

## Personalised Learning Checklist

Subject: Science

Year group: 10



Dear Student,

During the academy closure you have been set a number of tasks. The list below is the learning you should have completed. Your teacher will use the list to check your progress during this time. It may be used for short quizzes, mini assessments or homework. Where there are gaps your lessons will focus on improving your knowledge and understanding.

### CC5-7: Bonding and Types of substance

Lesson	Objective	My personal RAG rating (Red- do not understand, Amber- some understanding, Green- I am confident)			Teacher RAG rating
Ionic Bonds	Recall the formulae of simple ions.	RED	AMBER	GREEN	
	Explain how cations and anions are formed.	RED	AMBER	GREEN	
	Use dot and cross diagrams to explain how ionic bonds are formed.	RED	AMBER	GREEN	
	Explain the difference between an atom and an ion.	RED	AMBER	GREEN	
	Calculate the numbers of protons, neutrons and electrons in simple ions.	RED	AMBER	GREEN	
	Explain the formation of ions in groups 1, 2, 6 and 7 of the periodic table.	RED	AMBER	GREEN	
Ionic Lattices	Recall the formulae of common polyatomic ions, and the charges on them.	RED	AMBER	GREEN	
	Interpret the use of –ide and –ate endings in the names of compounds.	RED	AMBER	GREEN	
	Name ionic compounds using –ide and –ate endings.	RED	AMBER	GREEN	
	Work out the formula of an ionic compound from the formulae of its ions.	RED	AMBER	GREEN	
	Describe the structure of ionic compounds.	RED	AMBER	GREEN	
	Explain how ionic compounds are held together.	RED	AMBER	GREEN	
Properties of Ionic Compounds	Describe the properties of ionic compounds.	RED	AMBER	GREEN	
	Explain why ionic compounds have high melting points and high boiling points.	RED	AMBER	GREEN	
	Explain why ionic compounds conduct electricity when they are molten and in aqueous solution.	RED	AMBER	GREEN	
	Explain why ionic compounds do not conduct electricity as solids.	RED	AMBER	GREEN	
	Identify ionic compounds from data about their properties.	RED	AMBER	GREEN	
Covalent Bonds	Explain how covalent bonds are formed.	RED	AMBER	GREEN	
	Recall the names of some common molecular elements.	RED	AMBER	GREEN	

	Recall the names of some common molecular compounds.	RED	AMBER	GREEN	
	State the bonding that is found in molecules.	RED	AMBER	GREEN	
	State the approximate size (order or magnitude) of atoms and small molecules.	RED	AMBER	GREEN	
	Explain the formation of covalent bonds using dot and cross diagrams.	RED	AMBER	GREEN	
Molecular compounds	Recall examples of common covalent, simple molecular compounds.	RED	AMBER	GREEN	
	Describe the general properties of covalent, simple molecular compounds.	RED	AMBER	GREEN	
	Explain why covalent, simple molecular compounds have low melting and boiling points.	RED	AMBER	GREEN	
	Explain why covalent, simple molecular compounds are poor conductors of electricity.	RED	AMBER	GREEN	
	Describe the structure of a polymer.	RED	AMBER	GREEN	
Allotropes of carbon	Recall some allotropes of carbon.	RED	AMBER	GREEN	
	Describe the basic differences between covalent, simple molecules and giant covalent structures.	RED	AMBER	GREEN	
	Describe the structures of diamond, graphite, fullerenes and graphene.	RED	AMBER	GREEN	
	Describe the properties of diamond, graphite, fullerenes and graphene.	RED	AMBER	GREEN	
	Explain the properties and uses of diamond and graphite in terms of their structure and bonding.	RED	AMBER	GREEN	
	Explain the properties of fullerenes and graphene in terms of their structure and bonding.	RED	AMBER	GREEN	
Properties of metals	Describe the particles and how they are arranged in metals.	RED	AMBER	GREEN	
	Explain why metals are malleable.	RED	AMBER	GREEN	
	Explain why metals conduct electricity.	RED	AMBER	GREEN	
	Describe the typical properties of metals.	RED	AMBER	GREEN	
	Describe the typical properties of non-metals.	RED	AMBER	GREEN	
Bonding metals	Give examples of ionic; covalent, simple molecular; covalent, giant molecular; and metallic substances.	RED	AMBER	GREEN	
	Describe how the different types of bonds and structures are formed.	RED	AMBER	GREEN	
	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.)	RED	AMBER	GREEN	
	Explain why we use models to represent structure and bonding.	RED	AMBER	GREEN	
	Represent structures and bonding using a variety of different models (dot and cross, ball and stick, 2D, 3D).	RED	AMBER	GREEN	

	Describe the limitations of the different models used to represent structure and bonding (dot and cross, ball and stick, 2D, 3D).	RED	AMBER	GREEN	
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