Static Electricity Experiments: Three Kitchen Science Tricks That Actually Work

Science | Winter | Ages 6-10

Winter in Kansas City means dry air, and dry air means perfect conditions for static electricity. Your kids have probably already shocked themselves on the playground slide at Loose Park. Let's turn that annoying zap into actual science.

What You Need

- Balloons (get a pack of 10 from Dollar Tree—some will pop)
- A head of clean, dry hair (works best on fine or freshly washed hair)
- A salt shaker and pepper shaker
- A plastic comb or spoon
- A thin stream of water from your faucet
- A wool sweater or blanket (synthetic works too)

Experiment 1: Balloon on Hair

Blow up a balloon. Rub it on someone's head for 10-15 seconds—really scrub it around. Pull the balloon away slowly and watch their hair stand straight up, reaching for the balloon like tiny arms.

What's happening: Rubbing steals electrons from the hair and gives them to the balloon. Now they're oppositely charged, so they attract. Your kid looks ridiculous. Everyone wins.

Our tip: This works way better when the heat's been running and the air is bone-dry. If it's humid or someone just got out of the shower, you'll get weak results.

Experiment 2: Bending Water

Turn on your kitchen faucet to get the thinnest possible stream—like a pencil width. Rub the balloon on hair or a wool sweater again for 15 seconds. Hold it close to the water stream without touching it.

The water bends toward the balloon. Kids lose their minds over this one.

What's happening: The charged balloon pulls on the water molecules, which have a slight charge of their own. It's the same attractive force from experiment one, just acting on water instead of hair.

Experiment 3: Separating Salt and Pepper

Pour a small pile of salt on your kitchen counter or a plate. Add some pepper and mix it together. Now rub your plastic comb or spoon on the wool sweater for 20 seconds. Hold it an inch above the pile.

The pepper jumps up and sticks to the spoon first. The salt mostly stays put.

What's happening: Pepper pieces are lighter and have more surface area for their weight, so the static charge can lift them more easily. Salt is denser and harder to pull.

Real talk: This one's finicky. If your counter is damp or the pepper's clumpy, it won't work well. We've had better luck on a dry plastic plate.

Why Winter?

Static electricity needs dry air. Summer humidity in KC kills these experiments. But January and February? Perfect. The forced air heat sucks all moisture out of your house, and suddenly everything is shocky and staticky. Lean into it.

These experiments take maybe 15 minutes total. No fancy equipment, nothing from a science store. Just stuff you already have and the driest season of the year doing half the work for you.