The Cathode ray experiment: what it was and that we learned that the atom is made of positive and negatively charged particles

The gold foil experiment: what it was and that the atom is mostly empty space, it has nucleus, and the nucleus is positive

Mass # = protons + neutrons

Charge = protons – electrons

Atomic number = protons

Isotopes Definition - same # protons different number of neutrons

Atomic mass = WEIGHTED AVERAGE of the mass of an element and its isotopes.

Atomic number 2

Element He $ \_{Atomic Number 2 }^{Mass Number 4}$$He^{}$

Atomic Mass 4.00260

Alpha decay - you lose a helium nucleus

* Subtract 4 from the original mass number
* Subtract 2 from the original atomic number
* See guided notes for example
	+ The format (arrows and + signs must be in the right spot)

Beta decay – you eject an electron nucleus

* The original mass number stays the same
* The original atomic number goes up by one
* See guided notes for example
	+ The format (arrows and + signs must be in the right spot)

Gamma decay – you release energy

* The mass number stays the same
* The atomic number stays the same
* See guided notes for example
	+ The format (arrows and + signs must be in the right spot)

Half life

* If given the starting amount – half it over and over then count half-lives/ add up total time.
* If given ending amount – double it over and over again then count half-lives/ add up total time
* If given starting and ending amount
	+ Finding half-lives : count how many jumps you had to make to get to the ending amount. Divide by total time
	+ Finding total time: count how many jumps you had to make to get to the ending among. Multiply by half-lives