Name _____

Gravity - Student Worksheet

Gravity is "the glue that binds the Universe together". It is weak but acts across great distances.

What was the first force that started pulling matter together?

_____

As the clumps of nebula dust held together by static electricity increased in mass, they would also have been attracted together by the much stronger force of gravity. The more mass a body has, the greater is its gravitational pull. Matter moved to the center of the disc and crashed together to become our massive Sun. Over 99% of all the matter in our Solar System is within the Sun. The planets, moons, Asteroid Belt and other objects became assembled from what was left over. It was held in place by the gravitational pull of the Sun and nearby planets.

"Honestly Miss, It is gravity that pulls us together"

Name _____

Gravity - Student Worksheet

Your weight is your mass and the gravitational pull of the planet or moon you are standing on. If you ***weighed*** yourself on Earth and then moved to the Moon you would find that you weighed more on Earth. This is because the Earth is much more massive than the Moon and has a stronger gravitational pull.

Gravity and weight on other planets

You might like to visit the site below and note that although your body has a constant mass, your weight varies from planet to planet because of the different gravitational pull that each planet has.
http://www.schoolsobservatory.org.uk/discover/activities/weight_on_planets

A brief history of Gravity Theory

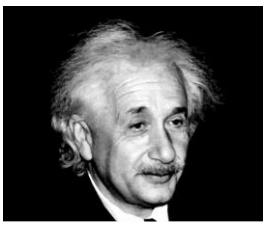
Gravity gets its name from the ancient Roman virtue of "gravitas". Which referred to the capacity to cope with heavy or solemn ideas. A good citizen treated all things with due gravitas.
Legend has it that ***Galileo Galilei*** (1564-1642) first recognised the force of gravity when dropping balls from the Leaning Tower of Pisa. This is incorrect. He first considered this universal force when watching hailstones of different sizes fall at the same speed during a thunderstorm.

Name _____

Gravity - Student Worksheet

What goes up must come down"

Isaac Newton (1643-1727) was the first modern scientist who tried to work out the laws of gravity. His statements relied on observation and measurement. It is said that he first noticed this Universal force when an apple fell on his head from the tree he was sitting under.



Albert Einstein (1879-1955) said in 1905 that mass distorted the space-time continuum. ***"Matter tells space how to curve and space tells matter how to move."***

Gravity and Orbit – Teacher Demonstration

Space tells matter how to move

A massive object produces a dip in the space-time continuum. Objects with less mass are pulled down towards the more massive one. Massive objects, like the Sun, attract less massive objects such as planets, comets and asteroids towards it. Their movement energy will allow them to orbit the Sun for a while but in time they will be drawn closer and closer by

Name _____

Gravity - Student Worksheet

gravitational force until they crash into it.

Observations

What effect did placing the heavy object in the center of the plastic have?

_____

_____

What effect did flicking the marble around the inside edge of the plastic sheet have?

_____

_____

Describe the orbit of the marble

_____

_____