

A-Level physics follows the 7408 AQA Specification, details of which can be found here: [AQA | Science | AS and A-level | Physics](#)

In the below, references to required reading, question practice and homework are from the Year 1 and Year 2 CGP textbooks, details of which can be found here: [Physics | CGP Books](#)

Homeworks alternate between question practice from the book, past exam materials and the portal IsaacPhysics, details of which can be found here: [Isaac Physics](#)

The course is delivered by two teachers concurrently.

Year 12 Term 1 Teacher 1

Term week	Topic	Required Reading	CGP Question Practice	Additional Questions
1	Nuclear Decay	17 – 20	20	
2	Antiparticles	21 – 24	24	
3	Hadron/Lepton	25 – 28	28	
4	Strange particles	29 – 35	32, 35	
5	Anti/Quarks	36 - 45	36, 44	46, 48
6	Particle Test			
7	Current and p.d.	189 – 191	191	
BREAK				
8	Resistance & IV	192 – 197	193, 196	218
9	Resistivity	197 – 199	199	
10	Find Resistivity	200 – 201	201	
11	Power	202 - 204	204	
12	e.m.f	205 – 208	208	
13	Energy	209 – 213	213	218 - 220
14	Potential divider	214 – 217	217	
BREAK				

Year 12 Term 1 Teacher 2

Term week	Topic	Required Reading	CGP Question Practice	CGP book Homework
1	Photoelectric Effect	49 – 53	53	
2	Energy levels	54 – 57	57	
3	Wave-particle	58 – 61	62	63 – 64
4	Quantum Test			
5	Scalars, vectors	111 – 114	191	
6	Equilibrium	115 – 117	193, 196	218
7	Scalars, vectors	111 – 114	114	
BREAK				
8	Equilibrium	115 – 117	117	
9	Moments	118 – 120	120, 122	
10	Motion graphs	123 – 135	124, 129, 134, 135	
11	Projectile Motion	143 – 148	138, 142, 144, 148	
12	Momentum	149 – 155	151, 155	
13	Work and Power	156 – 159	159	
14	Energy	160 – 165	164	166, 169
BREAK				

Year 12 Term 2 Teacher 1

Term week	Topic	Required Reading	CGP Question Practice	CGP book Homework
1	Progressive	65 – 71	68, 71	
2	Transverse/longitudinal	72 – 76	76	
3	Interference	77 – 79	79	
4	Stationary	80 – 85	85	
5	Diffraction	86 – 88	88	
BREAK				
6	Diffraction	89 – 91	92	
7	Youngs	92 – 95	95	
8	Refractive/TIR	96 – 107	99, 102, 107	108, 110
9	Waves Review			
10	Waves Review			
11	Waves Test			
BREAK				

Year 12 Term 2 Teacher 2

Term week	Topic	Required Reading	CGP Question Practice	CGP book Homework
1	Mechanics Test			
2	Density/Hooke's Law	170 – 174	174	
3	Young modulus	175 – 180	180	
4	Stress/Strain	181 – 186	186	187 - 189
5	Stress/Strain	181 – 186	186	187 - 189
BREAK				
6	Materials Test			
7	Practical Skills	RP1		
8	Practical Skills	RP2		
9	Practical Skills	RP3		
10	Practical Skills	RP4		
11	Practical Skills	RP5		
BREAK				

The third term of Year 12 allows for consolidation of previous learning, a focus on practical skills, PPEs and wider school events such as work experience and access to HE events.

Year 13 Term 1 Teacher 1

Term week	Topic	Required Reading	CGP Question Practice	CGP book Homework
1	Internal Energy			
2	Specific Heat Capacity			
3	Three Gas Laws	53 – 56	56	
4	Ideal Gas Law	57 – 60	60	
5	Ideal Gas Law	57 – 60		
6	Kinetic Energy	61 – 67	64, 66	70 – 72
7	Thermal Test			
BREAK				

8	Grav Fields	72 – 74	74	
9	Grav Fields	75 – 77	77	
10	Grav Fields	78 – 86	86	
11	Electric Fields	87 – 91	91	
12	Electric Fields	92 – 98	98	
13	Grav Elec Review			
14	Grav Elec Test			
BREAK				

Year 13 Term 1 Teacher 2

Term week	Topic	Required Reading	CGP Question Practice	CGP book Homework
1	Circular Motion	19 – 22	22	
2	Centripetal	23 – 26	26	
3	SHM	27 – 30	30	
4	SHO (springs)	31 – 33	33	
5	SHO (pendula)	34 – 36	36	
6	Vibrations	37 – 40	40	45 – 47
7	F. Mech Test			
BREAK				
8	Capacitors	102 – 107	105, 107	
9	Dis/Charging	108 – 113	113	
10	Time constant	114 – 119	119	119 – 121
11	Capacitors Test			
12	Rutherford	157 – 159	159	
13	Nuclear Radius	160 – 166	164, 166	
14	Radiation	167 – 170	170	
BREAK				

Year 13 Term 2 Teacher 1

Term week	Topic	Required Reading	Fact Recall Question Practice	CGP book Homework
1	Mag Fields	122 – 125	125	
2	Mag Fields	126 – 129	129	
3	Mag Fields	129 – 130	130	
4	Mag Fields	128 – 136	132, 136	
5	Mag Fields	137 – 152	146, 152	153 – 156
6	Mag Fields Review			
7	Mag Fields Test			
BREAK				
8	Astrophysics			
9	Astrophysics			
10	Astrophysics			
11	Astrophysics			
12	Astrophysics			
13	Astrophysics			
14	Astrophysics Test			
BREAK				

Term week	Topic	Required Reading	CGP Question Practice	CGP book Homework
1	Capacitors	102 – 107	105, 107	
2	Dis/Charging	108 – 113	113	
3	Time constant	114 – 119	119	119 – 121
4	Capacitors Test			
5	Rutherford	157 – 159	159	
6	Nuclear Radius	160 – 166	164, 166	
7	Radiation	167 – 170	170	
BREAK				
8	Year 12 Review			
9	Year 12 Review			
10	Year 12 Review			
11	Year 12 Review			
12	Year 13 Review			
13	Year 13 Review			
14	Year 13 Review			
BREAK				

The third term of Year 13 allows for additional consolidation, working towards CPAC accreditation and preparation for external examinations.

Further details on modules.

Year 12:

<p>3.2 Particles and radiation Students will develop their knowledge of particles and radiation. This section introduces students both to the fundamental properties of matter, and to electromagnetic radiation and quantum phenomena.</p> <p>3.4.1 Force, energy and momentum Students will learn about force, energy and momentum Vectors and their treatment are introduced followed by development of the student’s knowledge and understanding of forces, energy and momentum</p> <p>3.5 Electricity Students will develop their knowledge of electricity, building on earlier learning of these phenomena from GCSE. It provides opportunities for the development of practical skills at an early stage in the course and lays the groundwork for later study of the many electrical applications that are important to society.</p>	<p>3.4.2 Materials Students will develop their knowledge of materials considered in terms of their bulk properties and tensile strength.</p> <p>3.3 Waves Students will learn about waves and extend their GCSE studies of wave phenomena through a development of knowledge of the characteristics, properties, and applications of travelling waves and stationary waves.</p>	<p>3.6.1 Periodic motion Students will learn about Periodic motion. The earlier study of mechanics is further advanced through a consideration of circular motion and simple harmonic motion (the harmonic oscillator)</p> <p>3.6.2 Thermal physics Students' knowledge of Thermal physics will be developed. The thermal properties of materials, the properties and nature of ideal gases, and the molecular kinetic theory to be studied in depth.</p> <p>This term will culminate in a summer research project followed by presentations.</p>
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Year 13:

<p>3.7 Fields and their consequences</p> <p>3.7.1 Fields</p> <p>3.7.2 Gravitational fields</p> <p>3.7.3 Electric fields</p> <p>3.7.4 Capacitance</p> <p>3.7.5 Magnetic fields</p> <p>The concept of a field is one of the great unifying ideas in physics. The ideas of gravitation, electrostatics and magnetic field theory are developed within the topic to emphasise this unification. Many ideas from mechanics and electricity from earlier in the course support this and are further developed. Practical applications considered include: planetary and satellite orbits, capacitance and capacitors, their charge and discharge through resistors, and electromagnetic induction.</p>	<p>3.8 Nuclear physics</p> <p>This section builds on the work of Particles and radiation to link the properties of the nucleus to the production of nuclear power through the characteristics of the nucleus, the properties of unstable nuclei, and the link between energy and mass</p> <p>3.9 Astrophysics</p> <p>Fundamental physical principles are applied to the study and interpretation of the Universe. Students gain deeper insight into the behaviour of objects at great distances from Earth and discover the ways in which information from these objects can be gathered. The underlying physical principles of the devices used are covered and some indication is given of the new information gained by the use of radio astronomy.</p>
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