

Edexcel GCSE (9-1) Combined Science Revision Checklist

This checklist includes **all units** for the Edexcel GCSE (9-1) Combined Science Course.







Please ask your teachers about which units have been covered in Years 9, 10 and 11.

You can also access the individual unit checklists from www.revise4science.weebly.com







BIOLOGY

CB1 Key Concepts in Biology (Paper 1: Biology 1 and Paper 4: Biology 2)

CB1a Microscopes





Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Recall what an electron microscope is.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Recall what is meant by an instrument's resolution.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Explain why some cell structures can be seen with an electron microscope but not with a light microscope.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Calculate total magnification using an equation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Calculate sizes using magnifications.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Interpret the SI prefixes milli-, micro-, nano- and pico-.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB1b Plant and animal cells






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Identify the parts of plant and animal cells.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Recall the parts of plant and animal cells.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Make drawings of plant and animal cells using a light microscope and identify their parts.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the functions of the sub-cellular structures commonly found in eukaryotic cells (nucleus, cell membrane, cell wall, chloroplasts, mitochondria and ribosomes).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Estimate sizes using microscope fields of view.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Estimate sizes using scale bars.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CB1c Specialised cells

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Describe how sperm cells are adapted to their function.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe how egg cells are adapted to their function.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe how ciliated epithelial cells are adapted to their function.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Draw conclusions about a cell's function from its adaptations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB1d Inside bacteria







Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Identify the common parts of bacteria.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe the functions of common parts of bacteria.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe why bacteria are classified as being prokaryotic.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Change numbers to and from standard form.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Compare eukaryotic and prokaryotic cells.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB1e Enzymes and nutrition







Step	Learning outcome	Had a look	Nearly there	Nailed it!
	State that enzymes are proteins.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Give examples of enzymes and where they are found in the human body and in other species.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Recall the subunits from which carbohydrates, proteins and lipids are formed (sugars, amino acids, fatty acids and glycerol).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe what enzymes do (catalyse the synthesis and breakdown of substances, such as carbohydrates, proteins and lipids, by speeding up the rate of reaction).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Define an enzyme as a biological catalyst.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain why catalysis by enzymes is important for life processes (because reactions happen much faster).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CB1f Enzyme action

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	State what enzyme specificity means.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	State that an enzyme's action is due to its active site.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe the role of the active site in enzyme function (including specificity).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Use the lock-and-key model to develop explanations for enzyme activity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain why enzymes have a particular shape, as a result of the sequence of amino acids in the chain.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain how enzymes become denatured.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB1g Enzyme activity

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 8 th	Describe the effect of temperature on enzyme activity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Describe the effect of substrate concentration on enzyme activity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Describe the effect of pH on enzyme activity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain what is meant by the optimum pH/temperature of an enzyme.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Calculate the rate of enzyme activity from experimental data.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain why temperature, substrate concentration and pH affect enzyme activity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







CB1h Transporting substances

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	State that substances are transported by diffusion, osmosis and active transport.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe how substances are transported by active transport (including the need for energy).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Explain how substances are transported by diffusion.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain how substances are transported by osmosis.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain the effects of osmosis on cells and tissues.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Investigate osmosis in potatoes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Calculate percentage gain and loss of mass in osmosis.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>






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CB2 Cells and control (Paper 1: Biology 1)





CB2a Mitosis

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	List the names and order of the stages of the cell cycle, including mitosis.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe what happens in each stage of the cell cycle, including mitosis.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe why mitosis is important for an organism. (growth, repair, asexual reproduction)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain why organisms may rely on asexual reproduction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe how mitosis produces genetically identical, diploid cells.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe how cancers grow.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB2b Growth in animals







Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Define growth in animals as an increase in cell number and size.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Give examples of specialised animal cells.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe how structure of specialised animal cells is related to their function.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain why cell differentiation is important in the development of specialised cells.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Use percentile growth curves to interpret growth in children.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB2c Growth in plants






Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Describe the stages of growth in plants (cell division/mitosis, elongation, differentiation).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Give examples of specialised plant cells.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe how the structures of specialised plant cells are related to their functions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain why cell differentiation is important in the development of specialised cells in plants.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CB2d Stem cells

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	Describe where stem cells are found.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe the function of stem cells in plants and animals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Compare embryonic and adult stem cells in animals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Give examples of where stem cells may be used in medicine.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Identify benefits and risks of using stem cells in medicine.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 10 th	Evaluate the use of stem cells in medicine (by comparing their benefits and risks).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB2e The nervous system

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	List the parts of the nervous system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 4 th	Describe how the nervous system detects stimuli.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe the structure of sensory neurones.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe the routes that impulses take to and from the brain.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain how sensory neurones are adapted to their functions (including the myelin sheath).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







CB2f Neurotransmission speeds

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	Describe how the nervous system responds to stimuli.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe the structures of motor neurones and relay neurones.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain how motor neurones are adapted to their functions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain the action and function of synapses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain how the structure of the reflex arc allows a faster response.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Describe the structure and function of the reflex arc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







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CB3 Genetics (Paper 1: Biology 1)

CB3a Meiosis







Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	Recall that gametes are produced by meiosis.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Describe what happens in meiosis. [without details of the stages]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain why haploid gametes are needed for sexual reproduction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Recall what an organism's genome is.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe where genes are found.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Recall the function of genes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB3b DNA






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Recall where DNA is found in a eukaryotic cell.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Name the bases in DNA.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Recall the pairing of bases in DNA.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe how DNA strands are held together.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Describe the overall structure of DNA.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	<i>Describe how DNA can be extracted from fruit.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CB3c Alleles







Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	Describe the difference between a gene and an allele.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain the effects of alleles on inherited characteristics.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe the relationship between a genotype and a phenotype.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Identify homozygous and heterozygous genotypes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Use genetic diagrams to work out possible combinations of alleles in the offspring of parents.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain why the effects of some alleles in an organism's genotype are not seen in its phenotype.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB3d Inheritance






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 8 th	Use Punnett squares to work out possible combinations of alleles in the offspring of parents.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Interpret family pedigree charts to work out possible inherited genotypes and phenotypes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe how sex is determined in humans.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Calculate ratios of phenotypes (controlled by alleles of a single gene) when organisms are crossed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Calculate probabilities of certain phenotypes occurring when organisms are crossed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CB3e Gene mutation

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	Give examples of characteristics controlled by multiple genes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Define the term mutation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe some potential applications of mapping human genomes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain how a mutation can cause variation (limited to changes in the protein formed, which can affect processes in which that protein is needed).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Give examples of mutations in human genes that affect the phenotype, and examples of those that have little or no obvious effect.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain why many mutations have no effect on the phenotype.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







CB3f Variation

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 4 th	Distinguish between genetic variation and environmental variation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Distinguish between continuous and discontinuous variation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the causes of genetic variation (mutation and sexual reproduction).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the causes of environmental variation (differences in the environment, acquired characteristics).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Analyse the contribution of genes and environment to the variation in a characteristic.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>






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CB4 Natural Selection and Genetic Modification (Paper 1: Biology 1)






CB4a Evidence for human evolution

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 4 th	Define 'evolution'.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Recognise binomial species names.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain how evidence from fossils and stone tools supports current ideas about human evolution.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Recall how stone tools are dated from their environment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe how stone tools created by human-like species have developed over time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the fossil evidence for human-like species that lived 4.4, 3.2 and 1.6 million years ago.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB4b Darwin's theory





Step	Learning outcome	Had a look	Nearly there	Nailed it!
 4 th	Recall the cause of genetic variation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe how adaptations allow organisms to survive.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain how natural selection allows some members of a species to survive better than others when conditions change.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain how natural selection can lead to the evolution of a new species.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 10 th	Explain how the development of resistance in organisms supports Darwin's theory.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB4c Classification






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Describe how organisms are classified into smaller and smaller groups (based on their characteristics).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Identify genus and species from a binomial name.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Identify an organism as a member of one of the five kingdoms.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe what genetic analysis is.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain why biologists often now classify organisms into three domains.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CB4d Breeds and varieties






Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Describe why new breeds and varieties are created.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe what is meant by a 'genetically modified organism'.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe how selective breeding is carried out.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain the impact of selective breeding on domesticated plants and animals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB4e Genes in agriculture and medicine

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	 Describe the main stages of genetic engineering.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Recall some uses of selectively bred organisms (in agriculture).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Recall some uses of genetically engineered organisms (in agriculture, in medicine).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Evaluate the benefits and risks of using selective breeding and genetic engineering to produce new varieties and breeds.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>






CB5 Health, Disease, and the Development of Medicines (Paper 1: Biology 1)

CB5a Health and disease






Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Define the term health.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Define the term disease.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe how communicable and non-communicable diseases differ.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Outline the role of the immune system in protecting against disease.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain how disease can affect the immune system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CB5b Non-communicable disease

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Give examples of non-communicable diseases.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 4 th	Define the term malnutrition.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Explain how diet can lead to malnutrition.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the link between alcohol and liver disease.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain the effect of alcohol consumption on liver disease at local, national and global levels.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB5c Cardiovascular disease




Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Describe how obesity is measured (BMI and waist : hip calculations).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe how obesity correlates with cardiovascular disease.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe how smoking correlates with cardiovascular disease.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Explain why exercise and diet affect obesity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Compare how cardiovascular diseases are treated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB5d Pathogens






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Describe some problems and diseases caused by bacteria.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe a disease caused by a virus.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe a disease caused by a protist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe a disease caused by a fungus.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain how signs of a disease can be used to identify the pathogen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CB5e Spreading pathogens

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	State the ways in which pathogens can be spread.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Give examples of pathogens that are spread in different ways (e.g. cholera bacteria by water, tuberculosis bacteria and chalaria dieback fungi by air, malaria protist by vector, <i>Helicobacter</i> by mouth, Ebola by body fluids).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain how the spread of different pathogens can be reduced or prevented.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB5f Physical and chemical barriers






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 8 th	Explain how the spread of the STIs Chlamydia and HIV can be reduced or prevented.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Give examples of physical barriers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Give examples of chemical barriers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe how physical barriers protect the body (e.g. skin, mucus and cilia).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe how chemical barriers protect the body (e.g. lysozymes, hydrochloric acid).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB5g The immune system

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	State that the immune system protects the body by attacking pathogens.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe how antigens trigger the release of antibodies and the production of memory lymphocytes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe the role of antibodies in the immune response.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe the role of memory lymphocytes in triggering a secondary response.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain how immunisation protects against infection by a pathogen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>






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CB5h Antibiotics







Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Define the term antibiotic (as medicines that inhibit cell processes in bacteria).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Explain why antibiotics are useful for treating bacterial infections (because they do not damage human cell processes).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Explain why antibiotics cannot be used to treat infections by pathogens other than bacteria.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the stages of development of new medicines.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain why each stage of the development of a new medicine is needed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB6 Plant Structures and their Functions (Paper 4: Biology 2)

CB6a Photosynthesis






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	Explain why photosynthetic organisms are producers of biomass.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Recall some substances produced from glucose and their roles in the plant.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Summarise what happens in photosynthesis (including the use of a word equation).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain why photosynthesis is an endothermic reaction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Explain how a leaf and its cells are adapted for photosynthesis.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB6b Factors that affect photosynthesis







Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Recall what is meant by a rate of reaction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe the effects of temperature, light intensity and carbon dioxide concentration on the rate of photosynthesis.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain the effects of limiting factors of photosynthesis.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	H Explain the effects of more than one factor on the rate of photosynthesis.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	H Describe how light intensity and rate of photosynthesis are related.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	H Explain why the rate of photosynthesis is inversely proportional to the distance of a light source.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CB6c Absorbing water and mineral ions

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Explain how root hair cells are adapted to taking in water and mineral ions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Recall that substances can be transported by diffusion, osmosis and active transport.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe what is meant by a concentration gradient.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain why active transport is needed to transport some molecules.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain how molecules move by osmosis.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







CB6d Transpiration and translocation

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Explain how xylem tissue is adapted to its functions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain how phloem tissue is adapted to its function.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe how transpiration occurs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe how translocation occurs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain the effects of environmental factors on the rate of transpiration (light intensity, air movement, temperature, humidity).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe how to measure the rate of transpiration.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>








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CB7 Animal Coordination, Control and Homeostasis (Paper 4: Biology 2)

CB7a Hormones







Step	Learning outcome	Had a look	Nearly there	Nailed it!
	State where hormones are produced (in endocrine glands).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe the general role of hormones in the body.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe how hormones are transported around the body.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe the production and release of some common hormones from their endocrine glands (pituitary gland, thyroid gland, pancreas, adrenal glands, ovaries and testes).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Identify the target organs of some common hormones.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain the importance of hormones.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB7b Hormonal control of metabolic rate











Step	Learning outcome	Had a look	Nearly there	Nailed it!
	H Describe the effects of adrenalin on the body.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	H Explain how adrenalin prepares the body for fight or flight.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	H Define metabolic rate.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	H Describe the effect of thyroxine on metabolic rate.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	H Describe how a negative feedback mechanism works.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	H Explain how negative feedback controls the production of thyroxine.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	H Explain why negative feedback mechanisms are important in living organisms.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CB7c The menstrual cycle

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	Describe what happens during the menstrual cycle.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the function of oestrogen in the menstrual cycle.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the function of progesterone in the menstrual cycle.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain how barrier methods can be used as contraception.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain how hormones can be used as contraception.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Compare, contrast and evaluate hormonal and barrier methods of contraception.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB7d Hormones and the menstrual cycle






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	 Describe how changes in hormones affect the uterus wall, ovulation and menstruation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	 Explain how oestrogen, progesterone, FSH and LH interact in the menstrual cycle.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	 Describe examples of Assisted Reproductive Technology (ART).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	 Explain how clomifene is used to stimulate ovulation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	 Explain how hormones are used in IVF treatment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB7e Control of blood glucose

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	Define homeostasis.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain why a constant internal environment is important.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain the role of insulin in regulating blood glucose concentration.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	 Explain the role of glucagon in regulating blood glucose concentration.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain how type 1 diabetes is caused.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain how type 1 diabetes can be controlled.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>






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CB7f Type 2 diabetes






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	Explain how type 2 diabetes is caused.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain how type 2 diabetes can be controlled.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the correlation between body mass and type 2 diabetes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain how BMI and waist : hip ratio are related to body mass.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Evaluate the correlation between body mass and type 2 diabetes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB8 Exchange and Transport in Animals (Paper 4: Biology 2)

CB8a Efficient transport and exchange





Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Recall the names of substances that need to be transported into and out of the body.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe the functions of the substances that are transported into the body.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the adaptations of the lungs for gas exchange.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Calculate surface area : volume ratios.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain the importance of surface area : volume ratios in transport systems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB8b The circulatory system






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 4 th	Recall the components and function of the circulatory system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Recall the functions of the different types of blood vessels.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the functions of the different types of blood cells (erythrocytes, phagocytes, lymphocytes).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the functions of blood platelets and plasma.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe how the different blood vessels are adapted to their functions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Edexcel GCSE (9-1) Combined Science Revision Checklist

CB8c The heart






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 4 th	Recall the parts of the heart.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the flow of blood through the heart.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain how the heart is adapted for its function (valves, differing ventricle muscle thicknesses).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Recall and use the equation that relates cardiac output, stroke volume and heart rate.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB8d Cellular respiration

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	Explain why organisms need to respire.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Recall the word equation for aerobic respiration.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Recall the word equation for anaerobic respiration in humans.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain why respiration is an exothermic process.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Compare aerobic and anaerobic respiration.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>




CB9 Ecosystems and Material Cycles (Paper 4: Biology 2)

CB9a Ecosystems






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 4 th	State what is meant by the ecological terms community, population and habitat.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 4 th	Give examples of an ecosystem, a community, a population and a habitat.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe the organisation of the components of an ecosystem (including populations, communities, habitats and abiotic factors).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe how the interdependence of organisms in an ecosystem allows their survival.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Explain how to estimate population size, including the use of quadrats.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Edexcel GCSE (9-1) Combined Science Revision Checklist







CB9b Abiotic factors and communities

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 3 rd	Give examples of abiotic factors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Explain how communities are affected by abiotic factors (temperature, light, water, pollutants).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain how to investigate the effect of abiotic factors on the distribution of organisms using belt transects.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB9c Biotic factors and communities







Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Give examples of biotic factors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe how competition can affect communities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe how predation can affect communities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain how predator–prey cycles affect communities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain how the structure of a community can affect biodiversity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB9d Parasitism and mutualism






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	Define the term 'parasitism'.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Define the term 'mutualism'.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe how parasites are dependent on their hosts.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe how hosts are harmed by parasites.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Identify parasites and mutualists in examples.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain how mutualists benefit from their relationship.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Edexcel GCSE (9-1) Combined Science Revision Checklist







CB9e Biodiversity and humans

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Define the term eutrophication.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe examples of the introduction of non-indigenous species.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the advantages of fish farming.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain how fish farming can affect ecosystems and biodiversity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain how the introduction of species can affect ecosystems and biodiversity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain how eutrophication can affect ecosystems and biodiversity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB9f Preserving biodiversity







Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Define the term conservation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Explain what is meant by reforestation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Give examples of animal conservation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain how animal conservation can benefit biodiversity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain how reforestation can benefit biodiversity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB9g The water cycle






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Give examples of materials that cycle through ecosystems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 4 th	Describe the processes by which water cycles through abiotic parts of an ecosystem.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe the processes by which water cycles through living organisms.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe how drinking water is produced where water is plentiful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain how drinking water can be produced by desalination in areas of drought.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain why water is important to living organisms.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CB9h The carbon cycle

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	Give examples of decomposers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Define the term <i>decomposer</i> .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe the carbon cycle.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Identify the key processes in the carbon cycle.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain how carbon is cycled through the biotic and abiotic components of an ecosystem.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain the importance of the carbon cycle (in balancing photosynthesis and respiration, and removal of wastes by decomposition).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB9i The nitrogen cycle







Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	Describe how plants use nitrates.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe the different roles of bacteria in the nitrogen cycle.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain how fertilisers increase the nitrate content of the soil.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain why bacteria are important for soil fertility.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain how crop rotation can increase the nitrogen content of the soil.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Edexcel GCSE (9-1) Combined Science Revision Checklist

CHEMISTRY

CC1 States of Matter (Paper 2: Chemistry 1)






CC1a States of matter

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 2 nd	Name the three states of matter, and the physical changes that occur between them.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe the arrangements and movement of particles in the different states of matter.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Use information to predict the state of a substance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe the relative energies of particles in the different states of matter.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain why the movement and arrangement of particles change during changes of state.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain why the energy of particles changes during changes of state.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







Edexcel GCSE (9-1) Combined Science Revision Checklist

CC2 Methods of Separating and Purifying Substances (Paper 2: Chemistry 1)







CC2a Mixtures

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Describe the differences between a pure substance and a mixture.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Use melting point information to decide whether a substance is pure or is a mixture.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe what happens to atoms at a pure substance's melting point.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Interpret a heating curve to identify a melting point.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain why the temperature does not change as a pure substance melts.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CC2b Filtration and crystallisation







Step	Learning outcome	Had a look	Nearly there	Nailed it!
 4 th	State some mixtures that can be separated by filtration.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 4 th	State some mixtures that can be separated by crystallisation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Draw and interpret diagrams showing how filtration and crystallisation are done.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Explain the formation of crystals during crystallisation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Explain how mixtures are separated by filtration.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Explain ways of reducing risk when separating mixtures by filtration and crystallisation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CC2c Paper chromatography






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Describe how some mixtures can be separated by chromatography.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Identify pure substances and mixtures on chromatograms.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Identify substances that are identical on chromatograms.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Draw and interpret diagrams showing how chromatography is done.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Explain how substances can be separated by chromatography.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Calculate R_f values and use them to identify substances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Edexcel GCSE (9-1) Combined Science Revision Checklist

CC2d Distillation

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Describe how to carry out, and explain what happens in, simple distillation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Distinguish between simple distillation and fractional distillation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Identify when fractional distillation should be used to separate a mixture.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe how to carry out fractional distillation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain how the products of fractional distillation are linked to the boiling points of the components.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain what precautions are needed to reduce risk in a distillation experiment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







CC2e Drinking water

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Explain why water used in chemical analysis must not contain dissolved salts.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe how fresh water can be produced from seawater.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe the steps needed to make fresh water suitable for drinking.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Suggest how to purify water when you know what it contains.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Evaluate the hazards and control the risks present when purifying water.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







Edexcel GCSE (9-1) Combined Science Revision Checklist

CC3 Atomic Structure (Paper 2: Chemistry 1 and Paper 5: Chemistry 2)







CC3a Structure of an atom

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 8 th	Describe how Dalton's ideas about atoms have changed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Describe how the subatomic particles are arranged in an atom.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain how atoms of different elements are different.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Recall the charges and relative masses of the three subatomic particles.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain why all atoms have no overall charge.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Describe how the size of an atom compares to the size of its nucleus.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CC3b Atomic mass and number

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	State where most of the mass of an atom is found.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	State the meaning of atomic number.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	State the meaning of mass number.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Describe how the atoms of different elements vary.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	State the number of electrons in an atom from its atomic number.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Calculate the numbers of protons, neutrons and electrons using atomic and mass numbers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>





CC3c Atomic mass and number

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	State what is meant by an isotope.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Identify isotopes from information about the structure of atoms.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Calculate the numbers of protons, neutrons and electrons using atomic numbers and mass numbers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain why the relative atomic mass of many elements is not a whole number.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 10 th	 Calculate the relative atomic mass of an element from the relative masses and abundances of its isotopes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>





Edexcel GCSE (9-1) Combined Science Revision Checklist

CC4 The Periodic Table (Paper 2: Chemistry 1 and Paper 5: Chemistry 2)





CC4a Elements and the periodic table

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	Recall the chemical symbols of some common elements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe how Mendeleev arranged elements into a periodic table.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe how Mendeleev predicted the existence and properties of some elements yet to be discovered.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain how Mendeleev's early ideas were supported by later evidence.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CC4b Atomic number and the periodic table

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	Explain some problems Mendeleev had when ordering the elements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Explain the meaning of the term 'atomic number'.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe how the elements are arranged in the modern periodic table.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Recall the positions of metals and non-metals in the periodic table.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







CC4c Electronic configurations and the periodic table

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	State what the term 'electronic configuration' means.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Show electronic configurations in the form 2.8.1 and as diagrams.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Predict the electronic configurations of the elements hydrogen to calcium.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain the links between an element's position in the periodic table and its electronic configuration.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







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CC5 Ionic Bonding (Paper 2: Chemistry 1 and Paper 5: Chemistry 2)






CC5a Ionic bonds

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	Recall the formulae of simple ions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain how cations and anions are formed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Use dot and cross diagrams to explain how ionic bonds are formed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain the difference between an atom and an ion.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Calculate the numbers of protons, neutrons and electrons in simple ions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain the formation of ions in groups 1, 2, 6 and 7 of the periodic table.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CC5b Ionic lattices

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	Recall the formulae of common polyatomic ions, and the charges on them.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Interpret the use of –ide and –ate endings in the names of compounds.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Name ionic compounds using –ide and –ate endings.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Work out the formula of an ionic compound from the formulae of its ions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Describe the structure of ionic compounds.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain how ionic compounds are held together.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







CC5c Properties of ionic compounds

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Describe the properties of ionic compounds.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain why ionic compounds have high melting points and high boiling points.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain why ionic compounds conduct electricity when they are molten and in aqueous solution.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain why ionic compounds do not conduct electricity as solids.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Identify ionic compounds from data about their properties.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CC6 Covalent bonding (Paper 2: Chemistry 1 and Paper 5: Chemistry 2)






CC6a Covalent bonds

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	Explain how covalent bonds are formed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Recall the names of some common molecular elements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Recall the names of some common molecular compounds.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	State the bonding that is found in molecules.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	State the approximate size (order or magnitude) of atoms and small molecules.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain the formation of covalent bonds using dot and cross diagrams.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







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CC7 Types of Substance (Paper 2: Chemistry 1 and Paper 5: Chemistry 2)






CC7a Molecular compounds

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Recall examples of common covalent, simple molecular compounds.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the general properties of covalent, simple molecular compounds.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain why covalent, simple molecular compounds have low melting and boiling points.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain why covalent, simple molecular compounds are poor conductors of electricity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe the structure of a polymer.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CC7b Allotropes of carbon







Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Recall some allotropes of carbon.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe the basic differences between covalent, simple molecules and giant covalent structures.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe the structures of diamond, graphite, fullerenes and graphene.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the properties of diamond, graphite, fullerenes and graphene.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain the properties and uses of diamond and graphite in terms of their structure and bonding.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain the properties of fullerenes and graphene in terms of their structure and bonding.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CC7c Properties of metals

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	Describe the particles and how they are arranged in metals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain why metals are malleable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain why metals conduct electricity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 3 rd	Describe the typical properties of metals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 3 rd	Describe the typical properties of non-metals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CC7d Bonding metals

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	Give examples of ionic; covalent, simple molecular; covalent, giant molecular; and metallic substances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe how the different types of bonds and structures are formed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain how the structure and bonding of a substance is linked to its physical properties. (Relative melting point and boiling point, relative solubility in water and ability to conduct electricity, as solids and in solution.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain why we use models to represent structure and bonding.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Represent structures and bonding using a variety of different models (dot and cross, ball and stick, 2D, 3D).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Describe the limitations of the different models used to represent structure and bonding (dot and cross, ball and stick, 2D, 3D).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>





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CC8 Acids and Alkalis (Paper 2: Chemistry 1)

CC8a Acids, alkalis and indicators








Step	Learning outcome	Had a look	Nearly there	Nailed it!
 4 th	Describe what the main hazard symbols mean.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe the safety precautions that should be observed when handling different acids and alkalis.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 4 th	Name the ions present in all acidic and all alkaline solutions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	State the pH values associated with acidic, alkaline and neutral solutions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe the effect of acids and alkalis on common indicators.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	H Explain the link between pH and the concentration of ions in acids and alkalis.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CC8b Looking at acids






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	H Describe the relationship between hydrogen ion concentration and pH.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	H Explain the difference between a dilute and concentrated solution (in terms of the amount of solute present).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	H Explain the difference between strong and weak acids (in terms of the degree of dissociation of the acid molecules).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	H Explain how the pH and reactivity of an acid depend on the concentration and the strength of the acid.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CC8c Bases and salts




Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Describe how a base reacts in a neutralisation reaction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe what happens when an acid reacts with a metal oxide.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Write word equations for the reactions of acids and metal oxides.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Write symbol equations for the reactions of acids and metal oxides.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Explain what happens during a neutralisation reaction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the steps involved in preparing a soluble salt from an acid and an insoluble reactant.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Explain why: an excess of insoluble reactant is used when preparing a soluble salt the excess reactant is removed when preparing a soluble salt the remaining solution contains only a salt and water, when preparing a soluble salt from an acid and an insoluble reactant.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CC8d Alkalis and balancing equations







Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	Recall the chemical formulae of some common compounds.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Recall and use state symbols.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Balance chemical equations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 4 th	Recall that alkalis are soluble bases.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the reactions of alkalis with acids.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CC8e Alkalis and neutralisation

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Explain what happens to the ions from acids and alkalis during neutralisation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain why titration is used to prepare soluble salts.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe how to carry out an acid-alkali titration.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CC8f Reactions of acids with metals and carbonates

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	 Write balanced ionic equations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain the general reaction between an acid and a metal to produce a salt and hydrogen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain the general reaction between an acid and a metal carbonate to produce a salt, water and carbon dioxide.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe the test for hydrogen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe the test for carbon dioxide.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







CC8g Solubility

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Recall the general rules for the solubility of common substances in water.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Predict whether or not a precipitate will form from two solutions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Name the precipitate formed in a reaction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe how to prepare a pure, dry sample of an insoluble salt.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>






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CC9 Calculations involving masses (Paper 2: Chemistry 1 and Paper 5: Chemistry 2)











CC9a Masses and empirical formulae

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 8 th	Calculate the relative formula mass of a substance from relative atomic masses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Calculate the empirical formula of a compound from the masses of the elements it contains.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain the difference between an empirical formula and a molecular formula.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Deduce the empirical formula from a molecular formula.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Deduce the molecular formula for a compound from its empirical formula and its relative formula mass.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe an experiment to determine the empirical formula for a compound.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CC9b Conservation of mass

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	Explain the law of conservation of mass in a closed system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Explain the law of conservation of mass in a non-enclosed system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Calculate the mass of product formed from a given mass of reactant, using a balanced equation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Calculate the mass of a reactant needed to produce a given amount of product, using a balanced equation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Calculate the concentration of a solution in g dm ⁻³ .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







CC9c Moles

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	 Describe what is meant by a mole of particles.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	 Calculate the number of moles of particles in a given mass of a certain substance and vice versa.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	 Calculate the number of particles in a given number of moles or mass of a substance and vice versa.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	 Explain that the mass of a product formed in a reaction is controlled by the mass of reactant that is not in excess.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	 Deduce the balanced equation for a reaction from the masses of reactants and/or products.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>





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CC10 Electrolytic Processes (Paper 2: Chemistry 1)

CC10a Electrolysis

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	State the meaning of the term 'electrolyte'.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Outline what happens during electrolysis.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain the movement of the ions during electrolysis.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	H Write half equations for the reactions at the electrodes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	H Explain the meaning of oxidation and reduction in terms of the movement of electrons.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	H State the electrodes at which oxidation and reduction occur.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>






CC10b Products from electrolysis

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	Recall the products formed from the electrolysis of a variety of common compounds and solutions (copper chloride solution, sodium chloride solution, sodium sulfate solution, acidified water, molten lead bromide).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain the formation of the products in the electrolysis of a variety of common compounds and solutions (copper chloride solution, sodium chloride solution, sodium sulfate solution, acidified water, molten lead bromide).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Predict the products formed from the electrolysis of a molten, binary, ionic compound.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain how the electrolysis of copper sulfate solution using copper electrodes can be used to purify copper.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







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CC11 Obtaining and Using Metals (Paper 2: Chemistry 1)

CC11a Reactivity






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Describe the reactions of common metals with water and acids.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe the reactions of metals with salt solutions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	H Explain why displacement reactions are redox reactions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Deduce the order of metals in the reactivity series from their reactions with water, acids and salt solutions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain the reactivity series in terms of the tendency of different metal atoms to form cations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CC11b Ores






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 4 th	Recall the meaning of the term 'ore'.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 4 th	Recall some metals that are found uncombined in the Earth's crust.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain how and why some metals are extracted from their ores by heating with carbon.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain how and why some metals are extracted from their ores by electrolysis.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	H Describe two biological methods of metal extraction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 10 th	H Evaluate biological methods of metal extraction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CC11c Oxidation and reduction

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	H Explain why reactions occurring at the electrodes during electrolysis are redox reactions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe the meanings of oxidation and reduction in terms of oxygen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain which substance has been oxidised and which substance has been reduced in a reaction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Recall that all metals are extracted by reduction of their ores.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain how the position of a metal in the reactivity series is related to its resistance to oxidation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







CC11d Life cycle assessment and recycling

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	State the advantages and disadvantages of recycling a metal.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe a process where a material or product is recycled for a different use.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Evaluate the advantages and disadvantages of recycling a material or product to decide whether recycling is a viable option.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe the four stages in carrying out a life cycle assessment (LCA) of a material or product.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Evaluate data from a life cycle assessment of a material or product.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CC12 Reversible Reactions and Equilibria (Paper 2: Chemistry 1)







CC12a Dynamic equilibrium

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Describe what happens in reversible reactions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain the use of the symbol \rightleftharpoons in chemical equations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain what is meant by dynamic equilibrium.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe the formation of ammonia.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	State the conditions used for the Haber process.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	H Describe how changing the temperature, pressure and concentration all affect the relative amount of substances in an equilibrium mixture.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







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CC13 Groups in the Periodic Table (Paper 5: Chemistry 2)

CC13a Group 1









Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	Explain the classification of alkali metals, halogens and noble gases, into groups in the periodic table.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the main physical properties of alkali metals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the reactions of lithium, sodium and potassium with water.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Write word, balanced and H ionic equations (including state symbols) for the reactions of alkali metals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Describe the pattern of reactivity of the alkali metals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 10 th	Explain how the electronic configurations of the atoms of alkali metals affect their reactivity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CC13b Group 7





Step	Learning outcome	Had a look	Nearly there	Nailed it!
 3 rd	Recall the appearance of chlorine, bromine and iodine at room temperature.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Describe the trends in colour, melting point and boiling point of chlorine, bromine and iodine down the group, and use these to predict physical properties of other halogens.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe the chemical test for chlorine gas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Describe the trends in the reactions of halogens with metals, and use this to predict reactions of other halogens.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Write word and balanced chemical equations, including state symbols, for the reactions of halogens with metals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe hydrogen halides and their chemical properties.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CC13c Halogen reactivity

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	Describe the relative reactivity of halogens.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain how the reactivity of halogens can be worked out from displacement reactions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Write balanced chemical equations, including state symbols, for the displacement reactions of halogens.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 10 th	 Explain how displacement reactions are examples of redox reactions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	 Write ionic equations, including state symbols, for displacement reactions of halogens.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 10 th	Explain the order of reactivity of halogens (using electronic configurations).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>




CC13d Group 0

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 8 th	Explain why noble gases are chemically inert by referring to their electronic configuration.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 3 rd	Describe uses of noble gases linked with their properties.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the trends in the physical properties of the noble gases.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Use trends in physical properties to predict the physical properties of other noble gases.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>






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CC14 Rates of Reaction (Paper 5: Chemistry 2)







CC14a Rates of reaction

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Describe different changes that can occur as a reaction proceeds.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Suggest different experimental methods to investigate rates of reaction (e.g. measurements of mass of reactants against time, volume of gas released against time, concentration of reactant or product against time).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Use graphs of changes (in mass, volume or concentration of reactant or product) against time, to interpret what is happening during reactions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CC14b Factors affecting reaction rates

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Explain what has to happen for reactions to take place.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain why changes in the energy of particles affect rates of reaction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain why changes in the frequency of collisions between particles affect the rate of reaction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain why changes in temperature, concentration, surface area and pressure affect the rate of reaction (surface area for solids, pressure for gases only).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe ways of speeding up or slowing down chemical reactions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>




CC14c Catalysts and activation energy

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Describe what a catalyst does.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain how catalysts are useful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain what the activation energy of a reaction is.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain how catalysts speed up chemical reactions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe what enzymes are.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Name one or more examples of enzymes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>






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CC15 Heat energy changes in chemical reactions (Paper 5: Chemistry 2)

CC15a Exothermic and endothermic reactions

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 4 th	Recall some examples of exothermic and endothermic changes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe how heat changes in solution may be determined.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Describe the differences between exothermic and endothermic changes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>






CC15b Energy changes in reactions

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 9 th	Describe exothermic and endothermic reactions in terms of energy changes when bonds are broken and formed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 1 st	 Use bond energies to calculate energy changes in reactions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain the meaning of activation energy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 10 th	Draw and label reaction profiles.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>






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CC16 Fuels (Paper 5: Chemistry 2)




CC16a Hydrocarbons in crude oil and natural gas

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 4 th	Recall the meaning of the term hydrocarbon.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the compounds found in crude oil.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe the importance of crude oil for the petrochemical industry.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Explain why crude oil is a finite resource.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 4 th	Recall the names of some common fossil fuels.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CC16b Fractional distillation of crude oil





Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	Describe how crude oil is separated by fractional distillation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain how fractional distillation of crude oil works.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Recall the names and uses of fractions from crude oil.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Describe how fractions differ from each other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain why the properties of different fractions differ.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CC16c The alkane homologous series





Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	Describe that oil fractions mostly contain alkanes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe the main features of an homologous series.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain why alkanes form an homologous series.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CC16d Complete and incomplete combustion

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Describe the complete combustion of hydrocarbon fuels.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain the production of harmful products during the incomplete combustion of hydrocarbon fuels.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain why carbon monoxide is toxic.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe the problems caused by incomplete combustion.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CC16e Combustible fuels and pollution

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Explain how some hydrocarbon fuels produce sulfur dioxide in use.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Recall the names of the pollutants responsible for acid rain.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe some effects of acid rain.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain why oxides of nitrogen are produced when fuels are burned in engines.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>





CC16f Breaking down hydrocarbons

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Evaluate hydrogen as an alternative fuel to petrol for cars.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe what happens during cracking.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain why alkanes are saturated and alkenes are unsaturated.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain why cracking is necessary.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>




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CC17 Earth and Atmospheric Science (Paper 5: Chemistry 2)






CC17a The early atmosphere

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Describe how the Earth's early atmosphere was formed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	State the names and relative amounts of the gases found in the Earth's early atmosphere.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Draw conclusions from evidence about the Earth's early atmosphere.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Explain how the oceans are thought to have formed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CC17b The changing atmosphere






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	Describe how the formation of the oceans influenced the composition of the atmosphere.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain how photosynthetic organisms (including plants) changed the composition of the atmosphere.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	State the chemical test for oxygen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CC17c The atmosphere today

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Recall the names of significant greenhouse gases.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe the processes involved in the greenhouse effect.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe how human activity increases the concentration of greenhouse gases.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 10 th	Evaluate the correlation between atmospheric carbon dioxide concentrations and fossil fuel use.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 10 th	Evaluate the evidence for increased atmospheric greenhouse gas concentrations being part of the cause of global warming and climate change.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CC17d Climate change






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	Suggest possible effects on the climate of increased levels of carbon dioxide and methane.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe how human activity leads to increased carbon dioxide levels.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe how human activity leads to increased methane levels.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the projected effects of climate change.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe how the potential harmful effects of climate change can be addressed and limited.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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PHYSICS

CP1 Motion (Paper 3: Physics 1)







CP1a Vectors and scalars

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Describe the difference between weight and mass.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain the difference between a vector and a scalar quantity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe the difference between displacement and distance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe the difference between velocity and speed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Define the terms: acceleration, force, momentum, energy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CP1b Distance/time graphs





Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Recall formulae relating distance, speed and time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Use formulae relating distance, speed and time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Recall typical speeds for walking, running, cycling and travelling by car.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Interpret distance/time graphs (including recognising what the steepness of the line tells you).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Represent journeys on distance/time graphs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Determine speed from the gradient of a distance/time graph.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CP1c Acceleration

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Recall the formula relating acceleration, velocity and time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Use the formula relating acceleration, velocity and time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Recall the formula relating acceleration, velocity and distance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Use the formula relating acceleration, velocity and distance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Recall the acceleration in free fall.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Estimate the magnitudes of some everyday accelerations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>






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CP1d Velocity/time graphs









Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	Represent journeys on velocity/time graphs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Interpret velocity/time graphs qualitatively.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Calculate uniform accelerations from the gradients of velocity/time graphs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Determine the distance travelled from the area under a velocity/time graph.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CP2 Motion and Forces (Paper 3: Physics 1)

CP2a Resultant forces






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	Explain the difference between scalar and vector quantities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Use arrows to represent the direction and magnitude of forces.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Define a resultant force.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Calculate resultant forces.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Explain whether forces on an object are balanced or unbalanced.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CP2b Newton's First Law








Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Describe the effect of balanced forces on moving and stationary objects.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the effect of a non-zero resultant force on moving and stationary objects.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	 Describe circular motion at constant speed as a changing velocity and hence as an acceleration.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	 Describe the force needed to keep an object moving in a circular path.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	 Give some examples of objects moving in circular paths and the type of centripetal force involved.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CP2c Mass and weight

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 4 th	Describe the difference between mass and weight.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 4 th	List the factors that determine the weight of an object.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 4 th	Recall the formula for calculating weight.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Calculate weights using the formula.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Change the subject of the weight formula to calculate mass or gravitational field strength.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CP2d Newton's Second Law






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	Describe what an acceleration is.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	List the factors that affect the acceleration of an object.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Recall the formula that relates the factors affecting acceleration.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Use the formula relating force, mass and acceleration.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Change the subject of the formula relating force, mass and acceleration.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	 Explain what inertial mass means.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CP2e Newton's Third Law






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	Describe what Newton's Third Law says.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Recall the meaning of 'equilibrium situation'.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Identify action–reaction pairs in familiar situations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Distinguish between action–reaction pairs and balanced forces.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	 Describe how objects affect each other when they collide.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CP2f Momentum

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	Describe the factors that affect the momentum of an object.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Calculate the momentum of moving objects.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Recall what happens to momentum during a collision.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Use the idea of conservation of momentum to calculate velocities of objects after collisions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 10 th	Calculate the force needed to produce a change in momentum in a given time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CP2g Stopping distances

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Describe how human reaction times are measured.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Recall typical human reaction times and the factors that affect them.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe the link between stopping distance, thinking distance and braking distance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Recall the factors that affect stopping distances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe how different factors affect stopping distances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>






CP2h Crash hazards

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	Explain the meaning of a 'large deceleration'.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the dangers caused by large decelerations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain why large decelerations cause dangers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	 Recall some typical forces involved in road collisions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	 Use knowledge of changes in momentum to estimate the forces involved in road collisions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







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CP3 Conservation of Energy (Paper 3: Physics 1)







CP3a Energy stores and transfers

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Explain, using examples, that energy is conserved.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Give examples of energy being moved between different stores.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Interpret diagrams that represent energy transfers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Represent energy transfers using diagrams.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe what happens to wasted energy in energy transfers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CP3b Energy efficiency






Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Explain some ways in which energy is transferred wastefully by mechanical processes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain some ways of reducing unwanted energy transfers in mechanical processes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Define what efficiency means.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 Explain how efficiency can be increased.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Recall and use the formula for calculating energy efficiency.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CP3c Supplying electricity





Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Describe what is meant by electrical resistance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain how energy can be wasted in electrical appliances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe how the National Grid transmits electricity around the country.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain why step-up and step-down transformers are used in the National Grid.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 Explain how wasteful energy transfers can be reduced in electrical appliances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CP3d Keeping warm

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Describe the ways in which energy can be transferred by heating.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe ways of reducing unwanted energy transfers using thermal insulation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain how different ways of reducing energy transfer by heating work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Define the meaning of thermal conductivity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the effects of the thickness and thermal conductivity of the walls of a building on its rate of cooling.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CP3e Non-renewable resources

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 4 th	List the non-renewable energy resources in use today.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe the advantages and disadvantages of non-renewable energy resources.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Compare the advantages and disadvantages of non-renewable energy resources.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Explain how the use of non-renewable energy resources is changing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>





CP3f Renewable resources

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 4 th	List the renewable energy resources in use today.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe the source of energy for different renewable resources.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe the ways in which the different energy resources are used.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain why we cannot use only renewable energy resources.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Explain how the use of renewable energy resources is changing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







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CP4 Waves (Paper 3: Physics 1)





CP4a Describing waves

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Recall that waves transfer energy and information but do not transfer matter.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe waves using the terms frequency, wavelength, amplitude, period and velocity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the differences between longitudinal and transverse waves.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 4 th	Give examples of transverse and longitudinal waves.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CP4b Waves velocities

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	Recall the equation relating wave speed, frequency and wavelength	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Use the equation relating wave speed, frequency and wavelength.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Recall the equation relating wave speed, distance and time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Use the equation relating wave speed, distance and time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe how to measure the velocity of sound in air.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe how to measure the velocity of waves on the surface of water.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







CP4c Refraction

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Describe what refraction is.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe how the direction of a wave changes when it goes from one material to another.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Explain some effects of the refraction of light (explanations in terms of changing speeds are not expected).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	H Explain how a change in wave speed can cause a change in direction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>








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CP5 Light and the Electromagnetic Spectrum (Paper 3: Physics 1)

CP5a Electromagnetic waves











Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Recall examples of electromagnetic waves.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe the common features of electromagnetic waves.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe the transfer of energy by electromagnetic waves.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe the range of electromagnetic waves that our eyes can detect.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	 Describe an effect caused by the different velocities of electromagnetic waves in different substances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CP5b The electromagnetic spectrum








Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Recall the groups of waves in the electromagnetic spectrum in order.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Recall the colours of the visible spectrum in order.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe how the waves in the electromagnetic spectrum are grouped.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	 Describe some differences in the ways that different parts of the electromagnetic spectrum are absorbed and transmitted.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	 Describe some differences in the ways that different parts of the electromagnetic spectrum are refracted and reflected.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CP5c Using the long wavelengths

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	 Describe how long wavelength electromagnetic waves are affected by different substances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 Explain the effects caused by long wavelength electromagnetic waves travelling at different velocities in different substances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe some uses of radio waves.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe some uses of microwaves.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe some uses of infrared.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe some uses of visible light.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 Describe how radio waves are produced and detected by electrical circuits.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CP5d Using the short wavelengths

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	 Describe how short wavelength electromagnetic waves are affected by different substances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	 Explain the effects caused by short wavelength electromagnetic waves travelling at different velocities in different substances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe some uses of ultraviolet radiation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe some uses of X-rays.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe some uses of gamma rays.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>






CP5e EM radiation dangers

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Describe how the potential danger of electromagnetic radiation depends on its frequency.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe the harmful effects of microwave and infrared radiation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe the harmful effects of ultraviolet radiation, X-rays and gamma rays.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Recall the nature of radiation produced by changes in atoms and their nuclei.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Recall that absorption of radiation can cause changes in atoms and their nuclei.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>






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CP6 Radioactivity (Paper 3: Physics 1)






CP6a Atomic models

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	Describe the structure of an atom (in terms of nucleus and electrons).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	State where most of the mass of an atom is found.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	State the sizes of atoms and small molecules.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Describe an early model of the atom.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Describe how and why our model of the atom has changed over time, including the plum pudding model and the Rutherford alpha particle scattering.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CP6b Inside atoms







Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	State what is meant by an isotope.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Represent isotopes using symbols.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain how atoms of different elements are different (in terms of numbers of electrons and protons).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Recall the charges and relative masses of the three subatomic particles.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain why all atoms have no overall charge.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CP6c Electrons and orbits







Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	Describe where electrons are found inside atoms (in terms of shells).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Describe when electrons can change orbit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Recall what an ion is.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Describe how ionisation occurs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Describe some of the evidence for the Bohr model of the atom.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CP6d Background radiation

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 9 th	Explain what background radiation is.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Describe how radiation measurements need to be corrected for background radiation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	List some sources of background radiation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Describe how photographic film can be used to detect radioactivity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Describe how a Geiger-Müller tube works.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Describe how the amount of radioactivity can be measured (in terms of the darkness of photographic film or by attaching a counter to a GM tube).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CP6e Types of radiation






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 8 th	List five types of radiation that are emitted in random processes from unstable nuclei.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	State that the five types of radiation are ionising radiations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Describe what alpha and beta particles are.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Describe the nature of gamma radiation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 10 th	Compare the penetrating abilities of alpha, beta and gamma radiation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 10 th	Compare the ionisation abilities of alpha, beta and gamma radiation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CP6f Radioactive decay






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 9 th	Describe the process of β^- decay.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Describe the process of β^+ decay.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 10 th	Explain how the proton and mass numbers are affected by different kinds of radioactive decay.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Describe what happens during nuclear rearrangement after radioactive decay.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 10 th	Balance nuclear equations for mass and charge.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CP6g Half-life

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 8 th	Describe how the activity of a substance changes over time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	State how half-life can be used to describe the changing activity of a substance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Recall the unit of activity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Describe how half-life can be used to work out how much of a substance will decay in a certain time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 10 th	Carry out calculations involving half-life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>






CP6h Dangers of radioactivity

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 8 th	Describe the hazards of ionising radiation in terms of tissue damage and possible mutations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain the precautions taken to reduce the risks from radiation and ensure the safety of patients exposed to radiation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain the precautions taken to reduce the risks from radiation and protect people who work with radiation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Describe the differences between contamination and irradiation effects.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 11 th	Compare the hazards of contamination and irradiation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CP7 Energy – Forces doing work (Paper 6: Physics 2)

CP7a Work and power





Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Describe some ways in which the energy of a system can be changed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Measure the work done by a force.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Recall and use the equation linking work done, force and distance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Explain what power means.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Recall and use the equation linking power, work done and time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CP8 Forces and their Effects (Paper 6: Physics 2)

CP8a Objects affecting each other

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Describe the effect of a gravitational field on objects.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe the effects of magnetic fields on objects.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe the forces that can occur when objects are in contact with each other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the effects of electrostatic fields on objects.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Describe how pairs of forces occur when objects affect each other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Use examples to explain the difference between vector and scalar quantities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>






CP8b Vector diagrams

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	Describe how to resolve forces.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Use scale drawings to work out the net force on an object.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Draw free body diagrams to represent the forces on an object.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain what happens in situations where several forces are acting on an object.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>






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CP9 Electricity and Circuits (Paper 6: Physics 2)

CP9a Electric circuits







Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	Describe the basic structure of an atom (positions, relative masses and relative charges of protons, neutrons and electrons).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 3 rd	Recognise the circuit symbols for a range of common electrical components (cells, including batteries, switches, voltmeters, ammeters and lamps).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 4 th	Draw diagrams for circuits containing common electrical components, using conventions for positive and negative terminals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe and explain the difference between the brightness of identical lamps in series and parallel circuits.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe and explain the effects of different numbers of identical lamps, cells and switches in series and parallel circuits.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CP9b Current and potential difference







Step	Learning outcome	Had a look	Nearly there	Nailed it!
 4 th	Describe how to measure voltage.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Define the term 'potential difference'.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 4 th	Describe how to measure current.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 4 th	Describe the conditions needed to produce an electric current. (A complete circuit and a source of voltage/potential difference.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 4 th	Describe the behaviour of current at a junction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CP9c Current, charge and energy







Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Explain the link between the potential difference (voltage) across a battery or a component, the charge passing through it and the amount of energy transferred.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Recall that the unit of potential difference is the volt and explain it in terms of units of energy and charge (a potential difference of one joule per coulomb).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Recall and use the equation to calculate the energy transferred, the charge that flows or the potential difference. ($E = Q \times V$)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain the link between electric current and electric charge.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain electric current in metals in terms of electrons.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Recall and use the equation to calculate the charge that flows, the current or the time the current flows. ($Q = I \times t$)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CP9d Resistance








Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Explain the link between resistance and current in a circuit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Define the resistance of a component or circuit ($R = V/I$).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Recall and use the equation to calculate the potential difference, the current or the resistance ($V = I \times R$).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain the difference in resistance when two resistors are connected in series or in parallel.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Calculate the currents, potential differences and resistances in series circuits.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain the design and construction of series circuits for testing and measuring.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CP9e More about resistance






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	Explain how current changes with potential difference in fixed resistors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Explain how current and resistance change with potential difference in filament lamps.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Explain how current and resistance change with potential difference in diodes, including light-emitting diodes (LEDs).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe how the resistance of a light-dependent resistor (LDR) varies with changing light intensity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe how the resistance of a thermistor varies with changing temperature. (negative temperature coefficient only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Describe the uses of diodes, LDRs and thermistors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CP9f Transferring energy






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Describe the energy transfer that occurs when a current passes through a resistor.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Use the electron and ion model and the idea of electrical work to explain the energy transfer in a resistor and the resulting dissipation of energy in the surroundings.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	 Explain how unwanted energy transfers in wires can be avoided.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Recall the advantages of the heating effect of an electric current.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Recall the disadvantages of the heating effect of an electric current.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Use the equation $E = I \times V \times t$ to calculate the energy transferred, the current, the potential difference or the time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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CP9g Power

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Define power and the units used to measure it. (energy transferred per second in watts)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Recall and use the equation to calculate the power, the energy transferred or the time taken. ($P = E/t$)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Explain how power transfer depends on the potential difference across a device and the current through it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Recall and use the equation to calculate the electrical power, the current or the potential difference. ($P = I \times V$)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Recall and use the equation to calculate the electrical power, the current or the resistance. ($P = I^2 \times R$)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CP9h Transferring energy by electricity

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	Describe energy transfers from d.c. batteries and the a.c. mains supply to motors and heaters.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Explain the difference between direct and alternating voltage.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Compare alternating and direct current (in terms of movement of charge).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Recall the frequency and voltage of the UK domestic supply.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe the power ratings of some domestic electrical appliances and changes in stored energy when they are in use.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







CP9i Electrical safety

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 4 th	Explain the difference between the functions of the live and the neutral wires.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 4 th	Explain how circuit breakers make circuits safer.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 4 th	Explain how the earth wire and the fuse make circuits safer.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 4 th	Explain why switches and fuses are connected in the live wire.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Recall the potential differences between the live, neutral and earth wires.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 4 th	Explain the danger of a connection between the live wire and earth.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>






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CP10 Magnetism and the Motor Effect (Paper 6: Physics 2)











CP10a Magnets and magnetic fields

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 3 rd	Describe how magnets affect each other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 4 th	Explain the difference between permanent and induced magnets.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 4 th	Describe the uses of permanent and temporary magnetic materials.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 4 th	Describe the shapes of magnetic fields, including variations in strength.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 4 th	Describe how the shape of magnetic fields can be shown using plotting compasses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Explain how a magnetic compass can be used as evidence for the Earth's magnetic core.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CP10b Electromagnetism

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	Recall that a current can create a magnetic effect.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Relate the shape and direction of the magnetic field around a straight wire to the direction of the current.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Recall the factors that affect the strength of the magnetic field around a wire.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe the magnetic field inside and outside a coil of wire carrying a current.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain the shape and strength of the magnetic field around a solenoid.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>




CP10c Magnetic forces

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	 Recall that forces are produced when a current flows in a magnetic field.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	 Explain what causes the forces produced when a current flows in a magnetic field.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	 Recall Fleming's left-hand rule.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	 Use Fleming's left-hand rule.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	 Use the formula relating force, magnetic field strength, current and length.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>










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CP11 Electromagnetic Induction (Paper 6: Physics 2)

CP11a Transformers

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Recall the law of conservation of energy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Recall that the power of an electrical current is given by the current multiplied by the voltage.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Use the formula relating the input and output current and voltage for a transformer.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







CP11b Transformers and energy

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	 Recall the factors that affect the size and direction of an induced potential difference.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	 Describe how the magnetic field produced by an induced potential difference opposes the original change.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	 Explain how a transformer works.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Recall that transformers can change the voltage of an alternating current.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe how the national grid transmits electricity around the country.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Explain why step-up and step-down transformers are used in the national grid.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







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CP12 Particle Model (Paper 6: Physics 2)




CP12a Particles and density

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	Describe the arrangements of particles in solids, liquids and gases.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Use the particle model to explain the different properties of solids, liquids and gases.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 th	Recall the formula relating density, mass and volume.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Use the formula relating density, mass and volume.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Use the particle model to explain why solids, liquids and gases have different densities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 4 th	Describe what happens to the mass of a substance when it changes state.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CP12b Energy and changes of state






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	Explain how heating affects the particles in a substance or object, including changes of state.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe how the temperature of an object changes with time while being heated or cooled to make it change state.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Define the term specific heat capacity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Define the term specific latent heat.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain the difference between specific heat capacity and specific latent heat.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Explain ways of reducing unwanted energy transfer through thermal insulation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CP12c Energy calculations

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 8 th	Use the formula relating change in thermal energy, mass, temperature change and specific heat capacity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Use the formula relating thermal energy, mass and specific latent heat.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Recall that the value of specific latent heat for a substance is different for melting/solidifying and for evaporating/condensing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>






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CP12d Gas temperature and pressure





Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Explain how the movement of particles causes gas pressure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain how changing the temperature of a gas affects the speed of its particles.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain how temperature affects the pressure of a fixed mass of gas at constant volume.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain the significance of absolute zero.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Convert temperatures between the Kelvin and Celsius temperature scales.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CP13 Forces and Matter (Paper 6: Physics 2)

CP13a Bending and stretching

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Explain that more than one force is needed to distort an object.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe the difference between elastic and inelastic distortion.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe the relationship between force and extension for a spring.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe the relationship between force and extension for a rubber band.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Compare the force–extension relationship for different objects.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CP13b Extension and energy transfers

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Recall the equation that links force, extension and the spring constant.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Use the formula relating force, extension and spring constant.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Recall that work has to be done to stretch a spring.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Use the formula relating the energy transferred to the extension of a spring.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>