Card Shot

This trick uses pocket-sized props to demonstrate inertia. Just calls for a little practice.

Materials
A coin  A plastic playing card or an index card

To Do
Turn up the palm of one of your hands. Make a fist with that hand, but extend your index finger. Balance a playing card on the tip of the extended finger. Place a coin in the center of the card so that it too balances. Using a finger from the other hand, flick out the card. If your flick remains level, only the card will sail away. The coin will remain balanced on your fingertip.

The Science
All things, including coins, have inertia. When you flicked your finger, the forward motion was transferred to the card—not the coin. The card sailed off. Since the coin wasn't struck, its inertia helped keep it in place.

Check It Out! Suppose the card's surface wasn't slick. Suppose you glued sand grains or taped sandpaper to its surface. How might this affect the movement of the coin? Make a guess and then test your prediction.