



MASS

DEFINITION: how much matter
an object contains. Alternative
definition: how many atoms are
in an object.

UNITS: kilograms
(kg), pounds (lb),
solar masse

The amount of mass that an object has depends on the types of atoms it contains, the total number of atoms and the density of those atoms. We often interchange “mass” for “weight” but these are two different things. Weight is the mass of an object combined with the forces acting upon it. A person has the same mass on the surface of the Earth as they do in space or anywhere else, but not necessarily the same weight.

COSMIC EXAMPLE

Mass of Sagittarus A*: 4
million solar masses or 8×10^{36} kg

The center of our Milky
Way galaxy contains a
giant black hole with the
mass equivalent to about
4 million Suns, or about
 8×10^{36} kg.

OLYMPIC EXAMPLE

Curling is a sport where athletes
push a “stone” down a sheet of ice.

Stone: Between 17.24 and 19.96 kg.



EVERYDAY EXPERIENCE

Adult Golden Retriever mass:
36 kg (80 lbs)

