Classroom Central
TURNING PENCILS INTO POSSIBILITIES

STEM Lesson Kits

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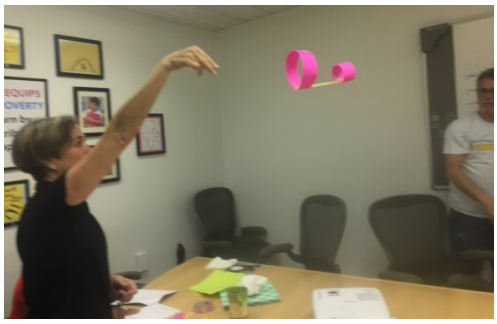
– Hoop Glider–



Suggested Grade Level: 3rd through 5th
NC Standard: 3.P.1 and 5.P.1
Lesson: Forces and Motion
Words and Phrases to Discuss: Test, variations and variables

Materials List:

- Copy paper/card stock
- Masking tape
- Scissors
- Straws
- Markers

Activity: Split students into groups and instruct the class that they will be involved in a competition to see which team can build a glider that will glide the farthest before touching the ground. Groups can create a team name and write it on a piece of tape to mark where their glider lands.

Groups receive the same supplies and are instructed to create a hoop glider that contains one small loop of paper and one large loop of paper and one straw. Students create their loops by cutting and taping their paper strips together to form a circle. The straw is attached inside of the paper loops and taped to secure. Their goal is to glide it as far as possible. Have student groups launch the first round of glides. Next, ask them to make one change to their glider intended to make it fly farther. Have them experiment with variations in the length of the straw, as well as the placement of the loops, the size of the loops as well as the motion in which they use to launch their gliders. Continue to have the groups make changes and record impacts as time allows.

Science Notebook Helper - During the lesson, students can predict what will happen when with different changes or variations made to their gliders. They can record what happens with each variation.

Tips and Talking Points: Ask students to think about things that glide and to consider the physical make-up of such things as hang gliders, kites, airplanes and even birds and consider incorporating elements that they hypothesize will increase their hoop glider's flight distance.

Guiding Questions

- What do you think works better—a short or long straw? Why?
- Should the large hoop be at the front or back of the glider?
- How did your first attempt do? How far did it go? What will you change to make it go farther?
- Based on trial throws, which variation works best?