

The Periodic Table

- Rows: periods (talk about more later)
- Columns: groups/families
 - * elements in the same group/family have similar properties
 - * main group elements are 1-2,13-18

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Hydrogen:

- group by itself
- has properties unlike any other element due to its small size
- bonds uniquely (has its own type of bonding, more later)

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Alkali Metals

group #1

- EXTREMELY reactive
- because they are so reactive, they usually exist as compounds
- common compounds alkali metals:
 - * Na, in NaCl
 - * Li used in batteries

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Alkaline Earth Metals

group #2

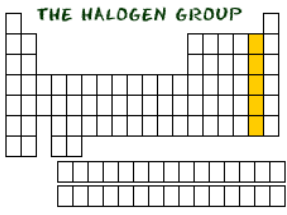
- highly reactive (not as much as alkali metals)
- common alkaline earth metals:
 - * Ca and Mg: important minerals in the body

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Halogens

group #17

- EXTREMELY reactive
- so reactive they are usually part of compounds
- compounds made with fluorine are added to toothpaste and drinking water to prevent tooth decay

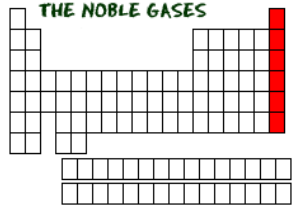


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Noble Gases

group #18

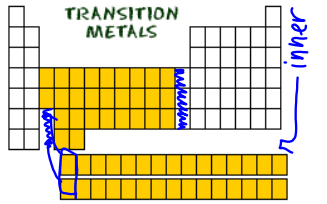
- EXTREMELY UNreactive
- used in lasers, variety of light bulbs and neon signs



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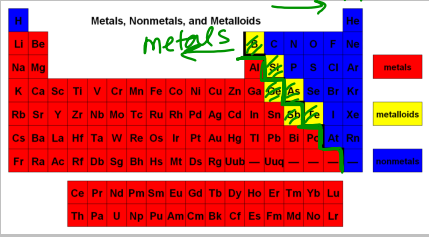
Transition Metals

- groups 3-12
- inner transition metals are below the periodic table
- transition metals are widely used
- * copper
- * titanium
- * gold and silver



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Metals and Non Metals:



Metals: good conductors of heat and electricity, luster, malleable, ductile

Nonmetals: poor conductors, brittle

Metalloids: contain properties of both metals and nonmetals

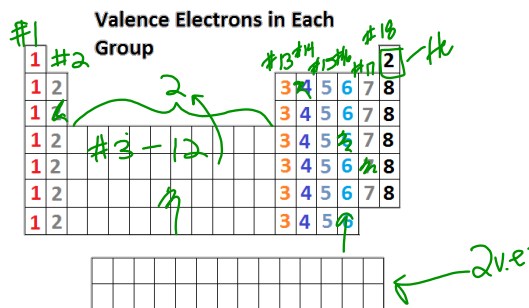
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Valence Electrons

- electrons in the outermost shell of an atom
- responsible for an element's chemical properties
- elements in the same group on the periodic table have the same number of valence electrons

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Valence Electrons



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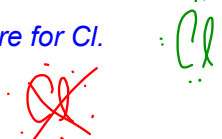
Lewis (Electron) Dot Structures

-- visually represents the number of valence electrons that each element has

RULES:

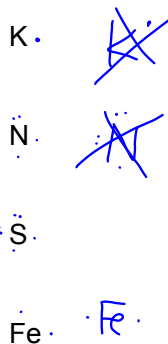
- * cannot have more than 8 (the most valence an atom can have)
- * each side must have a dot before any side can have 2
- * number of dots is equal to the number of valence electrons

example: Dot Structure for Cl.



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Lewis Dot Structure Practice:



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