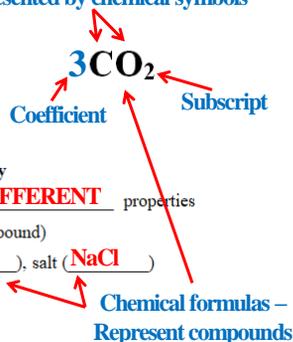


Chem Notes 1.1 → Glue on page 26 FAF Left

- ◆ **ELEMENTS** = Pure substances made up atoms → Represented by chemical symbols
 - ▶ **92** exist in nature; total of **118** as of today
 - ▶ Examples: **N** = Atmosphere, **O** = Earth's crust, **C** = living things
- ◆ **COMPOUNDS** = Two or more elements combined chemically
 - ▶ **FIXED** proportions ($\text{CO}_2 = 1 \text{ C atom and } 2 \text{ O atoms}$), but with **DIFFERENT** properties
 - ▶ May be **CRYSTALS** (framework) or **MOLECULE** (single compound)
 - ▶ Examples = **COAL** (85% C) and **SUGAR** (42% C), water (H_2O), salt (NaCl)
- ◆ **MIXTURES** = Substances are mixed, but not chemically combined
 - ▶ **DIFFERENT** proportions (Lemonade - very sweet vs. sour) with **PROPERTIES** based on particle size
 - ▶ **HOMOGENEOUS** - Appears the same throughout
 - **SOLUTION** - Occurs when a **SOLUTE** dissolves in a **SOLVENT**, such as salt water, air (O + other gases in N), & bronze (**ALLOY** of 2 metals).
 - **COLLOID** - Medium-sized particles, such as Jello & **MILK**
 - ▶ **HETEROGENEOUS** - Large particles, such as salad dressing, mud, **CLOUDS** (H_2O suspended in air) (**Suspension**) (**or FOG**)



Building Blocks of Matter

Glue the worksheet on page 26.

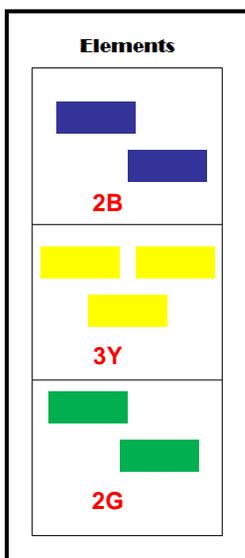
Sort the LEGOs into 4 piles based on their color.

Make sure they are not connected together.

Elements	Compounds	Mixtures
		Element Mixture
		Compound Mixture
		Mixture of Elements & Compounds



Elements - Each LEGO represents one ATOM.



Each color is a different ELEMENT.

Draw and color the atoms for each of the 3 elements in the first column with one element in each box.

Notes: Since the legos are representing elements, they are not snapped together and we use coefficients to show how many of each we have.

Compounds

Has 2 or more different elements bonded together.

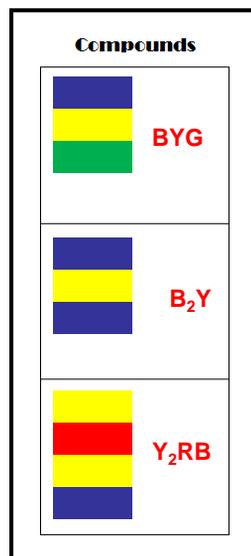
Use the elements to create at least 3 different compounds.

Draw and color the compounds in the middle row of the worksheet with one in each box.

Write the chemical formula for each.

NOTE: LEGOs snapped together represent a chemical bond forming one compound. LEGOs that are not snapped together are not chemically bonded to each other. These would be considered mixtures.

Notes: Since the legos are representing compounds, must be snapped together. Subscripts are used to show how many of each atom are in a compound.



Mixtures - Mixtures are not chemically combined

Mixtures

Element Mixture



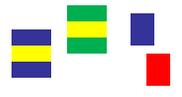
$2B + Y + R$

Compound Mixture



$B_2Y + G_2Y + B_2R$

Mixture of Elements & Compounds



$B_2Y + G_2Y + B + R$

Create a mixture of at least **TWO** different **ELEMENTS**.
Draw and color the element mixture in the 1st box.

Create a mixture of at least **THREE** different **COMPOUNDS**.
Draw and color the mixture in the 2nd box. Label with an expression.

Create a mixture of **ELEMENTS** & **COMPOUNDS**. Draw and color the mixture in the 3rd box. Label with an expression.

Remember ... not snapped = not bonded.

Notes: Since we are creating mixtures, we use addition signs to show what is added together. Subscripts are used to show how many of each atom are in a compound, while coefficients are used to show that we have more than one element or compound.

LEGO Science Challenge - Find real examples of the compounds and mixtures you created with the LEGOs.

Elements: What are three examples of elements? Give the name and chemical symbol for three of them

Compounds: Write the name of the compound with the same number of elements/atoms and give the chemical formulas.

Mixtures: Write the name of mixtures in the box with the same types of substances.

Elements	Compounds	Mixtures
		Element Mixture
		Compound Mixture
		Mixture of Elements & Compounds

Done? Due before Tuesday ...

➤ Read section 1.2 in your textbook and take notes on page 29 using all the words in group 2 →

➤ Watch the EDPuzzle video (Atomic Structure) and add to your notes on page 29!

Group 2: Atomic Basics

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