



BALLOON ROCKET

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

- Long Balloon
- String
- Tape
- Straw

INSTRUCTIONS

STEP 1: Cut 12 feet of string. Push the string through the straw.

STEP 2: Attach the string between two kitchen chairs. Pull the straw to one end of the string.

STEP 3: Fully inflate the long balloon. Using the tape, attach the balloon to the straw.

STEP 4: Release the balloon and observe. Provide evidence of the effects of balanced and unbalanced forces on the motion of the balloon.

STEP 5: Pull the balloon and straw to one end of the string. Inflate the balloon half of the way. Release the balloon and observe.

Compare the effects of different strengths of pushes on the motion of the balloon.

EXPLANATION

When you release the balloon, air quickly rushes out of the balloon, exerting a force, which pushes the balloon forward. This is known as Newton's Third Law of Motion, which states, for every action, there is an equal and opposite reaction.

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 | Cause and Effect
3 – Forces and Interactions | Cause and Effect