













SC5 Ionic Bonding






SC5a 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"/>







SC5b 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"/>

SC5c 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"/>

SC6 Covalent bonding**SC6a Covalent bonds**







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

SC7 Types of Substance






SC7a 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"/>







SC7b 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"/>

SC7c 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"/>

SC7d Bonding metals

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Give examples of ionic; covalent, simple molecular; covalent, giant molecular; and metallic substances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe how the different types of bonds and structures are formed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	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"/>
	Explain why we use models to represent structure and bonding.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	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"/>
	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"/>