# Elements

- An element is a substance that cannot be broken down further.
- Each element has unique chemical and physical properties.
- Scientists categorize elements according to their chemical and physical properties.
- Elements have a name (ex: sodium) and a symbol (ex: Na).

### Metals:

- Metals are normally solid. Only mercury exists at room temperature as a liquid.
- Samples of metals are often shiny (have luster).
- Metals are malleable. They can be hammered into foils or thin sheets.
- Metals are ductile. They can be drawn into wires.
- Often metals conduct heat and electricity.
- Most metals have high melting points and boiling points.
- Metal atoms often form positively charged particles when they dissolve.

Examples:	
Iron	
Lithium	
Potassium	
Sodium	
Calcium	
Uranium	- 0
Nickel	
Copper	
Cobalt	-
Silver	10.
Gold	100
Platinum	

### Nonmetals

- Nonmetals can exist as gases and solids. Only bromine is a liquid at room temperature.
- Nonmetals are brittle an cannot be rolled into wires or hammered into sheets.
- They are poor conductors of electricity and heat.
- They do not have metallic luster and do not reflect light.
- Some nonmetals exist in nature as molecules of the same type of atom. These are called diatomic molecules.

## Nonmetals

Examples:	
Sulfur	
Carbon	
Phosphorus	
Bromine	
Iodine	
Nitrogen	
Oxygen	
Fluorine	
Chlorine	

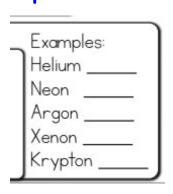
### Metalloids:

- Metalloids are solid at room temperature.
- Some metalloids have metallic characteristics and some have nonmetal characteristics.

Examples:	Arsenic
Silicon	_ Antimony
Boron	_ Germanium

## Noble gases:

- Noble gases are called "inert" because they rarely react to form compounds with other elements.
- All are gas at room temperature.



- Scientists use the periodic table to organize information about the elements.
- Elements in the same group (column) tend to have similar chemical properties.
- Group 1 elements are called alkali metals.
  Li, Na, K, Rb, and Cs are all very reactive.
- Group 2 elements are called alkaline earth metals. They are soft metals that are also quite reactive.

- Elements 95-118 have not been observed in nature.
- Scientists have artificially created them in the laboratory. Because they do not normally exist in nature, they are called synthetic elements.