

Activity #1: *Paper Aeronautics*

Objective 19: Inquiry

Objective 23: Science and Technology



In this activity, students learn how design affects performance.

Description: Students make paper airplanes and fly them to determine which design is best.

► **Directions**

1. Divide students into small groups and ask members of each group to appoint a “chief engineer” who will report the group’s findings to the class.
2. Duplicate the table shown on the following page and provide a copy to each group. Explain to the groups that they are engineers trying to design airplanes.
3. Have each group make airplanes of various designs, using sheets of paper measuring $8\frac{1}{2}$ by 11 inches.
4. Have the groups number their airplanes, list important features of each airplane (length, wingspan, etc.), and predict how far each airplane will fly. Starting with airplane #1, have each group fly each of its airplanes several times and record the distances the planes fly. Have students record their observations in the table.
5. After the trials have been completed, have each group discuss its results and make conclusions. Then have the chief engineer from each group report the group’s findings to the entire class.
6. Because the groups are certain to have used at least one identical design, lead a classwide discussion on how or why the results of using identical designs could still vary from group to group.

AIRPLANE FLIGHT DATA

Airplane	Characteristic Features	Prediction	Distance Plane Flew	Performance (Average Distance)
1			flight 1 =	
			flight 2 =	
			flight 3 =	
			flight 4 =	
2			flight 1 =	
			flight 2 =	
			flight 3 =	
			flight 4 =	
3			flight 1 =	
			flight 2 =	
			flight 3 =	
			flight 4 =	
4			flight 1 =	
			flight 2 =	
			flight 3 =	
			flight 4 =	
5			flight 1 =	
			flight 2 =	
			flight 3 =	
			flight 4 =	

Conclusions:
