

How Much Do You Weigh?

This depends on where you are...

Your weight is determined by gravity,

Which means you weigh a different amount in different places.

On Earth you always weigh the same, but what if you were to travel through the Solar System?

What would you weigh then?

Place	Relative force of Gravity	Multiplied by	Your Weight	equals	Your Weight In this location
Earth	1	x		=	
Outer Space	0	x		=	
Earth's Moon	0.17	x		=	
Mercury (the smallest planet)	0.38	x		=	
Jupiter (the largest planet)	2.36	x		=	

New Vocabulary

Mass is used in science to measure of the amount of **matter** (or stuff) in an object. Mass is measured in grams (g) or kilograms (kg) Mass is constant in all circumstances

Weight is the measurement of the pull of gravity on an object. Weight can change. An object weighs the same in China or the US, but take that object to the moon, and it will have a different weight! Why, because the moon places a different force of gravity on that object than the Earth's does, this is due to the differences in the moon and the Earth's mass.

Gravity: The force of attraction between two objects. Gravity is the force that attracts a body toward the center of the earth or toward any other physical body having mass. Items with more mass exert a stronger gravitational force.

Practice Using the New Vocabulary

Objects, including me, have mass. Mass is the amount of _____ in an object. _____ does not change. It stays constant. No matter where an object is in the universe it has the same mass.

On Earth we rarely measure our mass, we measure our _____. We are so used to experiencing the _____ of Earth that we usually don't think about it pulling us down. But every time we weigh ourselves or another object on Earth we are actually doing a measurement that involves gravity– because weight is actually the measurement of the pull of gravity on an object.

The crazy thing is that since all objects with mass have gravity, that means that I exert gravity too! But, alas, the _____ is so much more massive than me, that you can't feel my attraction.

Words to use

Earth mass stuff weight gravity