



The National Orthodox School /Shmaisani

Subject: Science

Name

Worksheet/ Ions and elements

Date:

Grade-Section: 8CS

Objective: To be able to define atoms and ions
To be able to name different ionic compounds.

What are ions?

Ions are atoms or a group of atoms that have a positive or a negative charge.

Ions are formed by gaining or losing electrons.

What are the differences between positive and negative ions?

	Positive ions	Negative ions
Net Charge	Positive net charge ion.	Negative net charge ion.
Formed by	They are formed by losing electrons.	They are formed by gaining electrons
Element type	Metal	Non-metal



Activity one: Complete the following table.

Element's symbol	Atomic configuration	Number of electrons lost or gained	Charge of the ion	Number of electrons in the ion	Number of protons in the ion	ion
K	2,8,8,1	Lose 1e	+1	18	19	K ⁺
S	2,8,6	Gain 2e	-2	18	16	S ⁻²
Cl	2,8,7	Gain 1e	-1	18	17	Cl ⁻¹
Ca	2,8,8,2	Lose 2	+2	18	20	Ca ⁺²

When elements (a metal and a non-metal) combine with each other, they will form an ionic compound.

To write the chemical formula of the ionic compound, follow these steps:

1. Write the symbol and charge of the (metal) first and the (nonmetal) second.
2. Transpose only the number of the positive charge to become the subscript of the non-metal and the number only of the negative charge to become the subscript of the metal

Activity Two: Fill in the table below with the missing information.

Reactants	Ionic compound formula
Ca + Cl	CaCl ₂
Mg + O	MgO
Li + Br	LiBr



Activity Three: Give the chemical formula for each compound (*start by writing the charge of each ion*)

Name of the positive ion	Formula of the positive ion	Name of the negative ion	Formula of the negative ion	Formula of the compound
Magnesium ion	Mg⁺²	Chloride ion	Cl⁻¹	MgCl₂
Potassium ion	K⁺¹	Bromide ion	Br⁻¹	KBr
Calcium ion	Ca⁺²	Oxide ion	O⁻²	CaO
Lithium ion	Li⁺¹	Fluoride ion	F⁻¹	LiF

