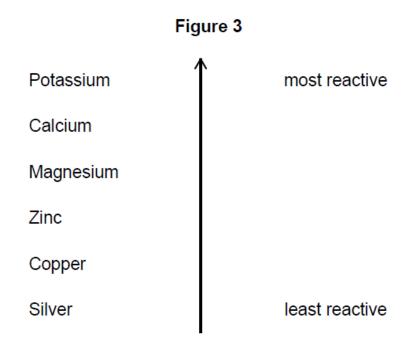
## AQA - Reactivity of metals - GCSE Combined Science Chemistry

## 1. May/2020/Paper\_8464/1F/No.2.4-2.6

The more reactive the metal added to copper sulfate solution, the greater the temperature change.

Figure 3 shows a reactivity series.



The student repeated the experiment.

The student added:

- · magnesium to copper sulfate solution
- an unknown metal A to copper sulfate solution.

Table 2 shows the results.

Table 2

Metal	Temperature change in °C
Magnesium	12
Metal A	8

The st	udent concludes metal <b>A</b> is zinc.	
Give o	one reason why the student is correct.	
Use <b>F</b> i	igure 3 and Table 2.	[1 mark]
The student did	d the experiment with silver and copper sulfate solution.	
What happens	to the temperature of the mixture?	
Use Figure 3.		[1 mark]
Tick (✓) one b	ox.	[Tillark
Decreases		
Increases		
Stays the same	e	
Suggest one re copper sulfate	eason why the student should <b>not</b> add potassium metal to solution.	[1 mark]

2.	Jun/201	9/Paner	8464/1F	/No.4.0-4.6
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This question is about Group 1 elements.

Sodium reacts with chlorine to produce sodium chloride.

Balance the equation for the reaction.

[1 mark]

\_\_\_\_ Na + Cl
$$_2$$
  $ightarrow$  \_\_\_\_ NaCl

4.6 g of sodium reacts with chlorine to produce 11.7 g of sodium chloride.

What mass of chlorine reacted?

[1 mark]

Mass of chlorine = \_\_\_\_\_ g

A teacher puts hot sodium into a gas jar of chlorine.

The changes seen before, during and after this reaction were observed.

Complete the sentences.

Choose the answers from the box.

[4 marks]

colourless	green	lilac	silver	white	yellow
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Sodium is a solid.

Chlorine is a gas.

The hot sodium burns with a flame.

The product sodium chloride is a \_\_\_\_\_ solid.

Sodium	chloride (NaCl) is	an ionic compour	nd.		
Write the	e formulae of the	ions in sodium chl	oride.		[2 marks
Sodium	ion				
Chloride	e ion				
Complet	te the sentence.				
Choose	the answer from	the box.			[1 mark
	an atom	an electron	a neutron	a proton	
Potassiu	um is more reactiv	e than sodium.			
This is b	ecause potassiur	m loses		_ more easily tha	n sodium.
How doe	es the size of a po	otassium atom con	npare with the s	size of a sodium a	atom?
Give a r	eason for your an	swer.			[2 marks
Reason					

3.

Jun/2019/Paper_8464/1H/No.1.4 Predict the reactivity of beryllium compared with magnesium.	
Give a reason for your answer.	
Use the periodic table.	[2 marks
Reason	

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4.	Jun/2019/	Paper 8464	1/1H/No.6

This question is about sodium.

Sodium reacts with chlorine.

What is the balanced equation for the reaction?

[1 mark]

Tick (✓) one box.

$$\text{Na + } \text{Cl}_2 \, \rightarrow \, \text{NaCl}_2$$

2 Na + 
$$Cl_2 \rightarrow 2 NaCl$$

2 Na + Cl 
$$\rightarrow$$
 Na<sub>2</sub>Cl



Hot sodium is put in a gas jar of chlorine.

Describe the observations made before, during and after the reaction.

[3 marks]

Before reaction \_\_\_\_\_

During reaction

After reaction

Explain why sodium is less reactive than potassium.	[4 marks]	

Chlorine reacts with sodium and with hydrogen.

Compare the structure and bonding in sodium chloride and hydrogen chlori	de. <b>[6 marks]</b>