

DANCE STYLE LOCATOR

Related Topic: Discover Gravity

Gravity is a force. A force is a push or pull that can be created in many different ways. Some forces require contact, such as pushing open a door, and other forces can act without contact, such as gravity. Gravity is the force that exists between all objects and pulls them together like magnets. The amount of force depends on the mass (quantity, size, or density) of the objects, and the distance between them.



The earth is the biggest object with the most mass that is nearby. The earth exerts a gravitational force that pulls us towards its center, and we feel that as “down,” (or “falling”) and we measure it as “weight.” That huge force is why we are standing on the ground instead of floating in the air. This force is the reason things fall when they are dropped – they are actually being pulled towards the earth by its gravitational force.

Any two bodies having mass exert a gravitational force on each other, but most pairs of objects have so small a combined mass that the force between them is very small and we can't see the effect. That is why all of the things on your desk aren't stuck together and when you walk past a building, you don't feel pulled towards it. What seem to us like very large objects (a lot of mass compared to us) still generate a very small amount of gravity. For example, two trucks weighing about 100,000 pounds, which are about 10 feet apart, influence each other with one tenth as much force as the earth exerts on a feather sitting in your hand. If your hand wasn't there, the earth would keep pulling the feather as close to the center of the earth as possible – probably the “falling” to the floor is as close as it would get.

Another example of the force of gravity is the attraction that occurs between the earth and the moon. The earth's mass causes a gravitational force that keeps the moon in its orbit (path) around the earth. The moon's mass (which is also very large) causes the gravitational force that pulls on the water of the earth's oceans to create tides. The combination of gravitational forces from the sun and the earth help to keep the moon in its orbit – like two pieces of bread keep all of your sandwich ingredients from falling apart.

Sir Isaac Newton— (1642–1727 C.E.) was the English physicist and mathematician who studied gravitational forces and motion, and is considered the founder of physical science. Newton figured out the Theory of Gravity and developed the Laws of Motion.

(Mr. Newton's fictional distant relative appears in *People Like Me 2005: It's All Relative!*)