

ISOTOPES

- Isotope - atoms of the same element with different masses.
- Isotopes of hydrogen

	protons	neutrons	Mass number
Protium	1	0	1
Deuterium	1	1	2
Tritium	1	2	3

- Two ways to designate isotopes

- Hyphen notation Uranium-235
- Nuclear Symbol ${}_{92}^{235}\text{U}$ $\begin{matrix} \text{mass \#} \\ \text{atomic \#} \end{matrix} X$

AVERAGE ATOMIC MASS

- Weighted averages of the atomic masses of the naturally occurring isotopes of an element
- Depends on the mass and natural abundance of each isotope

CALCULATING AVERAGE ATOMIC MASS

- Find the different isotopes for element
- Indicate the percentage that these isotopes occur
- Multiply the decimal with amu, find sum

Ex: Cu

- Has 2 naturally occurring isotopes
- Cu-63
mass = 62.929598 & percent abundance = 69.17%
- Cu-65
mass = 64.927793 & percent abundance = 30.83%
- $0.6917 \times 62.929598 + 0.3083 \times 64.927793 =$
63.55 amu