

Weight & Mass

Mass is a measurement of the amount of matter something contains, while Weight is the measurement of the pull of gravity on an object. Mass is measured by using a balance comparing a known amount of matter to an unknown amount of matter. Weight is measured on a scale.

Think of a dry sponge, how it's light weight and full of holes. It has a low mass.

Now think of a bowling ball or a piece of marble, which has a high (or dense) mass.

So:

An object has **mass** (say 100 kg).

This makes it heavy enough to show a **weight** of 100 kg on scales, but the scales are only showing a guess of the **mass** above them!

Gravity causes Weight,

so an object's weight is how hard gravity is pulling on it.

We think the weight is the same everywhere, because we all live on the surface of the planet Earth.

But in zero gravity (Say, on the International Space Station) it would not push on the scales at all and would show 0, but the mass is still 100 kg!

An object's mass doesn't change (unless you remove some), but its weight *can* change...

For example: On the Moon the scales would wrongly show 16.6kg for a mass of 100 kg

Because the pull of gravity on the Moon is much less than on Earth

Teacher to discuss with class and answer questions