

Exam Board:	AQA
Subject:	Combined Science - Physics
Paper:	Physics Paper 2 (March)
Marks available:	70
Length of paper:	1 hour 15 minutes
Topics:	Forces, Waves, Magnetism and Electromagnetism

	Exam Information, guidance and hints							
Command words: Complete - Fill in gaps/add labels, finish diagrams or graphs Give - Recall a simple fact Draw - Draw a symbol, diagram or graph Describe - Give details about an event, idea or a process Explain - Give reasons for an event, idea or process (use because/so) Compare - Identify how things are similar/different Suggest - Use your own knowledge in an unfamiliar context Calculate - Use numbers in a formula Complete - Fill the gaps or add to a diagram Determine - Work out mathematically Evaluate - Compare the pros and cons then give a judgement Conline Resources Cognito past papers Ecundation Example Papers and Markschemes			 Distance = speed x time Acceleration = change in velocity / time Weight = mass x gravitational field strength Period = 1 / frequency Frequency = 1 / period Force = mass x acceleration Work done = force x distance moved Wave speed = frequency x wavelength Elastic potential energy = ½ x spring constant x extension² How to calculate the change in x and y (on a graph) How to calculate a gradient (using a graph) Higher only Force on a wire = magnetic flux density x current x length V²-U² = 2 x a x s Momentum = mass x velocity 					
Foundation Example Papers and Markschemes		Higher Example Papers and Markschemes						
2018 H paper Annotated P2 2018 MS			2018 F Paper	Annotated P2	<u>2018 MS</u>			
2019 H Paper Annotated P2 2019 MS			2019 F Paper	Annotated P2	<u>2019 MS</u>			
2020 H Paper	Annotated P2	2020 MS	2020 F Paper	Annotated P2	<u>2020 MS</u>			

PLC Combined Science: Physics Paper 2 - Mock 2

Торіс	Key information related to topic	Sparx Code	Resources/Information related to topic	How well do you understand this topic′ RAG		you topic?
				Red	Amber	Green
Forces	Explain how and why objects accelerate as they fall.	R893 R760	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_3.07			
Forces	Explain why objects reach terminal velocity	R112	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_3.06			
Forces	Calculate resultant forces through addition and subtraction	R893	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_2.05			
Forces	Use Newton's first law to describe the motion of objects with different resultant forces (e.g, what happens to an object if the resultant force is 100N left or 0N?)	R744	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_3.07			
Forces	Explain changes in velocity using ideas about forces (thrust and air resistance)	R893 R760	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_3.07			
Forces	Apply ideas about forces and acceleration to explain terminal velocity	R112	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_3.06			
Forces	Interpret velocity time graphs to identify acceleration and constant speed	R176 R663	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_3.05			
Forces	Calculate distance using distance = speed x time	R374 R908	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_3.04			
Forces	Use Newton's third law to describe force pairs (action and reaction forces)	R519	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_3.08			
Forces	Calculate mass from weight and gravitational field strength	R590	https://www.youtube.com/watch?v=W2aBVbcHr_ k			



Торіс	Key information related to topic	Sparx Code	Resources/Information related to topic	How well do you understand this topic? RAG		you topic?
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Forces	Describe the relationship between weight, mass and gravitational field strength.	R590	https://www.youtube.com/watch?v=W2aBVbcHr k			
Forces	Describe the relationship between weight and distance from the Earth	R590	https://www.youtube.com/watch?v=W2aBVbcHr_ k			
Forces	Calculate force from mass and acceleration	R138	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_3.07			
Forces	Explain how different factors affect stopping distance	R823 R134 R107	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_3.09			
Forces	Evaluate vehicles based on their stopping distances (which is best, worst, why?)	R823 R134 R107	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_3.09			
Forces	Calculate work done using force and distance moved	R307	https://www.youtube.com/watch?v=PY80j iNT9Y			
Forces	Explain the relationship between force and extension/compression in springs.	R337 R598	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_1.06			
Forces	Explain the relationship between extension/compression in a spring and the energy stored in a spring	R337 R598 R353	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_2.08 https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_10.06			
Forces	Calculate elastic potential energy from extension and a spring constant	R494	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_1.06 https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_10.06			
Forces	Describe how to measure extension and compression in springs using original length	R353	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_2.08			



Торіс	Key information related to topic	Sparx Code	Resources/Information related to topic	How well do you understand this top RAG		you topic?
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Forces	HIGHER: Calculate initial velocity using the equation for acceleration (change in velocity / time)	R760	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_3.02			
Forces	HIGHER: Explain how to calculate thinking distance from reaction time and velocity	R134	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_3.09			
Forces	HIGHER: Calculate momentum	R980	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_3.11			
Forces	HIGHER: Calculate velocity using the equation for uniform acceleration (v^2 - u^2 = 2as)	R799	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c 3.02			
Waves	Describe waves (what do they transfer, what do they not transfer?)	R186 R103	https://www.youtube.com/watch?v=ITe6snIZBp8			
Waves	Compare transverse and longitudinal waves.	R186	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_4.01			
Waves	State the speed of sound in air and the speed of light in a vacuum.	R103 R452	https://www.youtube.com/watch?v=ITe6snIZBp8& t=2s			
Waves	Interpret wave diagrams to identify different frequencies and wavelengths	R103	https://www.youtube.com/watch?v=3qCmEHRFR H8			
Waves	Calculate periods from a frequency	R103	https://www.youtube.com/watch?v=3qCmEHRFR H8			
Waves	Identify the uses of different electromagnetic waves	R993	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_4.05			
Waves	Identify the dangers of different electromagnetic waves	R919	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_4.05			

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Waves	Calculate wavelength from frequency and wave speed	R569	https://www.youtube.com/watch?v=Aucu7YshyQ0			
Waves	Describe the relationship between wavelength and colour in visible light	R233 R288	https://www.youtube.com/watch?v=u5vkYjV1V1A			
Waves	Describe how to investigate frequency and wavelength	R625	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_10.08			
Waves	HIGHER : Explain how radio waves are produced, transmitted and received	R556	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_4.06			
Magnetism and Electromagnetism	Describe magnetic fields including which direction the field lines go	R847	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_6.01			
Magnetism and Electromagnetism	Draw diagrams to show magnetic fields	R847	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_6.01			
Magnetism and Electromagnetism	Identify magnetic materials and describe what happens to them when near a magnet	R847	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_6.01 https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_6.02			
Magnetism and Electromagnetism	HIGHER: Identify the direction of a force on a wire using the left hand rule	R766 R206	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_6.04 https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_6.05			
Magnetism and Electromagnetism	HIGHER: Calculate the magnetic flux density using the equation F = B x I x L	R206	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_6.04			
Magnetism and Electromagnetism	HIGHER: Explain how to change the size and direction of an electromagnetic field using current, polarity and magnetic field strength.	R766 R344	https://cognitoedu.org/coursesubtopic/p2-gcse-aq a-h-c_6.03			



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Scientific Skills	Calculate the gradient of a graph	x	https://www.youtube.com/watch?v=zVSq5b3PPfY &t=237s			
Scientific Skills	Plot a graph from data in a table	x	Constructing a line graph - Obtaining, analysing and evaluating results – WJEC - GCSE Physics (Single Science) Revision - WJEC - BBC Bitesize			
Scientific Skills	Describe the relationships shown by graphs as linear, non-linear or directly proportional	х	Constructing a line graph - Obtaining, analysing and evaluating results			
Scientific Skills	Convert units from base units (e.g mm \rightarrow km)	x	https://www.youtube.com/watch?v=qSKGI-0sf3w			
Scientific Skills	Identify independent, dependent and control variables	X	GCSE Science Revision "Independent Variable, Dependent Variable, Control Variables"			