



SHS LEARNING ACTIVITY

CHEM1-02-09

Name: _____ Score/Mark: _____

Grade and Section: _____ Date: _____

Strand: STEM ABM HUMSS ICT (*TVL Track*)

Type of Activity : Concept Notes Skills: Exercise/Drill Illustration

Laboratory Report Essay/Task Report Other: _____

Activity Title: 02-09.The four corners of an atomic symbol v03

Learning Target: To identify the numbers in each corner of atomic symbols

Authors/References: Victor Sojo

The mass number

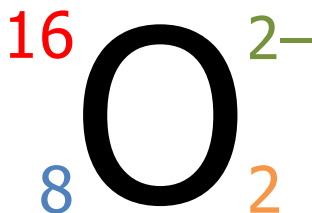
Same as the number of **nucleons** (protons + neutrons). It determines the **isotope**, so we only need to write it if we are considering a specific isotope. If we don't write anything, we mean the element just as it is found in Nature.

For oxygen, this would be:

99.76% ^{16}O

0.04% ^{17}O

0.20% ^{18}O



The atomic number Z

Same as the number of **protons** in the nucleus. It is not necessary to write it because oxygen always has 8 protons, so just by writing the symbol "O" we already indicated that $Z=8$.

However, sometimes we write Z just to make some discussions easier.

The charge

This corresponds to the difference between the total number of protons and the total number of electrons.

If we write **nothing**, it means the **charge is zero**.

Otherwise we must **always** write it. Some people write charges as -2 or $+3$ instead of **$2-$** and **$3+$** , but the latter are strongly preferred!

When there is only one charge, we just write $+$ or $-$, without 1.

The atom count

This indicates how many atoms of this element are present in this particular substance.

If we write **nothing**, it means there is only **one atom**.

Otherwise, we must **always** write the appropriate number.

For example, in H_2O there are two hydrogens and one oxygen.

Question

Write the four numbers at the corners of the ion azide, which has three nitrogen atoms and one negative charge. Assume that each of the nitrogen atoms has 7 neutrons.

