Types of Particle

Broadly we can consider two types of particle; fundamental particles and hadrons (non-fundamental particles, i.e. particles made up of other particles). Each of these types can be split into two further catergories each.

Fundamental Particles

There are two types of fundamental particle; quarks and leptons, their are 6 of each.

Quarks

Flavour	Charge	Strangeness	
Up (u)	$+\frac{2}{3}e$	0	(1)
Down (d)	$-\frac{1}{3}e$	0	(1)
Charm (c)	$+\frac{2}{3}e$	0	(2)
Strange (s)	$-\frac{1}{3}e$	-1	(2)
Top (t)	$+\frac{2}{3}e$	0	(3)
Bottom (b)	$-\frac{1}{3}e$	0	(3)

Leptons

Particle	Charge	
Electron (e)	-1 e	(1)
Muon (μ)	-1 e	(2)
Tau (τ)	-1 e	(3)
Electron Neutrino (ν_e)	0	(1)
Muon Neutrino (ν_μ)	0	(2)
Tau Neutrino (ν_τ)	0	(3)

These particles are part of 3 generations. Each successive generation represents, in it's simplest form, a more massive version of the former generation. i.e. a muon is effectively just a heavy electron.

Hadrons

A hadron is a particle composed of other particles, namely quarks (or antiquarks). They also have the distinction of feeling the strong force (which leptons do not). These hadrons can be split into two types; baryons and mesons.

Baryons

Particle	Quark Composition
Proton	uud
Neutron	udd
Σ^+	uus
Σ^0	uds
Σ^-	dds

A baryon is made of 3 quarks.

Protons and neutrons are the common baryons but baryons containing a strange quark are the Σ-baryons.

Baryons evidently have a baryon number of 1.

Mesons

Particle	Quark Composition
π^+	$u\bar{d}$
π^-	$\bar{d}u$
π^0	$u\bar{u}$ or $d\bar{d}$
K^+	$u\bar{s}$
K^-	$s\bar{u}$
K^0	$d\bar{s}$ or $s\bar{d}$

A meson is made of a quark and an anti-quark.

Pions are mesons without a strange quark and Kaons are mesons with a strange quark.

They have a baryon number of 0. There is no such thing as a meson number.

Gauge Bosons

A final "particle" type is the gauge boson which is a force carrier of each of the four fundamental interaction.

Electromagnetic → photons

Weak → W^+, W^- or Z^0

Strong → gluon

Gravity → graviton

There is also the Higgs Boson which gives particles mass. It doesn't fit well into the 'Standard Model' particle physics.