

**Atomic Number:**

The [number](#) equal to the number of [protons](#) in an [atom](#) that determines its [chemical](#) properties. Symbol: [Z](#)

**Atomic Mass:**

The mass of an atom expressed in atomic mass units.

**Strong (nuclear) Force:**

A [fundamental force](#) that is associated with the strong bonds between [quarks](#) and other subatomic particles.

**Weak (nuclear) Force:**

One of the four [fundamental forces](#) that is associated with nuclear decay.

**Binding Energy:**

The energy needed to [separate](#) the constituent parts of an [atom](#) or [nucleus](#).

**Mass Defect:**

The [difference](#) between the mass of an [atom](#) and the sum of the masses of its [individual components](#).

**Mass-Energy Equivalence:**

All mass represents an equivalent amount of energy.  $1 \text{ amu} = 931 \text{ MeV}$ .

**Radioactivity:**

[Emission](#) of [radiation](#) as a [consequence](#) of a [nuclear reaction](#), or directly from the [breakdown](#) of an [unstable nucleus](#).

**Half Life:**

The time required for half of the [nuclei](#) in a [sample](#) of a specific [isotope](#) to undergo [radioactive decay](#).

**Alpha Particle:**

A [positively charged helium nucleus](#) (consisting of two [protons](#) and two [neutrons](#)).

**Beta Particle:**

An energetic electron produced as the result of a [nuclear reaction](#) or [nuclear decay](#).

**Gamma Particle/Ray:**

Very high [frequency electromagnetic radiation](#) emitted as a [consequence](#) of [radioactivity](#).

**Fission:**

The [process](#) whereby one item splits to become two.