

Chemistry Unit 1  
Fundamentals of Chemistry Paper 1

Content	RAG
Understand that atoms make up everything and that substances made of one type of atom are known as elements that can be found in the periodic table	
Use element symbols and describe compound formation using balanced word and symbol equations	
HT: Write balanced half equations and ionic equations	
Understand that mixtures contain 2 or more different types of atoms not joined together	
Describe and explain how different methods of separating mixtures work and suggest uses for them	
State how the model of the atom has changed over time including the importance of the evidence produced by the scientists involved	
Be able to state the difference between the plum model of the atom and the nuclear model of the atom	
Know the relative charges and masses of subatomic particles	
Be able to define atomic number and mass number and use atomic theory to describe different atoms	
Be able to calculate the numbers of protons, neutrons and electrons in an atom or ion, given its atomic number and mass number	
Be able to describe the arrangement of electrons in atoms	
Describe how isotopes of an element are different	
Describe the arrangement of elements in the periodic table and recognise the relationships between elements in the same group/period	
Predict the reactivity of elements based on their position in the periodic table	
Explain the key contributions of Mendeleev in the development of the modern periodic table	
Identify metals and non-metals in the periodic table and describe how they can form ions	
Explain how the properties and reactivity of group 1,7,0 atoms depend on their electron configuration and position in the periodic table	
Describe and predict the properties of the Noble gases, Halogens and Alkali metals, and the trends in the group including how they can form ions	

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Describe and explain ionic, covalent and metallic bonding in terms of electrons	
Draw dot & cross diagrams for ionic compounds formed by metals in Groups 1 and 2 with non-metals in Groups 6 and 7	
Work out charges on ions from group 1, 2, 6 and 7.	
Describe the bonding in sodium chloride lattice.	
Recognise covalent substances as small molecules, polymers or giant structures from diagrams.	
Draw dot and cross diagrams for the molecules of hydrogen, chlorine, oxygen, nitrogen, hydrogen chloride, water, ammonia and methane.	
recognise substances as giant metallic structures from diagrams showing their bonding	
Describe and explain the properties of ionic compounds, covalent substances and metals.	
Recognise polymers from their diagrams.	
Explain why alloys are harder than pure metals.	
Recognise diamond, graphite and graphene from diagrams of their structures.	
Explain the properties of diamond, graphite and graphene	
Describe uses of carbon nanotubes.	
What are Nanoparticles, and how do we use them? (SEPARATE CHEMISTRY ONLY)	
Describe the 3 states of matter	
Describe changes of state	
Predict the state of a substance at different temperatures given the melting point and boiling point.	
Include state symbols in symbol equations.	