




Newton's First Law of Motion



First we need to define the word **FORCE**:

- The cause of motion (what causes objects to move)
- Two types of forces
 - Pushes
 - Pulls

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Forces may be **balanced** or **unbalanced**

- **Balanced forces** – all forces acting on an object are equal
 - There is **NO MOTION**
- **Unbalanced forces** – one or more forces acting on an object are stronger than others
 - There is **MOTION**
 - **A NET FORCE**

Objects at Rest

- Objects at rest tend to stay at rest unless acted upon by a force. [push or pull]
- Newton described this tendency as inertia.
- **Inertia** can be described as the tendency of an object to keep doing whatever's it's doing.

Mass & Inertia




Which vehicle has more inertia?

- **Mass** is the amount of matter in an object.
- The more **MASS** an object has, the more **INERTIA** the object has.
- Bigger objects are harder to start & stop

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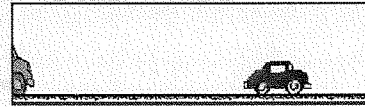
What about objects that are already in motion?



- Newton stated that objects in motion tend to stay in motion until acted upon by a force (or hits it.)

Newton's 1st Law
(also known as the law of inertia)

- A moving object moves in a straight line with constant speed unless a force acts on it.
- The tendency of an object at rest to remain at rest and an object in motion to remain in motion unless acted upon by an unbalanced force.
- **Objects do not change their motion unless a force acts on them**



The truck is ***in motion***. What is the **force** that causes it to stop?

The **push** of the stopped car.

The car is ***at rest***. What is the **force** that causes it to move?

The **push** of the truck.

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