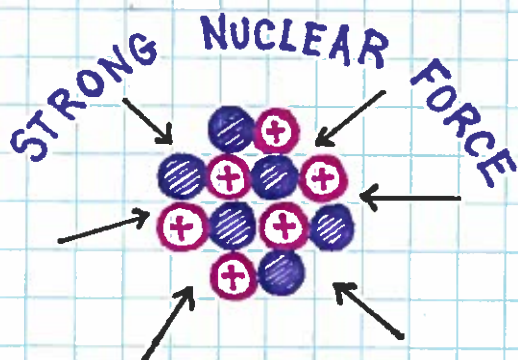


Nuclear Reactions

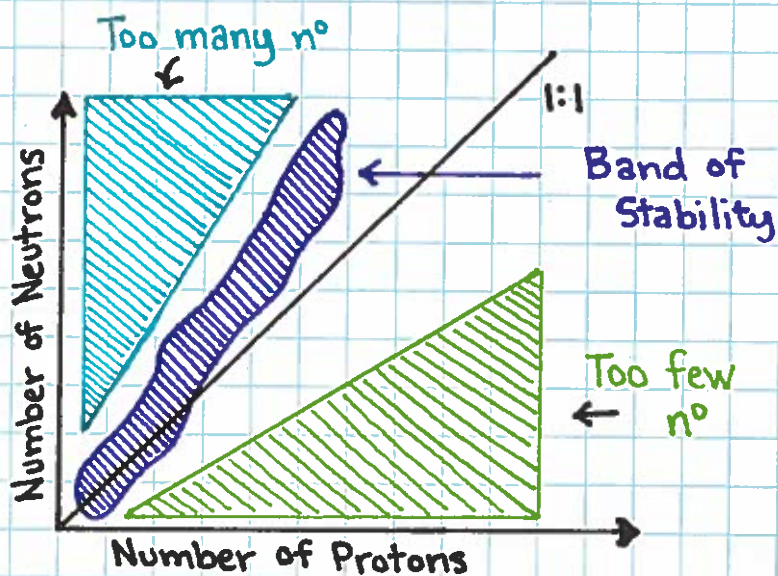
NUCLEAR REACTIONS	vs	CHEMICAL REACTIONS
Nuclei emit charged particles (α or β) and gamma rays.		Bonds between atoms are broken & new ones are formed.
Atoms are changed into different atoms.		Atoms are not changed, just rearranged.
Involve Nucleons (subatomic particles inside nucleus)		Only involve the valence electrons
<u>VERY LARGE</u> change in energy! $E=mc^2$		Relatively <u>small</u> change in energy

Why do atoms undergo nuclear decay?



As the atomic number increases and the atom gets bigger, more **neutrons** are needed to stabilize the nucleus.

Unstable atoms will fall apart to create smaller, more manageable atoms in a process known as **RADIATION**



All elements after Bi-83 are radioactive.