





Higgs boson



## ARECIPE FOR ALL MATTER

The basic building blocks of all matter, and the forces through which they interact, are described by a single theory. The Standard Model may have a rather ordinary sounding name, but this is the recipe for everything we see around us today. All matter is made of only three families of fundamental particles, each composed of two quarks and two leptons. Everything you see in this room is made from the ingredients of just the first family. The other two families only exist in more exotic particle interactions – in cosmic rays and outer space or indeed in particle accelerators. The Higgs boson, for years the only missing ingredient, is the lynchpin that holds the theory together. The boson is the only measureable manifestation of a mechanism that gives mass to some of the force carrying particles. This same mechanism is also responsible for giving the quarks and leptons their basic rest mass.