

Extraction of metals: Worksheet 4.3

Extraction techniques and discovery dates

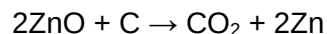
The table lists data for three metals with very different reactivities.

Metal	Discovery date	Extraction method
Gold	Thousands of years ago	Separate from surrounding rocks
Zinc	1500	Reduce its oxide by heating it with carbon
Sodium	1807	Melt its compounds and use electrolysis to decompose them

1. Explain why the extraction technique used for gold is so simple.

2. Zinc is obtained by 'reducing' zinc oxide. Explain what this means.

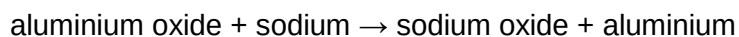
3. The equation for the reduction of zinc oxide is:



Copper (II) oxide can also be reduced by carbon. Write an equation for the reaction.

4. Explain why sodium could not be extracted before the 1800s.

5. When aluminium was first extracted, the reaction used was:



Which substance is reduced during this reaction?
