

Metal oxides and the reactivity series

① Magnesium reacts with oxygen to form a white solid.

a Write a word equation for this reaction. (1 mark, ★★)

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b Write a balanced chemical equation for this reaction. (2 marks, ★★★)

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c In this reaction, magnesium is oxidised. Explain what is meant by oxidation. (1 mark, ★)

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NAILIT!



More reactive metals will **displace** less reactive metals from metal salts.

This means that the metals swap places in the reaction. For example:

sodium + lead oxide → lead + sodium oxide

② Use the reactivity series to predict the outcome of the following reactions. (4 marks, ★★)

a Aluminium + lead chloride →

b Silver + copper oxide →

c Calcium + zinc nitrate →

d Iron chloride + copper →

③ A student has an unknown metal, X, and carries out some experiments in order to determine its reactivity. The student's results are in the table below.

1	X + copper sulfate solution	A red/orange solid is formed
2	X + sodium sulfate solution	No reaction
3	X + magnesium sulfate	A silvery grey solid is produced
4	X + hydrochloric acid	X dissolves vigorously and a gas is produced

Metal	Reactivity
Copper	
Sodium	1
Magnesium	
X	

a Use the student's results to place the metals in order of reactivity, with 1 being the most reactive and 4 being the least reactive. The most reactive is done for you. (2 marks, ★★★)

b What is the name of the red/orange solid formed in experiment 1? (1 mark, ★★★)

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