

AQA GCSE Physics: Foundation

Advance Information of Assessed Content 2022

Link to specification: <https://filestore.aqa.org.uk/resources/physics/specifications/AQA-8463-SP-2016.PDF>

Link to advance information document: <https://filestore.aqa.org.uk/content/summer-2022/AQA-8463-AI-22.PDF>

Link to revised Physics equation sheet: <https://filestore.aqa.org.uk/resources/physics/AQA-8463-ES-INS.PDF>

Physics Paper 1 - F

These specification points will be the **major focus** of this paper.

Exam date: 9th June

All other specification points from P1, other than those on the [next slide](#) that are explicitly omitted, **may still be assessed** in multiple choice questions/linked to a previous answer, so cannot be completely ignored in your revision

Spec point	Concepts	CGP revision guide pages	Bitesize	YouTube
4.1.1 Energy changes in a system, and the ways energy is stored before and after such changes	<ul style="list-style-type: none"> -identifying the energy changes in systems -Calculate, using equations, the amount of energy associated with a moving object, a stretched spring and an object raised above ground level. -Calculate, using an equation, the amount of energy stored in or released from a system as its temperature changes -Calculate Power 	11-14	<ul style="list-style-type: none"> https://www.bbc.co.uk/bitesize/guides/zskp7p3/revision/1 https://www.bbc.co.uk/bitesize/guides/z8pk3k7/revision/1 https://www.bbc.co.uk/bitesize/guides/zy8g3k7/revision/1 	<ul style="list-style-type: none"> https://www.youtube.com/watch?v=JGwcDCEYRYo https://www.youtube.com/watch?v=zy9eWzmGe4 https://www.youtube.com/watch?v=Qw_9kX9PARc https://www.youtube.com/watch?v=63OTIdNb-TE https://www.youtube.com/watch?v=EDT0DPhaaMY
4.1.2 Conservation and dissipation of energy	<ul style="list-style-type: none"> -Describe the law of the conservation of energy -Describe, and give examples of how energy is dissipated, or 'wasted' -Explain ways of reducing unwanted energy transfers -Describe thermal conductivity in relation to the rate of energy transfer by conduction, through a material -Calculate the efficiency of a device, process or system 	15-17	<ul style="list-style-type: none"> https://www.bbc.co.uk/bitesize/guides/z8hsrwx/revision/1 https://www.bbc.co.uk/bitesize/guides/zp8jtv4/revision/1 https://www.bbc.co.uk/bitesize/guides/z2gjt4/revision/1 	<ul style="list-style-type: none"> https://www.youtube.com/watch?v=H6D_ViW0Ch4 https://www.youtube.com/watch?v=NI5jaeBrlgQ https://www.youtube.com/watch?v=43XCqAN53Sg https://www.youtube.com/watch?v=GTdgl-0KckA

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Required Practical 2: investigate the effectiveness of different materials as thermal insulators and the factors that may affect the thermal insulation properties of a material	<ul style="list-style-type: none"> -Identify dependent, independent and control variables -How to measure the dependent variable -Analysing results -Plotting graphs -Drawing conclusions from data 	16 bottom half	https://www.bbc.co.uk/bitesize/guides/z2gjt4/revision/3	https://www.youtube.com/watch?v=ILH45loyPUA&t=2s https://www.youtube.com/watch?v=MUy1o4ogCvw
4.2.1 Current, potential difference and resistance	<ul style="list-style-type: none"> - Standard circuit symbols - Calculating electrical charge and current, resistance and potential difference - Recognise current p.d graphs for ohmic conductors, filament lamps and diodes - Describe how resistance changes for thermistors and LDRs and used for these 	24-26	https://www.bbc.co.uk/bitesize/guides/zpdtv9q/revision/1	https://www.youtube.com/watch?v=hRojfU77c38
4.2.5 Static electricity	<ul style="list-style-type: none"> - Describe how static electricity is produced by rubbing surfaces in terms of electron transfer - Describe the electric field created around an object acts on a second object placed in the field. 	35-36	https://www.bbc.co.uk/bitesize/guides/z9s4qhv/revision/1	https://www.youtube.com/watch?v=St_KzxJqUGA https://www.youtube.com/watch?v=5obbfXg_MH4

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Required Practical 5: determine the densities of regular and irregular solid objects and liquids.	<ul style="list-style-type: none"> -Method to determine density of regular shaped objects -Method to determine density of irregular shaped objects -Measurements needed to determine mass and volume of objects -Equipment and apparatus 	38 bottom half	https://www.bbc.co.uk/bitesize/guides/zsqngdm/revision/1	https://www.youtube.com/watch?v=ScXOp8Zph28 https://www.youtube.com/watch?v=lvqu6JAbaKc
4.3.1 Changes of state and particle model	<ul style="list-style-type: none"> -Define and calculate the density of a substance or object -recognise/draw simple diagrams to model the difference between solids, liquids and gases -explain the differences in density between the different states of matter in terms of the arrangement of atoms/molecules. -describe how, when substances change state mass is conserved. -Describe changes of state as physical changes 	38	https://www.bbc.co.uk/bitesize/guides/zqjv6yc/revision/1 https://www.bbc.co.uk/bitesize/guides/zwwfxfr/revision/1	https://www.youtube.com/watch?v=hkBrw2fG75U https://www.youtube.com/watch?v=-EZmXVOSa20
4.3.2 Internal energy and energy transfers	<ul style="list-style-type: none"> -Define internal energy, specific heat capacity & specific latent heat -Calculate, using an equation, the amount of energy stored in or released from a system as its temperature changes -interpret heating & cooling graphs -Use an equation that links energy transferred, mass and specific latent heat 	39-40	https://www.bbc.co.uk/bitesize/guides/zcncjty/revision/1	https://www.youtube.com/watch?v=4rT7-5yE4pQ https://www.youtube.com/watch?v=5WVT5NR0iLA https://www.youtube.com/watch?v=x7GZ2DXef84

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4.4.2 Atoms and nuclear radiation	<ul style="list-style-type: none">- Radioactive decay and nuclear radiation- Nuclear equations- Half-lives and random nature of radioactive decay- Radioactive contamination	44-46, bottom half 47	https://www.bbc.co.uk/bitesize/guides/z3tb8mn/revision/1	https://www.youtube.com/watch?v=F_Y1-JieCrg https://www.youtube.com/watch?v=wj9BzGFao8k https://www.youtube.com/watch?v=VeXpMijpazE

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Spec point	CGP Revision Guide Pages
4.2.3 Domestic uses and safety (of electricity)	31
4.3.3 Particle model and pressure	41
4.4.1 Atoms and isotopes	43
4.4.4 Nuclear fission and fusion	49

Physics Paper 2 - F

These specification points will be the **major focus** of this paper.

Exam date: 23rd June

All other specification points from P2, other than those on the [next slide](#) that are explicitly omitted, **may still be assessed** in multiple choice questions/linked to a previous answer, so cannot be completely ignored in your revision

Spec point	Concepts	CGP revision guide pages	Bitesize	YouTube
4.5.1 Forces and their interactions	<p>Describe the difference between scalar and vector quantities and give examples</p> <ul style="list-style-type: none"> -give examples of contact and non-contact forces -Describe the relationship between mass, weight and gravitational field strength -Use an equation to calculate weight -Calculate the resultant of two forces that act in a straight line. -Use vector diagrams to illustrate the resolving of forces e.g. two components acting at right angles to each other -Use free body diagrams to describe qualitatively examples where several forces lead to a resultant force on an object, including balanced forces when the resultant force is zero 	51-53	<p>https://www.bbc.co.uk/bitesize/guides/zpqngdm/revision/1</p> <p>https://www.bbc.co.uk/bitesize/guides/zyxv97h/revision/1</p> <p>https://www.bbc.co.uk/bitesize/guides/zgncity/revision/1</p>	<p>https://www.youtube.com/watch?v=P1ISWWUkMdQ</p> <p>https://www.youtube.com/watch?v=xxK8N23nx9M</p> <p>https://www.youtube.com/watch?v=W2aBVbcHr_k</p> <p>https://www.youtube.com/watch?v=PL8ATKipoB4</p> <p>GCSE Physics - Vector Diagrams and Resultant Forces #43 – YouTube</p> <p>Resolving Forces using Scale Drawings – YouTube</p>
4.5.2 Work done and energy transfer	<ul style="list-style-type: none"> -Use an equation to calculate the work done to an object -Convert between newton-metres and joules. -Work done against the frictional forces acting on an object causes a rise in the temperature of the object. 	53-54	<p>https://www.bbc.co.uk/bitesize/guides/zgncity/revision/3</p>	<p>https://www.youtube.com/watch?v=JHEmPZ-YnrU</p>

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4.5.6.1 Describing motion along a line	<ul style="list-style-type: none"> -Describe the difference between distance and displacement -Use an equation to calculate speed -describe the difference between speed and velocity -explain that motion in a circle involves constant speed but changing velocity. -Interpret distance-time graphs and velocity-time graphs -Calculate speed of an accelerating object at any particular time by drawing a tangent and measuring the gradient of the distance–time graph at that time -Use an equation to calculate acceleration -Describe how an object reaches terminal velocity 	60-63	https://www.bbc.co.uk/bitesize/guides/zwc7pbk/revision/1 https://www.bbc.co.uk/bitesize/guides/zp2fcj6/revision/1	https://www.youtube.com/watch?v=QaU9jMHh7gE https://www.youtube.com/watch?v=M_OFRIX8wIM https://www.youtube.com/watch?v=DkCw2C-DkT0 https://www.youtube.com/watch?v=b0VKIpetP9A https://www.youtube.com/watch?v=Kzx8GBTI5VM https://www.youtube.com/watch?v=YCVSQp428GI https://www.youtube.com/watch?v=VRvjQBjI0oY https://www.youtube.com/watch?v=EKrAPvSin-M

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4.6.1 Waves in air, fluids and solids	<ul style="list-style-type: none"> -Describe the differences between transverse and longitudinal waves and give examples -Define the property terms of waves -Compare properties of waves -Use an equation to calculate a time period -Use an equation that links wave speed, frequency and wavelength -describe a method to measure the speed of sound waves in air -describe a method to measure the speed of ripples on a water surface. -construct ray diagrams to illustrate the reflection of a wave at a surface. -describe the effects of reflection, transmission and absorption of waves at material interfaces. 	73-75	<p>https://www.bbc.co.uk/bitesize/guides/zgf97p3/revision/1</p> <p>https://www.bbc.co.uk/bitesize/guides/z9bw6yc/revision/1</p> <p>https://www.bbc.co.uk/bitesize/guides/zw42ng8/revision/1</p>	<p>https://www.youtube.com/watch?v=aCu4VRKMstA</p> <p>https://www.youtube.com/watch?v=8K6gOST8pZk</p> <p>https://www.youtube.com/watch?v=wO49W5IsP0s</p>
4.6.2 Electromagnetic waves	<ul style="list-style-type: none"> - Types of electromagnetic waves - Properties of electromagnetic waves - Uses and applications of electromagnetic waves - Lenses - Visible light and colour 	76-85	<p>https://www.bbc.co.uk/bitesize/guides/z9bw6yc/revision/3</p>	<p>https://www.youtube.com/watch?v=7v2gs8rdQzU</p>

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Spec point	Concepts	CGP revision guide pages	Bitesize	YouTube
Required practical 9: investigate the reflection of light by different types of surface and the refraction of light by different substances.	<ul style="list-style-type: none"> -Identify dependent, independent and control variables -How to measure the dependent variable -Analysing results -Plotting graphs -Drawing conclusions from data 	77	https://www.bbc.co.uk/bitesize/guides/zw42ng8/revision/3	https://www.youtube.com/watch?v=2fN_jvf4fw8 https://www.youtube.com/watch?v=tiqiN3y1ze4
4.8.1 Solar system, stability of orbital motions, satellites	<ul style="list-style-type: none"> -Describe the structure of the universe and our solar system -Describe the life cycle of a star -explain how fusion processes lead to the formation of new elements. -describe the similarities and distinctions between the planets, their moons, and artificial satellites. -explain qualitatively how for circular orbits, the force of gravity can lead to changing velocity but unchanged speed, for a stable orbit, the radius must change if the speed changes. 	100-101	https://www.bbc.co.uk/bitesize/guides/zt2fcj6/revision/1 https://www.bbc.co.uk/bitesize/guides/zpxv97h/revision/1	https://www.youtube.com/watch?v=mndRVjMvQk https://www.youtube.com/watch?v=VOY1JlVuin4 https://www.youtube.com/watch?v=okMA18ppu98

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Spec point	CGP Revision Guide Pages
4.5.4 Moments, levers and gears	57
4.5.6.2 Forces, accelerations and Newton's Laws of motion	64-65
4.5.6.3 Forces and braking	67-69
4.6.3 Black body radiation	87
4.8.2 Red shift	102