A CARD DROP CHALLENGE

YOU NEED
A magazine
Playing cards

THE SET UP
Place a magazine flat on the floor. Hand six playing cards to a friend and ask her to drop each card from a height of a few feet, so it lands on the magazine. As you say this, hold a card vertically, as shown, but without saying that the card must be held that way before it is dropped. If she holds the card this way before dropping it, it will flutter to one side, missing the magazine.
Now you show the only way to do it. Hold the card horizontally by a thumb at one end and your fingers at the other end, so the card is parallel to the floor. Let go. The card will fall on the magazine.

WHY DOES IT WORK?
When you drop a card, gravity pulls it toward the floor, but the surrounding air resists its downward motion. If you drop the card horizontally, the air resistance is equal over the surface of the card, so it floats straight down toward the magazine. If you drop the card vertically, the thin edge of the card cuts through the air quickly, but the larger, flat surfaces are likely to encounter turbulence and small air currents that cause the card to turn slightly. As it turns, the card begins to slip sideways through the air, following its thin leading edge that has less air resistance. The slipping card misses the magazine.