**Newton's First Law:**

( Galileo's Law of Inertia)

Galileo was the first to suggest that in the absence of friction objects should continue travelling at a constant velocity (or if they were at rest they would remain at rest) unless acted upon by an external unbalanced force. This unbalanced force is also called the net force. The net force is the sum of all of the forces acting. Newton adopted Galileo's law as the first of his 3 fundamental laws of motion

***" An object tends to remain in a state of constant motion or at rest unless acted upon by an external unbalanced or net force"***

How big an object's tendency to do so depends on it mass and is referred to as ***inertia***. Objects with large mass are both difficult to start moving and to stop moving; they have large inertia

In equation form we write Newton’s law as $\vec{F\_{NET}}=0$ where 

**Examples of Newton’s First Law**

1.  Pulling a table cloth out from under a wine glass

 What did you observe?

 Explain your observations using Newton’s First Law



1. Breaking a board with your hand;

 What did you observe?

 Explain your observations using Newton’s First Law

1. Two people pulling a mass with two spring scales at a constant velocity.

What did you observe?



Explain why using Newton’s First Law