

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%  $^{16}\text{O}$

0.04%  $^{17}\text{O}$

0.20%  $^{18}\text{O}$

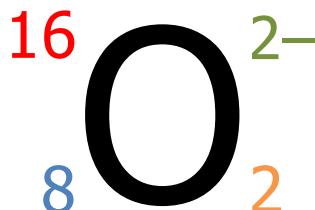
### The charge

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 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 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  $\text{H}_2\text{O}$  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.