# BOUNCING BALLOON

In this experiment, we'll explore how elasticity and kinetic energy influence the way a balloon bounces on different surfaces.

**Materials**

**Balloon**
**Variety of surfaces (carpet, table, bed)**

**INSTRUCTIONS:**

**STEP 1:** Inflate the balloon until it is firm, but not too tight, and tie it closed.

**STEP 2:** Hold the balloon about 1 foot above each surface and release it, letting it bounce naturally.

**STEP 3:** Observe how high the balloon bounces on each surface. Note any differences between the bounces. Record observations.

**THE SCIENCE**

When you release the balloon, it gains kinetic energy (the energy of motion) as it falls. Upon hitting a surface, the kinetic energy transfers partly into the surface and partly back into the balloon, propelling it upward.

Smooth, hard surfaces (like tables) don't absorb much energy, so more energy goes back into the balloon, making it bounce higher. Rough or soft surfaces (like carpet) absorb more energy, reducing the amount of energy that pushes the balloon back up.

Elasticity is an object's ability to return to its original shape after being squished or stretched. When the inflated balloon hits a surface, it briefly changes shape, then quickly snaps back, which helps it bounce back into the air. Harder surfaces help the balloon bounce higher because they don't absorb much energy. Softer surfaces, like carpet, absorb some of the energy, so the balloon doesn't bounce as high.