

AQA GCSE Combined Science Trilogy: 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 advance information document: <https://filestore.aqa.org.uk/content/summer-2022/AQA-8464-AI-22.PDF>

Link to revised Physics equation sheet: <https://filestore.aqa.org.uk/resources/science/AQA-8464-8465-ES-INS.PDF>

Biology Paper 1 - H

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

Exam date: 17th May

All other specification points from B1, other those on the [next slide](#) that are not 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 | Pearson 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 | 7-8 | 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 | 15, 17, 19 -25 | 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 | -Reagent and positive result for carbohydrates, proteins and lipids | 16 | https://www.bbc.co.uk/bitesize/guides/z89mk2p/revision/3 | https://www.youtube.com/watch?v=SqWTJWOBww4 |

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|---|---|------------------------------|---|--|
| 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 | 17-18 | 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. | 41-43 | 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 | 43 | https://www.bbc.co.uk/bitesize/guides/zs4mk2p/revision/5 | https://www.youtube.com/watch?v=cBCKedXdFeE |

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| Spec point | Pearson Revision Guide Pages |
|---|------------------------------|
| 4.1.1.5 Microscopy | |
| 4.1.3 Transport in cells | |
| 4.2.3 Plant tissues, organs and systems | |
| 4.3.1.2 Viral Diseases | |
| 4.3.1.4 Fungal Diseases | |
| 4.3.1.5 Protist Diseases | |
| 4.3.1.6 Human Defence Systems | |
| 4.4.1.3 Uses of Glucose from Photosynthesis | |
| 4.4.2.2 Response to exercise | |

Chemistry Paper 1 - H

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| Spec point | Concepts | Pearson 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 | 104,106, 107 | https://www.bbc.co.uk/bitesize/topics/z33rrwx | <ul style="list-style-type: none"> 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 | 114-119 | https://www.bbc.co.uk/bitesize/topics/zsnyy4j | <ul style="list-style-type: none"> 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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| Spec point | Concepts | Pearson 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 | 121-123 | 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 | 124, 126 | https://www.bbc.co.uk/bitesize/guides/ztv2dxs/revision/1 | https://www.youtube.com/watch?v=ofw6oHSYGFI GCSE Science Revision Chemistry "Acids Reacting with Metals 2" - YouTube https://www.youtube.com/watch?v=QISsle_jSQ8 |
| 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 | 125 | 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 |

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Chemistry Paper 1 - H

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| Spec point | Concepts | Pearson 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 | 127-129 | https://www.bbc.co.uk/bitesize/guides/z9h9v9q/revision/1 | https://www.youtube.com/watch?v=AhTRiL6xiBA&t=2s https://www.youtube.com/watch?v=ilNOpROacf0 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 | 130 | https://www.bbc.co.uk/bitesize/guides/z9h9v9q/revision/3 | https://www.youtube.com/watch?v=ukbtTTG1Kew |

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| Spec point | Concepts | Pearson 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 | 132-133, 135-136 | 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 | 134 | https://www.bbc.co.uk/bitesize/guides/z2b2k2p/revision/2 | https://www.youtube.com/watch?v=Bz0C9mmF2tw |

Physics Paper 1 - H

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Exam date: 9th June

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| Spec point | Concepts | Pearson 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 | 174,176,178 | 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=63OTldNb-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 | 177 | 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 | 184-185 | 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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| Spec point | Concepts | Pearson 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. | -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 | 186 | 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 | -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 | 197, 199 | 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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| Spec point | Concepts | Pearson 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 | 202 | https://www.bbc.co.uk/bitesize/guides/z2xcfcw/revision/1 | https://www.youtube.com/watch?v=hKO3DpgilSk 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 | 204-205, 92, 206 | 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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| Spec point | Concepts | Pearson 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 | 207, 211-212 | <ul style="list-style-type: none">https://www.bbc.co.uk/bitesize/guides/zxbnh39/revision/1https://www.bbc.co.uk/bitesize/guides/zp4vfcw/revision/1 | <ul style="list-style-type: none">https://www.youtube.com/watch?v=F_Y1-JieCrghttps://www.youtube.com/watch?v=nW0S1C6wVrghttps://www.youtube.com/watch?v=wj9BzGFao8khttps://www.youtube.com/watch?v=teGu0VAPIOo |

Physics Paper 1 - H

Exam date: 9th June

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| Spec point | Pearson Revision Guide Pages |
|---|------------------------------|
| 6.2.2 Series and Parallel Circuits | 190 |
| 6.2.3 Domestic uses and safety | 191-192 |
| 6.3.2 Internal Energy and Energy Transfers | 200, |

Biology Paper 2 - H

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Exam date: 15th June

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| Spec point | Concepts | Pearson 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 | 52-56, 58-59 | https://www.bbc.co.uk/bitesize/guides/zq4mk2p/revision/1 | <p>https://www.youtube.com/watch?v=c6olhi88KZs</p> <p>https://www.youtube.com/watch?v=77oyUdNZ054</p> <p>GCSE Biology Hormones in human reproduction (AQA 9-1) – YouTube</p> <p>GCSE Science Revision Biology "The Menstrual Cycle" – YouTube</p> <p>GCSE Science Revision Biology "Hormones to Treat Infertility" – YouTube</p> <p>GCSE Science Revision Biology "Negative Feedback" – YouTube</p> |

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| Spec point | Concepts | Pearson 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 | 79, 82 | 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. | 84-86, | 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 | 81 | 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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Biology Paper 2 - H

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| Spec point | Pearson Revision Guide Pages |
|---|------------------------------|
| 4.5.2 The human nervous system | |
| 4.5.3.4 Contraception | |
| 4.6.1.1 Sexual and asexual reproduction | |
| 4.6.1.3 DNA and the genome | |
| 4.6.1.4 Genetic Inheritance | |
| 4.6.1.5 Inherited Disorders | |
| 4.6.1.6 Sex Determination | |
| 4.6.2 Variation and Evolution | |
| 4.6.3. The development of understanding of genetics and evolution | |
| 4.7.1.4 Adaptations | |
| 4.7.3.3 Land Use | |
| 4.7.3.4 Deforestation | |

Chemistry Paper 2 - H

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| Spec point | Concepts | Pearson 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 | 138-143, 145 | 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 | 144 | https://www.bbc.co.uk/bitesize/guides/zpkp7p3/revision/6 | https://www.youtube.com/watch?v=N5p06i9ilmo https://www.youtube.com/watch?v=Gl6LVI7oAIU |

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| Spec point | Concepts | Pearson 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 | 146-148 | https://www.bbc.co.uk/bitesize/guides/z32bpbk/revision/1 | https://www.youtube.com/watch?v=66qcNNJFy6E GCSE Science Revision Chemistry "Concentration and Reversible Reactions" – YouTube GCSE Science Revision Chemistry "Pressure and Reversible Reactions" – YouTube GCSE Science Revision Chemistry "Temperature and reversible reactions" – YouTube GCSE Chemistry - Le Chatelier's Principle #42 (Higher Tier) – YouTube |

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| Spec point | Concepts | Pearson 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 | 150-154 | 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 | 156 | 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 | 157 | 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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Chemistry Paper 2 - H

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

Exam date: 20th June

All other specification points from C2, other those on the [next slide](#) that are not 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 | Pearson 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 | 160-161 | 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 | 167-168, 170 | 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 |

Chemistry Paper 2 - H

Exam date: 20th June

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

| Spec point | Pearson Revision Guide Pages |
|--------------------------------------|------------------------------|
| 5.8.2 Identification of common gases | 158 |

Physics Paper 2 - H

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Exam date: 23rd June

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| Spec point | Concepts | Pearson 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 | 215-219 | <p>https://www.bbc.co.uk/bitesize/guides/zskn2nb/revision/1</p> <p>https://www.bbc.co.uk/bitesize/guides/zcxfcw/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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Physics Paper 2 - H

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| Spec point | Concepts | Pearson 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 | 224-228 | https://www.bbc.co.uk/bitesize/guides/z2wy6yc/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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Physics Paper 2 - H

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| Spec point | Concepts | Pearson 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 | 229-230, 232 | 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 | 235 | 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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Physics Paper 2 - H

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| Spec point | Concepts | Pearson 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. | 241-242, 244 | <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

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| Spec point | Concepts | Pearson 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 | 243 | 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 | 247 - 249 | 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> |

Physics Paper 2 - H

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Exam date: 23rd June

| Spec point | Pearson Revision Guide Pages |
|--|------------------------------|
| 6.5.3 Forces and elasticity | 221-222 |
| 6.5.4.3 Forces and braking | 233-234 |
| 6.7.1 Permanent and induced magnetism, magnetic forces and fields | 246 |