

Name _____ Class _____ Date _____

Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
C15.1 Rusting	I can define the term corrosion.	<input type="checkbox"/>	I can describe an experiment to investigate the conditions required for rusting to occur.	<input type="checkbox"/>	I can explain in detail why corrosion is a problem.	<input type="checkbox"/>
	I can state what is required for iron to rust.	<input type="checkbox"/>	I can, with the help of equations, describe the process of rusting.	<input type="checkbox"/>	I can write balanced equations to describe rusting and identify species that are oxidised and reduced.	<input type="checkbox"/>
	I can list some ways to prevent rusting.	<input type="checkbox"/>	I can explain how different corrosion prevention techniques work.	<input type="checkbox"/>	I can evaluate rust prevention techniques and suggest which is best for a specific purpose.	<input type="checkbox"/>
C15.2 Useful alloys	I can state the difference between a metal before and after being alloyed.	<input type="checkbox"/>	I can explain in detail why pure metals are often alloyed before they are used.	<input type="checkbox"/>	I can explain the term carat.	<input type="checkbox"/>
	I can state the elements in steel and bronze.	<input type="checkbox"/>	I can describe how different amounts of carbon affect the properties of iron.	<input type="checkbox"/>	I can use data on the properties of unfamiliar alloys to explain a suitable alloy for a given purpose.	<input type="checkbox"/>
	I can list some common examples of alloys and their uses.	<input type="checkbox"/>	I can identify an appropriate purpose for an alloy when given data on its properties.	<input type="checkbox"/>	I can evaluate an alloy in terms of its properties and uses.	<input type="checkbox"/>
C15.3 Properties of polymers	I can describe the properties of a thermosetting plastic.	<input type="checkbox"/>	I can explain how thermosetting plastics and thermosoftening plastics are different in terms of structure and bonding.	<input type="checkbox"/>	I can explain in detail, giving examples, how the properties of plastics can be changed.	<input type="checkbox"/>
	I can describe the properties of a thermosoftening plastic.	<input type="checkbox"/>	I can describe the different conditions used to make poly(ethene).	<input type="checkbox"/>	I can, when data about the properties of plastics is given, suggest a suitable plastic for a given purpose.	<input type="checkbox"/>
	I can describe the difference between LD and HD poly(ethene).	<input type="checkbox"/>	I can explain how the structure of poly(ethene) affects its properties and therefore its uses.	<input type="checkbox"/>	I can evaluate a plastics in terms of its properties and uses.	<input type="checkbox"/>

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C15.4 Glass, ceramic, and composites	I can describe how to make soda-lime glass and borosilicate glass.	<input type="checkbox"/>	I can describe what a composite is.	<input type="checkbox"/>	I can explain the properties of ceramics and composites in terms of structure and bonding.	<input type="checkbox"/>
	I can describe how to make clay ceramics.	<input type="checkbox"/>	I can explain the difference between a composite and an advanced composite.	<input type="checkbox"/>	I can, when data about the properties of a material is provided, classify it and suggest a suitable material for a given purpose.	<input type="checkbox"/>
	I can state examples of clay ceramics and composites.	<input type="checkbox"/>	I can compare quantitatively the physical properties of glass and clay ceramics, polymers, composites, and metals.	<input type="checkbox"/>	I can evaluate materials in terms of their properties and uses.	<input type="checkbox"/>
C15.5 Making ammonia – the Haber process	I can state the purpose of the Haber process.	<input type="checkbox"/>	I can describe how the raw materials are turned into the reactants for the Haber process.	<input type="checkbox"/>	I can evaluate the Haber process using atom economy and LCA to determine its environmental impact.	<input type="checkbox"/>
	I can state the conditions for the Haber process.	<input type="checkbox"/>	I can describe how the Haber process is a reversible reaction.	<input type="checkbox"/>	I can explain how costs are kept to a minimum in the Haber process.	<input type="checkbox"/>
	I can write a word equation to describe the Haber process.	<input type="checkbox"/>	I can describe the Haber process with the help of a balanced symbol equations including state symbols.	<input type="checkbox"/>	I can explain, with the use of balanced symbol equations, where the reactants come from for the Haber process.	<input type="checkbox"/>
C15.6 The economics of the Haber process			I can explain the effect of changing temperature on yield of the Haber process.	<input type="checkbox"/>	I can justify why the conditions used in the Haber process are a compromise.	<input type="checkbox"/>
			I can explain the effect of changing pressure on the yield of the Haber process.	<input type="checkbox"/>	I can explain the effect of an iron catalyst on the rate and position of equilibrium in the Haber process.	<input type="checkbox"/>
			I can explain why the conditions used in the Haber process are a compromise.	<input type="checkbox"/>	I can use data to predict and explain the effect on the equilibrium and rate of reaction of changing conditions in the Haber process.	<input type="checkbox"/>

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C15.7 Making fertilisers in the lab	I can state what a fertiliser is.	<input type="checkbox"/>	I can explain the importance of fertilisers for agriculture.	<input type="checkbox"/>	I can evaluate different processes to make NPK fertilisers.	<input type="checkbox"/>
	I can identify the fertiliser produced from a reaction.	<input type="checkbox"/>	I can describe in detail how fertilisers are produced in the laboratory.	<input type="checkbox"/>	I can write ionic equations for reactions to make fertilisers.	<input type="checkbox"/>
	I can write a word equation for the formation of the chemicals in the NPK fertilisers.	<input type="checkbox"/>	I can write balanced symbol equations for the reactions to make components of NPK fertilisers.	<input type="checkbox"/>	I can calculate the concentration of an ammonia solution from the results of a titration.	<input type="checkbox"/>
C15.8 Making fertilisers in industry	I can name the elements in NPK fertilisers.	<input type="checkbox"/>	I can describe production of fertilisers in industry.	<input type="checkbox"/>	I can evaluate the composition of fertilisers.	<input type="checkbox"/>
	I can describe where the raw materials for NPK fertilisers come from.	<input type="checkbox"/>	I can compare and contrast the industrial and laboratory production of fertilisers.	<input type="checkbox"/>	I can evaluate different processes to make NPK fertilisers.	<input type="checkbox"/>
	I can name and give the formulae of the chemicals in the NPK fertilisers.	<input type="checkbox"/>	I can write balanced symbol equations or the reactions to make components of NPK fertilisers.	<input type="checkbox"/>	I can write ionic equations to illustrate the reactions to make NPK fertilisers.	<input type="checkbox"/>