Edexcel GCSE Combined Science - Paper 2: Foundation Tier

Advance Information of Assessed Content 2022

Link to specification:
https://qualifications.pearson.com/content/dam/pdf/GCSE/Science/2016/Specification/GCSE_CombinedScience_Spec.pdf

Link to advance information document:
https://qualifications.pearson.com/content/dam/pdf/GCSE/Science/2016/teaching-and-learning-materials/W73065_GCSE_Combined_Science_1SC0_AN_Accessible_version.pdf

Link to revised Physics equation sheet:
https://qualifications.pearson.com/content/dam/pdf/GCSE/Science/2016/Specification/GCSE_CombinedScience_Spec.pdf

Useful websites/ videos:

Free science lessons:
https://www.youtube.com/c/freesciencelessons

Primrose Kitten:
https://www.youtube.com/watch?v=L6ODraBBZRg

Mr Barnes Chemistry videos:

https://www.youtube.com/c/MrBarnesTC

Oak National Academy:

https://classroom.thenational.academy/subjects-by-key-stage/key-stage-4/subjects/combined-science/tiers/higher

Seneca Learning:

https://senecalearning.com/en-GB/

GCSE Pod:

https://members.gcsepod.com/login

Biology Paper 2 - F

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

Exam date: 15th June

Topic	Concepts	Edexcel Revision Guide	Bitesize	YouTube
Topic 1 – Key Concepts in Biology – Cells and Microscopes	1.1 Explain how the sub-cellular structures of eukaryotic and prokaryotic cells are related to their functions, including: a animal cells – nucleus, cell membrane, mitochondria and ribosomes b plant cells – nucleus, cell membrane, cell wall, chloroplasts, mitochondria, vacuole and ribosomes c bacteria – chromosomal DNA, plasmid DNA, cell membrane, ribosomes and flagella	1-5	Animal cells - Cell structure - Edexcel - GCSE Combined Science Revision - Edexcel - BBC Bitesize	https://www.youtube.com/watch?v=GuY0n7-zfds https://www.youtube.com/watch?v=QCCp-Y_-7J0 https://www.youtube.com/watch?v=EAoeI2gXBRg https://www.youtube.com/watch?v=HBZcpzr5B2g
	1.2 Describe how specialised cells are adapted to their function, including: a sperm cells – acrosome, haploid nucleus, mitochondria and tail b egg cells – nutrients in the cytoplasm, haploid nucleus and changes in the cell membrane after fertilisation c ciliated epithelial cells			
	1.3 Explain how changes in microscope technology, including electron microscopy, have enabled us to see cell structures and organelles with more clarity and detail than in the past and increased our understanding of the role of sub-cellular structures			https://www.youtube.com/watch?v=VBdVARYWq1c https://www.youtube.com/watch?v=PB97svr7Ye8 https://www.youtube.com/watch?v=PAzs3Ooex5k https://www.youtube.com/watch?v=2WYVZ0t1Ee4
	1.4 Demonstrate an understanding of number, size and scale, including the use of estimations and explain when they should be used			
	1.5 Demonstrate an understanding of the relationship between quantitative units in relation to cells, including: a milli (10−3) b micro (10−6) c nano (10−9) d pico (10−12)			
	1.6 Core Practical: Investigate biological specimens using microscopes, including magnification calculations and labelled scientific drawings from observations			https://www.youtube.com/watch?v=jBVxo5T-ZQM

Biology Paper 2 - F

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Exam date: 15th June

Topic	Concepts	Edexcel Revision Guide	Bitesize	YouTube
Topic 6 – Plant Structures and their functions - Photosynthesis	6.1 Describe photosynthetic organisms as the main producers of food and therefore biomass	P49-51	What is photosynthesis? - Photosynthesis - Edexcel - GCSE Combined Science Revision - Edexcel - BBC Bitesize	https://www.youtube.com/watch?v=rAJGnS_ktk4 https://www.youtube.com/watch?v=kx7AeCx_6xQ https://www.youtube.com/watch?v=cBCKedXdFeE
	6.2 Describe photosynthesis in plants and algae as an endothermic reaction that uses light energy to react carbon dioxide and water to produce glucose and oxygen			
	6.3 Explain the effect of temperature, light intensity and carbon dioxide concentration as limiting factors on the rate of photosynthesis			
	6.5 Core Practical: Investigate the effect of light intensity on the rate of photosynthesis			

Topic	Concepts	Edexcel Revision Guide	Bitesize	YouTube
Topic 6 – Plant Structures and their functions – Movement of Substances through plants	6.7 Explain how the structure of the root hair cells is adapted to absorb water and mineral ions	52-56	Xylem and phloem - Transport in plants - GCSE Biology (Single Science) Revision - BBC Bitesize	https://www.youtube.com/watch?v=yVd9Z3av1Ew
	6.8 Explain how the structures of the xylem and phloem are adapted to their function in the plant, including: a lignified dead cells in xylem transporting water and minerals through the plant b living cells in phloem using energy to transport sucrose around the plant			
	6.9 Explain how water and mineral ions are transported through the plant by transpiration, including the structure and function of the stomata			https://www.youtube.com/watch?v=9yTDokLRZs0
	6.10 Describe how sucrose is transported around the plant by translocation			
	6.12 Explain the effect of environmental factors on the rate of water uptake by a plant, to include light intensity, air movement and temperature			https://www.youtube.com/watch?v=9FTafxnbwHQ

Biology Paper 2 - F

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Exam date: 15th June

Topic	Concepts	Edexcel Revision Guide	Bitesize	YouTube
Topic 8 – Exchange and Transport in Animals – The heart and blood	8.6 Explain how the structure of the blood is related to its function: a red blood cells (erythrocytes) b white blood cells (phagocytes and lymphocytes) c plasma d platelets	64-69	Blood - Cellular respiration and transport - Edexcel - GCSE Combined Science Revision - Edexcel - BBC Bitesize	https://www.youtube.com/watch?v=nc_kbfjhiUo https://www.youtube.com/watch?v=81w0BXg7QJA https://www.youtube.com/watch?v=Wx-MrhlOFMk https://www.youtube.com/watch?v=AlSQEs694qY https://www.youtube.com/watch?v=zU90AkcTJEs https://www.youtube.com/watch?v=bpYaKM2hVFY https://www.youtube.com/watch?v=ZKAaDbTP6Dc https://www.youtube.com/watch?v=U4WwWuVZSe4
	8.7 Explain how the structure of the blood vessels is related to their function			
	8.8 Explain how the structure of the heart and circulatory system is related to its function, including the role of the major blood vessels, the valves and the relative thickness of chamber walls			
	8.9 Describe cellular respiration as an exothermic reaction which occurs continuously in living cells to release energy for metabolic processes, including aerobic and anaerobic respiration			

Biology Paper 2 - F

Exam date: 15th June

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

Spec point	Edexcel Revision Guide
• Topic 1 Key concepts in biology – enzymes (1.7–1.12) • Topic 7 Animal coordination, control and homeostasis – Hormones (7.1 – 7.7) • Topic 7 Animal coordination, control and homeostasis – Hormones (7.13 – 7.17) • Topic 8 Exchange and transport in animals – Respiration (8.10 – 8.12) • Topic 9 Ecosystems and material cycles – communities (9.1–9.6)	

Chemistry Paper 2 - F

These specification points and core practical will be the **major focus** of this paper

Exam date: 20th June

Topic	Concepts	Edexcel Revision Guide	Bitesize	YouTube
Topic 1 Key concepts in chemistry – Calculations involving masses	1.43 Calculate: a relative formula mass given relative atomic masses a percentage by mass of an element in a compound given relative atomic masses	100	https://www.bbc.co.uk/bitesize/guides/ztdsmsg	https://www.youtube.com/watch?v=q49NwIrjaFw https://www.youtube.com/watch?v=02lgP9u_bcE&t=3s https://www.youtube.com/watch?v=it_fMQu5ivg
	1.44 Calculate the formulae of simple compounds from reacting masses or percentage composition and understand that these are empirical formulae	101		
	1.45 Deduce: a the empirical formula of a compound from the formula of its molecule b the molecular formula of a compound from its empirical formula and its relative molecular mass	101		https://www.youtube.com/watch?v=k_GTEtK01Wg https://www.youtube.com/watch?v=VgIotPASd9U
	1.46 Describe an experiment to determine the empirical formula of a simple compound such as magnesium oxide	101		
	1.47 Explain the law of conservation of mass applied to: a a closed system including a precipitation reaction in a closed flask b a non-enclosed system including a reaction in an open flask that takes in or gives out a gas	102		https://www.youtube.com/watch?v=K4pw_-U6Xpc https://www.youtube.com/watch?v=M-De2IMayco
	1.48 Calculate masses of reactants and products from balanced equations, given the mass of one substance	102		https://www.youtube.com/watch?v=5zOpoeN0dV0&t=182s https://www.youtube.com/watch?v=5zOpoeN0dV0
	1.49 Calculate the concentration of solutions in g dm–3	103		https://www.youtube.com/watch?v=3G3KQIyoZDI https://www.youtube.com/watch?v=kJBbu7_vYC8 https://www.youtube.com/watch?v=XCX0PkZdUjM

Chemistry Paper 2 - F

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Exam date: 20th June

Topic	Concepts	Edexcel Revision Guide	Bitesize	YouTube
Topic 6 – Group 1, and Group 7	6.1 Explain why some elements can be classified as alkali metals (group 1), halogens (group 7) or noble gases (group 0), based on their position in the periodic table	133	Group 1 - the alkali metals - Edexcel - Video - GCSE Combined Science - BBC Bitesize	https://www.youtube.com/watch?v=aORsI-2dwnY https://www.youtube.com/watch?v=QAUwi0LQgZY https://www.youtube.com/watch?v=dZGDUKQa_6g
	6.2 Recall that alkali metals a are soft b have relatively low melting points			
	6.3 Describe the reactions of lithium, sodium and potassium with water			
	6.4 Describe the pattern in reactivity of the alkali metals, lithium, sodium and potassium, with water; and use this pattern to predict the reactivity of other alkali metals			
	6.5 Explain this pattern in reactivity in terms of electronic configurations			
	6.6 Recall the colours and physical states of chlorine, bromine and iodine at room temperature	134-136	https://www.youtube.com/watch?v=3G3KQIyoZDI	https://www.youtube.com/watch?v=kNPthLiM8T4 https://www.youtube.com/watch?v=fyA7qtPq7QY https://www.youtube.com/watch?v=WB9X1-oTbGU https://www.youtube.com/watch?v=HT1zAPQIBAQ
	6.7 Describe the pattern in the physical properties of the halogens, chlorine, bromine and iodine, and use this pattern to predict the physical properties of other halogens			
	6.8 Describe the chemical test for chlorine			
	6.9 Describe the reactions of the halogens, chlorine, bromine and iodine, with metals to form metal halides, and use this pattern to predict the reactions of other halogens			
	6.10 Recall that the halogens, chlorine, bromine and iodine, form hydrogen halides which dissolve in water to form acidic solutions, and use this pattern to predict the reactions of other halogens			
	6.11 Describe the relative reactivity of the halogens chlorine, bromine and iodine, as shown by their displacement reactions with halide ions in aqueous solution, and use this pattern to predict the reactions of astatine			
	6.13 Explain the relative reactivity of the halogens in terms of electronic configurations			

Chemistry Paper 2 - F

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Exam date: 20th June

Topic	Concepts	Edexcel Revision Guide	Bitesize	YouTube
Topic 6 – Group 0	6.14 Explain why the noble gases are chemically inert, compared with the other elements, in terms of their electronic configurations	137	https://www.bbc.co.uk/bitesize/guides/zy6cfcw/revision/1	https://www.youtube.com/watch?v=VhiieTJWYHs https://www.youtube.com/watch?v=HT1zAPQIBAQ
	6.15 Explain how the uses of noble gases depend on their inertness, low density and/or non-flammability			
	6.16 Describe the pattern in the physical properties of some noble gases and use this pattern to predict the physical properties of other noble gases			

Chemistry Paper 2 - F

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Exam date: 20th June

Topic	Concepts	Edexcel Revision Guide	Bitesize	YouTube
Topic 7- Rates of Reaction and Energy Changes – Rates of Reaction	7.1 Core Practical: Investigate the effects of changing the conditions of a reaction on the rates of chemical reactions by: a measuring the production of a gas (in the reaction between hydrochloric acid and marble chips) b observing a colour change (in the reaction between sodium thiosulfate and hydrochloric acid)	140-141	https://www.bbc.co.uk/bitesize/guides/zcyjcj6/revision/1	Playlist for all rates videos: GCSE Science Revision Chemistry "Mean Rate of Reaction" - YouTube https://www.youtube.com/watch?v=SPXanyy3-hU https://www.youtube.com/watch?v=-4HXaUBbv04
	7.2 Suggest practical methods for determining the rate of a given reaction			
	7.3 Explain how reactions occur when particles collide and that rates of reaction are increased when the frequency and/or energy of collisions is increased	139		
	7.4 Explain the effects on rates of reaction of changes in temperature, concentration, surface area to volume ratio of a solid and pressure (on reactions involving gases) in terms of frequency and/or energy of collisions between particles	139-141		
	7.5 Interpret graphs of mass, volume or concentration of reactant or product against time			
	7.6 Describe a catalyst as a substance that speeds up the rate of a reaction without altering the products of the reaction, being itself unchanged chemically and in mass at the end of the reaction			
	7.7 Explain how the addition of a catalyst increases the rate of a reaction in terms of activation energy			
	7.8 Recall that enzymes are biological catalysts and that enzymes are used in the production of alcoholic drinks			

Chemistry Paper 2 - F

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Exam date: 20th June

Topic	Concepts	Edexcel Revision Guide	Bitesize	YouTube
Topic 7- Rates of Reaction and Energy Changes – Heat Energy Changes in Chemical reactions	7.9 Recall that changes in heat energy accompany the following changes: a salts dissolving in water b neutralisation reactions c displacement reactions d precipitation reactions and that, when these reactions take place in solution, temperature changes can be measured to reflect the heat changes	142-143	https://www.bbc.co.uk/bitesize/guides/zg84y4j/revision/1	GCSE Science Revision Chemistry "Exothermic and Endothermic Reactions" – YouTube – PLAYLIST FOR ENERGY CHANGES https://www.youtube.com/watch?v=dstRL5xB0Sk https://www.youtube.com/watch?v=eJXL0IrbtqE
	7.10 Describe an exothermic change or reaction as one in which heat energy is given out			
	7.11 Describe an endothermic change or reaction as one in which heat energy is taken in			
	7.12 Recall that the breaking of bonds is endothermic and the making of bonds is exothermic			
	7.13 Recall that the overall heat energy change for a reaction is: a exothermic if more heat energy is released in forming bonds in the products than is required in breaking bonds in the reactants b endothermic if less heat energy is released in forming bonds in the products than is required in breaking bonds in the reactants			
	7.15 Explain the term activation energy			
	7.16 Draw and label reaction profiles for endothermic and exothermic reactions, identifying activation energy			

Chemistry Paper 2 - F

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Exam date: 20th June

Topic	Concepts	Edexcel Revision Guide	Bitesize	YouTube
Topic 8- Fuels and Earth Science - Fuels	8.1 Recall that hydrocarbons are compounds that contain carbon and hydrogen only	144-148	https://www.bbc.co.uk/bitesize/guides/zxshqhv/revision/1	PLAYLIST – IGNORE LAST VIDEO ON **ALKENES** GCSE Science Revision Chemistry "Crude oil and Hydrocarbons" – YouTube https://www.youtube.com/watch?v=ykIFTtTjoso https://www.youtube.com/watch?v=F8J2FirbIxg
	8.2 Describe crude oil as: a a complex mixture of hydrocarbons b containing molecules in which carbon atoms are in chains or rings (names, formulae and structures of specific ring molecules not required) c an important source of useful substances (fuels and feedstock for the petrochemical industry) d a finite resource			
	8.3 Describe and explain the separation of crude oil into simpler, more useful mixtures by the process of fractional distillation			
	8.4 Recall the names and uses of the following fractions: a gases, used in domestic heating and cooking b petrol, used as fuel for cars c kerosene, used as fuel for aircraft d diesel oil, used as fuel for some cars and trains e fuel oil, used as fuel for large ships and in some power stations f bitumen, used to surface roads and roofs			
	8.5 Explain how hydrocarbons in different fractions differ from each other in: a the number of carbon and hydrogen atoms their molecules contain b boiling points c ease of ignition d viscosity and are mostly members of the alkane homologous series			
	8.6 Explain an homologous series as a series of compounds which: a have the same general formula b differ by CH_2 in molecular formulae from neighbouring compounds c show a gradual variation in physical properties, as exemplified by their boiling points d have similar chemical properties			
	8.7 Describe the complete combustion of hydrocarbon fuels as a reaction in which: a carbon dioxide and water are produced b energy is given out			https://www.youtube.com/watch?v=CjmriZq5xRo
	8.8 Explain why the incomplete combustion of hydrocarbons can produce carbon and carbon monoxide			
	8.9 Explain how carbon monoxide behaves as a toxic gas			
	8.10 Describe the problems caused by incomplete combustion producing carbon monoxide and soot in appliances that use carbon compounds as fuels			
	8.11 Explain how impurities in some hydrocarbon fuels result in the production of sulfur dioxide			

Chemistry Paper 2 - F

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Exam date: 20th June

Topic	Concepts	Edexcel Revision Guide	Bitesize	YouTube
Topic 8- Fuels and Earth Science	8.12 Explain some problems associated with acid rain caused when sulfur dioxide dissolves in rain water		https://www.bbc.co.uk/bitesize/guides/zxshqhv/revision/6	https://www.youtube.com/watch?v=yLp6LOgPHmI
	8.13 Explain why, when fuels are burned in engines, oxygen and nitrogen can react together at high temperatures to produce oxides of nitrogen, which are pollutants			
	8.14 Evaluate the advantages and disadvantages of using hydrogen, rather than petrol, as a fuel in cars			
	8.15 Recall that petrol, kerosene and diesel oil are non-renewable fossil fuels obtained from crude oil and methane is a non-renewable fossil fuel found in natural gas			
	8.16 Explain why cracking involves the breaking down of larger, saturated hydrocarbon molecules (alkanes) into smaller, more useful ones, some of which are unsaturated (alkenes)			https://www.youtube.com/watch?v=7AWwjKbRa_o
	8.17 Explain why cracking is necessary			https://www.youtube.com/watch?v=bOiYLKX9ZRY

Chemistry Paper 2 - F

Exam date: 20th June

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

Spec point	Edexcel Revision Guide
• Topic 1 Key concepts in chemistry – Atomic structure (1.1–1.12) • Topic 1 Key concepts in chemistry – Covalent bonding (1.28–1.31) • Topic 1 Key concepts in chemistry – Types of substance (1.32–1.42)	

Physics Paper 2 - F

These specification points and core practical will be the **major focus** of this paper

Exam date: 23rd June

Topic	Concepts	Edexcel Revision Guide	Bitesize	YouTube
Topic 8- Energy- Forces doing work	8.1 Describe the changes involved in the way energy is stored when systems change	170 173 199	https://www.bbc.co.uk/bitesize/guides/zpgtjty/revision/1	https://www.youtube.com/watch?v=-zy9eWzmGe4&list=PL9IouNCPbCxWNjJvmqwZ4vKy4VfcAhsCj https://www.youtube.com/watch?v=JGwcDCeYRYo https://www.youtube.com/watch?v=-zy9eWzmGe4 https://www.youtube.com/watch?v=63OTIdNb-TE https://www.youtube.com/watch?v=PY80j_iNT9Y https://www.youtube.com/watch?v=rNS-W7k0jts https://www.youtube.com/watch?v=WLaUmNr4lho https://www.youtube.com/watch?v=WrFCHt21kVA https://www.youtube.com/watch?v=kCJUzdCBOk0 https://www.youtube.com/watch?v=NI5jaeBrIgQ https://www.youtube.com/watch?v=7hcv_mxcA-g
	8.2 Draw and interpret diagrams to represent energy transfers			
	8.3 Explain that where there are energy transfers in a closed system there is no net change to the total energy in that system			
	8.4 Identify the different ways that the energy of a system can be changed: a through work done by forces b in electrical equipment c in heating			
	8.5 Describe how to measure the work done by a force and understand that energy transferred (joule, J) is equal to work done (joule, J)			
	8.6 Recall and use the equation: work done (joule, J) = force (newton, N) × distance moved in the direction of the force (metre, m) E = F × d			
	8.7 Describe and calculate the changes in energy involved when a system is changed by work done by forces			
	8.8 Recall and use the equation to calculate the change in gravitational PE when an object is raised above the ground: change in gravitational potential energy (joule, J) = mass (kilogram, kg) × gravitational field strength (newton per kilogram, N/kg) × change in vertical height (metre, m) ΔGPE = m× g ×Δh			
	8.9 Recall and use the equation to calculate the amounts of energy associated with a moving object: kinetic energy (joule, J) = 2 1 × mass (kilogram, kg) × (speed)2 ((metre/second)2, (m/s)2) KE = ½ x m × v^2			
	8.10 Explain, using examples, how in all system changes energy is dissipated so that it is stored in less useful ways			
	8.11 Explain that mechanical processes become wasteful when they cause a rise in temperature so dissipating energy in heating the surroundings			
	8.12 Define power as the rate at which energy is transferred and use examples to explain this definition			
	8.13 Recall and use the equation: power (watt, W) = work done (joule, J) ÷ time taken (second, s) *P = E/t*			
	8.14 Recall that one watt is equal to one joule per second, J/s			
	8.15 Recall and use the equation Efficiency = (useful energy transferred by the device) / (total energy supplied to the device)			

Physics Paper 2 - F

These specification points and core practical will be the **major focus** of this paper

Exam date: 23rd June

Topic	Concepts	Edexcel Revision Guide	Bitesize	YouTube
Topic 10- Electricity and circuits – Electrical Circuit Principles	10.1 Describe the structure of the atom, limited to the position, mass and charge of protons, neutrons and electrons	186 200-210	https://www.bbc.co.uk/bitesize/guides/zwpwrwx/revision/1	https://youtube.com/playlist?list=PLHvKSlP1soBafV1fNXkXtPulf-shZZEUL https://www.youtube.com/watch?v=R3hdaLpq2AA https://www.youtube.com/watch?v=AQawCNla5Fg https://www.youtube.com/watch?v=ZQurBlu35Fo https://www.youtube.com/watch?v=jNFXtjt5muI https://www.youtube.com/watch?v=hRojfU77c38
	10.2 Draw and use electric circuit diagrams representing them with the conventions of positive and negative terminals, and the symbols that represent cells, including batteries, switches, voltmeters, ammeters, resistors, variable resistors, lamps, motors, diodes, thermistors, LDRs and LEDs			
	10.3 Describe the differences between series and parallel circuits			
	10.4 Recall that a voltmeter is connected in parallel with a component to measure the potential difference (voltage), in volt, across it			
	10.5 Explain that potential difference (voltage) is the energy transferred per unit charge passed and hence that the volt is a joule per coulomb			
	10.6 Recall and use the equation: energy transferred (joule, J) = charge moved (coulomb, C) × potential difference (volt, V) $E = Q \times V$			
	10.7 Recall that an ammeter is connected in series with a component to measure the current, in amp, in the component			
	10.8 Explain that an electric current as the rate of flow of charge and the current in metals is a flow of electrons			
	10.9 Recall and use the equation: charge (coulomb, C) = current (ampere, A) × time (second, s) $Q = I \times t$			
	10.10 Describe that when a closed circuit includes a source of potential difference there will be a current in the circuit			
	10.11 Recall that current is conserved at a junction in a circuit			
	10.12 Explain how changing the resistance in a circuit changes the current and how this can be achieved using a variable resistor			
	10.13 Recall and use the equation: potential difference (volt, V) = current (ampere, A) × resistance (ohm, Ω) $V = I \times R$			
	10.14 Explain why, if two resistors are in series, the net resistance is increased, whereas with two in parallel the net resistance is decreased			
	10.15 Calculate the currents, potential differences and resistances in series circuits			
	10.16 Explain the design and construction of series circuits for testing and measuring			
	10.17 Core Practical: Construct electrical circuits to: a investigate the relationship between potential difference, current and resistance for a resistor and a filament lamp b test series and parallel circuits using resistors and filament lamps			

Physics Paper 2 - F

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Exam date: 23rd June

Topic	Concepts	Edexcel Revision Guide	Bitesize	YouTube
Topic 10- Electricity and circuits – a.c and d.c used in practice	10.32 Describe how, in different domestic devices, energy is transferred from batteries and the a.c. mains to the energy of motors and heating devices	212-215	Current - Mains electricity and alternating current - Edexcel - GCSE Combined Science Revision - Edexcel - BBC Bitesize	https://www.youtube.com/watch?v=MEvO2rQFIWk https://www.youtube.com/watch?v=EY_EphcrpDI https://www.youtube.com/watch?v=fbu3o9wavHk
	10.33 Explain the difference between direct and alternating voltage			
	10.34 Describe direct current (d.c.) as movement of charge in one direction only and recall that cells and batteries supply direct current (d.c.)			
	10.35 Describe that in alternating current (a.c.) the movement of charge changes direction			
	10.36 Recall that in the UK the domestic supply is a.c., at a frequency of 50 Hz and a voltage of about 230 V			
	10.37 Explain the difference in function between the live and the neutral mains input wires			
	10.38 Explain the function of an earth wire and of fuses or circuit breakers in ensuring safety			
	10.39 Explain why switches and fuses should be connected in the live wire of a domestic circuit			
	10.40 Recall the potential differences between the live, neutral and earth mains wires			
	10.41 Explain the dangers of providing any connection between the live wire and earth			
	10.42 Describe, with examples, the relationship between the power ratings for domestic electrical appliances and the changes in stored energy when they are in use			

Physics Paper 2 - F

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Exam date: 23rd June

Topic	Concepts	Edexcel Revision Guide	Bitesize	YouTube
Topic 12 – Magnetism and motor effect – Magnets and Magnetic Fields	12.1 Recall that unlike magnetic poles attract and like magnetic poles repel	216-217	https://www.bbc.co.uk/bitesize/guides/zqvm8mn/revision/1	https://www.youtube.com/watch?v=FodEDHaEY68 https://www.youtube.com/watch?v=sRyy7-jEu3Q https://www.youtube.com/watch?v=3elpPfyHV0E
	12.2 Describe the uses of permanent and temporary magnetic materials including cobalt, steel, iron and nickel			
	12.3 Explain the difference between permanent and induced magnets			
	12.4 Describe the shape and direction of the magnetic field around bar magnets and for a uniform field, and relate the strength of the field to the concentration of lines			
	12.5 Describe the use of plotting compasses to show the shape and direction of the field of a magnet and the Earth's magnetic field			
	12.6 Explain how the behaviour of a magnetic compass is related to evidence that the core of the Earth must be magnetic			

Topic	Concepts	Edexcel Revision Guide	Bitesize	YouTube
Topic 14 – Particle Model	14.3 Core Practical: Investigate the densities of solid and liquids	223-225	Required practical – investigating density - Density of materials - Edexcel - GCSE Combined Science Revision - Edexcel - BBC Bitesize	
	14.11 Core Practical: Investigate the properties of water by determining the specific heat capacity of water and obtaining a temperature-time graph for melting ice		Required practical - measuring the specific heat capacity of water - Temperature changes and energy - Edexcel - GCSE Combined Science Revision - Edexcel - BBC Bitesize	

Physics Paper 2 - F

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Exam date: 23rd June

Spec point	Edexcel Revision Guide
• Topic 9 Forces and their effects – Describing and representing forces (9.1–9.2) • Topic 10 Electricity and circuits – Electrical devices. (10.18 – 10.21) * Topic 12 Magnetism and the motor effect – Electromagnetism (12.7 – 12.9) • Topic 13 Electromagnetic induction – Transformers (13.8–13.10) • Topic 14 Particle model – Pressure of a gas (14.12 – 14.15) • Topic 15 Forces and matter – Elasticity (15.1–15.6)	