



Yale-New Haven
Teachers Institute®

Curriculum Units by Fellows of the Yale-New Haven Teachers Institute
1990 Volume VII: What Makes Airplanes Fly? History, Science and Applications of Aerodynamics

Historical Developments of the Aircraft Industry with Mathematical Applications

Guide for Curriculum Unit 90.07.10
by Hermine E. Smikle

This unit is written with several audiences in mind: 1) for History—a junior high school grade 8 class to take a look at the developments that took place in the aircraft industry; 2) for Mathematics to be taught as an enrichment lesson for students in Basic Geometry or Geometry. Also, the section on spherical geometry can be used in a class of Algebra II Trigonometry as an extension or an introduction to spherical geometry.

This unit makes an attempt to present new content ideas into the mathematics curriculum. The focus of the unit is on problem solving, using graphs as a model. The unit also considers the new standards that will be put in place for mathematics, and has considered some of the topics that have been targeted for increased attention.

Because of the limitation placed on the numbers of pages in the unit, only a sample of the extension activities and worksheets presented for the students is included. The user, however, can make ditto of the examples presented, and, with the use of an atlas, can come up with more examples (spherical geometry). In the section on graphs and matrices, students can draw or design their own networks (good example of open-ended problems). The unit, therefore, lends itself to extensive use of one's imagination. Examples can be found from newspapers, advertisements, a map, the atlas, and everyday activities. If there is the need for any other material or explanation I will be willing to provide these through the office of the Teachers Institute.

(Recommended for History, grade 8; Mathematics and Basic Geometry, grades 10-11; and Geometry, grades 10-12)

Key Words

History Aviation Mathematics Economics Aircraft Industry U.S. National Parks

<https://teachersinstitute.yale.edu>

©2019 by the Yale-New Haven Teachers Institute, Yale University

For terms of use visit <https://teachersinstitute.yale.edu/terms>