

Newton's First Law: The Coin, Card & Toy Car Trick

Name: _____ Date: _____

LEARNING OBJECTIVE

Students will demonstrate and explain Newton's First Law of Motion, that an object at rest stays at rest and an object in motion stays in motion unless an unbalanced force acts on it.

MATERIALS NEEDED

- index card or playing card
- coin
- cup
- small toy car
- small block or object
- table

HANDS-ON ACTIVITY

1. Place an index card on top of a cup with a coin balanced on top of the card. Quickly flick the card horizontally out from under the coin and observe what happens.
2. Repeat the experiment 3 times, adjusting your flick speed, and record what you observe each time.
3. Roll a toy car across the table, then place a small obstacle (a book) partway to abruptly stop it; observe what happens to a small unsecured object placed on top of the car when it stops suddenly.
4. Record your observations for both experiments in a table with columns: Setup, Prediction, Observation.
5. Write a 2-3 sentence explanation connecting both experiments to Newton's First Law.

QUESTIONS

1. **In the coin/card trick, why does the coin fall straight down into the cup instead of flying off with the card?**

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2. **State Newton's First Law of Motion in your own words.**
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3. In the toy car experiment, what happened to the unsecured object when the car stopped suddenly, and why?

4. Give a real-life example, not from this activity, of Newton's First Law in action.
