

# Periodic Table Review

## Metals vs. Nonmetals

*m*

### Periodic Table of the Elements

*nm*

1	IA	1	H	2	IIA	3	Li	4	Be	10	Ne	0	He																								
2		5	B	6	IVA	7	C	8	N	9	O	10	F																								
3		11	Na	12	Mg	13	Al	14	Si	15	P	16	S	17	Cl	18	Ar																				
4		19	K	20	Ca	21	Sc	22	Ti	23	V	24	Cr	25	Mn	26	Fe	27	Co	28	Ni	29	Cu	30	Zn	31	Ga	32	Ge	33	As	34	Se	35	Br	36	Kr
5		37	Rb	38	Sr	39	Y	40	Zr	41	Nb	42	Mo	43	Tc	44	Ru	45	Rh	46	Pd	47	Ag	48	Cd	49	In	50	Sn	51	Sb	52	Te	53	I	54	Xe
6		55	Cs	56	Ba	57	*La	72	Hf	73	Ta	74	W	75	Re	76	Os	77	Ir	78	Pt	79	Au	80	Hg	81	Tl	82	Pb	83	Bi	84	Po	85	At	86	Rn
7		87	Fr	88	Ra	89	+Ac	104	Rf	105	Ha	106	Sg	107	Ns	108	Hs	109	Mt	110	111	112	113														

* Lanthanide Series	58	59	60	61	62	63	64	65	66	67	68	69	70	71
	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
+ Actinide Series	90	91	92	93	94	95	96	97	98	99	100	101	102	103
	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr

# Parts of an Atom

The smallest part of an element is called the atom.

The atom is comprised of three types of subatomic particles:  
**protons, neutrons and electrons** .

Protons: are 'heavy', **positively charged ( $p^+$ )** particles found in the **nucleus**

- the number of protons is equal to the atomic number

Neutrons: are **neutral** particles that have the same mass as a proton and are found in the **nucleus**.

**What does neutral mean??**

Electrons: are **negatively charged ( $e^-$ )** particles that circle or orbit the nucleus at different energy levels.

- The particles have almost no mass.
- The farther away from the nucleus an electron is, the higher the energy level.
- atoms are electrically neutral, so the **number of  $p^+$  equals the number of  $e^-$**

- **Bohr diagrams** can be drawn to represent the arrangement of **electrons in various levels or orbits**
- each orbit has a definite number of electrons

**the first level can have two  
the second can have eight  
the third can have eight**

# Atomic Structure

What is an atom?

Protons?

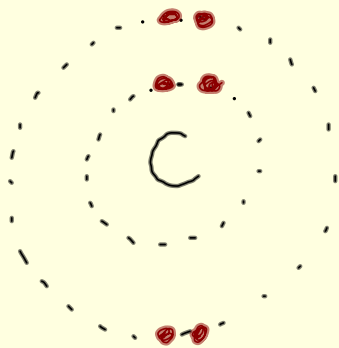
Neutrons?

Electrons?

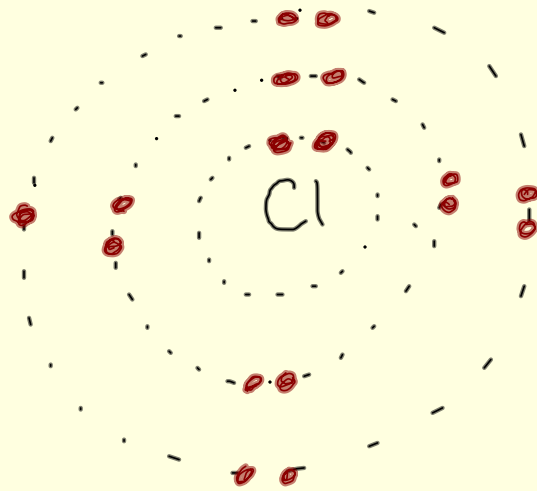
# Atomic Models

Draw a Bohr diagram for:

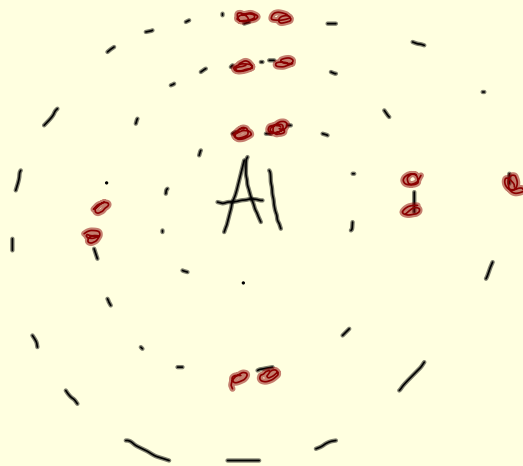
a) C  $\rightarrow$   $6p^+$ ,  $6e^-$



b) Cl  $\rightarrow$   $17p^+$ ,  $17e^-$



c) Al  $\rightarrow$   $13p^+$ ,  $13e^-$



# **Bohr Diagram worksheets**