Ch 2.1 Elements

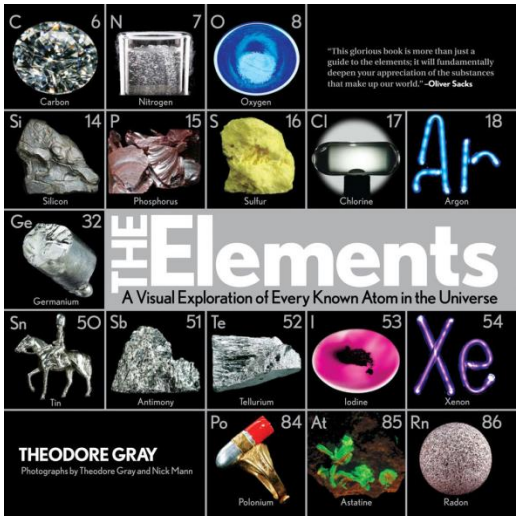
Objective: introduce some of the elements of the periodic table

Agenda

- Hand in assignment from last day
- Short notes
- Meet the elements activity

- https://www.youtube.com/watch?v=0RRVV4Diomg

2.1 Elements



- Why are elements studied in chemistry?
  - Chemistry is the study of **matter** and its **changes**.
  - Elements make up an incredible variety of different substances.
  - An element is a **pure substance** that cannot be broken down or separated into simpler substances. Each element is **one** kind of **atom**.
  - By studying elements, we can learn more about the structure of matter.

Chemical symbols

- Element names and symbols
- Because elements have different names in different languages, chemists use international symbols for them
- Chemical symbols consist of **one** or **two** letters.
- Ancient names are used as the source of many of the symbols.
- Example **M**ercury-**HG**-**H**ydra**g**yrum (latin for liquid silver)

- All elements are represented by symbols
- examples:

Gases at room temperature		
hydrogen	H	***Hydro genes*** = water forming
helium	He	***He****lios* = sun
Liquids at room temperature		
bromine	Br	***Br****omos* = smelly
mercury	Hg	***Hydrarg****yrum* = Latin for liquid silver
Solids at room temperature		
lithium	Li	***Lith****os* = stone
sodium	Na	***Na****trium* = Latin for sodium

Common Elements (In your book…)

- Hydrogen (**H**)
  - **Colourless**, **odourless**, **tasteless**, and highly flammable gas.
  - Makes up over **90** percent of the atoms in the universe
  - Used in producing fertilizers
  - Lighter than air
  - Can be separated from water or gasoline and be used as a source of fuel

Common Elements

- Iron (**Fe**) - mixed with carbon to make steel
  - Good structural material, but can rust when mixed with water or oxygen

- Oxygen (**O**) - gaseous element we breathe
  - 21 % of the atmosphere
  - Reacts with most other elements

Common Elements

- Sodium (**Na**) - soft metal that reacts with water
- Chlorine (**Cl**) - yellow-green gas that is highly toxic
- Mercury (**Hg**) - liquid at room temperature metal.
- Silver (**Ag**) - precious metal mined in British Columbia
- Silicon (**Si**) - brittle, grey, semiconductor that is second most common element in Earth's crust.

Na

Cl

Hg

Ag

Si

Meet the elements

- In a group of 3 you will be given boxes containing minerals and elements.
- Fill out the chart. When writing descriptions do NOT say things like “it looks like pepper”…why?
  - Instead use vocabulary such as it is black, grey, red, small particles, flaky, smooth, rough etc.