

Vocabulary



acceleration a change in an object's speed or direction

Acceleration happens when an object's speed changes or when its direction changes. On Earth, a falling object accelerates 9.8 meters per second, per second (9.8 m/s^2). This means that every falling object, regardless of its mass, falls at a speed of 9.8 m/s during the first second, 19.6 m/s during the second second, 28.4 m/s during the third second, and so on. This rate of acceleration is the same for all objects, ignoring air friction.

friction the force between two surfaces rubbing against each other, or between a surface and a fluid, such as air

Friction between air and a falling object slows the rate of fall of the object—particularly on objects that have a large surface area compared to their mass. The Moon has no air, so friction does not slow the rate of fall. A feather and hammer would fall at the same rate on the Moon.

gravity the force of attraction that exists between all objects

The strength of gravity, also called gravitational force, depends on the distance between the objects and the masses of the objects. Gravity is stronger between objects that are closer together than between objects that are farther apart. Objects with more mass exert a stronger gravitational force than objects with less mass.

weight the measure of the force of gravity on an object

Different planets and moons exert different gravitational forces on objects at their surface. For example, the Moon's gravitational force on an object is only about one-sixth that of Earth's. On the Moon, you would weigh only one-sixth as much as you weigh on Earth.