Chemistry Paper 1 (foundation) – Check list

Practice applying your knowledge after using the knowledge organiser to revise a unit or topic:

- Take each learning statement and prove you can do it by answering that statement on paper.
- For any statement you cannot answer, use BBC bitesize to make notes and try to re-learn it.
- If you are still stuck, use Cognito science video lessons or ask a friend to re-explain

Topic	Tier	Learning statement	Answer from memory
Elements & Compounds	F	Describe and draw a model of the three states of matter	
Elements & Compounds	F	Use the particle model to explain melting, boiling, freezing and condensing	
Elements & Compounds	F	Identify a substance's state using its melting and boiling point	
Elements & Compounds	F	Classify a substance as an element or compound	
Elements & Compounds	F	Identify the symbol for the first 20 elements	
Elements & Compounds	F	Name common compounds from their formula	
Mixtures	F	Use key terms (soluble, insoluble, solute, solvent and solution) correctly to describe a substance dissolving	
Mixtures	F	Explain how to separate given mixtures (filtration, crystallisation, simple distillation, fractional distillation, chromatography)	
Structure of an atom	F	Describe the plum pudding model of the atom	
Structure of an atom	F	Describe the current (nuclear) model of the atom giving the relative charge and mass of the subatomic particles	
Structure of an atom	F	Recall the radius of an atom and its nucleus	
Structure of an atom	F	Calculate protons, neutrons and electrons for an atom linking to mass and atomic number	
Structure of an atom	F	Draw the electronic structure and work out the electronic configuration for a given atom	
Structure of an atom	F	Define an 'isotope'	
Structure of an atom	F	Link isotopes to relative atomic mass to explain why this is an average	
Structure of an atom	F	Calculate the relative atomic mass of an element given the percentage abundance of its isotopes	
Structure of an atom	F	Calculate the relative formula mass of a substance	
Metals in the periodic table	F	Describe how Mendeleev has arranged the periodic table	
Metals in the periodic table	F	Explain why something is classified as a metal or non-metal	
Metals in the periodic table	F	Describe the uses of metals	
Metals in the periodic table	F	Define a 'chemical reaction' and given examples	
Metals in the periodic table	F	Explain what an alloy is and how it's properties differ from a pure metal	
Groups in the periodic table	F	Describe the key properties (state, easy to cut, appearance) of group 1	
Groups in the periodic table	F	Describe and explain how the reactivity changes as you move down group 1 (oxygen, chlorine, water)	
Groups in the periodic table	F	Describe the key properties (molecular mass, boiling and melting point) of group 7	

Groups in the periodic table	F	Describe and explain how the reactivity changes as you move down group 7	
Groups in the periodic table	F	Describe the key properties (boiling point, density, reactivity) of group 0	
Groups in the periodic table	F	Describe and explain how the reactivity changes as you move down group 0	
Types of bonding	F	Describe the structure and properties of giant ionic structures	
Types of bonding	F	Link the structure of giant ionic structures to its properties	
Types of bonding	F	Describe the structure and properties of simple covalent structures	
Types of bonding	F	Describe the structure and properties of giant covalent structures (including diamond, graphite and silica)	
Types of bonding	F	Compare and contrast giant carbon structures (diamond, graphite, graphene and fullerene – Buckminster fullerenes and nanotubes as examples)	
Types of bonding	F	Describe how a substance bonds metallically	
Types of bonding	F	Link the structure of giant metallic structures to their properties	
Describing chemical reactions	F	Write a word equation for a given reaction	
Describing chemical reactions	F	Write a balanced symbol equation for a given reaction	
Describing chemical reactions	F	Include appropriate state symbols in an equation	
Describing chemical reactions	F	Compare the mass of reactants and products when looking at a word equation, linking this to the theory of 'conservation of mass' (metal and oxygen, thermal decomposition of metal carbonates)	
Describing chemical reactions	F	Calculate 'uncertainty' for a given set of measurements	
Reactions of metals	F	Describe the reaction of given metals with oxygen	
Reactions of metals	F	Describe the reaction of given metals with water	
Reactions of metals	F	Describe the reactions of given metals with acids (magnesium, zinc and iron with hydrochloric and sulphuric acid)	
Reactions of metals	F	Predict products from given reactants	
Acids & alkalis	F	Identify the ions produced by different acids and alkalis	
Acids & alkalis	F	Describe the pH scale and how to test pH using universal indicator or a pH probe	
Acids & alkalis	F	Describe neutralisation reactions (alkalis and bases, metal carbonates and acid)	
Acids & alkalis	F	Deduce the formulae of salts from their given ions	
Acids & alkalis	F	Explain the method for producing soluble salts	
Acids & alkalis	F	**RP Making Salts:** Prepare a pure dry sample of a soluble salt from an insoluble oxide or carbonate	
Acids & alkalis	F	Recall the ionic equation for neutralisation	
Acids & alkalis	F	Explain how to use a titration to measure the volume of an acid or an alkali	
Reactivity of metals	F	Use evidence to rank metals in order of reactivity	

Reactivity of metals	F	Predict what would happen in a displacement reaction between two substances	
Electrolysis	F	Link reactivity to how metals are extract from their ore	
Electrolysis	F	Describe how electrolysis is carried out	
Electrolysis	F	Explain the electrolysis of molten compounds e.g. Lead bromide	
Electrolysis	F	Predict what is produced at each electrode	
Electrolysis	F	Explain how electrolysis can be used to extract metals from their ores	
Electrolysis	F	Explain how electrolysis can be used to determine the presence of hydrogen in an aqueous solution	
Electrolysis	F	**RP Electrolysis:** Investigate what happens when aqueous solutions are electrolysed (including the development of a hypothesis)	
Exothermic and Endothermic reactions	F	Explain how energy is conserved in reactions	
Exothermic and Endothermic reactions	F	Define and give examples and uses of exothermic and endothermic reactions	
Exothermic and Endothermic reactions	F	Evaluate data to decide whether a reaction is exothermic or endothermic	
Exothermic and Endothermic reactions	F	**RP Temperature Changes:** Investigate the variables that affect temperature changes in reacting solutions	
Exothermic and Endothermic reactions	F	Define activation energy	
Exothermic and Endothermic reactions	F	Use reaction profiles to show energies of reactants and products and link to exothermic and endothermic and draw simple reaction profiles for endothermic and exothermic reactions.	
Chemical calculations	F	Link changes in mass to the word equation for a reaction (double only)	
Chemical calculations	F	Calculate the relative formula mass of a substance (double only)	
Volumes and concentrations	F	Calculate the mass of solute in a given volume of solution	
Types of bonding	F	Name the three types of bonds that can form (double only recap)	
Types of bonding	F	Explain how atoms bond ionically (double only recap)	
Types of bonding	F	Use different models to represent the ions in an ionic compound (double only recap)	
Types of bonding	F	Evaluate the use of different models of representation (double only recap)	
Types of bonding	F	Work out the empirical formula for different ionic compounds (double only recap)	
Types of bonding	F	Describe and explain the properties of ionic compounds (double only recap)	
Types of bonding	F	Explain how atoms bond covalently (double only recap)	
Types of bonding	F	Use different models to represent the atoms in a covalent compound (hydrogen, chlorine, oxygen, nitrogen, hydrogen chloride, water, ammonia, methane) (double only recap)	
Types of bonding	F	Describe the structure of diamond, graphite, graphene and fullerenes (double only recap)	
Types of bonding	F	Explain the properties of simple and giant covalent compounds (double only recap)	

Types of bonding	F	Describe the structure of a polymer (double only recap)	
Types of bonding	F	Work out the molecular formula of a substance given a model or diagram of its structure (double only recap)	
Types of bonding	F	Explain how atoms bond metallically (double only recap)	
Types of bonding	F	Describe and explain the properties of giant metallic structures (double only recap)	