

Science skills success criteria - equipment	Me	Teacher
* I select & use a Newton meter with a suitable scale <b>with help</b> ; I read decimal scales <b>with help</b>		
** I select and use a Newton meter with a suitable scale <b>independently</b> ; I read decimal scales <b>with help</b>		
*** I select and use a Newton meter with a suitable scale <b>independently</b> ; I read decimal scales <b>independently</b>		

Use the Newton meters to measure the weight of the various objects here on Earth.

You should look at the scale carefully so that you use the correct meter for the object - pick the object up first and decide roughly how heavy it is and **record your estimate (in Newtons) in the same column as the object's name.**

**What Does it Weigh?**

Choose the correct Newton meter to measure the weight of different objects

Science skills success criteria - equipment		Me	Teacher
* I select suitable equipment for a task (whole/decimal scale)			
** I select suitable equipment (correct scale for task)			
*** I select suitable equipment (correct scale & use for task) and calculate with decimals			

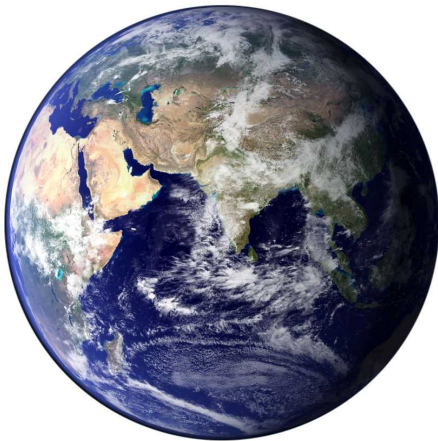
Object	Weight (in newtons)	Weight on the moon (in newtons)

Remember that 'weight' is the force of gravity acting on a mass?

Think: how could we reduce the weight of something, without taking any of its mass away?

Hint - where could you go so that you wouldn't feel as heavy?

 Watch this, and then try to explain what you see.



The Moon is far less **massive** than the Earth, so it has a much smaller gravity than Earth does - one sixth as much.

This means that anyone walking on the Moon would feel six times lighter. They could jump six times higher and kick a ball six times further than they could on Earth!



**mass** on Earth = 82 kg

**weight** on Earth = 820 N

(force of gravity is 10 Newtons  
per kilogram:  $82 \times 10 = 820$ )



mass on Moon = 82 kg  
(he hasn't changed)

weight on Moon = 140 N

(force of gravity is only 1.7 newtons  
per kilogram  $82 \times 1.7 = 140$ )



Now go back to your sheet and fill in the last column. Work out what the weight of each object would be on the Moon - use a calculator to divide each weight you measured by 6 to find one sixth.

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Object	Weight (in newtons)	Weight on the moon (in newtons)

Me	Teacher



Attachments

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FREE FOOTAGE - Astronaut Jumping On The Moon HD.wmv