

High Tunstall College of Science Curriculum Intent

Subject: Separate Chemistry Year: 10

Thread 2—Structure, bonding and quantitative Chemistry



	Chemistry Thread 2	Progress		
Topic	Key ideas	R	A	G
Structure, bonding and quantitative chemistry	I can explain how metals and non metals form ionic bonds			
	I can explain how non metals form covalent bonds			
	I can explain metallic bonding			
	I can explain what a nanoparticle is			
	I can evaluate uses of nanotechnology			
	I can balance chemical equations			
	I can explain and apply ideas of conservation of mass			
	I can explain mass change in reactions when gases are involved			
	I can explain why there may be uncertainty in chemical measurements			
	I can explain the mole as a unit of chemical measurement (HT)			
	I am able to calculate reacting masses in experimental work (HT)			
	I can calculate percentage yield and explain the importance of this in industry			
	I can calculate atom economy and explain the importance of this in industry			

Lesson	Learning Focus	Assessment	Key Words
1	What are ionic bonds?	Completion of differentiated tasks to show ionic bonding	Ion, electrostatic forces of attraction
2	What are covalent bonds?	Completion of differentiated tasks to show covalent bonding	Covalent, share
3	What is metallic bonding?	Completion differentiated task to explain metallic bonding and relate this to properties	Metallic, attraction, delocalised electrons
4	What is nanotechnology?	Completion go differentiated exam questions	Nanotechnology
5	How can we use nanoparticles?	Evaluation of the use of nanoparticles, considering benefits and possible risks	Nanotechnology
6	How do we balance equations?	Application of learning to a variety of equations	Reactants, products
7	What is conservation of mass?	Completion of practical work and conclusions made	Conservation of mass
8	How does mass change with gases?	Completion of practical work and conclusions made	Reaction, conservation of mass
9	Why are there uncertainties in chemical measurements?	Completion of progress task reviewing learning	Uncertainty, error
10	What is a mole? (HT)	Application of understanding to calculate moles, mass and RFM	Mole, mass, relative formula mass
11	How do we calculate reacting masses? (HT)	Application to calculations of varying levels of challenge	Mole, reacting mass, ratio
12—13	How do we calculate percentage yield and atom economy, and why is this important?	Application task throughout to apply to a real life problem	Percentage, atom economy, yield