillations • Energy of a simple harmonic oscillator 	<p>3.6 Further mechanics and thermal physics</p> <ul style="list-style-type: none"> • Circular motion • Simple harmonic motion • Simple harmonic systems • Forced vibrations and resonance • Thermal energy transfer • Ideal gases • Molecular kinetic theory model <p>3.7 Fields and their consequences</p> <ul style="list-style-type: none"> • Gravitational fields



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<ul style="list-style-type: none"> • Damping • Point and spherical masses • Newton's law of gravitation • Planetary motion • Gravitational potential and energy • Stars • Electromagnetic radiation from stars • Cosmology 	<ul style="list-style-type: none"> • Gravitational field strength and potential • Orbits of planets and satellites <p>3.9 Astrophysics option</p> <ul style="list-style-type: none"> • Classification by luminosity • Parsec and light year • Classification by temperature • The Hertzsprung-Russell diagram • Supernovae, neutron stars and black holes • Doppler effect • Hubbles law • [Telescopes] • [Absolute magnitude M] • [Stellar spectral classes] • [Quasars] • [Exoplanets]
<p>Module 6: Particles and medical physics</p> <ul style="list-style-type: none"> • Capacitors • Energy stored by a capacitor • Charging and discharging capacitors • Point and spherical charges • Coulomb's law • Uniform electric field • Electric potential energy • Magnetic fields • Motion of charged particles • Electromagnetism • The nuclear atom • Fundamental particles • Radioactivity • Nuclear fission and fusion • Using X rays 	<p>3.7 Electric fields</p> <ul style="list-style-type: none"> • Coulomb's law • Electric field strength • Electric potential • Capacitance • Parallel plate capacitor • Energy stored by a capacitor • Capacitor charge and discharge • Magnetic flux density • Moving charges in a magnetic field • Magnetic flux and flux linkage • Electromagnetic induction • [Alternating current] • The operation of a transformer <p>3.8 Radioactivity</p> <ul style="list-style-type: none"> • Rutherford scattering



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<ul style="list-style-type: none"> • Diagnostic methods in medicine • Using ultrasound 	<ul style="list-style-type: none"> • α, β and γ radiation • Radioactive decay • Nuclear instability • Nuclear radius • Mass and energy level • Induced fission • Safety aspects <p>3.10 Medical physics option</p> <ul style="list-style-type: none"> • Ultrasound imaging • X ray imaging • Radionuclide imaging and therapy • [Physics of the eye] • [Physics of the ear] • [Biological measurement] • [Fibre optics and endoscopy] • [Magnetic resonance scanner]
<p>Appendix 5f: Mathematical requirements</p> <p>Arithmetic and numerical computation</p> <ul style="list-style-type: none"> • Handling data • Algebra • Graphs • Geometry and trigonometry 	<p>Chapter 6: Mathematical requirements and exemplifications</p> <ul style="list-style-type: none"> • Arithmetic and numerical computation • Handling data • Algebra • Graphs • Geometry and trigonometry



Assessment

OCR Physics A	AQA Physics
<p>AS Paper 1: Breadth in Physics, Modules 1-4 50% of AS</p> <p>Written paper 1hr 30 minutes</p> <p>70 marks</p> <p>Section A multiple choice questions, 20 marks. Section B short structured questions, covering problem solving, calculations, practical and theory, 50 marks.</p>	<p>AS Paper 1: Sections 1-5</p> <p>50% of AS</p> <p>Written paper 1hr 30 minutes</p> <p>70 marks</p> <p>70 marks short and long answer questions split by topic.</p>
<p>AS Paper 2: Depth in Physics, Modules 1-4 50% of AS</p> <p>Written paper 1hr 30 minutes</p> <p>70 marks</p> <p>Short structured questions and extended response questions, problem solving, calculations, practical and theory.</p>	<p>AS Paper 2: Sections 1-5</p> <p>50% of AS</p> <p>Written paper 1 hr 30 minutes</p> <p>70 marks</p> <p>Section A: 20 marks of short and long answer questions on practical skills and data analysis</p> <p>Section B: 20 marks of short and long answer questions from across all areas of AS content</p> <p>Section C: 30 multiple choice questions</p>
<p>A Level Paper 1: Modelling Physics, Modules 1, 2, 3 & 5</p> <p>37% of A level</p> <p>Written paper 2 hours 15 minutes</p> <p>100 marks</p> <p>Section A multiple choice questions, 15 marks. Section B short structured questions, and extended response questions, problem solving, calculations, practical and theory 85 marks.</p>	<p>A Level Paper 1: Section 1-5 and 6.1</p> <p>34% of A level</p> <p>Written paper 2 hours</p> <p>85 marks</p> <p>25 multiple choice questions and 60 marks of short and long answer questions.</p>



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<p>A Level Paper 2: Exploring Physics, Modules 1, 2, 4 & 6 37% of A level Written paper 2 hours 15 minutes 100 marks</p> <p>Section A multiple choice questions, 15 marks. Section B short structured questions and extended response questions, problem solving, calculations, practical and theory 85 marks.</p>	<p>A Level Paper 2: Section 6.2, 7 & 8 plus assumed knowledge from sections 1 to 6.1.</p> <p>34% of A level Written paper 2 hours 85 marks</p> <p>25 multiple choice questions and 60 marks of short and long answer questions.</p>
<p>A Level Paper 3: Unified Physics, Modules 1-6 26% of A level Written paper 1 hour 30 minutes 70 marks</p> <p>Short structured questions and extended response questions, problem solving, calculations, practical and theory.</p>	<p>A Level Paper 3: Section A Practical Skills and data analysis, Section B Option one of sections 9 to 13</p> <p>32% of A level Written paper 2 hours 80 marks</p> <p>45 marks of short and long answer questions on practical experiments and data analysis.</p> <p>35 marks of short and long answer questions on optional topic.</p>

