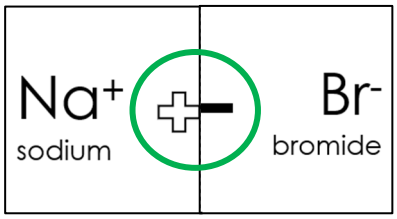
Name: _____ Chem Comm

IONIC FORMULAS

You have two sets of colored tiles. Each tile represents one ion and has the ions' symbol, name, and 1, 2, or 3 + or – signs:

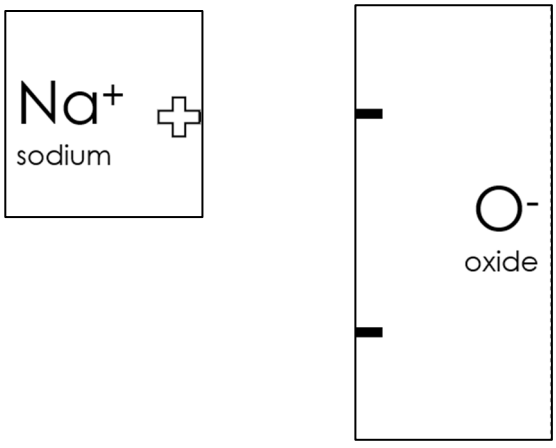
To show how these ions bond, bring their + and – charges together:



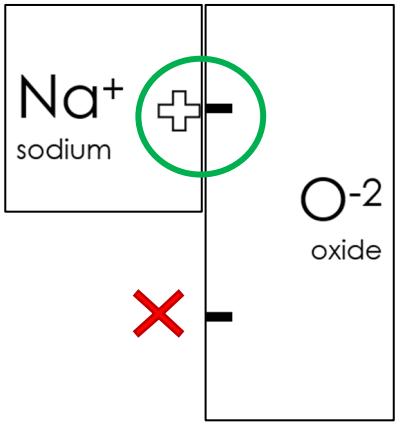
This makes <u>sodium bromide</u>, and its chemical formula is:

When ions bond their compounds are electrically neutral: they have an equal number of + and – charges.

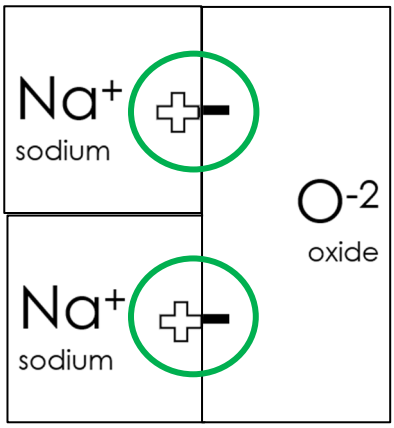
Try combining Na^{+} with O^{-2}:



As you can see, the charges are not equal:



Notice there is a -1 charge remaining on this compound. To correct this, add a second sodium ion to the compound:



There are now two positives and two negatives which bring the compound to a neutral charge. The compound for sodium oxide is complete.

Writing the Chemical Formula

When writing the chemical formula for an ionic compound, the positive ion is always first, and a subscript is written when there is more than one of the same ion.

In this case, the chemical formula for sodium oxide is:

Use your tiles to construct the ionic compounds listed below. Sketch the tiles, and write the chemical formula for that compound. Remember: every compound must have equal +'s and -'s, and every double line must be connected to another:

Ionic Compound	Drawing	Chemical Formula
Silver Fluoride		
Magnesium Sulfide		
Calcium Iodide		
Potassium Phosphide		
Aluminum Oxide		

Finally, construct three more compounds other than the ones done on pages 1-3. Sketch the tiles and write the correct chemical formula:

	Drawing	Formula
Compound #1		
Compound #2		
Compound #3		

Na^{+} sodium	Cu^{+} copper (I)	Mg^{+2} magnesium	Ca^{+2} calcium		
Na^{+} sodium	Cu^{+} copper (I)			Al^{+3} aluminum	Fe^{+3} iron (III)
Na^{+} sodium	Cu^{+} copper (I)	Mg^{+2} magnesium	Ca^{+2} calcium		
K^{+} potassium	Ag^{+} silver				
K^{+} potassium	Ag^{+} silver	Mg^{+2} magnesium	Ca^{+2} calcium	Al^{+3} aluminum	Fe^{+3} iron (III)
K^{+} potassium	Ag^{+} silver				

F^- fluoride	Br^- bromide	O^{-2} oxide	S^{-2} sulfide		
F^- fluoride	Br^- bromide			N^{-3} Nitride	P^{-3} phosphide
F^- fluoride	Br^- bromide	O^{-2} oxide	S^{-2} sulfide		
Cl^- chloride	I^- iodide				
Cl^- chloride	I^- iodide	O^{-2} oxide	S^{-2} sulfide	N^{-3} nitride	P^{-3} phosphide
Cl^- chloride	I^- iodide				

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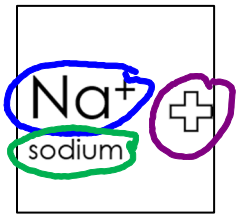

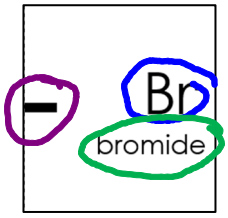

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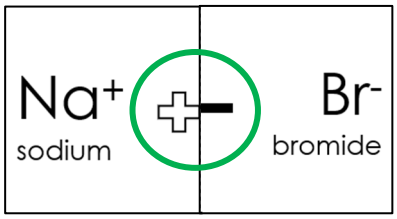
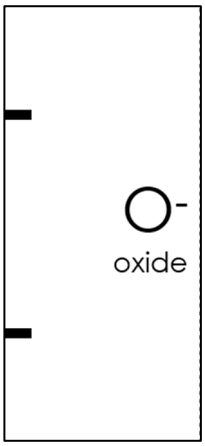


This makes <u>sodium bromide</u>, and its chemical formula is: NaBr

When ions bond their compounds are electrically neutral: they have an equal number of + and – charges.

Try combining Na^{+} with O^{-2}:



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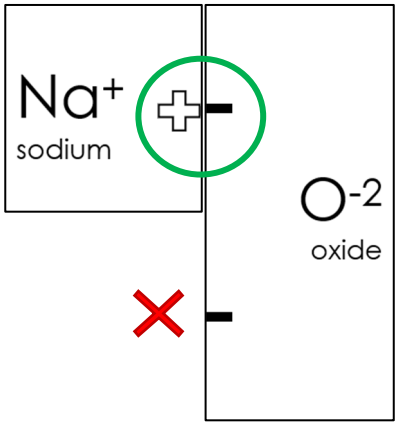

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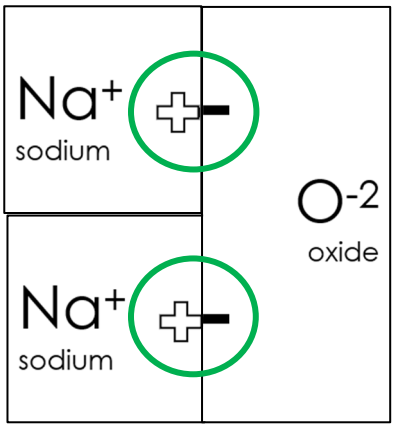

There are now two positives and two negatives which bring the compound to a neutral charge. The compound for sodium oxide is complete.

Writing the Chemical Formula

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In this case, the chemical formula for sodium oxide is: Na_2O

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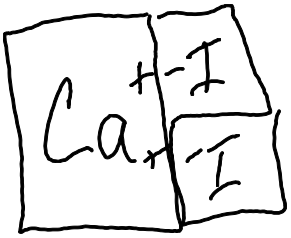
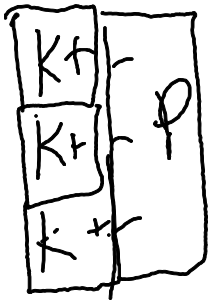
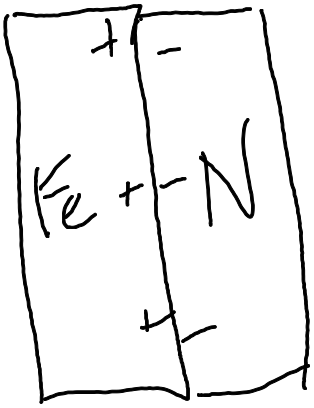
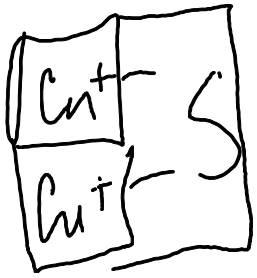
Ionic Compound	Drawing	Chemical Formula
Silver Fluoride		AgF
Magnesium Sulfide		MgS
Calcium Iodide		CaI_2
Potassium Phosphide		K_3P
Aluminum Oxide		Al_2O_3

Finally, construct three more compounds other than the ones done on pages 1-3. Sketch the tiles and write the correct chemical formula:

	Drawing	Formula
Compound #1		KF
Compound #2		FeN
Compound #3		Cu_2S