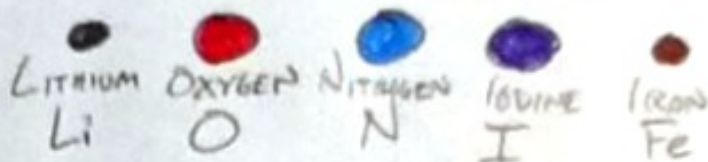


CLASSIFICATION OF MATTER

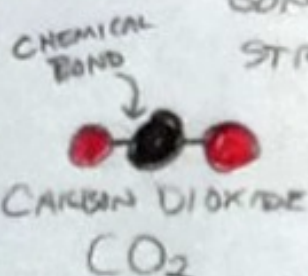
MATTER HAS MASS, OCCUPIES SPACE, AND IS MADE OF PARTICLES.

PARTICLES

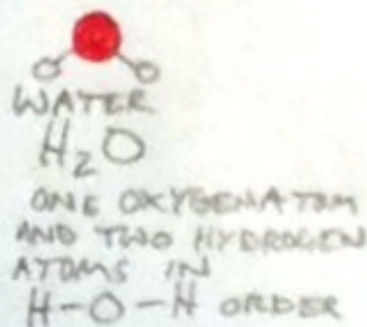
ATOMS - THE SMALLEST PARTICLE OF ORDINARY MATTER
THEY CAN BE CLASSIFIED AS DIFFERENT TYPES OF ELEMENTS



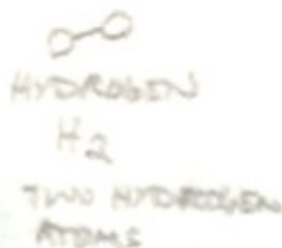
MOLECULES - A LARGER PARTICLE MADE OF TWO OR MORE ATOMS BOUND BY CHEMICAL BONDS. MOLECULES HAVE A SPECIFIC STRUCTURE AND ACT AS A UNIT.



ONE CARBON ATOM AND TWO OXYGEN ATOMS IN O-C-O ORDER



ONE OXYGEN ATOM AND TWO HYDROGEN ATOMS IN H-O-H ORDER



TWO HYDROGEN ATOMS

ELEMENTAL SUBSTANCE - A MATERIAL MADE OF MANY, MANY PARTICLES WHICH CONSIST OF ONLY ONE TYPE OF ELEMENT



Cu (solid)
METAL ATOMS BOND TO EACH OTHER IN A CRYSTAL LATTICE



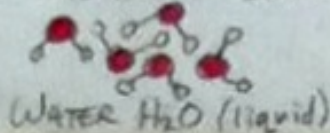
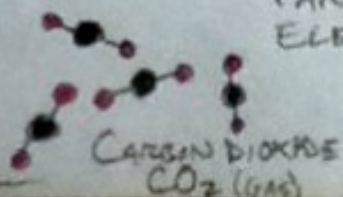
O_2 (gas)
OXYGEN ATOMS FORM MOLECULES WITH 2 ATOMS



Br_2 (liquid)
BROMINE ATOMS FORM MOLECULES WITH 2 ATOMS

PURE SUBSTANCES

COMPOUND SUBSTANCES - A MATERIAL MADE OF MANY, MANY PARTICLES WHICH CONSIST OF TWO OR MORE TYPES OF ELEMENTS CHEMICALLY BOUND IN A SPECIFIC RATIO

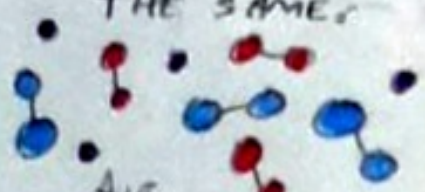


MIXTURES

MIXTURES ARE PHYSICAL COMBINATIONS OF TWO OR MORE PURE SUBSTANCES, THEY HAVE NO FIXED RATIO OF COMBINATION.

HOMOGENEOUS MIXTURES - THE COMPONENT PURE SUBSTANCES ARE MIXED SO THOROUGHLY THAT ALL PARTS OF THE MIXTURE HAVE THE SAME AVERAGE COMPOSITION.

THE PURE SUBSTANCES EACH REMAIN CHEMICALLY THE SAME.



AIR
O₂, N₂ AND Ar



Na⁺
Cl⁻

SALT AND WATER
NaCl (MADE OF Na⁺ AND Cl⁻ IONS)
AND H₂O

HETEROGENEOUS MIXTURES - THE COMPONENT PURE SUBSTANCES ARE CLUMPY, LUMPS, OR BUBBLY. THEY ARE NOT COMPLETELY MIXED AT THE MOLECULAR LEVEL.



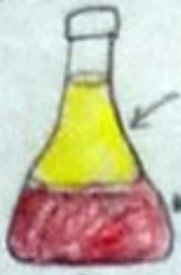
SAND

- NOT ATOMS
BUT GRAINS OF
DIFFERENT
MINERALS



BUBBLES

SOAP
AND
AIR



SALAD DRESSING