

0	1
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The method used to extract metals depends on its reactivity.

For each of the metals below, describe a method that can be used to extract the metal.

0	1
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1

Aluminium

[1 mark]

Electrolysis

0	1
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2

Iron

[2 marks]

Reduction [1] with carbon [1]

0	1
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3

Silver

[1 mark]

mined as silver / found pure in the ground [1]

0	2
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Sodium metal was not extracted until the 1800s. Gold has been used by humans for thousands of years.

0	2
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1

Explain why sodium was not extracted until the 1800s while gold has been used for thousands of years.

[4 marks]

Sodium is very reactive so found in compounds [1]

Sodium is difficult to extract or the technology was not available to extract it. [1]

Gold is found in native form or found as the metal. [1]

No extraction process needed for gold. [1]

0	3
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0	3
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1

Copper is commonly used for electrical wiring.

Write the balanced symbol equation for the reaction of copper (II) oxide with carbon.

[2 marks]

$2\text{CuO} + \text{C} \rightarrow 2\text{Cu} + \text{CO}_2$

0	3
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2

What type of reaction is this?

[1 mark]

REDOX [1] (allow reduction)

0	3
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3

Name the species that is reduced, and explain your reason in terms of oxygen.

[2 marks]

Name of species reduced Copper ions / Cu^{2+} [1]

Reason (Copper ions / Cu^{2+}) lose oxygen [1]

(Total 13 marks)

End