

Lab Activity: Newton's First Law

Frameworks Code)

Purpose: To investigate inertia and Newton's First Law of Motion.

Materials: text book, sheet of paper, 1/2 of a 3" x 5" card, 100 mL plastic beaker, a penny, a marble, a test tube large enough for the marble to fit inside

1. Place a book on a sheet of paper on the table. Pull **gently and steadily** on the paper.
 - a. The book _____ (does, does not) follow the paper.
 - b. This behavior is caused mostly by _____ (friction, inertia).
2. Place a book on a sheet of paper on the table. Pull **strongly and sharply** on the paper.
 - a. The book _____ (does, does not) follow the paper.
 - b. This behavior is caused mostly by _____ (friction, inertia).
3. Place a card on top of an empty 100 mL plastic beaker. Place a penny on the center of the card. Strike the edge of the card sharply with your fingertip to move the card horizontally off of the beaker.
 - a. The coin _____ (does, does not) follow the card.
 - b. This behavior is caused mostly by _____ (friction, inertia).
 - c. The coin _____ (does, does not) fall into the beaker.
 - d. This behavior is caused mostly by _____ (gravity, inertia).
4. Place a marble into a test tube. Lay the test tube on the table. With the open end forward, move the test tube smoothly across the table. Stop the test tube **suddenly**.
 - a. The marble _____ (does, does not) stop with the test tube.
 - b. This behavior is caused mostly by _____ (friction, inertia).
5. Place a marble into a test tube. Lay the test tube on the table. With the closed end forward, **suddenly** move the test tube across the table.
 - a. The marble _____ (does, does not) move with the test tube.
 - b. This behavior is caused mostly by _____ (friction, inertia).

Related Questions:

1. When an object tended to resist a change in its motion, _____ (friction, inertia) was stronger.
2. When an object tended to follow the changes in motion of another object that it was touching, _____ (friction, inertia) was stronger.
3. Newton's First Law of Motion states that an object at rest will _____ and an object moving at constant velocity will _____.
4. Newton's First Law of Motion is about the subject of _____.