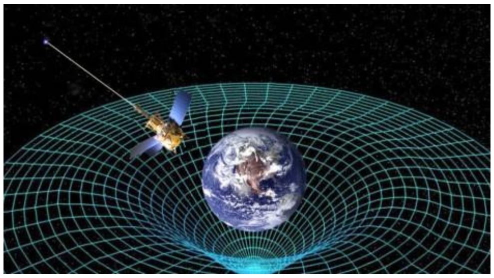
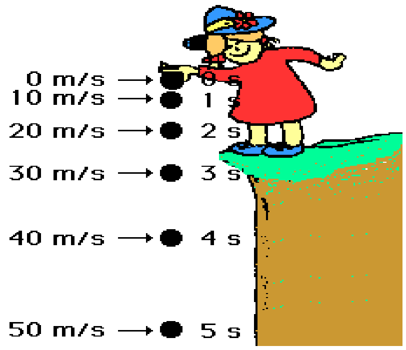
GRAVITY



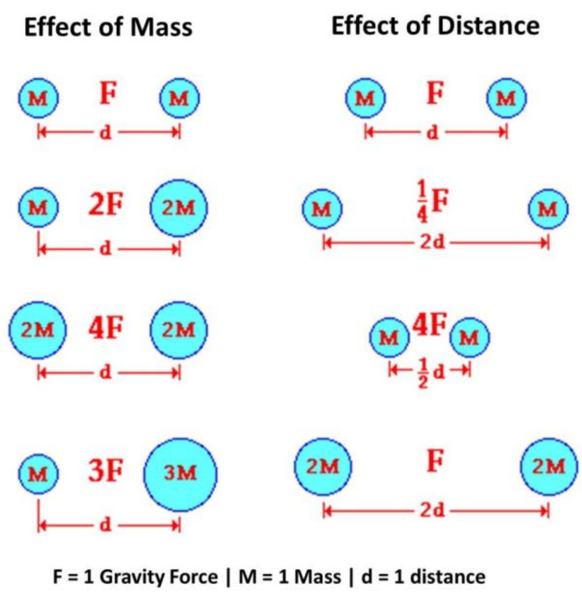
Gravity is a fundamental physical interaction that occurs on any form of energy in the universe in which the surface of a body is attracted to the surface of another body.

Dispersed matter tends to assemble and matter that is together remains intact, as everybody at rest or in motion stays in the same state until another force change its state.

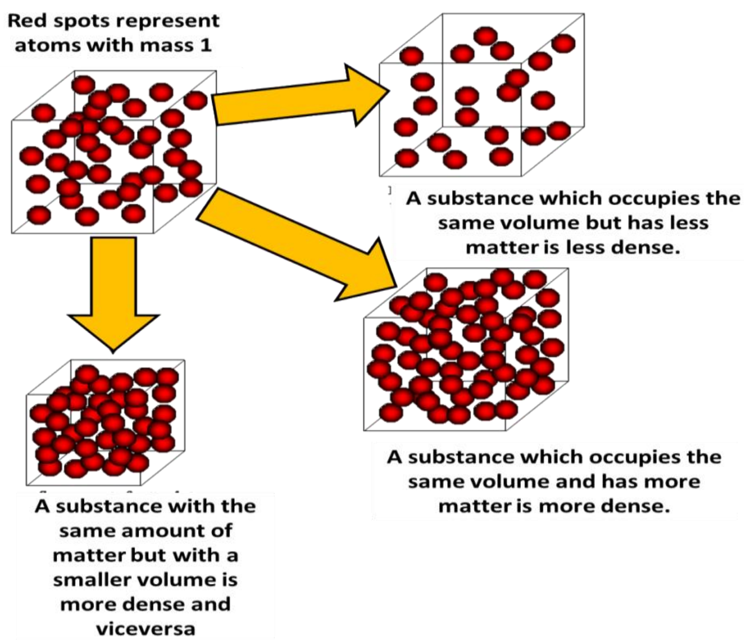
The gravity measurement is performed according to the acceleration of this interaction, i.e. the change of the speed of attraction of the body per unit of time and is measured relative to the center of gravity of objects.



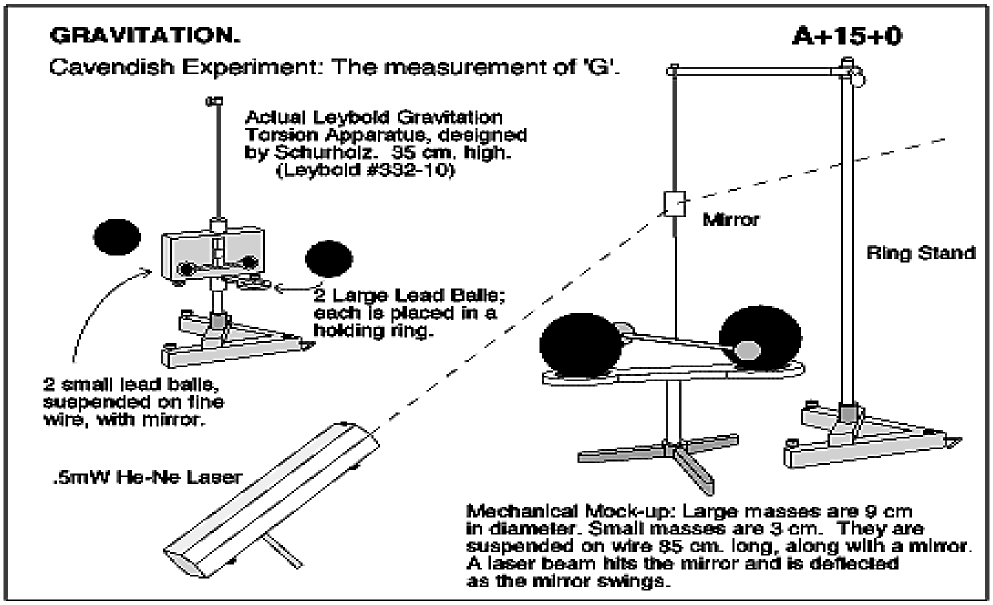
It has been determined that the acceleration of gravity changes due to the distance (squared) between the bodies. If the bodies are close, the attraction between them is higher, while its intensity diminishes if away. As time is a measure of change, any change in the distance of the bodies indicates a change in time.



All bodies exert attraction depending on the volume they possess. By definition, the mass is composed of a density (number of atoms per cubic meter), multiplied by a volume (in a sphere which is a function of its radius or length to the 3 dimensions).

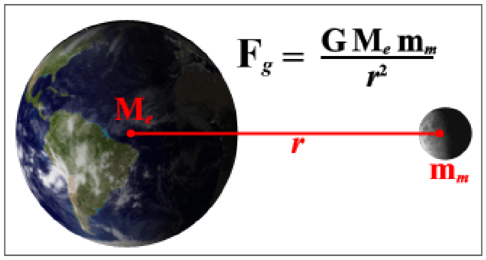


To calculate gravity between two bodies, man discovered in 1798 by experiments that there is a pattern of behavior and defined under the "universal gravitational constant" (G constant), but mankind only has been able to get a precision of 1/10000 of this number. Its approximate value is 6.67384 × 10-11 N • m2/kg2 and is determined by measuring the attraction between two objects (1 kg each) spaced at 1 meter distance.



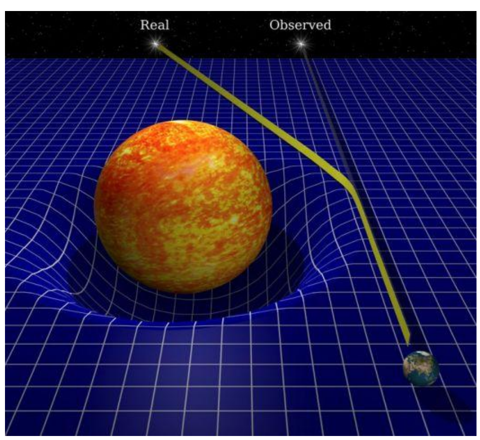
The G constant is an extremely difficult number to measure and there is no universal way to predict its absolute value so up to date not much is known about this issue and therefore remains virtually isolated from the theoretical structure of the rest of modern physics.

According to Isaac Newton, gravity is an instantaneous force with an infinite range performance, but the force is greater if the objects are close, and while this force will fades away. The force is proportional to the product of the two masses and inversely proportional to the square of the distance between them (G * density * 4 / 3 Pi * radio3/radio2).



For Albert Einstein gravity could not act instantly because nothing can travel faster than the speed of light (c = 300,000 km/s), but rather gravity is a geometric deformation of space and time around a body, so that the trajectory of a body in the straightest possible path followed a sphere path.

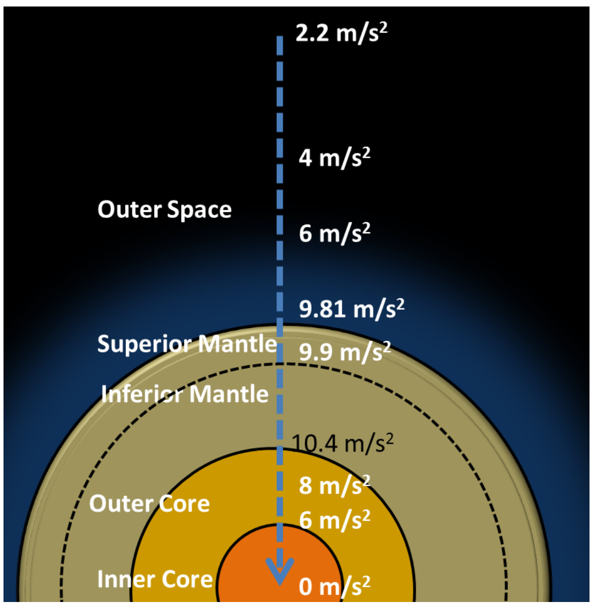
Einstein developed his field equations to describe how mass and energy (represented as stress energy tensor T) is related to the curvature of space-time (represented by the Einstein tensor G) and its effect influences from the point of view of an observer.



Gravity is related to particles with position, mass and size, so you can not use "points" to work with it, nor zero nor infinite. It is required an object with matter and surface o study and understand it.

If you drop an object on the surface of Earth, it will increase its speed at the rate of 9.81 meters per second per second of fall.

In the center of the Earth gravity is zero, since by symmetry, the forces cancel each other. As the density of the Earth is not constant, the acceleration of gravity takes its maximum value of 10.7 m/s2 at the surface of Earth's core.



Source: http://www.artinaid.com/2013/04/gravity/