

# Dalton's Atomic Theory

- Elements are composed of atoms.
- Atoms make up the materials we have.
- Chemical reactions make chemicals rearrange structure.
- Atoms mix together in **whole number** ratios to form compounds.

# #15:Table

| Element | Atomic # | Protons | Electrons |
|---------|----------|---------|-----------|
| K       | 19       | 19      | 19        |
| B       | 5        | 5       | 5         |
| S       | 16       | 16      | 16        |
| V       | 23       | 23      | 23        |

# Definitions

- Atomic #: Number of Protons
- #of Protons = # of Electrons
- **Whole #** on periodic table.

# Definitions

- **Atomic Mass:** Average of all isotopes
- **Mass #:** total protons & neutrons in an atom
- **AMU:** Atomic mass unit  
 $1 \text{ proton} = 1 \text{ amu} = 1 \text{ neutron}$

# Number of Neutrons

- Mass # - Atomic # = # of Neutrons.
- Tell me the number of Protons, Neutrons, and Electrons.
- Br-80  $P^+ 35^- n^? 4S e^- 38$
- Rb-86  $37 \quad 49 \quad 37$

# Calculating Atomic Mass

- Weighted or Unweighted Average?  
Explain? % Abundance
- Formula:
- Cw- “Buckium” has 3 isotopes.  
Cw-45 (74%), Cw-47 (18%), & Cw-48 (8%) Determine the Atomic Mass.

45.6

- Cw-45 (74%), Cw-47 (18%), & Cw-48 (8%)

List the number of protons, neutrons, and electrons for each isotope.

| Element | Protons | Neutrons | Electrons |
|---------|---------|----------|-----------|
| P-31    | 15      | 16       | 15        |
| P-32    | 15      | 17       | 15        |
| Zr-92   | 40      | 52       | 40        |
| Zr-94   | 40      | 54       | 40        |

# A reading



