

Three Generations of Matter (Fermions) spin 1/2

	I	II	III
mass →	2.4 MeV	1.27 GeV	171.2 GeV
charge →	$\frac{2}{3}$	$\frac{2}{3}$	$\frac{2}{3}$
name →	Left u Right up	Left c Right charm	Left t Right top
Quarks	4.8 MeV $-\frac{1}{3}$ Left d Right down	104 MeV $-\frac{1}{3}$ Left s Right strange	4.2 GeV $-\frac{1}{3}$ Left b Right bottom
	0 eV 0 Left ν_e Right electron neutrino	0 eV 0 Left ν_μ Right muon neutrino	0 eV 0 Left ν_τ Right tau neutrino
	0.511 MeV -1 Left e Right electron	105.7 MeV -1 Left μ Right muon	1.777 GeV -1 Left τ Right tau
Leptons			

0
0
g
gluon

0
0
 γ
photon

91.2 GeV
0
 Z^0
weak
force

80.4 GeV
 ± 1
 W^\pm
weak
force

> 114 GeV
0
0
H
Higgs
boson

spin 0

Bosons (Forces) spin 1