

Note Taking Guide - Episode 401

Newton's 1st Law - the law of inertia

An object with no net force acting on it remains at rest or in uniform motion.

- Objects at rest tend to stay at rest.
- Objects in motion tend to move in a straight line at constant at constant speed.

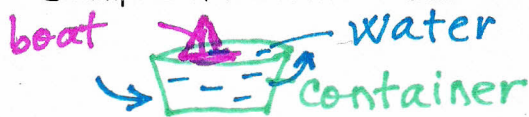
Inertia - a property of matter which resists changes in motion

The best measure of an object's inertia is its mass.

Force - a push or a pull

Net forces cause the motion of an object to change.

Examples of Newton's 1st Law in Action:



Spinning the container will not cause the spinning of the water or the boat.

In the egg demonstration:

Why does the tray fly across the table?

The tray will move because it was pushed by the broom.

Why do the cardboard cylinders go with it?

The cylinders will move with the tray because the friction force is acting like a glue.

Why do the eggs drop straight down into the water?

The eggs will have the tendency to stay at rest but will fall because gravity is acting like a glue.

Physics Challenge: Why doesn't a car in motion on a flat road stay in motion?

The car will slow down because of the friction forces.

Examples of Accelerated Motion:

speeding up; slowing down; starting;
changing direction; stopping; moving in a circle.

Inertia resists acceleration.

A net force causes acceleration.

Newton's 2nd Law - the law of acceleration

When a net force is applied to an object, the object will accelerate in the direction of that force.

Show What You Know:

1. a
2. c
3. c
4. b
5. d