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1990 Volume VII: What Makes Airplanes Fly? History, Science and Applications of Aerodynamics

The Science of Flight in Relationship to Birds and Gliders

Guide for Curriculum Unit 90.07.09

by Joseph H. Lewis

“The Science of Flight in Relationship to Birds and Gliders” is a unit based upon scientific aspects of how birds and gliders actually fly. Therefore, its fundamental goal is to answer one of the most often asked questions of children: “How do Birds Fly?.” In addition to answering that question, I intend to show the student that man has somewhat imitated bird’s flight with an engineless machine—the glider.

The first section of the unit takes an in-depth look at birds—how their feathers are formed and the role they play in flight in relationship to the wings. Within this section the reader will learn why there are different wing types on birds, as well as what different types of flight birds can perform. The reader will also learn about the science of aerodynamics associated with the bird.

Concluding the unit, students will learn about man’s first form of flight which truly imitated the first free flight of birds—the glider. This section starts off with a brief history of gliders where students will learn about such important contributions to the invention of the glider such as: Sir George Cayley, Jean Marie LeBris, Otto Lilienthal, and others. Afterwards, the unit will focus on how gliders actually fly. Students will discover that the science of bird’s flight played a remarkable role in man’s discovery of the glider. The similarities of the science of flight between the bird and the glider is phenomenal.

(Recommended for Science, grades 5-8)

Key Words

Aerodynamics Science

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