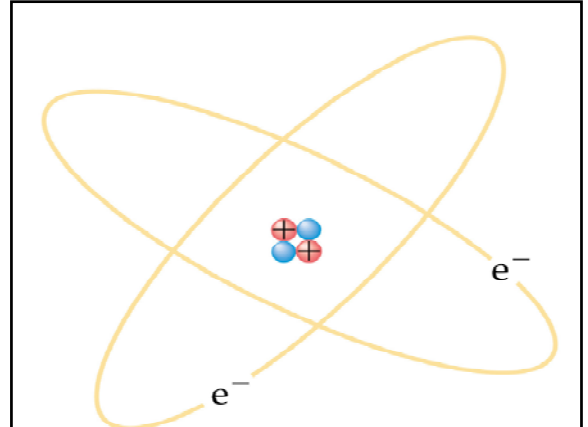


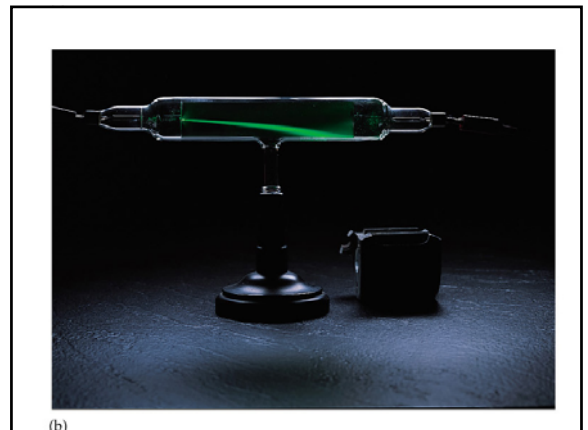
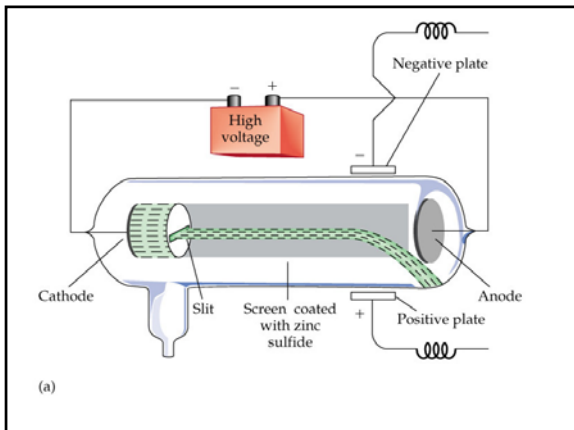
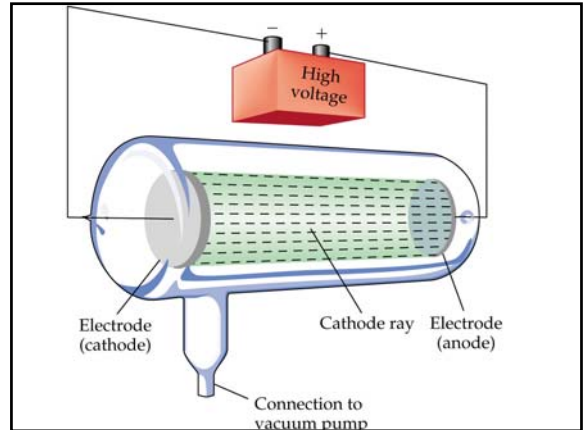
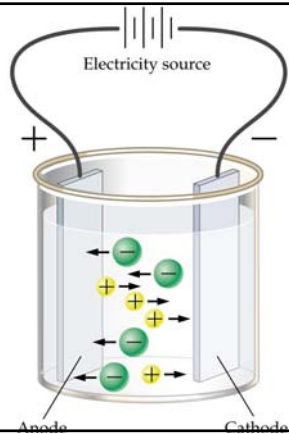
Atomic Structure, Isotopes

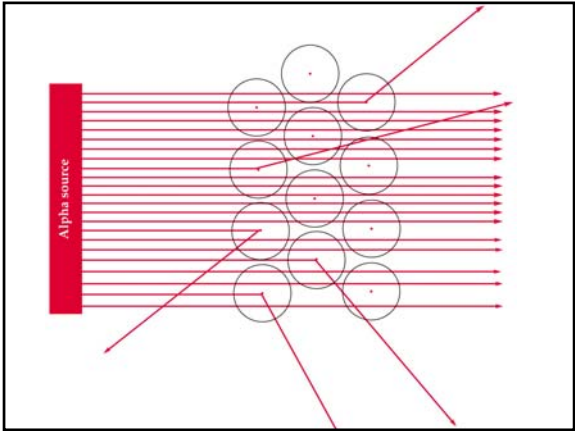
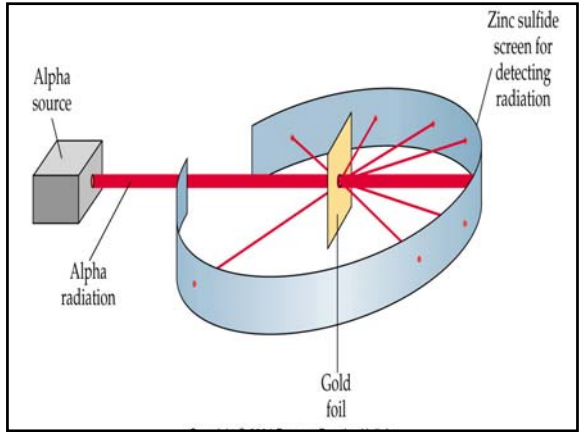
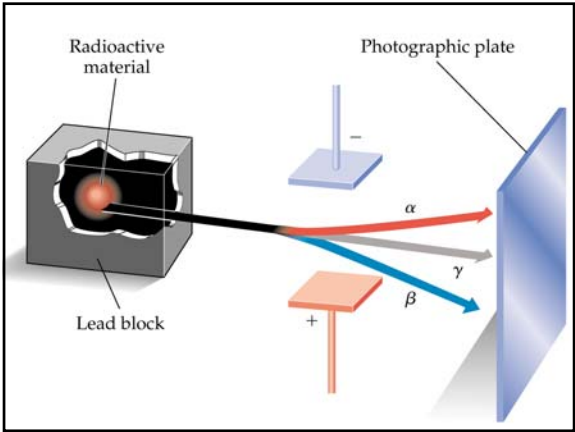
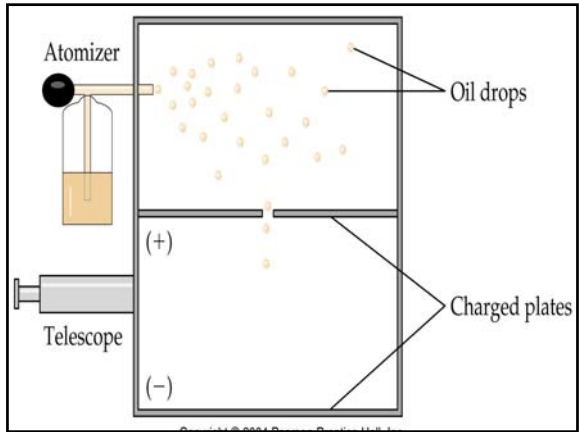
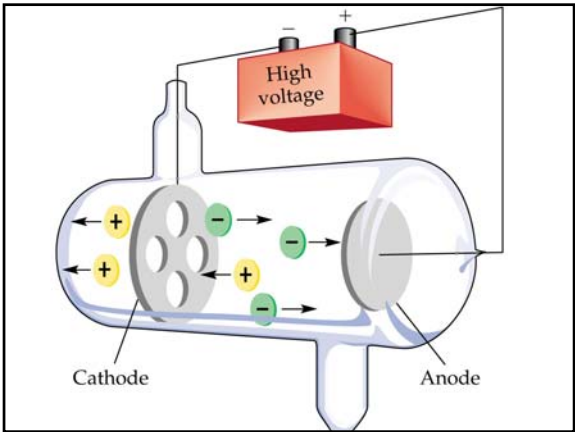
STM Chapter 5
Pages 88-108

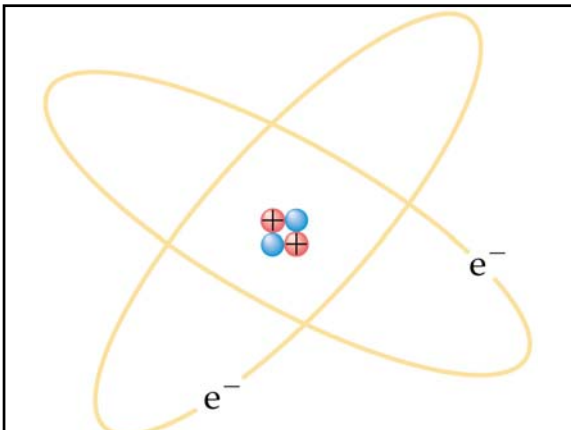
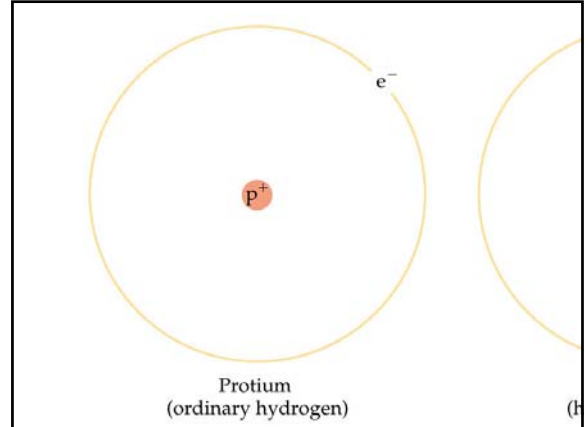
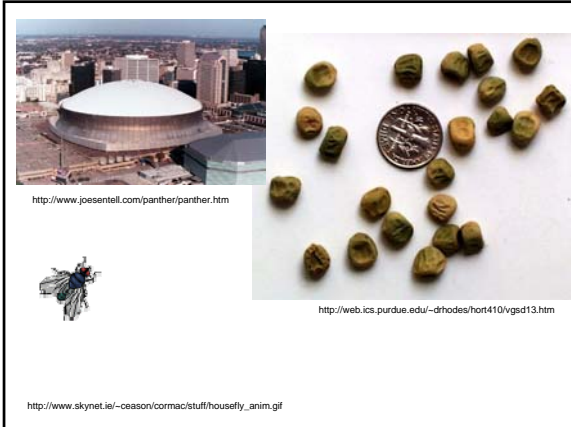


Electrolysis of Salts

- Anode +
- Cathode -
- Opposites attract
 - particles → +
 - + particles → -
- - particle: ANION
- + particle: CATION







Atomic Structure

- Protons
- Neutrons
- Electrons

Atomic Structure

- Neutrons
 - Electrical charge 0
 - Mass = 1 atomic unit

Atomic Structure

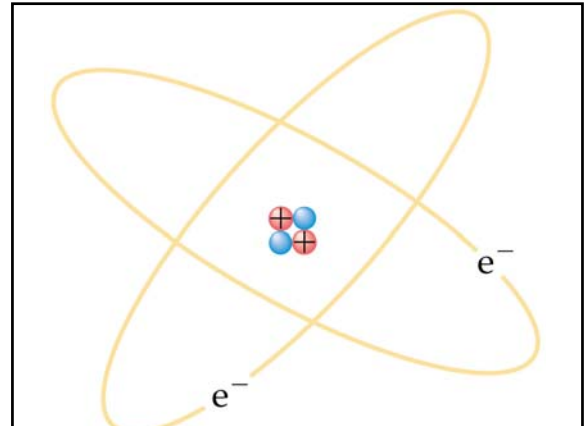
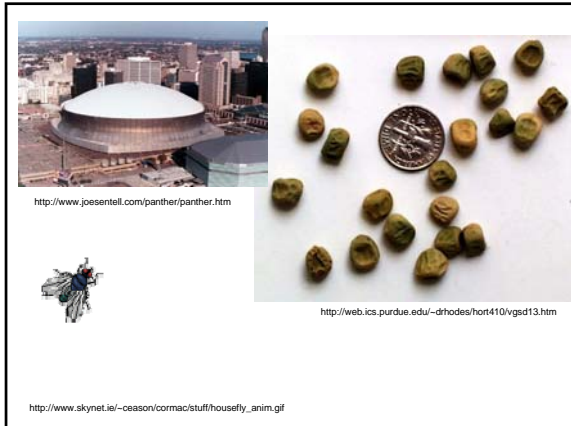
- Protons
 - Electrical charge +1
 - Mass = 1 atomic mass unit (u)

Atomic Structure

- Electrons
 - Electrical charge -1
 - Mass = almost nothing (1/1837 of a proton)

Atomic Structure

- Protons
 - Neutrons
- Make up the NUCLEUS
NEW KLEE US
Nucleons—have mass
NEW KLEE ONS
- Electrons—minimal mass



Atomic Structure

- Protons
- Neutrons
- Electrons

Atomic Structure

- Protons
 - Atomic Number
 - Controls properties of elements
 - Constant number for all atoms of the same element

Atomic Structure

- Neutrons
 - Atoms may have different numbers of neutrons
 - Different atomic masses of atoms of the same element
 - ISOTOPES of the same element

Isotope notation



In-class activity

Ca

In-class activity

- How many neutrons?
- How many nucleons?

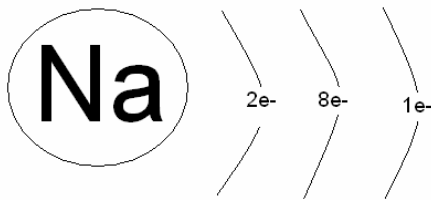
In-class activity

Electrons

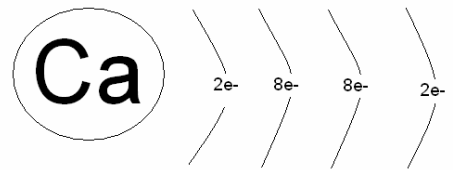
- Positioned in energy levels
- First level 2
- Second level 8
- Higher levels temporarily fill with 8



Neils Bohr's electron energy level diagram



In Class Activity # 3



Period	1A	2A	3A	4A	5A	6A	7A	8A										
1	H	He																
2	Li	Be	B	C	N	O	F	Ne										
3	Na	Mg	Al	Si	P	S	Cl	Ar										
4	K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
5	Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
6	Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
7	Fr	Ra	Ac	Rf	Db	Sg	Bh	Hs	Mt	Uun								

Lanthanide Series: Ce, Pr, Nd, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu

Actinide Series: Th, Pa, U, Np, Pu, Am, Cm, Bk, Cf, Es, Fm, Md, No, Lr

http://www.nyu.edu/classes/tuckerman/honors.chem/lectures/lecture_2/node5.html

Groups of the Periodic Table

- Alkali Metals—first column
- Alkaline Earth Metals—second column
- Halogens—next to last column
- Noble Gases—last column

1A	2A	3A	4A	5A	6A	7A	8A										
H	He																
Li	Be	B	C	N	O	F	Ne										
Na	Mg	Al	Si	P	S	Cl	Ar										
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra	Ac	Rf	Db	Sg	Bh	Hs	Mt	Uun								

Transition Elements: 3B, 4B, 5B, 6B, 7B, 8B, 1B, 2B

Inner Transition Elements: Ce, Pr, Nd, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu

Actinide Series: Th, Pa, U, Np, Pu, Am, Cm, Bk, Cf, Es, Fm, Md, No, Lr

Labels: Semi-metals/Metalloids, Metals, Non-Metals

<http://www.specialedprep.net/MSAT%20SCIENCE/StrucClassMatHomePage.htm>