Jumpstart #2D

ABSENT YESTERDAY? COME UP TO MY DESK NOW!

How many atoms of each element in the compound?

1) H_2O → **How many Hydrogens? How many Oxygens?**

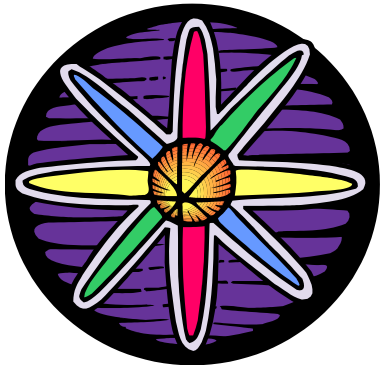
2) $2Al_2S_3$ → **How many Aluminums? How many Sulfurs?**

3) $3Mg_2(SO_4)_2$ → **How many Mg? How many S? How many O?**

GET YOUR NOTEBOOK!!!!!

NUCLEAR CHEMISTRY

Subatomic Particles



- **Protons- positive charge**
- **Neutrons- neutral**
- **Electrons - negative charge**

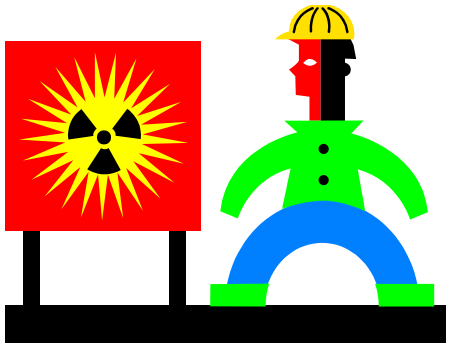
In the nucleus

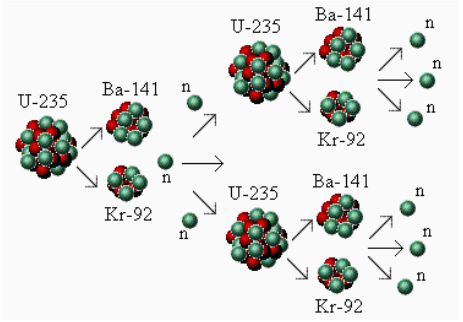
The part involved in nuclear chemistry!

Examples:

Nuclear Fission

- Carbon-14 Dating
- The nuclear bomb
- Nuclear power
- Nuclear medicine
- Radon testing in basements
- Chain Reactions





What holds the nucleus together?

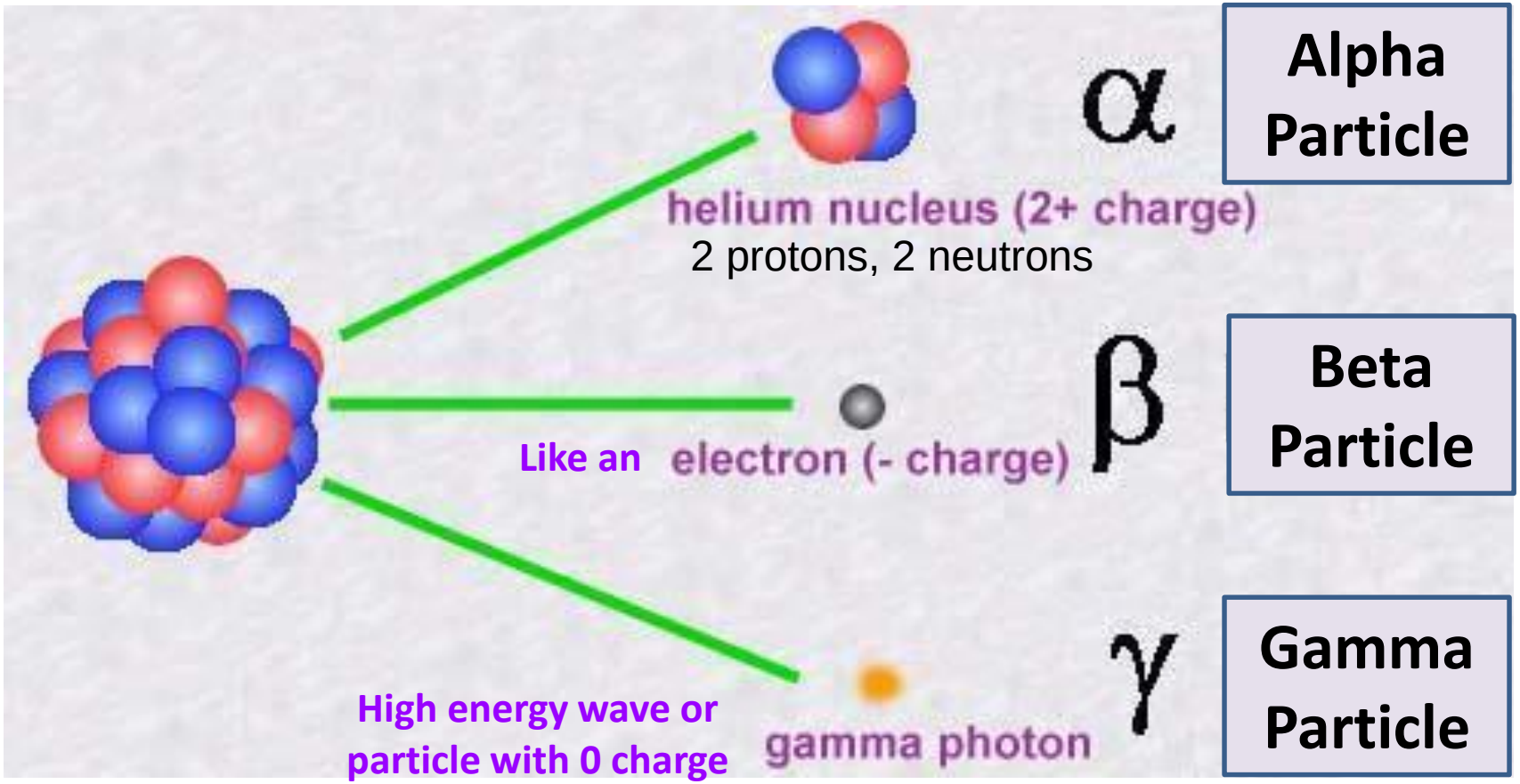
- Normally particles with same charge would repel each other
  - So why doesn't the nucleus fly apart from protons repelling each other?!
    - ***Strong Force***

Where do the radioactive particles and energy come from?

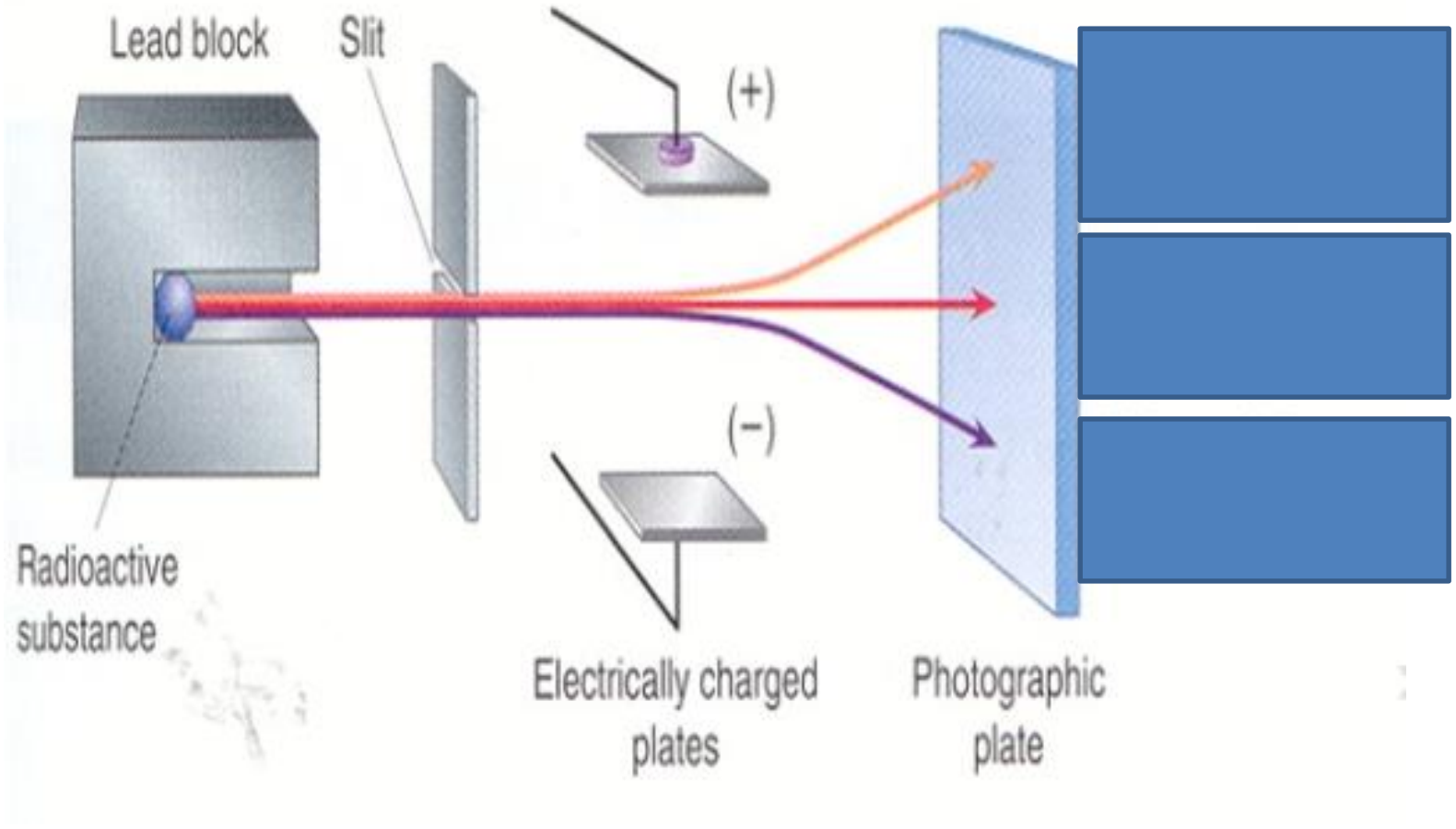
- Sometimes there are ***too many neutrons***, and it makes the atom unstable
- The atom flies apart and releases particles from the nucleus and energy

Radiation

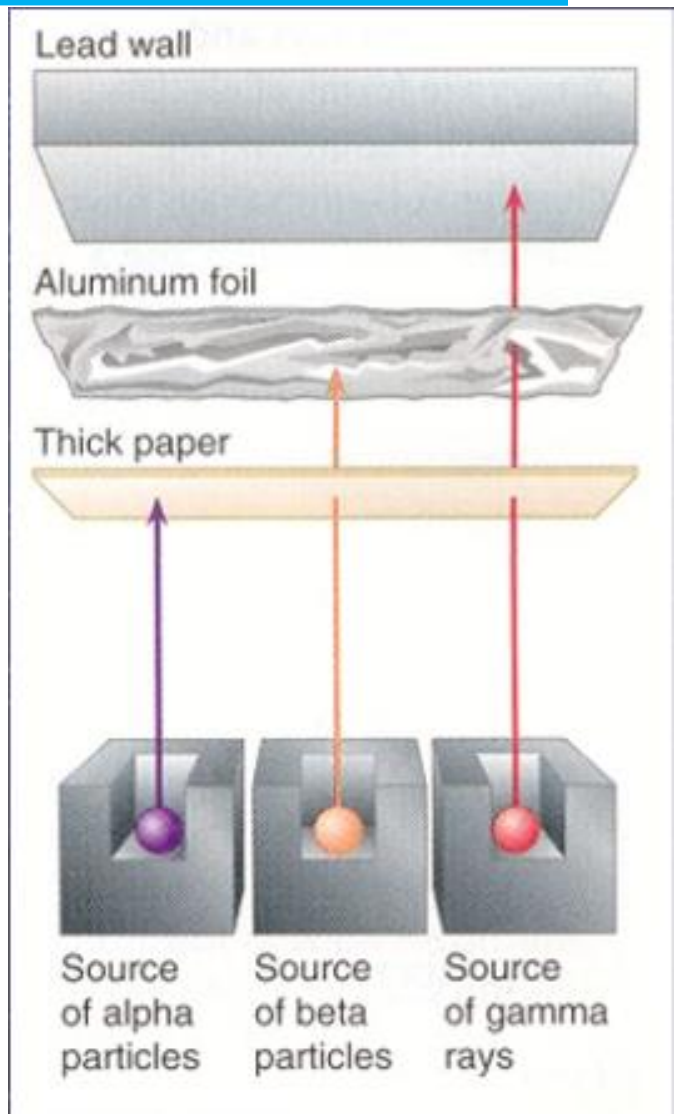
- **Radiation comes from the nucleus of an atom. Unstable nucleus emits (spits out) a particle or energy**

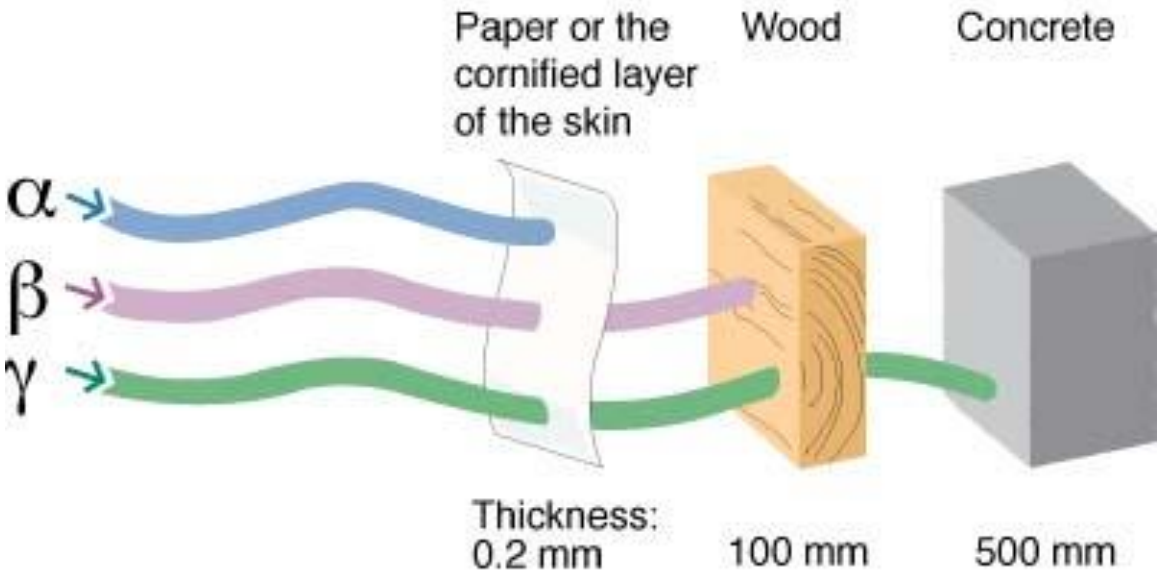


Charge of Nuclear Particles



Penetrating Power of Radiation





Copy the symbols down

Type	What is it?	Symbol	Charge	What Stops It
Alpha Particle	2 protons 2 neutrons (Helium nucleus)	$^{4}_{2}\mathrm{He}$ $^{4}_{2}\alpha$	2+	Paper
Beta Particle	Like an electron	$^{0}_{-1}\beta$ $^{0}_{-1}\mathrm{e}^{-}$	1-	Aluminum, wood, clothes
Gamma Ray	High speed energy waves	γ $^{0}_{0}\gamma$	0	Thick lead or concrete