

Year 8 Science Half term 4 (27th February – 31st March)

Unit	Lesson Title	Objectives	Keywords.
Chemical Reactions	Chemical reactions - Required practical Year 8 Heinemann F3 core	Record observations for a variety of experiments. Decide for each experiment if a chemical reaction has taken place. Describe how you came to your conclusions.	chemical, physical, reaction, reversible, irreversible,
	Re-arranging atoms	Draw particles and simple compounds. Complete word equations to show the reactions these atoms and compounds. Derive the balanced symbol equations for these reactions. Show these equations as simple diagrams.	atoms, elements, compounds, bonds, reactants, products
	Fire triangle	List the three components necessary to start/maintain a fire. Describe how the fire triangle can be used to develop fire precautions. Explain how the fire triangle theory is linked to fire extinguishing equipment.	fuel, heat, oxygen, precaution, fire extinguisher, blanket, sprinklers
	Combustion - Required practical Demo Year 9 Heinemann H1a Core	Recall a synonym of combustion. Carry out the tests for the products of combustion. Identify and explain the type of reaction taking place during combustion.	burning, synonym, oxygen, carbon dioxide, hydrogen, splint, limewater, squeaky pop, boiling tube, oxidation, irreversible, chemical
	Oxidation and Reduction	Identify the difference between oxidation and reduction. Complete word equations for oxidation and reduction reactions. Explain why oxidation of copper or magnesium results in an increase in mass.	oxidation, reduction, oxygen, atom, gain, lose, conservation of mass

Incomplete combustion	Identify the difference between carbon dioxide and carbon monoxide. Describe how and why incomplete combustion occurs. Explain why inhalation of excessive carbon monoxide can be fatal.	complete, incomplete, combustion, dioxide, monoxide, diatomic, inhalation, suffocation
Thermal decomposition	State the conditions required for thermal decomposition to take place. Complete word equations for decomposition of carbonates. Write balanced symbol equations for thermal decomposition reactions.	thermal energy, splits, catalyst
Reacting metals with acid investigation - Required practical Year 8 Heinemann E2 Core	Name the gas produced when metals react and the test for it. Observe reactions of metals to determine the most and least reactive. Determine the relative strength of each acid observed. Explain the difference between strength and concentration.	hydrogen, squeaky pop, reactivity, concentration, strength
Revision	Revise for assessment	

Types of reactions	Displacement reactions investigation - Required practical Year 8 Heinemann F4a Core	Identify when a reaction has taken place. Explain why reactivity is significant in displacement reactions. Explain ways of speeding up reactions using collision theory.	observation, displacement reactions, collision theory
	Catalysts	List ways of speeding up a reaction. Describe the effects of a catalyst. Explain why catalysts are important to industry.	surface area, temperature, concentration, catalyst, unchanged, industry, large-scale production, money
	Exothermic and Endothermic reactions - Required practical (Reaction of copper sulphate with magnesium ribbon and sodium hydrogen carbonate with citric acid).	Record temperature change in given reactions. Determine if the reaction is exothermic or endothermic. Assess if reaction type is linked to the reactivity series.	temperature, reaction, endothermic, exothermic, reactivity

Exothermic and Endothermic reactions (EXTENSION)	State the difference between exothermic and endothermic reactions. Use data to determine the type of reaction. Draw diagrams to show how bonding affects temperature change.	endothermic, exothermic, data analysis, bonds
Conservation of mass investigation - Required practical (burning magnesium ribbon in a crucible - measuring mass change).	Predict the change in mass when magnesium is burned in air. Accurately record the changes in mass for various pieces of magnesium. Plot the results on an appropriate graph and identify a relationship.	combustion, oxidation, conservation of mass, atoms, particles, combine, compound
Writing up investigation	Describe the relationship between mass and increase in mass. Explain your conclusion using detailed scientific knowledge and understanding. Evaluate the reproducibility of your results.	pattern, reproducibility, evaluate, strengths, weaknesses, improvements
Polymers and uses	Show how polymers are formed from single units. List the properties of various natural and man-made polymers. Link their properties to their uses.	cotton, starch, plastic, thermosetting, thermoplastic, cross links
Revision	Revise for assessment	