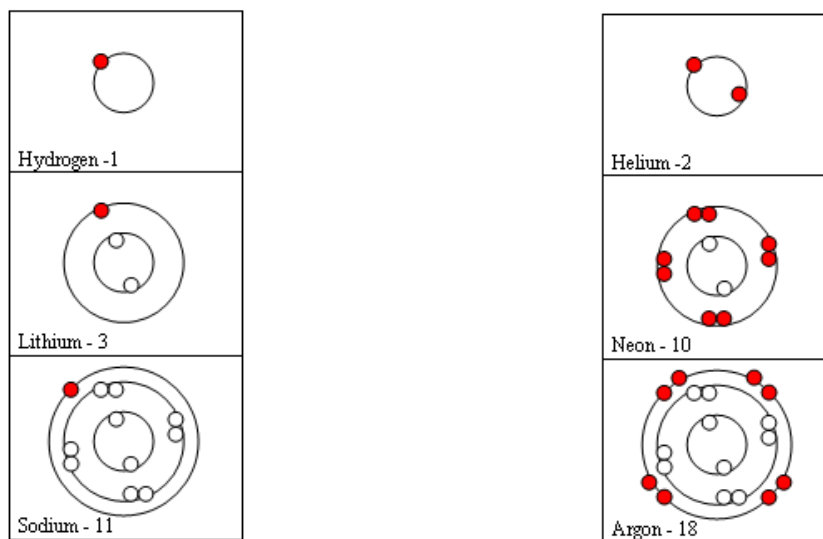


Group 1 the Alkali Metals and Group 18 the Noble Gasses



Notice that there is always one valence electron for all Alkali Metals and a full shell for the Noble Gasses. That means they all react similarly. This pattern is what determines where an atom will fit in the periodic table. **Atoms that are in the same group all have the same number of valence electrons.**

All atoms want to have a perfect outer shell. This determines how reactive the elements are and how they bond.

Atomic Theory and the Periodic Table Vocabulary

1. Atomic Theory - See your timeline and notes
2. Element - A pure substance made of one type of atom. (examples: Carbon, Gold, Silver). Each different element has a different number of protons inside it's nucleus.
3. Atom - The building blocks of matter. Everything is made of atoms or pieces of atoms. Atoms are made of protons, neutrons and electrons.

	Mass	Charge	Location
Electrons	None	-	Around the nucleus
Protons	1 AMU	+	Nucleus
Neutron	1 AMU	None	Nucleus

4. Atomic Mass - The average mass of atoms for that element. Determined by the number of protons plus the number of neutrons.
5. Atomic Number - The number of protons in the nucleus.
6. Isotope - An atom of an element that has a different atomic mass than normal. Carbon 14 (mass of 14) is an isotope of Carbon (Typical carbon is mass 12)

ION - (write in above #7) Ions are atoms which have gained or lost an electron. They are positively (if they lost an electron) or negatively (if they gained an electron) charged.

7. Periodic Table - The periodic table is a way of organizing the data of elements.

Group - Groups are the columns on the table. All elements in the same group have the same number of **outer (valence) electrons** and tend to have similar chemical properties.

Periods - The rows of the periodic table. As you move across a period the number of protons and electrons increase by one each step.

8. Forces in the atom

Gravity- Attraction force (weakest)

Electromagnetic Force (EM force) - attracts opposite charges and repels like charges. Keeps electrons in orbit.

Strong Force - strongest force in the atom. Attraction force but limited by distance (only works over short distances). Glues protons together in nucleus and works against EM repulsion.

Weak force - causes radioactive decay.