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Newton's 1st Law of Motion Notes

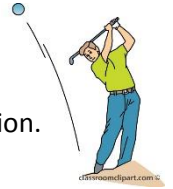
Newton's 1st Law – “An object at rest will stay at rest, and an object in motion will stay in motion unless an outside force acts upon it.”

There are two parts here to understand:

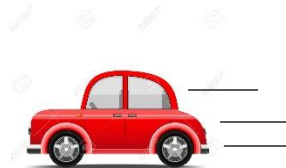
A. If an object is not moving, it won't go anywhere forever...



- unless a force changes the object's motion.



B. Once an object is moving, it will keep moving forever...



- unless a force changes the object's motion.



Inertia – an object's natural resistance to having its motion changed

Objects have a natural resistance to having their motion changed. The more massive the object, the more resistance. This resistance is called inertia.

- to make an object move faster or slower, there must be enough force to overcome the inertia
- to change an object's direction, there must be enough force to overcome the inertia
- to stop or start an object moving, there must be enough force to overcome the inertia

If an object is at rest and you want to make it move, you have to push or pull hard enough to overcome the inertia.

If an object is already moving, and you want to speed it up, slow it down, or change its direction, you have to push or pull hard enough to overcome the inertia.

Inertia is like a bodyguard of motion changes. You have to get past it to change the motion.

