

Smithtown Middle School

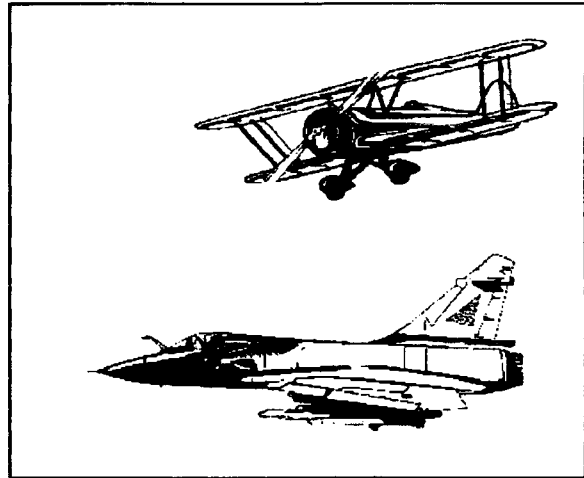
Math, Science and Technology Integrated Activity

Introduction to Flight

Problem Statement

BACKGROUND

Around the turn of the century, Wilbur and Orville Wright were experimenting with kites and gliders with the hope of developing a powered, heavier than air, craft that could fly. Today we take flight, by craft heavier than air, for granted, but back then it almost seemed impossible. The Wright Brothers were successful, not because of luck, but because of their willingness to work on a task until completion and their application of Math, Science and Technological concepts. In this project we will incorporate these same skills and concepts to design, test, redesign and construct model planes that we will fly in class.



PROBLEM

In teams of two you will plot out the profile for an airfoil from prescribed coordinates. Working with this shape you will determine the surface area for a portion of a wing three inches long. You will then construct a model of the airfoil and test it to determine its lift capabilities. After analyzing the results of the test for your wing section and those of your classmates you will determine what makes for an effective airfoil and design your own. This airfoil will be attached to a fuselage with stabilizers that you will build in the Technology Lab. Your goal will be to design, test and construct the most efficient airplane, that is, the one that will fly the highest and/or fastest.

RELEVANT INFORMATION

1. In Math, Science and Technology classes you will be asked to perform different activities related to this problem. These activities must be done in a timely fashion to allow for integration between the subject areas.
2. You might find yourselves doing things in a fashion that is different from what you are used to. Be flexible and allow the teachers to assist you in this activity.
3. You might find yourselves working with people that you do not know. This happens in the real world. It is imperative that you learn to work with others. That, too, is required in the real world.
4. Computers will be used to record and analyze data.
5. A contest may be held at the end of this activity. The winners will be the team that produces the plane that flies the highest and/or fastest.
6. Any problems that arise which require a judgement to be made, will be solved by the teacher(s) and that decision will be final.