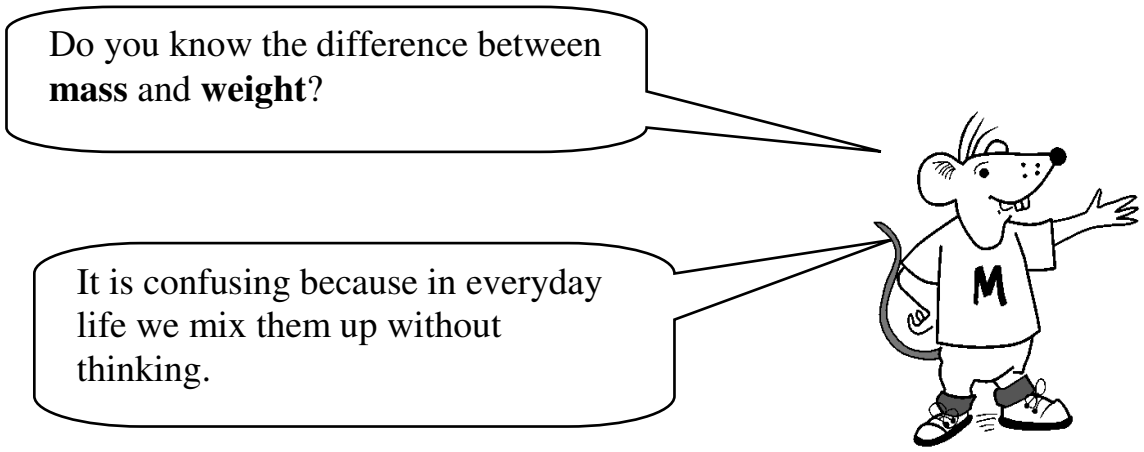
6601-04 Mass and weight



Mass
Mass is the **amount of material** in an object and is measured in **kilograms**. This stays the same wherever you take the object.

Weight
Weight is the **force by which the Earth (or other planet) pulls the object down** and is measured in **newtons**. This changes depending on where you take the object.

For example, if your **mass** is **40 kg**, you will have a **mass** of **40 kg** whether you are on the Earth, on Mars or on the Moon, because your body has the same amount of material wherever you are.

However, your **weight** will change because the gravity on Mars and the Moon is not as great as that on the Earth. On Earth your **weight** would be about **400 newtons**, on Mars it would be about **152 newtons** and on the Moon only about **66 newtons**.

Nelly the elephant was invited to the ball, but when she tried to put on her best dress she realised she had eaten so many buns she no longer fitted into it. She had heard, however, that astronauts were weightless in space, so she hitched a lift on the Space Shuttle.
Unfortunately, when she was in space she soon discovered that, although she didn't have any weight, she still had plenty of mass!

Michael was asked in a science test: 'What is the difference between mass and weight?'

He wrote: 'Mass is when you buy a bag of potatoes. Weight is when you have to carry them home!'