**The Law of Inertia**

According to Newton's first law, an object in motion continues in motion with the same speed and in the same direction unless acted upon by an unbalanced force. It is the natural tendency of objects to keep on doing what they're doing. All objects resist changes in their state of motion. In the absence of an unbalanced force, an object in motion will maintain its state of motion. This is often called the law of inertia.

The law of inertia is most commonly experienced when riding in

cars and trucks. In fact, the tendency of moving objects to continue in motion is a common cause of a variety of transportation injuries - of both small and large magnitudes. Consider for instance the unfortunate collision of a car with a wall. Upon contact with the wall, an unbalanced force acts upon the car to abruptly decelerate it to rest. Any passengers in the car will also be decelerated to rest if they are strapped to the car by seat belts. Being strapped tightly to the car, the passengers share the same state of motion as the car. As the car accelerates, the passengers accelerate with it; as the car decelerates, the passengers decelerate with it; and as the car maintains a constant speed, the passengers maintain a constant speed as well.

What would happen if the passengers were not wearing the seat belt? What motion would the passengers undergo if they failed to use their seat belts and the car were brought to a sudden and abrupt halt by a collision with a wall? Were this scenario to occur, the passengers would no longer share the same state of motion as the car. The use of the seat belt assures that the forces necessary for accelerated and decelerated motion exist. Yet, if the seat belt is not used, the passengers are more likely to maintain its state of motion.

In the first paragraph the word resist means?

A. prevent

B. allow

C. accept

D. surrender

What would be another good title for this passage?

A. The Story of Isaac Newton

B. Newton’s 3 Laws

C. How Seatbelts Work

D. An Explanation of Newton’s 1st Law of Motion and Inertia

The author suggests inertia is most often experienced?

A. when planets orbit

B. in moving and stopping vehicles

C. at amusement parks

D. when watching rockets launch

According to the article, what is one benefit of a seatbelt?

A. It keeps you from falling out of the car.

B. It affects the inertia of the passenger

C. It allows you share the same motion as the vehicle

D. They make you fly out of the car when stopping.

**Go to** [**http://goo.gl/Gyx4DZ**](http://goo.gl/Gyx4DZ) **(case-sensitive)**

What is inertia?

What will happen to an object if it is put into motion in space?

A. It will stop eventually

B. It will continue to move until it is acted on by an unbalanced force.

C. It will speed up over time

D. It will slow down over time

An object at rest will remain at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and an object in motion will remain in \_\_\_\_\_\_\_\_\_\_ unless acted on by external force.

**Go to https://goo.gl/C4vfAZ**

On your answer sheet answer the following questions.

1. In your own words, what does Newton's first law mean to you?
2. Why does the skateboarder continue to move forward when he hits the trash? What is the unbalanced force?
3. Come up with 3 examples of how inertia can change when an unbalanced force acts upon it.