

AQA GCSE Combined Science Trilogy: Paper 1 Biology Higher

Advance Information of Assessed Content 2022

Link to specification:

<https://filestore.aqa.org.uk/resources/science/specifications/AQA-8464-SP-2016.PDF>

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

Biology Paper 1 - H

Spec point	Concepts	CGP revision guide pages	Bitesize	YouTube
4.1.2 Cell Division	<ul style="list-style-type: none"> -How DNA is arranged as chromosomes -Series of stages in the cell cycles inc. mitosis -Definition and uses of stem cells 	15-16	https://www.bbc.co.uk/bitesize/guides/z2kmk2p/revision/2 https://www.bbc.co.uk/bitesize/guides/z2kmk2p/revision/3	https://www.youtube.com/watch?v=RHyZVmbiA78 https://www.youtube.com/watch?v=Kh27eyjxvYM&t=24s
4.2.2 Animal tissues, organs and organ systems	<ul style="list-style-type: none"> - Functions of tissues and organs in the digestive system -Digestive enzymes -Functions of tissues and organs in the circulatory system -Pathway of blood through the heart -adaptations of components of the blood -risk factors of non-communicable diseases -Explain the cause of CHD -Evaluate the advantages and disadvantages of treating cardiovascular diseases by drugs, mechanical devices or transplant 	24 - 38	https://www.bbc.co.uk/bitesize/guides/z89mk2p/revision/1 https://www.bbc.co.uk/bitesize/guides/zsnscrd/revision/1	https://www.youtube.com/watch?v=4ui4oSHHnzA https://www.youtube.com/watch?v=VLK2wANjQm0 https://www.youtube.com/watch?v=bpYaKM2hVFY GCSE Biology - Why Do We Get Heart Disease and How to Treat It? - Cardiovascular Disease (CVD) #20 – YouTube
Required practical 3: test for carbohydrates, lipids and proteins	<ul style="list-style-type: none"> -Reagent and positive result for carbohydrates, proteins and lipids 	29	https://www.bbc.co.uk/bitesize/guides/z89mk2p/revision/3	https://www.youtube.com/watch?v=SqWTJWOBww4

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Biology Paper 1 - H

Exam date: 17th May

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

Spec point	Concepts	CGP revision guide pages	Bitesize	YouTube
Required Practical 4 investigate the effect of pH on the rate of reaction of amylase enzyme.	<ul style="list-style-type: none"> -action of enzymes -describe and explain the effect of extreme pH on rate of enzymes -testing for starch -identify independent, dependent, control variables -How to measure the dependent variable -method -analysing results 	25-27	Required practical activity - Animal organisation - digestion - AQA - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize	GCSE Science Revision Biology "Required Practical 5: Effect of pH on Amylase" – YouTube Enzymes - GCSE Science Required Practical – YouTube
4.4.1 Photosynthesis	<ul style="list-style-type: none"> -photosynthesis equation -factors affecting rate of photosynthesis -explain graphs of photosynthesis rate involving 2/3 factors and decide which is the limiting factor. -understand and use inverse proportion – the inverse square law and light intensity -explain the important of limiting factors in enhancing the conditions in greenhouses to gain the maximum rate of photosynthesis while still maintaining profit. 	50-53	https://www.bbc.co.uk/bitesize/guides/zs4mk2p/revision/1	https://www.youtube.com/watch?v=rAJGnS_ktk4 GCSE Science Revision Biology "Limiting Factors" – YouTube The Rate of Photosynthesis & The Inverse Square Law – YouTube
Required Practical 5: effect of light intensity on rate of photosynthesis	<ul style="list-style-type: none"> -independent, dependent, control variables -How to measure the dependent variable -method -analysing results 	52	https://www.bbc.co.uk/bitesize/guides/zs4mk2p/revision/5	https://www.youtube.com/watch?v=cBCKedXdFeE

These specification points will **may be assessed on low tariff or linked questions** on this paper.

Spec point	CGP Revision Guide Pages
4.1.1 Cell structure	11
4.2.1 Principles of organisation	24
4.3.1.1 Communicable diseases	43
4.3.1.3 Bacterial diseases	45
4.3.1.7 Vaccination	47
4.4.2.1 Aerobic and anaerobic respiration	55
4.4.2.3 Metabolism	54

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Exam date: 17th May

These specification points will **not be assessed** on this paper.

Spec point	CGP Revision Guide Pages
4.1.1.5 Microscopy	12-13
4.1.3 Transport in cells	17-19
4.2.3 Plant tissues, organs and systems	39-41
4.3.1.2 Viral Diseases	44
4.3.1.4 Fungal Diseases	44
4.3.1.5 Protist Diseases	44
4.3.1.6 Human Defence Systems	46-47
4.4.1.3 Uses of Glucose from Photosynthesis	Middle section pg 50
4.4.2.2 Response to exercise	56

AQA GCSE Combined Science Trilogy: Paper 1 Chemistry Higher

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Spec point	Concepts	CGP revision guide pages	Bitesize	YouTube
5.2.2 How bonding and structure are related to the properties of a substance	<ul style="list-style-type: none"> -interpreting melting and boiling point data to determine state at a certain temp -link energy needed to change state to strength of forces between particles -state symbols -describe & explain properties of ionic compounds -describe & explain properties of simple covalent molecules -describe & explain properties of polymers -describe & explain properties of metals and alloys 	114, 116-117, 119-121	https://www.bbc.co.uk/bitesize/topics/z33rrwx	https://www.youtube.com/watch?v=leVxy7cjZMU https://www.youtube.com/watch?v=DECGNyC-x_s https://www.youtube.com/watch?v=EP0zfm_FVqc https://www.youtube.com/watch?v=A-wTpLPICd0
5.3.2 Use of amount of substance in relation to masses of pure substances	<ul style="list-style-type: none"> -calculating relative formula mass -calculating the number of moles in a given mass of a substance, calculating the mass of a certain no. of moles of a substance -Avogadro's constant – the number of particles in 1 mole of every substance -calculate the masses of reactants and products from the balanced symbol equation and the mass of a given reactant or product. -using molar ratios to balance equations -identifying limiting reactants and explaining the effect on yield of products -define concentration of a solution -calculate the concentration of a solution, or the mass of a solute dissolved in a given volume to create a solution of given concentration 	123-124, 126-128	https://www.bbc.co.uk/bitesize/topics/zsnyy4j	https://www.youtube.com/watch?v=q49NwlrjaFw https://www.youtube.com/watch?v=wPGVQu3UXpw https://www.youtube.com/watch?v=TV6n5MFH6IU https://www.youtube.com/watch?v=YKvUQ2cPmJg https://www.youtube.com/watch?v=MuzOmFhiE8o https://www.youtube.com/watch?v=3G3KQIyoZDI

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Chemistry Paper 1 - H

Exam date: 27th May

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

Spec point	Concepts	CGP revision guide pages	Bitesize	YouTube
5.4.1 The Reactivity of Metals	<ul style="list-style-type: none"> -Metals + oxygen -Reduction and oxidation in terms of oxygen -reduction and oxidation in terms of electrons -identify in a given reaction, symbol equation or half equation which species are oxidised and which are reduced -The Reactivity Series - Displacement reactions - Extraction of metals by reduction 	132-134	https://www.bbc.co.uk/bitesize/guides/zy7dgd/revision/1	https://www.youtube.com/watch?v=Lk1V0buHEFs https://www.youtube.com/watch?v=gnbuTl2aril https://www.youtube.com/watch?v=2i5Lm7BMtpo https://www.youtube.com/watch?v=MXTSels6e2Y
5.4.2 Reactions of Acids	<ul style="list-style-type: none"> -Naming Salts -products of the reactions of acids and metals -explain the reactions of metals and acids in terms of loss and gain of electrons -products of the reactions of acids and alkalis and insoluble bases -products of the reactions of acids and metal carbonates -pH scale and neutralisation -difference between strong and weak acids 	131, 134 129-130	https://www.bbc.co.uk/bitesize/guides/ztv2dxs/revision/1	https://www.youtube.com/watch?v=ofw6oHSYGFI https://www.youtube.com/watch?v=QISsle_jSQ8 <p style="text-align: center;">Continued on next slide...</p>
5.4.2.3 and Required Practical 8: preparation of a pure, dry sample of soluble salts	<ul style="list-style-type: none"> -method of producing solid salt crystals from insoluble oxide or carbonate and acids -identifying errors in methods and reagents 	131	https://www.bbc.co.uk/bitesize/guides/ztv2dxs/revision/5	https://www.youtube.com/watch?v=9GH95172Js8&t=16s GCSE Science Revision Chemistry "Strong and Weak Acids" – YouTube

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

Spec point	Concepts	CGP revision guide pages	Bitesize	YouTube
5.4.3 Electrolysis	<ul style="list-style-type: none"> -The process of electrolysis -identifying oxidation and reduction in terms of electrons -writing half equations for oxidation/reduction reactions occurring at each electrode -Electrolysis of molten ionic compounds -Electrolysis of aluminium oxide -Electrolysis of aqueous solutions, predicting products formed 	135-6	https://www.bbc.co.uk/bitesize/guides/z9h9v9q/revision/1	https://www.youtube.com/watch?v=AhTRiL6xjBA&t=2s https://www.youtube.com/watch?v=iINOpROacf0 https://www.youtube.com/watch?v=YcyMEIBEzAY https://www.youtube.com/watch?v=6WjC_Vi4roA https://www.youtube.com/watch?v=W9ngXNxSyoo
Required Practical 9: : investigate what happens when aqueous solutions are electrolysed using inert electrodes.	<ul style="list-style-type: none"> -Developing a hypothesis -Planning an investigation 	136	https://www.bbc.co.uk/bitesize/guides/z9h9v9q/revision/3	https://www.youtube.com/watch?v=ukbtTG1Kew

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Chemistry Paper 1 - H

Exam date: 27th May

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

Spec point	Concepts	CGP revision guide pages	Bitesize	YouTube
5.5.1 Exothermic and endothermic reactions	<ul style="list-style-type: none"> -describe the law of the conservation of energy -define exo and endothermic reactions and describe their features -give examples of exo and endothermic reactions -define activation energy -represent exo and endothermic reactions with reaction profiles -describe bond breaking in the reactants as an endothermic process -describe bond formation in the products as an exothermic process -calculate the energy transferred in chemical reactions using bond energies supplied -Use energy change values to identify if a reaction is exo/endothermic 	138-140	https://www.bbc.co.uk/bitesize/guides/z2b2k2p/revision/1	https://www.youtube.com/watch?v=4HS6D0hTzdg https://www.youtube.com/watch?v=dstRL5xB0Sk https://www.youtube.com/watch?v=it0HGXhxD-s https://www.youtube.com/watch?v=eExCBkp4jB4 https://www.youtube.com/watch?v=PdValXAVUOc
Required Practical 10: investigate the variables that affect temperature changes in reacting solutions such as, eg acid plus metals, carbonates, neutralisations, displacement of metals	<ul style="list-style-type: none"> -Identifying independent, dependent, control variables -Analysing results -identifying exo and endothermic reactions from experimental results 	139	https://www.bbc.co.uk/bitesize/guides/z2b2k2p/revision/2	https://www.youtube.com/watch?v=Bz0C9mmF2tw

These specification points will **may be assessed on low tariff or linked questions** on this paper.

Spec point	CGP Revision Guide Pages
5.1.1 a simple model of the atom, symbols, RAM, Electronic charge and isotopes	96-99
5.1.2 The periodic table	105-110
5.2.1 Chemical bonds, ionic, Covalent and metallic	112-115, 119
5.2.3 Structure and bonding of Carbon	118
5.3.1 Chemical measurements, conservation of mass and the quantitative interpretation of chemical equations	123-127

AQA GCSE Combined Science Trilogy: Paper 1 Physics Higher

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Link to specification:

<https://filestore.aqa.org.uk/resources/science/specifications/AQA-8464-SP-2016.PDF>

Link to revised Physics equation sheet:

<https://filestore.aqa.org.uk/resources/science/AQA-8464-8465-ES-INS.PDF>

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

Physics Paper 1 - H

Spec point	Concepts	CGP revision guide pages	Bitesize	YouTube
6.1.1 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 -Define power -Calculate Power and state its units 	167-169	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	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
Required Practical 14: an investigation to determine the specific heat capacity of one or more materials.	linking the decrease of one energy store (or work done) to the increase in temperature and subsequent increase in thermal energy stored	169	https://www.bbc.co.uk/bitesize/guides/zy8g3k7/revision/4	https://www.youtube.com/watch?v=Hs5x0-IU2F4 https://www.youtube.com/watch?v=loeRLKNeUsc
6.2.4 Energy Transfers	<ul style="list-style-type: none"> -Use the equation that links energy transferred, charge flow and potential difference -Use the equation that links power, current and potential difference 	187-188	https://www.bbc.co.uk/bitesize/guides/zgvq4qt/revision/3 https://www.bbc.co.uk/bitesize/guides/zgvq4qt/revision/9	https://www.youtube.com/watch?v=WKvQLrXOqik

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Physics Paper 1 - H

Spec point	Concepts	CGP revision guide pages	Bitesize	YouTube
Required Practical 16: construct appropriate circuits to investigate the I–V characteristics of circuit elements, inc. a filament lamp, diode and a resistor at constant temp.	<ul style="list-style-type: none"> -placing ammeter and voltmeter in the correct place in a circuit to measure the current through and potential difference across a component -Plotting graphs -Describing and explaining patterns shown in graphed data 	180-181	https://www.bbc.co.uk/bitesize/guides/zgvq4qt/revision/5	https://www.youtube.com/watch?v=A1SyKvdHoqY&t=29s
6.3.1 Changes of state and the 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 or molecules. -describe how, when substances change state mass is conserved. -Describe changes of state as physical changes 	191-192	https://www.bbc.co.uk/bitesize/guides/zqjy6yc/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

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Physics Paper 1 - H

Spec point	Concepts	CGP revision guide pages	Bitesize	YouTube
6.3.3 Particle Model and pressure	<ul style="list-style-type: none"> -Describe the motion of gases -explain how the motion and the average kinetic energy of the molecules in a gas is related to both its temperature and its pressure 	191	https://www.bbc.co.uk/bitesize/guides/z2xcfcw/revision/1	https://www.youtube.com/watch?v=hK03DpgiISk https://www.youtube.com/watch?v=9PwzPDJ7GYc
6.4.1 Atoms and isotopes	<ul style="list-style-type: none"> -Describe the structure of an atom. -Compare the radius of the nucleus to the radius of the atom -Describe how electrons are arranged on energy levels -Describe how electrons can move energy levels further from or towards the nucleus -define the atomic number and mass number of elements -calculate the number of protons, neutrons and electrons in atoms -state the features of protons, neutrons and electrons -describe the similarities and differences between atoms of isotopes of the same element -development of the model of the atom 	96-97, 195-196	https://www.bbc.co.uk/bitesize/guides/zpctjty/revision/1 https://www.bbc.co.uk/bitesize/guides/z964y4j/revision/1	https://www.youtube.com/watch?v=KwOHJbE4Tro https://www.youtube.com/watch?v=sG6QoLxwlw4 https://www.youtube.com/watch?v=0ASldDQmIOQ

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Physics Paper 1 - H

Spec point	Concepts	CGP revision guide pages	Bitesize	YouTube
6.4.2 Atoms and nuclear radiation	<ul style="list-style-type: none"> -radioactive decay, types of nuclear radiation and their properties -definition and units of activity and count rate -nuclear equations -half lives -calculate the net decline, expressed as a ratio, in a radioactive emission after a given number of half-lives -contamination and irradiation 	196-199	<p>https://www.bbc.co.uk/bitesize/guides/zxbnh39/revision/1</p> <p>https://www.bbc.co.uk/bitesize/guides/zp4vfcw/revision/1</p>	<p>https://www.youtube.com/watch?v=F_Y1-JieCrg</p> <p>https://www.youtube.com/watch?v=nW0S1C6wVrg</p> <p>https://www.youtube.com/watch?v=wj9BzGFao8k</p> <p>https://www.youtube.com/watch?v=teGu0VAPIOo</p>

These specification points will **may be assessed on low tariff or linked questions** on this paper.

Spec point	CGP Revision Guide Pages
6.1.2 Conservation and dissipation of energy	140
6.1.3 National and global energy resources	173-177
6.2.1 Current, potential difference and resistance	179-181

Physics Paper 1 - H

Exam date: 9th June

These specification points will **not be assessed** on this paper.

Spec point	CGP Revision Guide Pages
6.2.2 Series and Parallel Circuits	183-184
6.2.3 Domestic uses and safety	186
6.3.2 Internal Energy and Energy Transfers	193-194

AQA GCSE Combined Science Trilogy: Paper 2 Biology Higher

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Biology Paper 2 - H

Spec point	Concepts	CGP revision guide pages	Bitesize	YouTube
4.5.3 Hormonal Control in Humans	<ul style="list-style-type: none"> -definition of 'hormone' function of the tissues and organs of the endocrine system -identifying position of glands, and the hormones secreted from them -hormones involved in control of blood glucose concentration -Type 1 and Type 2 diabetes -explain how glucagon interacts with insulin in a negative feedback cycle to control blood glucose (sugar) levels in the body. -describe the roles of hormones in human reproduction, including the menstrual cycle -explain the interactions of FSH, oestrogen, LH and progesterone, in the control of the menstrual cycle -explain the use of hormones in modern reproductive technologies to treat infertility. -explain the roles of thyroxine and adrenaline in the body. Thyroxine levels are controlled by negative feedback 	62-67	https://www.bbc.co.uk/bitesize/guides/zq4mk2p/revision/1	https://www.youtube.com/watch?v=c6olhi88KZs https://www.youtube.com/watch?v=77oyUdNZ054 GCSE Biology Hormones in human reproduction (AQA 9-1) – YouTube GCSE Science Revision Biology "The Menstrual Cycle" – YouTube GCSE Science Revision Biology "Hormones to Treat Infertility" – YouTube GCSE Science Revision Biology "Negative Feedback" – YouTube

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

Biology Paper 2 - H

Spec point	Concepts	CGP revision guide pages	Bitesize	YouTube
4.7.2 Organisation of an ecosystem	<ul style="list-style-type: none"> -interpret food chains and webs -identify producers, consumers, predators and prey from food chains and webs -describe the carbon and water cycles 	86, 89-90	https://www.bbc.co.uk/bitesize/guides/zqskv9q/revision/1	https://www.youtube.com/watch?v=dRFQ8rZCK6Q https://www.youtube.com/watch?v=urzpnjwazV0
4.7.3 Biodiversity and the effect of human interaction on an ecosystem	<ul style="list-style-type: none"> -Define biodiversity -Describe ways in which pollution can occur, and the impacts of this pollution on biodiversity -Describe ways to manage this pollution -describe some of the biological consequences of global warming. -Describe the things that scientists have introduced to reduce the negative effects of humans on ecosystems and biodiversity. 	91-92, 94	Biodiversity and interdependence - Biodiversity and the effect of human interaction on ecosystems - AQA - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize	GCSE Science Revision Biology "Biodiversity" - YouTube GCSE Science Revision Biology "Maintaining Biodiversity" - YouTube GCSE Biology - How Human Waste Reduces Biodiversity - Explained #63 - YouTube GCSE Science Revision Biology "Global Warming" - YouTube
Required Practical 7: measure the population size of a common species in a habitat. Use sampling techniques to investigate the effect of a factor on the distribution of this species	<ul style="list-style-type: none"> -Using transects and quadrats are used by ecologists to determine the distribution and abundance of species in an ecosystem. -Understand the terms mean, mode and median -Calculate arithmetic means 	87-88	https://www.bbc.co.uk/bitesize/guides/zqskv9q/revision/3	https://www.youtube.com/watch?v=2MW6nwf80XM https://www.youtube.com/watch?v=RhMOCxXcDrQ https://www.youtube.com/watch?v=yLHz2Ea10Mg&t=2s

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Spec point	CGP Revision Guide Pages
4.5.1 Homeostasis	58
4.6.1.2 Meiosis	70
4.6.4 Classification of living organisms	81
4.7.1.1 Communities	83
4.7.1.2 Abiotic factors 4.7.1.3 Biotic factors	84

These specification points will **not be assessed** on this paper.

Spec point	CGP Revision Guide Pages
4.5.2 The human nervous system	59-61
4.5.3.4 Contraception	Bottom half of pg 65
4.6.1.1 Sexual and asexual reproduction	69
4.6.1.3 DNA and the genome	68
4.6.1.4 Genetic Inheritance	72-73
4.6.1.5 Inherited Disorders	74
4.6.1.6 Sex Determination	71
4.6.2 Variation and Evolution	75-77
4.6.3. The development of understanding of genetics and evolution	78-80
4.7.1.4 Adaptations	85
4.7.3.3 Land Use	93
4.7.3.4 Deforestation	93

AQA GCSE Combined Science Trilogy: Paper 2 Chemistry Higher

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Spec point	Concepts	CGP revision guide pages	Bitesize	YouTube
5.6.1 Rate of Reaction	<ul style="list-style-type: none"> -Calculating the rate of a reaction -Calculate the gradient of a tangent to the curve on these graphs as a measure of rate of reaction at a specific time. -Describe collision theory -Define activation energy -Describe and explain the factors that increase the rate of reaction -Describe and explain the effect of catalysts on rate of reaction 	142-146	https://www.bbc.co.uk/bitesize/guides/zpkp7p3/revision/1	https://www.youtube.com/watch?v=UkrBJ6-uGFA https://www.youtube.com/watch?v=GCR5xeduq2o https://www.youtube.com/watch?v=-4HXaUBbv04 https://www.youtube.com/watch?v=hel8fQjxcO8
Required Practical 11: investigate how concentration affects the rates of reaction by a method involving measuring the volume of a gas produced/change in colour	<ul style="list-style-type: none"> -identify independent, dependent and control variables -describe how to measure the dependent variable -analyse results and draw conclusions from graphed data -calculate rate of reaction from data 	145	https://www.bbc.co.uk/bitesize/guides/zpkp7p3/revision/6	https://www.youtube.com/watch?v=N5p06i9ilmo https://www.youtube.com/watch?v=GI6LVI7oAIU

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Spec point	Concepts	CGP revision guide pages	Bitesize	YouTube
5.6.2 Reversible reactions and dynamic equilibrium	<ul style="list-style-type: none"> -Identify and give examples of reversible reactions -Apply the conservation of energy to reversible reactions -Define dynamic equilibrium -Describe Le Chatelier's principle -Describe and explain the effect of changing the following conditions on equilibrium; concentration, temperature, pressure 	147-148	https://www.bbc.co.uk/bitesize/guides/z32bpbk/revision/1	<p>https://www.youtube.com/watch?v=66qcNNJFy6E</p> <p>GCSE Science Revision Chemistry "Concentration and Reversible Reactions" – YouTube</p> <p>GCSE Science Revision Chemistry "Pressure and Reversible Reactions" – YouTube</p> <p>GCSE Science Revision Chemistry "Temperature and reversible reactions" – YouTube</p> <p>GCSE Chemistry - Le Chatelier's Principle #42 (Higher Tier) – YouTube</p>

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Spec point	Concepts	CGP revision guide pages	Bitesize	YouTube
5.7.1 Carbon compounds as fuels and feedstock	<ul style="list-style-type: none"> -describe crude oil as a mixture of different length hydrocarbons -define the term hydrocarbon -identify the first 4 alkanes from their chemical formula and name them -Describe the trend in properties as hydrocarbon chain length increases -Describe and explain the process of fractional distillation -describe the process of cracking -describe the use of alkenes 	150-152	https://www.bbc.co.uk/bitesize/guides/zxd4y4j/revision/1	https://www.youtube.com/watch?v=CX2IYWggEBc https://www.youtube.com/watch?v=3I7yCkSXPos https://www.youtube.com/watch?v=7AWwjKbRa_o
5.8.1 Purity, formulations and chromatography	<ul style="list-style-type: none"> -Define the term pure substance in chemistry -Use melting and boiling point data to identify pure and impure substances -Define the term formulation and give examples 	153-154	https://www.bbc.co.uk/bitesize/guides/zp2wrwx/revision/1	https://www.youtube.com/watch?v=3OjxWwcnfJY
Required Practical 12: investigate how paper chromatography can be used to separate and tell the difference between coloured substances.	<ul style="list-style-type: none"> -Describe the properties of the mixtures that chromatography can be used to separate -Describe and explain the experimental process of chromatography -Explain how substances are separated using chromatography -Interpret chromatograms + -Calculate R_f values 	154	https://www.bbc.co.uk/bitesize/guides/zp2wrwx/revision/3	https://www.youtube.com/watch?v=TdJ57SQ6GAQ https://www.youtube.com/watch?v=pnTGNAfu6GE

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

Spec point	Concepts	CGP revision guide pages	Bitesize	YouTube
5.9.1 The composition and evolution of the Earth's Atmosphere	<ul style="list-style-type: none"> -describe the composition of the current atmosphere -describe the composition of the early atmosphere and explain theories of how the early atmosphere formed -explain how the early atmosphere changed to that of the present atmosphere 	157	https://www.bbc.co.uk/bitesize/guides/z9pk3k7/revision/1	https://www.youtube.com/watch?v=t1Z3GINldLA https://www.youtube.com/watch?v=l0h_-3MOPso
5.10.1 Using the Earth's resources and obtaining potable water	<ul style="list-style-type: none"> -Describe the renewable and non-renewable resources that we get from the Earth and its atmosphere -Define the term potable water -Describe how potable water can be produced. -Describe the differences in the treatment of waste water, salt water and ground water -Describe and evaluate alternative methods of extracting metals e.g. phytomining and bioleaching 	161-162, 164-165	https://www.bbc.co.uk/bitesize/guides/zswfxfr/revision/1 https://www.bbc.co.uk/bitesize/guides/zg6cfcw/revision/1 Biological methods of metal extraction - Higher - Ways of reducing the use of resources - AQA - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize	https://www.youtube.com/watch?v=-XczTGavTZU https://www.youtube.com/watch?v=n7pYRQs20bl https://www.youtube.com/watch?v=b5RVPauf4oM

These specification points will **may be assessed on low tariff or linked questions** on this paper.

Spec point	CGP Revision Guide Pages
5.9.2 Carbon dioxide and methane as greenhouse gases	158
5.9.3 Common atmospheric pollutants and their sources	160
5.10.2 Life cycle assessment and recycling	162-163

Chemistry Paper 2 - H

Exam date: 20th June

These specification points will **not be assessed** on this paper.

Spec point	CGP Revision Guide Pages
5.8.2 Identification of common gases	155

AQA GCSE Combined Science Trilogy: Paper 2 Physics Higher

Advance Information of Assessed Content 2022

Link to specification:

<https://filestore.aqa.org.uk/resources/science/specifications/AQA-8464-SP-2016.PDF>

Link to revised Physics equation sheet:

<https://filestore.aqa.org.uk/resources/science/AQA-8464-8465-ES-INS.PDF>

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

Physics Paper 2 - H

Spec point	Concepts	CGP revision guide pages	Bitesize	YouTube
6.5.1 Forces and their interactions	<ul style="list-style-type: none"> -Describe the difference between scalar and vector quantities and give examples -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 	201-204	<p>https://www.bbc.co.uk/bitesize/guides/zskn2nb/revision/1</p> <p>https://www.bbc.co.uk/bitesize/guides/zcxcfw/revision/1</p> <p>https://www.bbc.co.uk/bitesize/guides/z232k2p/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>

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

Physics Paper 2 - H

Spec point	Concepts	CGP revision guide pages	Bitesize	YouTube
6.5.4.1: 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 -Calculate the distance travelled /displacement of an object by calculating the area under a velocity–time graph. -Use an equation to calculate acceleration -Describe how an object reaches terminal velocity 	207 - 210	https://www.bbc.co.uk/bitesize/guides/z2wy6yc/revision/1	https://www.youtube.com/watch?v=QaU9jMHh7gE https://www.youtube.com/watch?v=M_0FRIX8wIM 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=VRvjQBjiOoY https://www.youtube.com/watch?v=EKrAPvSin-M

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

Physics Paper 2 - H

Spec point	Concepts	CGP revision guide pages	Bitesize	YouTube
6.5.4.2 Force, accelerations and Newton's Laws of motion	<ul style="list-style-type: none"> -Describe Newton's first law of motion -Describe Newton's second law of motion and use an equation to calculate the force required to make an object with a certain mass accelerate at a certain speed -Explain that inertial mass is a measure of how difficult it is to change the velocity of an object -Describe Newton's third law of motion 	211 - 213	https://www.bbc.co.uk/bitesize/guides/zgv797h/revision/1	https://www.youtube.com/watch?v=i5PtaCJJFjw https://www.youtube.com/watch?v=DpQ_ikFKru0
6.6.5 Momentum	<ul style="list-style-type: none"> -Use an equation to calculate the momentum of an object from its mass and velocity -Describe the law of the conservation of momentum -Explain examples of momentum in an event, such as a collision 	216	What is momentum? - Higher - Momentum - Higher - AQA - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize	GCSE Science Revision Physics "Momentum" – YouTube GCSE Physics - Momentum Part 1 of 2 - Conservation of Momentum Principle #59 – YouTube GCSE Physics - Momentum Part 2 of 2 - Changes in Momentum #60 – YouTube

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

Physics Paper 2 - H

Spec point	Concepts	CGP revision guide pages	Bitesize	YouTube
6.6.2 Electro-magnetic Waves	<ul style="list-style-type: none"> -Describe the order of the electromagnetic spectrum -Describe the properties of the different parts of the EM spectrum -Describe the uses and hazards of the different parts of the EM spectrum - Describe how changes in atoms and the nuclei of atoms can result in EM waves being generated -Describe how waves are refracted at the boundary of two materials with different densities -Construct ray diagrams to illustrate the refraction of a wave at the boundary between two different media. -Use wave front diagrams to explain refraction in terms of the change of speed that happens when a wave travels from one medium to a different medium -Describe how radio waves can be produced by oscillations in electrical circuits. 	220-224, 226	<p>https://www.bbc.co.uk/bitesize/guides/z3yq4qt/revision/3</p> <p>Reflection of waves - Reflection and refraction - AQA - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize</p>	<p>https://www.youtube.com/watch?v=u5vkYjV1V1A&t=3s</p> <p>https://www.youtube.com/watch?v=L0iivb-acqU&list=RDLVu5vkYjV1V1A&index=2</p> <p>GCSE Science Revision Physics "Refraction of Waves" – YouTube</p> <p>GCSE Physics - Radio Waves #65 – YouTube</p>

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Physics Paper 2 - H

Exam date: 23rd June

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

Spec point	Concepts	CGP revision guide pages	Bitesize	YouTube
Required Practical 21 investigate how the amount of infrared radiation absorbed or radiated by a surface depends on the nature of the surface.	<ul style="list-style-type: none"> -Identify dependent, independent and variables -Plan a method to ensure valid results are collected -Draw conclusions from data 	225	https://www.bbc.co.uk/bitesize/guides/ztpm7p3/revision/1	https://www.youtube.com/watch?v=LFwio38EK9s
6.7.2 The motor effect	<ul style="list-style-type: none"> -Describe how an electromagnet is made -Describe how to change the strength of the electromagnet -Show that Fleming's left-hand rule represents the relative orientation of the force, the current in the conductor and the magnetic field. -Describe the factors that affect the size of the force on the conductor. -Use an equation to calculate the force acting on the conductor from the magnetic flux density, current and length of the wire -Explain how the force on a conductor in a magnetic field causes the rotation of the coil in an electric motor 	228-230	https://www.bbc.co.uk/bitesize/guides/zg43y4j/revision/1	<p>https://www.youtube.com/watch?v=79_SF5AZtzo</p> <p>GCSE Science Revision Physics "The Motor Effect" – YouTube</p> <p>GCSE Physics - Motor Effect #79 – YouTube</p> <p>GCSE Physics - How the Electric Motor Works #80 – YouTube</p> <p>GCSE Science Revision Physics "The Electric Motor" – YouTube</p>

These specification points will **may be assessed on low tariff or linked questions** on this paper.

Spec point	CGP Revision Guide Pages
6.5.2 Work done and energy transfer	203
6.6.1 Waves in air, fluids and solids	218-219

These specification points will **not be assessed** on this paper.

Spec point	CGP Revision Guide Pages
6.5.3 Forces and elasticity	205-206
6.5.4.3 Forces and braking	214-215
6.7.1 Permanent and induced magnetism, magnetic forces and fields	227