POTATO LAUNCHER

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

- 36-inch Wooden Dowel Rod
- 24-inch Copper Tube
- Potato
- Meterstick

INSTRUCTIONS

STEP 1: Push one end of the copper tube into the potato. Pull the tube out of the potato.
STEP 2: Push the other end of the copper tube into the potato. Pull the tube out of the potato.
STEP 3: Use the wooden dowel rod to push one of the potato plugs about 6 inches into the copper tube.
STEP 4: Push the dowel rod into the copper tube and observe. Using the Meterstick, determine how far the potato plug launched.
STEP 5: Repeat steps 1 through 3. This time, using more force, push the dowel rod into the copper tube and observe. Using the Meterstick, determine how far the potato plug launched. Describe the effects of different directions of pushes and pulls on the motion of the potato plugs. Provide evidence that a pattern can be used to predict the future motion of the potato plugs.

EXPLANATION

As you push the dowel rod into the copper tube, the volume of the trapped air decreases, while the pressure increases. This forces one of the potato plugs out of the tube, into the air.

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SCIENCE BACKGROUND

A force is a push or a pull. Pushes and pulls can have different strengths and directions. Pushing or pulling on an object can change the direction of its motion and can start or stop it. The patterns of an object's motion in various situations can be observed and measured; when that past motion exhibits a regular pattern, future motion can be predicted. Energy is the ability to do work. The faster a given object is moving, the more energy it possesses.

I CAN STATEMENT

- ✓ I can plan and conduct an investigation to compare the effects of different directions of pushes and pulls on the motion of an object.
- ✓ I can make observations and/or measurements of an objects motion to provide evidence that a pattern can be used to predict future motion.

NEXT GENERATION SCIENCE STANDARDS CONNECTION

K – Forces and Interactions: Pushes and Pulls | Cause and Effect
3 – Forces and Interactions | Patterns