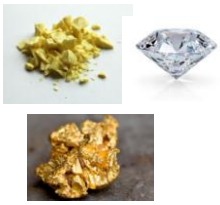
CLASSIFYING MATTER

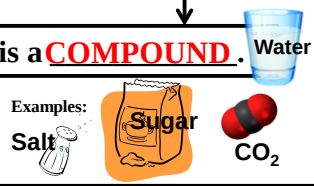
ANSWER KEY

Is it a pure substance?

- YES → **It is an ELEMENT.**
  - Examples:



- NO → **Is the substance chemically combined?**
  - YES → **It is a COMPOUND.**
    - Examples:



  - NO → **It is a MIXTURE. Does it look the same throughout?**
    - YES → **It is a HOMOGENEOUS mixture. Did something dissolve?**
      - NO → **It is a COLLOID with one substance suspended in another.**
        - Examples:

?

      - YES → **It is a SOLUTION with a SOLUTE dissolved in a SOLVENT.**
        - Examples:

    - NO → **It is a HETEROGENEOUS mixture.**
      - Examples:

?

Section 1.2 - Atoms

Group 2: _____

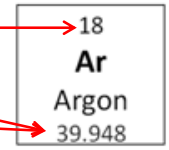
- ☐ Atomic Mass
- ☐ Atomic Number
- ☐ Bohr Diagram
- ☐ Chemical symbol
- ☐ Electron
- ☐ Energy level
- ☐ Isotope
- ☐ Lewis Structure
- ☐ Neutron
- ☐ Nucleus
- ☐ Proton
- ☐ Valence

ATOMS = Building blocks of matter

- Makes up ELEMENTS, which are represented by chemical SYMBOLS (one or two letters for each element)
- NUCLEUS (center) contains PROTONS (+ charge) & NEUTRONS (neutral)
  - # of PROTONS tells us what element it is
  - ISOTOPES - Same # of protons, but # of neutrons may vary (C-12, C-13, C14)
- ELECTRONS (- charge) found in ENERGY LEVELS around the nucleus
  - BOHR diagrams - Shows all electrons
  - LEWIS STRUCTURE (or electron-dot diagrams) - Shows VALENCE electrons in outer shell

Or ORBITALS

- Atomic # = Protons OR electrons (= #s in a stable atom)
- Atomic MASS = Protons + Neutrons (nucleus)
- Atomic WEIGHT = Average of all an elements isotopes



What information did you add to your notes?

Atoms & Electrons

Glue the worksheet on page 28 FAF Left.
Complete the worksheet as we discuss it during class.

Atoms & Electrons Name _____

1. How many electrons can each level hold? 1st = 2 2nd = 8 3rd = 18

2. What term is used for the electrons in the outermost shell or energy level? VALENCE

3. Scientists use two types of diagrams to show the electron configuration for atoms. Follow your teacher's directions to complete the diagrams.

Sulfur

Atomic # = 16

Atomic Mass = 32

P+N

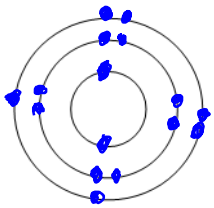
16 + ?

Protons = 16

Neutrons = 16 (32-16)

Electrons = 16

Bohr Diagram
Shows ALL electrons



Lewis Structure
(Electron Dot Diagram)
Shows VALENCE electrons