

CHEMISTRY

Learning objectives I can:	I can do this very well	I can do this quite well	I need to do more work on this
4.1 Recall that: a most metals are extracted from ores found in the Earth's crust			
b unreactive metals are found in the Earth as the uncombined elements			
4.2 Describe how most metals are extracted from their ores by: a heating with carbon, illustrated by iron			
b electrolysis, illustrated by aluminium (Knowledge of the blast furnace or the electrolytic cell for aluminium extraction are not required)			
4.3 Explain why the method used to extract a metal is related to its position in the reactivity series and cost of the extraction process			
HSW 3 Describe how phenomena are explained using scientific theories and ideas			
4.4 <i>Investigate methods for extracting a metal from its ore</i>			
4.5 Describe oxidation as the gain of oxygen and reduction as the loss of oxygen			
4.6 Recall that the extraction of metals involves reduction of ores			
4.7 Recall that the oxidation of metals results in corrosion			
4.8 Demonstrate an understanding that a metal's resistance to oxidation is related to its position in the reactivity series			
HSW 3 Describe how phenomena are explained using scientific theories and ideas			
4.9 Discuss the advantages of recycling metals, including economic implications and how recycling preserves both the environment and the supply of valuable raw materials			
HSW 13 Describe the social, economic and environmental effects of decisions about the uses of science and technology			
4.10 Describe the uses of metals in relation to their properties, including: a aluminium			
b copper			

C1 Topic 4 Revision tracker

c gold			
d steel			
HSW 5 Plan to test a scientific idea, answer a scientific question, or solve a scientific problem by selecting appropriate data to test a hypothesis			
4.11 Use models to explain why converting pure metals into alloys often increases the strength of the product			
4.12 Demonstrate an understanding that iron is alloyed with other metals to produce alloy steels with a higher strength and a greater resistance to corrosion			
H 4.13 Describe how alloying changes the properties of metals, including: a smart or shape memory alloys, including nitinol, an alloy of nickel and titanium			
H b gold alloys with higher strength, including fineness (parts per thousand) and carats to indicate the proportion of pure gold			
H 4.14 Demonstrate an understanding that new materials are developed by chemists to fit new applications, such as the creation of new shape memory alloys for use, for example, in spectacle frames and as stents in damaged blood vessels			
HSW 11 Present information, develop an argument and draw a conclusion, using scientific, technical and mathematical language, and ICT tools			