

# STRAW GLIDERS

Source: Jerry Brenden, Modified for the EAA

## Concepts Illustrated:

(1) Stabilization of flight, center of mass, and forced air flight.

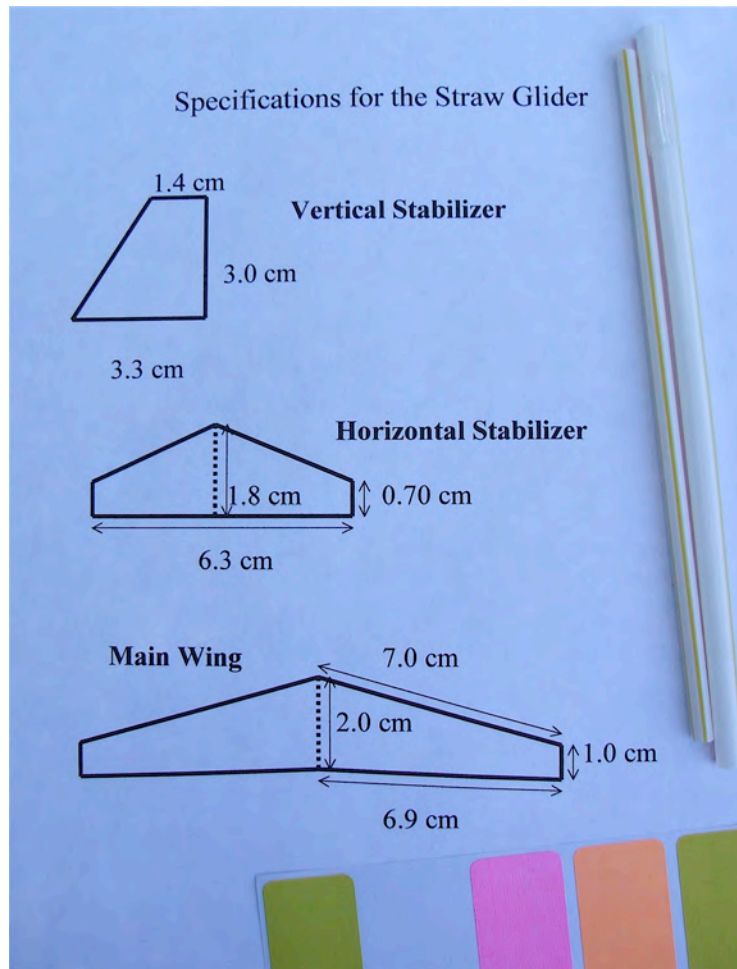
**Time Requirements:** 15 minutes

**Grade Level of Audience:** This activity is primarily suited for kids in grades K-8.

## **I. Materials and Equipment Utilized**

(Materials needed for a group of 20 students)

1. 5 rolls of scotch tape
2. 20 pairs, of two different sizes of drinking straws:
3. 1 sheet of Label stickers
4. 20 sets of wing and stabilizer patterns (See detailed photograph below)
5. 10 pairs of scissors



## II. Description of Set-up and/or Construction of Apparatus

1. Wrap a label sticker or about a 3-inch piece of tape around the front end of the straw, such that the opening is closed.
2. Carefully cut out the wings and stabilizers, given the chosen pattern, using the scissors provided. Students may design their own if they like.
3. Fold the main wing and horizontal stabilizer along the dashed line.
4. Using two inch pieces of tape, attach the main wing near the center of the straw and the horizontal stabilizer near the back of the straw.
5. Using two pieces of tape, attach the vertical stabilizer above the horizontal stabilizer. See the photographs below.
6. Place the smaller diameter straw into the larger bodied straw rocket and blow into the smaller straw.



## III. Details of Student Implementation

1. What makes the straw glider move? How is this related to Newton's 3<sup>rd</sup> law?
2. If the straw does not fly level, students may add some tape near the front of the glider or just in front of the horizontal stabilizer. Under what flight conditions would tape be added (A) to the front? Or (B) to the back?
3. The gliders may be launched for air time, distance, or accuracy. Many presentations have students shoot the straw gliders through hula hoops or other suspended rings.
4. How else could these gliders be modified to increase their times of flight or distance of travel? Brainstorm and make the appropriate modifications.
5. Students should not aim these at each other.