SOARING STREAMERS

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

- Leaf Blower
- 6 Rolls of Crepe Paper Streamers
- 2 Skewers

INSTRUCTIONS

STEP 1: Place three rolls of crepe paper streamers on one of the skewers and unstick the streamers, so they will unroll.
STEP 2: Hold the skewer horizontally, so the streamers will unroll away from you.
STEP 3: Turn on the leaf blower and aim the stream of air just over the top of the streamers. Provide evidence of the effects of balanced and unbalanced forces on the streamers.
STEP 4: Place three rolls of crepe paper streamers on a different skewer. Turn on the leaf blower at a higher speed and aim the fast flow of air in different directions, over the top of the streamers. Compare the effects of different strengths or different directions of pushes and pulls on the motion of the streamers.

EXPLANATION

Bernoulli's Principle says the pressure exerted by a fluid decreases as its velocity increases. Basically, increasing the velocity over the top of the streamers lowers the pressure of the air pushing down on the streamers. The streamers are lifted because there is now an unbalanced force of air acting upward.

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. Motion is a change in position. An object at rest typically has multiple forces acting on it, but they add to give zero net force on the object. Forces that do not sum to zero can cause changes in the object's speed or direction of motion. Speed is how far an object moves over a specific period of time. Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it. Friction is the resistance between two objects. The force of friction opposes the motion of an object, causing moving objects to lose energy and slow down.

I CAN STATEMENT

- ✓ 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 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