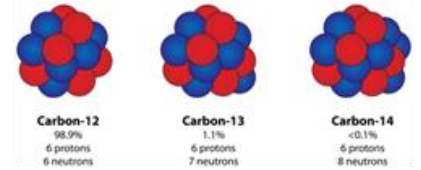




# Isotopes & Ions

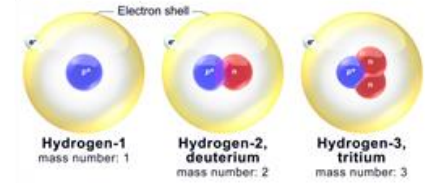
## What are Isotopes? How are they represented?

• **Isotopes** are \_\_\_\_\_ of an element that have \_\_\_\_\_ numbers of \_\_\_\_\_.



• A lot of them are \_\_\_\_\_ and \_\_\_\_\_ over time

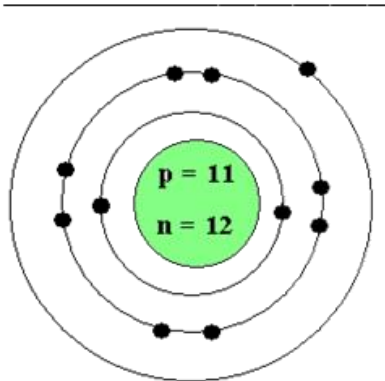
• **Isotopes** are written with the name of the element followed by its atomic \_\_\_\_\_ or like this  $\overset{\text{mass number} \rightarrow 4}{\text{atomic number} \rightarrow 2} \text{He}$



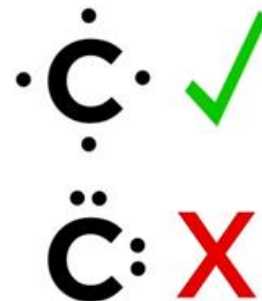
## How are electrons arranged in atoms?

- Electron shells hold \_\_\_\_\_ numbers of \_\_\_\_\_.
- In order for the atom to be considered \_\_\_\_\_, the electron shell(s) must be \_\_\_\_\_

**Valence Electron(s)** are the electrons on the \_\_\_\_\_ electron



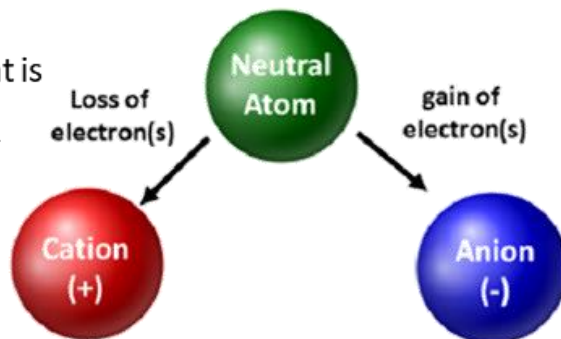
carbon = 4 valence electrons



## What are ions?

An **ion** is an atom that has \_\_\_\_\_ or \_\_\_\_\_ an electron

A **cation** is an atom that is \_\_\_\_\_ charged, because it \_\_\_\_\_ electrons.



An **anion** is an atom that is \_\_\_\_\_ charged, because it \_\_\_\_\_ electrons.



## Isotopes & Ions GUIDED PRACTICE

Notate the isotope for the following structure:

**7 Protons, 7 Electrons, 9 Neutrons**

- 1) Find the Element's Name!
- 2) Calculate the Atomic Mass

- 1) Find the Element's Symbol!
- 2) Calculate the Atomic Mass
- 3) Write the Atomic Mass
- 4) Write the Atomic # below

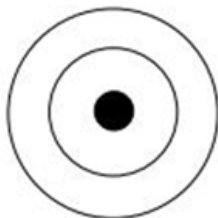
List the atomic structure of the isotope:

**Sodium-24**

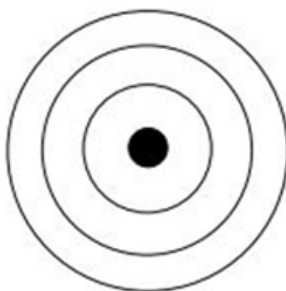
- 1) Find the number of Protons
- 2) Number of Electrons (neutral)
- 3) Number of Neutrons  
(mass of ISOTOPE-Atomic #)

### Drawing Bohr Diagrams and Lewis Dot Structures

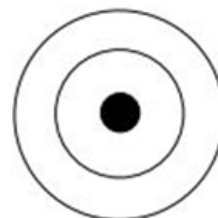
2-8-8



Carbon (C) \_\_\_\_\_



Silicon (Si) \_\_\_\_\_



Oxygen (O) \_\_\_\_\_

- Look at the GROUP your element is in LEWIS STRUCTURES **PHOSPHORUS**
- The group # tells you how many valence electrons you have
- Write the element SYMBOL and place your valence electrons ONE-BY-ONE
- If you have more than 4, start making pairs

Determine charge of an ion when Ionic Notation given a structure

Determine structure of an atom when given a ionic symbol

38 Protons

39 Electrons

38 Neutrons



- 1) Find the Element's Symbol!
- 2) Calculate the charge