Soaring Oklahoma

Presented by

OKLAHOMA AERONAUTICS COMMISSION

AEROSPACE & DEFENSE

LESSON 1: Newton's First Law of Motion

Newton's Law of Inertia, also known as the first law of motion, indicates that an object at rest tends to stay at rest, while an object in motion will stay in motion, unless acted upon by an outside or unbalanced force.

Example: Think about what it feels like to ride along in a car. When the car is in motion, so is your body. Once the forward motion begins, it takes stepping on the vehicle's brakes or slamming into another object to stop the cars forward motion. If you have ever experienced someone slamming on their brakes you may have noticed that even though the car comes to an abrupt stop, your body continues with a forward motion. In a high impact accident, if you are wearing your seatbelt, the seatbelt will act as an outside or unbalanced force and keep your body from continuing in a forward motion straight through the car's windshield.

CLASSROOM EXPERIMENT

SUPPLIES: glass, index card and a coin.

Watch the following video to understand the experiment that explores Newton's Law of Inertia: https://www.youtube.com/watch?v=wuYf7uuf7n8

PROCEDURE:

1. Experiment 1
   a. Ask students to place the index card across the top of the glass.
   b. Place the coin on top of the index card in the center.
   c. Students will slowly slide the index card off of the top of the glass while maintaining the cards balance.
2. Experiment 2
   a. Ask students to place the index card across the top of the glass.
   b. Place the coin on top of the index card in the center.
   c. Students will quickly flick the index card off of the top of the glass.

CLASSROOM DISCUSSION:

1. What happened to the coin in experiment one? Why?
2. What happened to the coin in experiment two? Why?