

# Traveling Programs

## Paper Airplane Pilots

Using paper airplanes, students learn how to modify an existing design to accomplish a goal.

### Materials

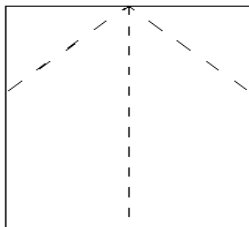
- Scrap paper
- Paper clips
- Markers
- Colored tape

### Procedure

Give each student a sheet of paper and 1-5 paper clips. Teach them how to make the paper airplane below and label their plane with the markers.

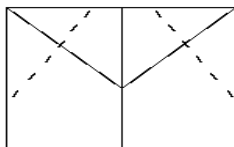
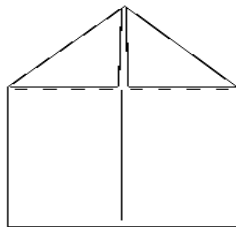
### The EAGLE

This is a very stable plane. It can fly straight with little adjustment. Curve the elevators up for loops.



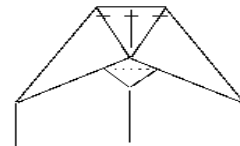
Fold the top down.

Fold an 8.5 x 11 inch sheet of paper in half lengthwise and open back up. Fold the top corners down to the center.

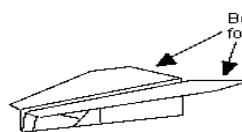


Fold the corners in to the middle.

Fold the little point up, fold the top 0.5 inch down, and fold the airplane in half away from you.



Now fold the wings out at an angle as shown.



Bend elevators up just slightly for better performance.

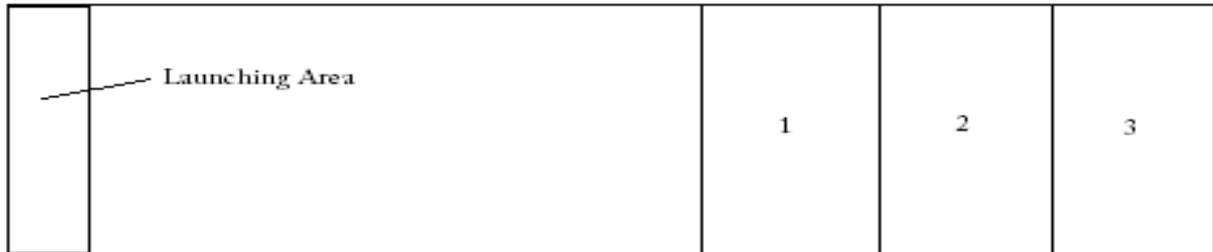


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Give the students some time to practice throwing the airplanes and then bring them to the gym or a hallway where you have placed down tape to mark a “launching area” and target zones like below:



Challenge the students to carry as many paper clips as they can with their plane into zone 1. Have all the students throw, record their results and then make them take a minute to modify their design before letting them throw again. This ensures that they are thinking about the challenge and all the different variables that can affect their results. Encourage them to modify their planes as they see fit to increase the plane’s cargo capacity, accuracy, stability, etc, but emphasize the benefit of changing only one variable at a time. After they have all had a chance to try for zone 1, proceed on to zone 2 and then zone 3.

After the activity is complete, it may be useful to have a discussion about what students have learned about the engineering process, and have them share with each other what they needed to change in their designs to have them work better.