NEWTON'S THANKSGIVING TABLECLOTH TRICK

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

- Several Heavy Dished
- Tablecloth without a Hem
- Square Table with an Edge

INSTRUCTIONS

STEP 1: Place the tablecloth on the table and then arrange the heavy dishes on the tablecloth. Grab the edges of the tablecloth, quickly pull down toward the floor, and observe. Record your observations.
STEP 2: Place the tablecloth on the table again and arrange the heavy dishes exactly the same way you did before on the tablecloth. Grab the edges of the tablecloth, pull down toward the floor faster than what you did the first time, and observe. Record your observations.
STEP 3: Compare the effects of the different strengths of pulls on the motion of the tablecloth. What happens to the dishes each time? Describe and provide evidence of the effects of balanced and unbalanced forces on the motion of the dishes.

EXPLANATION

The dishes stay on the table as you quickly remove the tablecloth. This happens because of inertia. Inertia is the tendency of an object to resist change. The dishes resist the change, taking place underneath them, and remain in place. The heavier an object is, the more inertia it has. This is the reason why plastic or paper dishes will not work for this experiment. They do not have enough inertia and will not resist the change taking place underneath them.

Hooked on SCIENCE

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 speed or direction of its motion and can start or stop it. When objects touch or collide, they push on one another and can change motion. A bigger push or pull makes things speed up or slow down more quickly. 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 object's speed or direction of motion.

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 and 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
3 – Forces and Interactions