

SCHEME OF WORK

DEPARTMENT: Physics

COURSE: PHB

Tutor A

LEVEL: A level Year 2

BOARD: AQA

CODE: 7408

Notes

Textbook references are from AQA Physics – Breithaupt. The assignments column serves as a guide only; students may find this useful as a source of additional practice questions, or to assist with catching up on work missed. Supporting experimental work will be supervised by tutor A and consist of introductory experiments, individual experiments completed on a 'circus' basis and more investigatory exercises. Practical work embodies the content of section 3.1 'Measurements and their errors'

WEEK	ROUTE THROUGH THE SPECIFICATION BY TOPIC or UNIT	LEARNING AND TEACHING ACTIVITIES (Highlighting differentiation)	ASSIGNMENTS	EDUCATIONAL RESOURCES USED (Type and Location)
S1 – 3	Summer half term taster work Development of assessed practical skills.	Past practical tests and data analysis exercises.	Practical exercises completed in laboratory sessions	Lab apparatus; exercise sheets
S1 – 4	<u>3.6.1.1 Circular Motion</u> Angular speed, Centripetal Acceleration, Centripetal force, Applications.	Teacher explanation Question and answer Problem solving Experiments: Whirling rubber bung	Text P. 22 – 29 Summary Qu. P. 23, 25, 27, 29 Exam Qu. P. 30 - 33 Practical reports	Demonstration apparatus; duplicated handouts; textbooks; problem books Lab apparatus; reference worksheets / GO
1	Autumn term Pre-summer taster work topic test and review.		Tests	Test Papers

2	Introduction to A2 practical course.	Experiment: Measurement of g by simple pendulum	Practical reports	Lab apparatus; reference worksheets / Godalming Online
2 – 4	<u>3.7.2 Gravitational Fields</u> Gravitational fields; Field strength, Field patterns, Gravitational potential, Newton's law of gravitation - the force between masses, Planetary fields, Satellites	Teacher explanation Question and answer Problem solving	Text P. 54 – 67 Summary Qu. P. 55, 58, 61, 65, 67 Exam Qu. P. 68 - 71 Text P. 89	textbooks; problem books; video
5 – 9	<u>3.6.1.2 Simple Harmonic Motion</u> Oscillations, SHM, Sinusoidal functions <u>3.6.1.3 Simple Harmonic Systems</u> Mass – spring system, Simple pendulum, Energy in SHM <u>3.6.1.4 Forced Vibrations and Resonance</u> Forced oscillations, Resonance.	Teacher explanation Question and answer Problem solving Experiments: Measurement of g - by SHM of mass on a spring, SHM motion sensor, Resonance – oscillating tube	Text P. 34 – 49 Summary Qu. P. 35, 37, 39, 43, 46, 49 Exam Qu. P. 50 - 53 Practical reports	Demonstration apparatus; duplicated handouts; textbooks; problem books Lab apparatus; reference worksheets / GO
10 – 14	<u>3.7.3 Electric Fields</u> Electrostatic phenomena, Field patterns, Electric field strength, Electric potential, Equipotentials, Uniform fields, Coulomb's law – the force between point charges, radial fields. Comparison between electric and gravitational fields.	Teacher explanation Question and answer Problem solving Experiments: Plotting lines of equipotential using Teledeltos paper Potential of an electric field - flame probe	Text P. 72 – 88 Summary Qu. P. 75, 79, 82, 85, 88 Exam Qu. P. 90 - 93 Practical reports	Demonstration apparatus; duplicated handouts; textbooks; problem books Lab apparatus; reference worksheets / GO
15 – 18	<u>3.7.4 Capacitance</u> Capacitance, Capacitors, Parallel plate capacitor, Energy stored in a charged capacitor, Charging and discharging a capacitor.	Teacher explanation Question and answer Problem solving Experiments: Resistor -	Text P. 94 - 101 Summary Qu. P. 95, 97, 101 Exam Qu. P. 102 - 105	Demonstration apparatus; textbooks; problem books Lab apparatus; reference worksheets / GO

19 – 22	<u>3.7.5 Magnetic Fields</u> Permanent magnets; Field lines Magnetic flux density; $F = BIl$, Force on moving charges, Applications – the cyclotron and mass spectrometer	Capacitor Time Constants, Measurement of C by charge stored from area under $I v t$ graph, Investigation of parallel plate capacitor Teacher explanation Question and answer Problem solving Experiments: The force on a current carrying conductor, Magnetic Field due to a Solenoid (Datadisc)	Text P. 106 - 115 Summary Qu. P. 109, 112, 115 Exam Qu. P. 116 - 119 Practical reports	Demonstration apparatus; textbooks; problem books; video; Lab apparatus; reference worksheets / GO
23 – 26	<u>3.7.5 Electromagnetic Induction</u> Magnetic flux, Flux linkage, Electromagnetic induction, Faraday's and Lenz's laws, the AC generator, Transformers	Teacher explanation Question and answer Problem solving Experiments: Magnetic flux linkage with search coil and CRO	Text P. 120 - 132 Summary Qu. P. 122, 126, 129, 132 Exam Qu. P. 133 – 136	Demonstration apparatus; textbooks; problem books; video
27 – 30	Revision of second year topics		Exam Qu. P. 137 - 145 Exam Qu. P. 222 - 227	Revision handbooks / past questions