



SANTA DROP

SCIENCE SAFETY

PLEASE follow these safety precautions when doing any science experiment.

- **ALWAYS** have an adult present.
- **ALWAYS** wear the correct safety gear while doing any experiment.
- **NEVER** eat or drink anything while doing any experiment.
- **REMEMBER** experiments may require marbles, small balls, balloons, and other small parts. Those objects could become a **CHOKING HAZARD**. Adults are to perform those experiments using these objects. Any child can choke or suffocate on uninflated or broken balloons. Keep uninflated or broken balloons away from children.

INGREDIENTS

- Tall Transparent Drinking Glass
- Santa Ornament
- Pie Pan
- Toilet Paper Tube

INSTRUCTIONS

STEP 1: Place the pie pan on top of the tall transparent drinking glass. Make sure the pie pan is in the center of the tall transparent drinking glass.

STEP 2: Stand the toilet paper tube in the center of the pie pan.

STEP 3: Place the Santa ornament on the toilet paper tube.

STEP 4: Gently hit the pie pan, so the pie pan and toilet paper tube fly out of the way and observe. What happens? Why?

STEP 5: Place the pie pan on top of the tall transparent drinking glass. Make sure the pie pan is in the center of the tall transparent drinking glass.

STEP 6: Stand the toilet paper tube in the center of the pie pan.

STEP 7: Place the Santa ornament on the toilet paper tube.

STEP 8: Hit the pie pan with a greater force, so the pie pan and toilet paper tube fly out of the way and observe. What happens? Why? Compare the effects of gently hitting the pie pan versus hitting the pie pan with a greater force on the motion of the Santa ornament. Provide evidence of the effects of balanced and unbalanced forces on the motion of the Santa ornament.

EXPLANATION

When hit with enough force, the Santa ornament falls into the glass. As the pie pan and toilet paper tube fly in one direction, the Santa ornament resists the change, and gravity pulls the Santa ornament into the tall transparent drinking glass.

WATCH NOW



SCIENCE BACKGROUND

A force is a push or pull, which can cause an object to be in motion. Pushes and pulls can have different strengths and directions. Each force acts on one particular object and has both strength and a direction. An object at rest typically has multiple forces acting on it, but they add to give zero net forces on the object. Forces that do not sum to zero can cause changes in the objects speed or direction of motion. Motion is a change in position. The mass of an object affects the objects motion. An object with more mass requires a greater force to put the object in motion. Speed is how far an object moves over a specific period of time. An object moving at a greater speed changes position faster than an object moving at a slower speed. Inertia is the tendency of an object to resist change.

I CAN STATEMENTS

- ✓ I can plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.
- ✓ I can plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.

NEXT GENERATION SCIENCE STANDARDS CONNECTION

K – Forces and Interactions: Pushes and Pulls I Cause and Effect
3 – Forces and Interactions I Cause and Effect