Radioactivity

- Scattering of $\alpha - particles$ supports the nuclear model of atom by the following evidence
  - A very small nucleus surrounded by mostly empty space
  - A nucleus containing most of the mass of the atom
  - A nucleus that is positively charged
- Decay Law
  - $N = N_o \times \left(\frac{1}{2}\right)^{\frac{t}{halflife}}$, where N is the remaining quantity, N0 is the initial quantity, and t is time.

- Activity = decay constant x number of radioactive atoms
  - $A = \lambda N$
- Half-Life
  - $t_{\frac{1}{2}} = \frac{\ln(2)}{\lambda}$