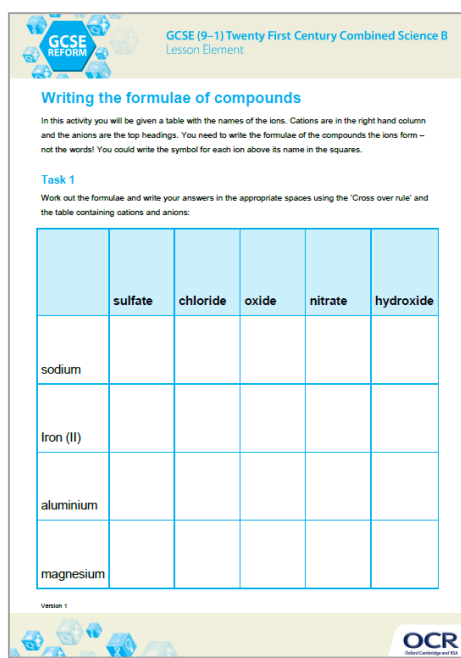


Writing the formulae of compounds



Instructions and answers for teachers

These instructions should accompany the OCR resource 'Writing the formulae of compounds' activity which supports OCR GCSE (9–1) Twenty First Century Combined Science B.



GCSE REFORM GCSE (9–1) Twenty First Century Combined Science B Lesson Element


Writing the formulae of compounds

In this activity you will be given a table with the names of the ions. Cations are in the right hand column and the anions are the top headings. You need to write the formulae of the compounds the ions form – not the words! You could write the symbol for each ion above its name in the squares.

Task 1
Work out the formulae and write your answers in the appropriate spaces using the 'Cross over rule' and the table containing cations and anions:

	sulfate	chloride	oxide	nitrate	hydroxide
sodium					
Iron (II)					
aluminium					
magnesium					

Version 1



Task instructions

This activity summarises the writing of formulae of compounds using ions and the cross-over rule. After introducing the ionic bonding and cross over rule, issue the worksheet for students to practise writing formulae.

Objective

For students to be able to apply the knowledge of ions and ionic bonding to written formulae.



This resource is an exemplar of the types of materials that will be provided to assist in the teaching of the new qualifications being developed for first teaching in 2016. It can be used to teach existing qualifications but may be updated in the future to reflect changes in the new qualifications. Please check the OCR website for updates and additional resources being released. We would welcome your feedback so please get in touch.



Questions to expect from students

Why do we have to put brackets on ions made of group of atoms such as NH_4^+ ?

Because NH_4^+ represents one ion like a parcel that cannot be changed.

Task 1

Work out the formulae and write your answers in the appropriate spaces using the 'Cross over rule' and the table containing cations and anions:

	$(\text{SO}_4)^{2-}$ sulfate	Cl^- chloride	O^{2-} oxide	$(\text{NO}_3)^-$ nitrate	$(\text{OH})^-$ hydroxide
Na^+ sodium	Na_2SO_4	NaCl	Na_2O	NaNO_3	NaOH
Fe^{2+} Iron (II)	FeSO_4	FeCl_2	FeO	$\text{Fe}(\text{NO}_3)_2$	$\text{Fe}(\text{OH})_2$
Al^{3+} aluminium	$\text{Al}_2(\text{SO}_4)_3$	AlCl_3	Al_2O_3	$\text{Al}(\text{NO}_3)_3$	$\text{Al}(\text{OH})_3$
Mg^{2+} magnesium	MgSO_4	MgCl_2	MgO	$\text{Mg}(\text{NO}_3)_2$	$\text{Mg}(\text{OH})_2$
Ca^{2+} calcium	CaSO_4	CaCl_2	CaO	$\text{Ca}(\text{NO}_3)_2$	$\text{Ca}(\text{OH})_2$
K^+ potassium	K_2SO_4	KCl	K_2O	KNO_3	KOH
Cu^{2+} copper(II)	CuSO_4	CuCl_2	CuO	$\text{Cu}(\text{NO}_3)_2$	$\text{Cu}(\text{OH})_2$
$(\text{NH}_4)^+$ ammonium	$(\text{NH}_4)_2\text{SO}_4$	NH_4Cl	$(\text{NH}_4)_2\text{O}$	NH_4NO_3	NH_4OH
Iron(III)	$\text{Fe}_2(\text{SO}_4)_3$	FeCl_3	Fe_2O_3	$\text{Fe}(\text{NO}_3)_3$	$\text{Fe}(\text{OH})_3$



Task 2

What is wrong about each of the following formulae?

Write the correct one in the answer box below.

a) AlOH_3

Al(OH)_3

b) Fe(III)Cl_3

FeCl_3

c) Omg

MgO

d) $(\text{Na})_2\text{O}$

Na_2O

Extension activity

Give students the names of compounds in words and ask them to write their correct formula.



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