



# Newton's Challenge Day

## 1. The Coin Challenge

Set a playing card on top of a beaker. Set a coin on the card.

Flick the card sharply with your finger so it moves horizontally off the beaker.

On the Challenge Card, **describe** what happened.

On the Challenge Card, **explain** which of Newton's Law you think applies.

## 2. The Weighted Meter Stick Challenge

Fill a baggie with sand. Close tightly and enclose in another baggie.

Tape this securely to the top of a meter stick. Balance the meter stick in the palm of your **flat** hand. Try this with the sand up and down.

On the Challenge Card, **describe** what happens with the weighted end in your palm and with the weighted end in the air.

(b) On the Challenge Card, **explain** which of Newton's Law you think applies.

## 3. The Push Me-Pull You Challenge

(1) Two students stand on skateboards 5 ft. apart and pull steadily and equally on a 7 ft. rope, hand over hand.

(2) One student merely holds the rope and the other student pulls the rope steadily, hand over hand.

(3) One student weighs considerably more than the other students, both pulling steadily and equally, hand over hand.

On the Challenge Card,

(a) **Describe** student ending positions for both pulling the rope the same.

(b) **Describe** student ending positions when one student merely holds the rope and the other student pulls the rope steadily as before.

(c) **Describe** student ending positions when one student weighs considerably more than the other.

(d) On the Challenge Card, **explain** which of Newton's Law you think applies.

## 4. Huff-Puff-Slide Challenge

Put 3 pennies in the cup and blow air to push the cup across the table. Add 3 additional pennies to cup and blow air to push across table. Keep adding pennies until you get to 12 and then answer the questions below.

On the Challenge Card: Describe what happened.

On the Challenge Card, **explain** which of Newton's Law you think applies.

## 5. Jet-Car Challenge

Build a "car" propelled by a balloon. You may use these materials: 1 balloon, 4 wooden wheels, 1 plastic drinking straw, 1 piece plain white paper, two bamboo sticks, and a "few" pieces of clear tape.

On the Challenge Card: Describe what happened.

On the Challenge Card, **explain** which of Newton's Law you think applies.