# Nuclear Physics

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## 1 Types of radiation

#### 1.1 $\alpha$ -radiation

Alpha Radiation or Alpha Decay is when a particle releases another particle as it decays.

$${}_Z^A X \rightarrow {}_{Z-2}^{A-4} X' + {}_2^4 a$$

#### 1.2 $\beta$ -radiation

Beta Radiation or Beta Decay is when a particle releases an electron and a neutrino as it decays, by a neutron splitting into an electron and a proton.

$$^{A}_{Z}X \rightarrow ~^{A}_{Z+1}X' ~+~^{0}_{-1}e ~+~ \bar{v}$$

#### Sidenote:

Since elements release electrons as they decay, and gain a proton, the element itself changes to the next element over in the periodic table.

### 1.3 $\gamma$ -radiation