

SUBJECT: GCSE Combined Science HIGHER

EXAM BOARD: AQA

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

Exam Dates - https://filestore.aqa.org.uk/admin/t_table_pdf/AQA-TT-GCSE-JUN22-CONFIRMED.PDF

Week	Focus	Key Knowledge	Revision Guide	Web Links
21/2/22	4.1.2 Cell Division BIOLOGY	-How DNA is arranged as chromosomes -Series of stages in the cell cycles inc. mitosis -Definition and uses of stem cells	Revise - Pages 20-21 Practise - Page 35 Review - Page 57	<ul style="list-style-type: none"> • 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
	5.2.2 How bonding and structure are related to the properties of a substance CHEMISTRY	-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	Revise – Pages 94-101 Practise – Pages 111-112 Review – Pages 106-107	<ul style="list-style-type: none"> • 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
	6.1.1 Energy Changes in a system, and the ways energy is stored before and after such changes PHYSICS	-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	Revise – Pages 170-173 Practise – Page 181 Review – Page 201	<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 • 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

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28/2/22	4.5.3 Hormonal Control in Humans BIOLOGY	<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 -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. 	<p>Revise – Pages 52-55</p> <p>Practise – Pages 63</p> <p>Review – Pages 83</p>	<ul style="list-style-type: none"> • 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
	5.6.1 Rate of Reaction CHEMISTRY	<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 	<p>Revise – Pages 124-125</p> <p>Practise – Pages 135</p> <p>Review – Pages 153</p>	<ul style="list-style-type: none"> • 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
	6.5.1 Forces and their interactions PHYSICS	<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 	<p>Revise – Pages 158-159</p> <p>Practise – Pages 178</p> <p>Review – Pages 198</p>	<ul style="list-style-type: none"> • https://www.bbc.co.uk/bitesize/guides/zskn2nb/revision/1 • https://www.bbc.co.uk/bitesize/guides/zxcfcw/revision/1 • https://www.bbc.co.uk/bitesize/guides/z232k2p/revision/1 • https://www.youtube.com/watch?v=P1ISWWUkMdQ • https://www.youtube.com/watch?v=xxK8N23nx9M • https://www.youtube.com/watch?v=W2aBVbcHr_k • https://www.youtube.com/watch?v=PL8ATKipoB4 • GCSE Physics - Vector Diagrams and Resultant Forces #43 – YouTube • Resolving Forces using Scale Drawings – YouTube

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7/3/22	<p>4.2.2 Animal tissues, organs and organ systems</p> <p>BIOLOGY</p>	<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 	<p>Revise – Pages 24-31</p> <p>Practise – Pages 37-38</p> <p>Review – Pages 58-59</p>	<ul style="list-style-type: none"> • 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=4ui4oSHHzA • 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
	<p>5.3.2 Use of amount of substance in relation to masses of pure substances</p> <p>CHEMISTRY</p>	<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 	<p>Revise – Pages 102-105</p> <p>Practise – Pages 112-113</p> <p>Review – Pages 131</p>	<ul style="list-style-type: none"> • https://www.bbc.co.uk/bitesize/topics/zsnny4j • https://www.youtube.com/watch?v=g49NwlrjaFw • 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=3G3KQlqyZDI
	<p>Required Practical 14: an investigation to determine the specific heat capacity of one or more materials.</p> <p>PHYSICS</p>	<p>Linking the decrease of one energy store (or work done) to the increase in temperature and subsequent increase in thermal energy stored.</p>	<p>Revise – Pages 171</p> <p>Practise – Pages 181</p> <p>Review – Pages 201</p>	<ul style="list-style-type: none"> • 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

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14/3/22	4.7.2 Organisation of an ecosystem BIOLOGY	-interpret food chains and webs -identify producers, consumers, predators and prey from food chains and webs -describe the carbon and water cycles	Revise – Pages 74-77 Practise – Pages 86-87 Review – Pages 108-109	<ul style="list-style-type: none"> • https://www.bbc.co.uk/bitesize/guides/zqskv9q/revision/1 • https://www.youtube.com/watch?v=dRFQ8rZCK6Q • https://www.youtube.com/watch?v=urzpnjwazV0
	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 CHEMISTRY	-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	Revise – Pages 124-125 Practise – Pages 135 Review – Pages 153	<ul style="list-style-type: none"> • https://www.bbc.co.uk/bitesize/guides/zpkp7p3/revision/6 • https://www.youtube.com/watch?v=N5p06i9ilmo • https://www.youtube.com/watch?v=Gl6LVI7oAIU
	6.5.4.1: Describing motion along a line PHYSICS	-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.	Revise – Pages 162-163 Practise – Pages 179 Review – Pages 199	<ul style="list-style-type: none"> • 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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21/3/22	MOCK EXAMS			
28/3/22	Required practical 3: test for carbohydrates, lipids and proteins BIOLOGY	-Reagent and positive result for carbohydrates, proteins and lipids	Revise – Pages 26-27 Practise – Pages 37 Review – Pages 58	<ul style="list-style-type: none"> • https://www.bbc.co.uk/bitesize/guides/z89mk2p/revision/3 • https://www.youtube.com/watch?v=SqWTJWOBww4
	5.4.1 The Reactivity of Metals CHEMISTRY	-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	Revise – Pages 114-115 Practise – Pages 132 Review – Pages 150	<ul style="list-style-type: none"> • https://www.bbc.co.uk/bitesize/guides/zy7dgd/revision/1 • https://www.youtube.com/watch?v=Lk1V0buHEFs • https://www.youtube.com/watch?v=gmbuTl2aril • https://www.youtube.com/watch?v=2i5Lm7BMtpo • https://www.youtube.com/watch?v=MXTSels6e2Y
	6.2.4 Energy Transfers PHYSICS	-Use the equation that links energy transferred, charge flow and potential difference -Use the equation that links power, current and potential difference	Revise – Pages 188-193 Practise – Pages 204-205 Review – Pages 219-220	<ul style="list-style-type: none"> • https://www.bbc.co.uk/bitesize/guides/zgvg4qt/revision/3 • https://www.bbc.co.uk/bitesize/guides/zgvg4qt/revision/9 • https://www.youtube.com/watch?v=WKvQLrXOqik

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4/4/22	4.7.3 Biodiversity and the effect of human interaction on an ecosystem BIOLOGY	-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.	Revise – Pages 78-79 Practise – Pages 87 Review – Pages 109	<ul style="list-style-type: none"> • 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
	5.6.2 Reversible reactions and dynamic equilibrium CHEMISTRY	-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	Revise – Pages 126-127 Practise – Pages 135 Review – Pages 153	<ul style="list-style-type: none"> • 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
	6.5.4.2 Force, accelerations and Newton’s Laws of motion PHYSICS	-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	Revise – Pages 162-167 Practise – Pages 179-180 Review – Pages 199-200	<ul style="list-style-type: none"> • https://www.bbc.co.uk/bitesize/guides/zgv797h/revision/1 • https://www.youtube.com/watch?v=i5PtaCJFjw • https://www.youtube.com/watch?v=DpQ_ikFKru0