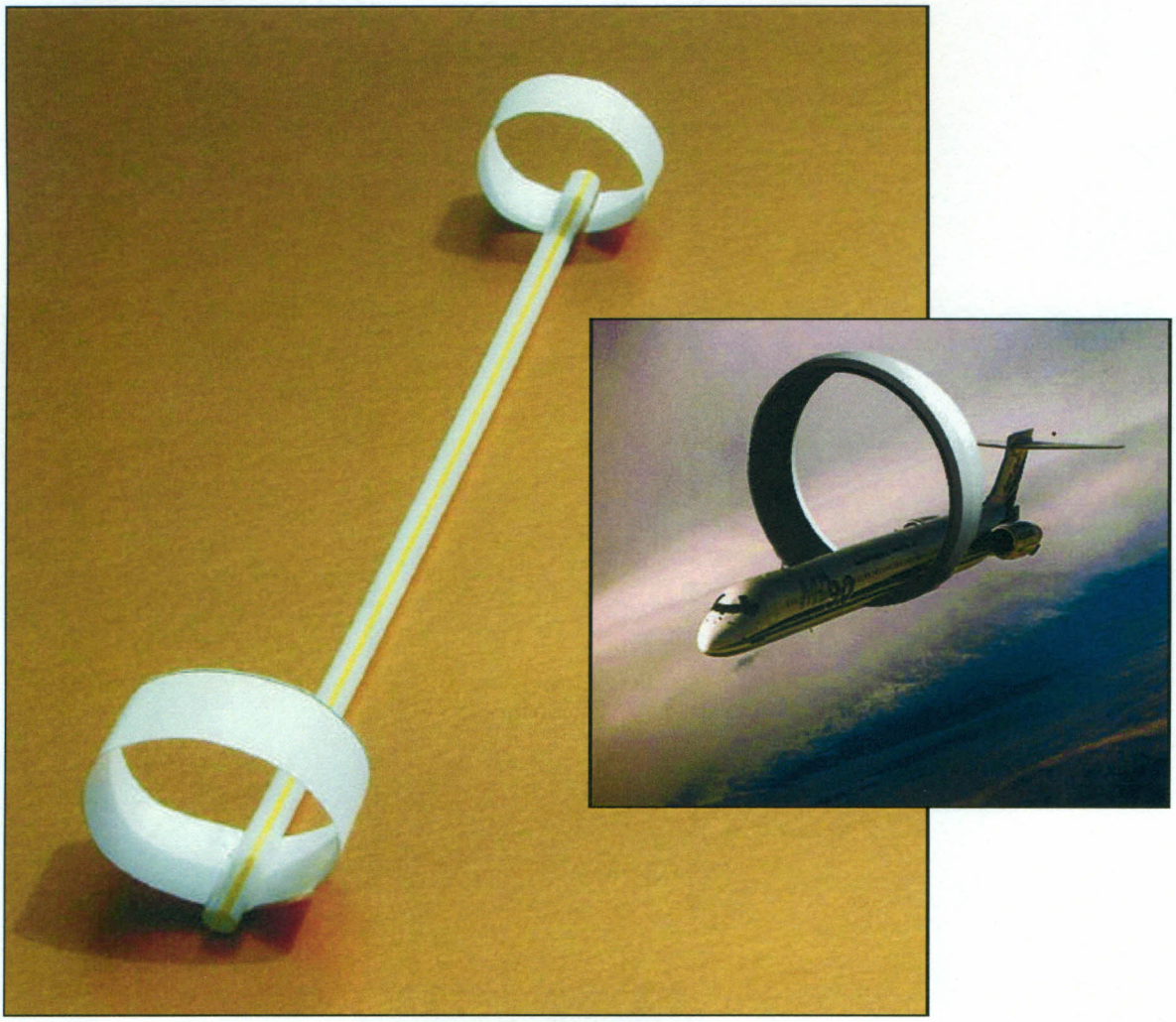
activity eleven

RING WING

OBJECTIVE

The idea is to build a flying machine that defies all of the known concepts of aerodynamics--yet still flies quite well!



NATIONAL SCIENCE STANDARDS (NRC)

Content Standard A: Science as Inquiry

Content Standard B: Physical Science
Motions and Forces

Content Stand E: Science and Technology
Abilities of technological design

Unifying Concepts and Processes
Evidence, Models, and explanation

Technology Standards:

8. Understanding of the attributes of design
10. Understanding of the role of trouble shooting, research and development, invention and innovation, and experi mentation in problem solving
11. Ability to apply the design process

BACKGROUND

From the very beginning, man has had some pretty weird ideas of what a flying machine should look like. Their idea was, "...if it looked like a bird, flapped like a bird, it just had to fly." Unfortunately, flapping just didn't work, at least not with their technology. It wasn't until the early Nineteenth century that someone actually came up the idea that wings didn't have to flap to fly. Sir George Cayley, an English nobleman, created a glider that had a remarkable resemblance to the aircraft of today. It had a wing up front, a stick fuselage and a vertical and horizontal "stabilizer" in back.

As time passed, it was the scientific method of theorizing and testing that worked. Men like Samuel Langley, Otto Lilienthal, Octave Chanute, and the Wright brothers finally made it all come together. Everyone more or less followed Cayley's idea of how an aircraft should look. That doesn't mean, however, that the conventional wings, fuselage, and tail is the only way to fly. Our little Ring Wing proves that point.