



Flipping Physics Lecture Notes:  
Introduction to Inertia and Inertial Mass

Inertia: The tendency of an object to resist a change in state of motion. A “change in state of motion” means a change in an object’s velocity.  $\bar{a} = \frac{\Delta \bar{v}}{\Delta t}$ , therefore inertia can also be define as: The tendency of an object to resist acceleration.

Inertial Mass: A measure of an object’s inertia. In other words, inertial mass is a measure of the tendency of an object to resist acceleration. The more mass something has, the more it resists acceleration.

(There is also gravitational mass, which, as far as we can tell experimentally, is identical to inertial mass. I will define gravitational mass at a later date. Because the two are experimentally identical, unless there is specific reason to distinguish between the two, I will refer to both inertial and gravitational mass as “mass”.)