







# Year 10: Combined Science End of Year Assessment Checklist






## Paper 1: Biology

### CB4 Natural Selection and Genetic Modification






#### CB4a Evidence for human evolution

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 4 <sup>th</sup>	Define 'evolution'.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 <sup>th</sup>	Recognise binomial species names.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 <sup>th</sup>	Explain how evidence from fossils and stone tools supports current ideas about human evolution.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 <sup>th</sup>	Recall how stone tools are dated from their environment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 <sup>th</sup>	Describe how stone tools created by human-like species have developed over time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 <sup>th</sup>	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 <sup>th</sup>	Recall the cause of genetic variation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 <sup>th</sup>	Describe how adaptations allow organisms to survive.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	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 <sup>th</sup>	Explain how natural selection can lead to the evolution of a new species.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 10 <sup>th</sup>	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 <sup>th</sup>	Describe how organisms are classified into smaller and smaller groups (based on their characteristics).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 <sup>th</sup>	Identify genus and species from a binomial name.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 <sup>th</sup>	Identify an organism as a member of one of the five kingdoms.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 <sup>th</sup>	Describe what genetic analysis is.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 <sup>th</sup>	Explain why biologists often now classify organisms into three domains.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Year 10: Combined Science End of Year Assessment Checklist

### CB4d Breeds and varieties

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 <sup>th</sup>	Describe why new breeds and varieties are created.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 <sup>th</sup>	Describe what is meant by a 'genetically modified organism'.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	Describe how selective breeding is carried out.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 10 <sup>th</sup>	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!
 7 <sup>th</sup>	Recall some uses of selectively bred organisms (in agriculture).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	Recall some uses of genetically engineered organisms (in agriculture, in medicine).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 11 <sup>th</sup>	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"/>






# Year 10: Combined Science End of Year Assessment Checklist

## CB5 Health, Disease, and the Development of Medicines






### 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"/>

### CB5b Non-communicable disease






Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Give examples of non-communicable diseases.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Define the term malnutrition.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain how diet can lead to malnutrition.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe the link between alcohol and liver disease.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	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!
	Describe how obesity is measured (BMI and waist : hip calculations).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe how obesity correlates with cardiovascular disease.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe how smoking correlates with cardiovascular disease.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain why exercise and diet affect obesity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Compare how cardiovascular diseases are treated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

# Year 10: Combined Science End of Year Assessment Checklist






## CB5d Pathogens

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

## CB5e Spreading pathogens






Step	Learning outcome	Had a look	Nearly there	Nailed it!
	State the ways in which pathogens can be spread.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Give examples of pathogens that are spread in different ways (e.g. cholera bacteria by water, tuberculosis bacteria and chlamydia 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"/>
	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!
	Explain how the spread of the STIs Chlamydia and HIV can be reduced or prevented.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Give examples of physical barriers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Give examples of chemical barriers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe how physical barriers protect the body (e.g. skin, mucus and cilia).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe how chemical barriers protect the body (e.g. lysozymes, hydrochloric acid).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Year 10: Combined Science End of Year Assessment Checklist

### CB5g The immune system

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






### CB5h Antibiotics

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




# Year 10: Combined Science End of Year Assessment Checklist

## CB6 Plant Structures and their Functions

### CB6a Photosynthesis






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

## Year 10: Combined Science End of Year Assessment Checklist

### CB6c Absorbing water and mineral ions

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 <sup>th</sup>	Explain how root hair cells are adapted to taking in water and mineral ions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 <sup>th</sup>	Recall that substances can be transported by diffusion, osmosis and active transport.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 <sup>th</sup>	Describe what is meant by a concentration gradient.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 <sup>th</sup>	Explain why active transport is needed to transport some molecules.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	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!
 6 <sup>th</sup>	Explain how xylem tissue is adapted to its functions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 <sup>th</sup>	Explain how phloem tissue is adapted to its function.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 <sup>th</sup>	Describe how transpiration occurs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 <sup>th</sup>	Describe how translocation occurs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 <sup>th</sup>	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"/>
 7 <sup>th</sup>	Describe how to measure the rate of transpiration.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

# Year 10: Combined Science End of Year Assessment Checklist








## Paper 2: Chemistry

### CC8 Acids and Alkalis – Year 9 Topic

#### CC8a Acids, alkalis and indicators

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






#### CC8c Bases and salts

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Describe how a base reacts in a neutralisation reaction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe what happens when an acid reacts with a metal oxide.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Write word equations for the reactions of acids and metal oxides.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Write symbol equations for the reactions of acids and metal oxides.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain what happens during a neutralisation reaction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	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"/>
	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"/>






## Year 10: Combined Science End of Year Assessment Checklist

### CC8d Alkalis and balancing equations





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

## Year 10: Combined Science End of Year Assessment Checklist





### 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!
	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"/>






# Year 10: Combined Science End of Year Assessment Checklist

## CC9 Calculations involving masses

### CC9a Masses and empirical formulae

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 8 <sup>th</sup>	Calculate the relative formula mass of a substance from relative atomic masses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	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 <sup>th</sup>	Explain the difference between an empirical formula and a molecular formula.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 <sup>th</sup>	Deduce the empirical formula from a molecular formula.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	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 <sup>th</sup>	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 <sup>th</sup>	Explain the law of conservation of mass in a closed system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 <sup>th</sup>	Explain the law of conservation of mass in a non-enclosed system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	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 <sup>th</sup>	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 <sup>th</sup>	Calculate the concentration of a solution in g dm <sup>-3</sup> .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>





# Year 10: Combined Science End of Year Assessment Checklist

## CC10 Electrolytic Processes

### CC10a Electrolysis

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 <sup>th</sup>	State the meaning of the term 'electrolyte'.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 <sup>th</sup>	Outline what happens during electrolysis.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 <sup>th</sup>	Explain the movement of the ions during electrolysis.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>





### CC10b Products from electrolysis

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 <sup>th</sup>	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 <sup>th</sup>	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 <sup>th</sup>	Predict the products formed from the electrolysis of a molten, binary, ionic compound.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	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"/>





## Year 10: Combined Science End of Year Assessment Checklist

### CC11 Obtaining and Using Metals

#### CC11a Reactivity





Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 <sup>th</sup>	Describe the reactions of common metals with water and acids.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 <sup>th</sup>	Describe the reactions of metals with salt solutions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	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 <sup>th</sup>	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 <sup>th</sup>	Recall the meaning of the term 'ore'.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 4 <sup>th</sup>	Recall some metals that are found uncombined in the Earth's crust.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 <sup>th</sup>	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 <sup>th</sup>	Explain how and why some metals are extracted from their ores by electrolysis.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Year 10: Combined Science End of Year Assessment Checklist

### CC11c Oxidation and reduction

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 8 <sup>th</sup>	Describe the meanings of oxidation and reduction in terms of oxygen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 <sup>th</sup>	Explain which substance has been oxidised and which substance has been reduced in a reaction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 <sup>th</sup>	Recall that all metals are extracted by reduction of their ores.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	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!
 4 <sup>th</sup>	State the advantages and disadvantages of recycling a metal.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 <sup>th</sup>	Describe a process where a material or product is recycled for a different use.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	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"/>
 5 <sup>th</sup>	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"/>
 8 <sup>th</sup>	Evaluate data from a life cycle assessment of a material or product.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

# Year 10: Combined Science End of Year Assessment Checklist

## CC12 Reversible Reactions and Equilibria







### CC12a Dynamic equilibrium

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 <sup>th</sup>	Describe what happens in reversible reactions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 <sup>th</sup>	Explain the use of the symbol $\rightleftharpoons$ in chemical equations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 <sup>th</sup>	Explain what is meant by dynamic equilibrium.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 <sup>th</sup>	Describe the formation of ammonia.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 <sup>th</sup>	State the conditions used for the Haber process.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







# Year 10: Combined Science End of Year Assessment Checklist

## CC13 Groups in the Periodic Table

### CC13a Group 1

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 <sup>th</sup>	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 <sup>th</sup>	Describe the main physical properties of alkali metals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 <sup>th</sup>	Describe the reactions of lithium, sodium and potassium with water.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 <sup>th</sup>	Write word, balanced) for the reactions of alkali metals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 <sup>th</sup>	Describe the pattern of reactivity of the alkali metals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 10 <sup>th</sup>	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 <sup>rd</sup>	Recall the appearance of chlorine, bromine and iodine at room temperature.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	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 <sup>th</sup>	Describe the chemical test for chlorine gas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	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 <sup>th</sup>	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 <sup>th</sup>	Describe hydrogen halides and their chemical properties.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







## Year 10: Combined Science End of Year Assessment Checklist

### CC13c Halogen reactivity

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 <sup>th</sup>	Describe the relative reactivity of halogens.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	Explain how the reactivity of halogens can be worked out from displacement reactions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 <sup>th</sup>	Write balanced chemical equations, including state symbols, for the displacement reactions of halogens.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 10 <sup>th</sup>	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 <sup>th</sup>	Explain why noble gases are chemically inert by referring to their electronic configuration.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 3 <sup>rd</sup>	Describe uses of noble gases linked with their properties.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 <sup>th</sup>	Describe the trends in the physical properties of the noble gases.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	Use trends in physical properties to predict the physical properties of other noble gases.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>






# Year 10: Combined Science End of Year Assessment Checklist

## CC14 Rates of Reaction







### 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"/>

# Year 10: Combined Science End of Year Assessment Checklist






## Paper 3: Physics

### CP6 Radioactivity

#### CP6a Atomic models






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 <sup>th</sup>	Describe the structure of an atom (in terms of nucleus and electrons).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 <sup>th</sup>	State where most of the mass of an atom is found.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 <sup>th</sup>	State the sizes of atoms and small molecules.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	Describe an early model of the atom.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	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 <sup>th</sup>	State what is meant by an isotope.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	Represent isotopes using symbols.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	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 <sup>th</sup>	Recall the charges and relative masses of the three subatomic particles.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	Explain why all atoms have no overall charge.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Year 10: Combined Science End of Year Assessment Checklist







### CP6c Electrons and orbits

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

### CP6d Background radiation






Step	Learning outcome	Had a look	Nearly there	Nailed it!
 9 <sup>th</sup>	Explain what background radiation is.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 <sup>th</sup>	Describe how radiation measurements need to be corrected for background radiation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	List some sources of background radiation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	Describe how photographic film can be used to detect radioactivity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 <sup>th</sup>	Describe how a Geiger-Müller tube works.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	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 <sup>th</sup>	List five types of radiation that are emitted in random processes from unstable nuclei.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	State that the five types of radiation are ionising radiations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	Describe what alpha and beta particles are.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	Describe the nature of gamma radiation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 11 <sup>th</sup>	Compare the penetrating abilities of alpha, beta and gamma radiation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 11 <sup>th</sup>	Compare the ionisation abilities of alpha, beta and gamma radiation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Year 10: Combined Science End of Year Assessment Checklist






### CP6f Radioactive decay

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

### CP6g Half-life

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Describe how the activity of a substance changes over time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	State how half-life can be used to describe the changing activity of a substance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Recall the unit of activity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	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"/>
	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!
	Describe the hazards of ionising radiation in terms of tissue damage and possible mutations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	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"/>
	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"/>
	Describe the differences between contamination and irradiation effects.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Compare the hazards of contamination and irradiation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

# Year 10: Combined Science End of Year Assessment Checklist

## CP7 Energy







### CP7a Work and power

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





# Year 10: Combined Science End of Year Assessment Checklist

## CP8 Forces and their Effects

### CP8a Objects affecting each other

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 <sup>th</sup>	Describe the effect of a gravitational field on objects.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 <sup>th</sup>	Describe the effects of magnetic fields on objects.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 5 <sup>th</sup>	Describe the forces that can occur when objects are in contact with each other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 <sup>th</sup>	Describe the effects of electrostatic fields on objects.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	Describe how pairs of forces occur when objects affect each other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	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 <sup>th</sup>	Describe how to resolve forces.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	Use scale drawings to work out the net force on an object.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 <sup>th</sup>	Draw free body diagrams to represent the forces on an object.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 <sup>th</sup>	Explain what happens in situations where several forces are acting on an object.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>