In 1903, Wilbur and Orville Wright, bicycle makers from Dayton, Ohio, flew an airplane for the first time in aviation history. Uses family reminiscences, photographs, letters, and old film footage to present the lives of the Wright brothers, ordinary men who shaped history.

### Academic Standards

**Subject Area: Technology**

- **Standard:** Understands the relationships among science, technology, society, and the individual
  - **Benchmark:** Knows ways in which technology has influenced the course of history (e.g., revolutions in agriculture, manufacturing, sanitation, medicine, warfare, transportation, information processing, communication) (See Instructional Goals #1, #3)

### Instructional Goals

1. To examine the lives of the Wright brothers and the impact they had on the quest for manned flight.
2. To introduce the concepts involved in the construction of early airplanes.
3. To explore the impact of certain technologies on history.

### Vocabulary

1. aviation
2. propeller
3. entrepreneurs
4. glider
5. tuberculosis
6. altitude
7. aerodynamics
8. aeronautical
BEFORE SHOWING

1. Locate or construct a timeline and discuss what was happening in the world in the late 1800s and early 1900s.
   a. the push West
   b. the invention of the automobile
   c. the cost of particular goods
   d. the fashion
2. Discuss the basics of how an airplane works.
   a. lift
   b. power
   c. control
3. Locate on a map the following places:
   a. Dayton, OH
   b. Kitty Hawk, NC
   c. Paris, France
4. Explain that letters are used in this video to relay some of the information.

DURING SHOWING

Discussion Items and Questions

1. View the video more than once, with one showing uninterrupted.
2. Pause after the second attempt at Kitty Hawk in 1901.
   a. Discuss the setbacks they encountered.
   b. Predict what Orville and Wilbur will do to overcome these setbacks.
3. Pause before Wilbur and Orville split up—one to France and the other to Washington.
   a. Summarize what other attempts were made at flying and why the Wrights’ design was superior.
   b. Discuss the reasoning behind their marketing strategy.

AFTER SHOWING

Discussion Items and Questions

1. Describe the events that led to Orville and Wilbur’s interest in designing flying machines.
   a. How did their experience repairing bicycles help them while constructing the airplane?
   b. What part did their family play?
   c. What impact did Wilbur’s accident have?
2. Explain the three parts of a flying machine and each part’s importance.
3. How did the atmosphere of the times contribute to Wilbur and Orville’s desire to be first in flight?
4. Compare and contrast Wilbur and Orville’s personalities. Did the differences/similarities help or hinder their relationship?
5. How were Wilbur and Orville different than other people attempting to be the first in flight?
6. Describe the events of December 17, 1903.
7. Orville and Wilbur decided to keep their flying machine secret.
   a. Explain why it was kept secret.
   b. Discuss the consequences of secrecy.
   c. Determine if it was an advantageous strategy.
8. List the reasons Kitty Hawk was a good place for the glider experiments.
9. Examine the obstacles to manned flight. Describe how the Wright brothers solved each problem.
10. What aspects of the engineering techniques employed by the Wright brothers are still in use today?
11. The Wright brothers had an interesting marketing strategy.
    a. What was their marketing strategy?
    b. How did the U.S. government react?
    c. Why was it necessary for them to go to France?
12. Discuss the impact these two men had on aviation.
13. Evaluate whether the Wright brothers have received the credit they deserve for their role in achieving flight.

Applications and Activities
1. Do some research to find out what patents the Wright brothers actually hold.
2. Construct a time line of the history of flight to include gliders, balloons, and early machines.
3. Use the engineering techniques of Wilbur and Orville to build models of aerodynamic paper airplanes and then have a contest to see which design goes the farthest.
4. Develop a chart comparing the different airplane designs mentioned in the video. Include inventor, strengths, weakness, date of construction, and length flew.
5. Compose biographies for some of the other aviators mentioned in this video. Mention each man’s link to the Wright brothers.
   a. Octave Chanute
   b. Samuel Langley
   c. Henry Farman
   d. Alberto Santos-Dumont
   e. Otto Lilienthal
6. Create a play based on the lives of Wilbur and Orville Wright.
   a. Divide the brothers’ lives into sections; i.e., before Kitty Hawk, during Kitty Hawk, after Kitty Hawk, the marketing days, after Wilbur’s death.
   b. Divide into groups of three or four to write scenes based on each section.
c. Present the play to younger grades.
7. Reenact the box experiment (wing warping) done by Wilbur and Orville. (See RELATED RESOURCES.)
8. Construct a model of the Wright brothers’ airplane. Label the parts of the plane and their function.
9. Safety of airplanes was mentioned briefly in this video.
   a. Compare the relative safety of Wilbur’s and Orville’s airplane with those used today.
   b. Discover the statistics regarding injury and death on airplanes.

RELATED RESOURCES

Captioned Media Program

- Inventors and the American Industrial Revolution  #1880
- How a Plane Flies  #3477

World Wide Web

The following Web sites complement the contents of this guide; they were selected by professionals who have experience in teaching deaf and hard of hearing students. Every effort was made to select accurate, educationally relevant, and “kid-safe” sites. However, teachers should preview them before use. The U.S. Department of Education, the National Association of the Deaf, and the Captioned Media Program do not endorse the sites and are not responsible for their content.

- WRIGHT BROTHERS AEROPLANE COMPANY MUSEUM
  www.first-to-fly.com/General/guide.htm
  Learn about the history of the Wright brothers, view pictures of each type of airplane they constructed, and much more

- THE WRIGHT BROTHERS
  www.hfmgv.org(histories/wright/wrights.html#cycle
  An interesting summary, informative chronology and good reference page of books for adults and children to learn more about the Wright brothers.