



Curriculum Units by Fellows of the Yale-New Haven Teachers Institute
1988 Volume VI: An Introduction to Aerodynamics

Introduction

The topics discussed in this seminar covered a wide range of subjects. On the one hand Fellows with interests in teaching fundamental facts about science and mathematics were introduced to a field new to most. Here the underlying ideas of fluid mechanics, on which aerodynamics is based, lend themselves well to teach high school and middle school students. Basic concepts include conservation laws, based on the notions of mechanics such as mass, force and power. On the other hand, the subject is also useful to the teaching of history of technology wrapped around flight. Finally, a third possibility covers the social aspects of transportation. In particular the impact of aviation on intercity and intercontinental transport of passengers and goods has caused a revolution in this century. The continents have grown closer, understanding of other cultures has become better—one hopes—because millions of people visit each other year after year. The eleven Fellows in the seminar prepared curriculum units that apply to one or more of the three aspects just discussed. All units presented in this volume cover different topics, while having a unified core based on some aspects of aerodynamics such as the lift and drag of an airplane. The units vary much in mathematical and scientific content. Consequently they can be adopted for different grade levels and different levels of sophistication. All units—if well taught—ought to succeed in interesting, and possibly even exciting students generally in science and engineering. Furthermore, they should open up aspects of the field that include the impact on society.

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