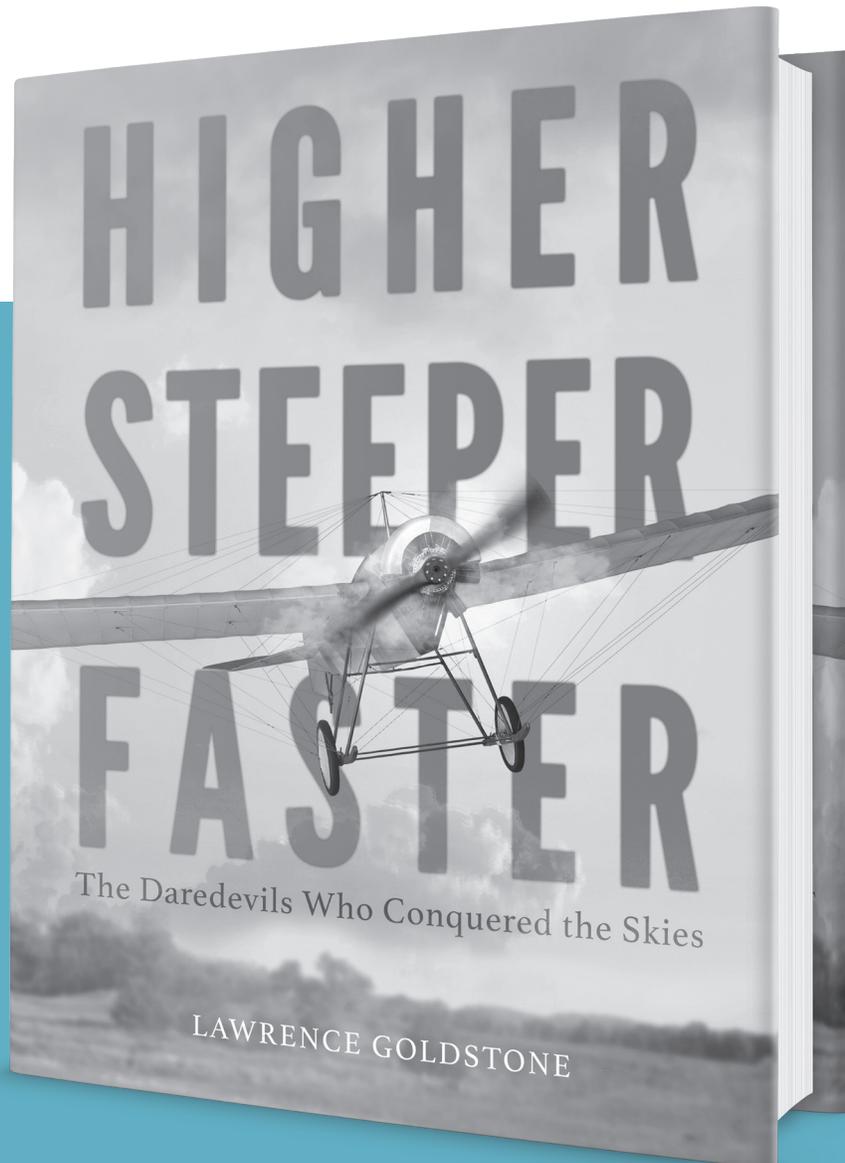


# HIGHER, STEEPER, FASTER

By LAWRENCE GOLDSTONE



## Curriculum connections

- ❖ Astronomy/Space/Aviation
- ❖ Science & Inventions
- ❖ Social Studies

**Ages 8–12**

## ELA

### Anticipation Guide

Students may think they already know about the history of flight, but even many adults have some misconceptions that are addressed in *Higher, Steeper, Faster*. Using an anticipation guide is one way to help prepare students by activating their background knowledge. To create the anticipation guide, ask a series of true or false questions with columns marked “before reading” and “after reading” with spaces for students to mark true or false. Questions should focus on areas that students might already know about or think they know about. Some statements to consider include:

- Orville and Wilbur Wright (the Wright brothers) were the first people to achieve manned flight.
- The first airplane had a motorcycle engine.
- Baseball was the most famous spectator sport in the 1900s.
- Stunt pilots pushed boundaries that led to increased safety and advances in aviation.
- Blimps were invented after airplanes.
- Many pilot deaths occurred because early airplanes lacked seat belts.
- Airplanes began as a military experiment.
- Wilbur Wright attended college for engineering.

These are just a few examples. Students should answer the questions to the best of their ability (true or false) before reading. Then, after reading, they can answer the questions again, citing where they found the information and explaining the correct answers for any statements that were false.

### Comparing and Contrasting

Modern airplanes are astounding compared to some of the earliest airplanes. Help students understand aviation advances with this compare and contrast assignment. Ask students to research planes in 1910 and airplanes of today, gathering facts such as the average distance a plane could travel, average number of passengers, maximum speed, size of the aircraft, etc. The class can brainstorm additional data to compare. Place the information on a T-Chart and ask students to compare and contrast airplanes from the 1900s with airplanes of today. What would they consider the biggest difference? What, if anything, has stayed the same? This project could remain as a chart with follow-up discussion, or it could evolve into a written assignment.

### Summarizing: Living Timeline

There were many people featured in *Higher, Steeper, Faster* who contributed to the evolution of flight. To help students summarize the timeline of events and contributions of key people, they can create a living timeline. As a class, brainstorm a list of people discussed in the text (such as Otto Lilienthal, Alberto Santos-Dumont, Glenn Hammond Curtiss, Thomas Scott Baldwin, Harriet Quimby, Lincoln Beachey, Orville Wright, and Wilbur Wright). Then ask students to form a line in chronological order of each person’s most significant contribution to aviation. Students take turns stepping forward and explaining their person’s achievement. To enhance the experience, students may want to dress up or add props. The living timeline presentation can be recorded, so students can watch it and share it with others.

### Vocabulary Teamwork

There are many vocabulary words related to aviation in *Higher, Steeper, Faster*. Help students develop a sense

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**ELA**

of ownership over this vocabulary, using a collaborative process to identify new words, guess meaning from context, define the words, and incorporate the words into their vocabulary. Begin by assigning each student to one of four groups: word finder, context guesser, fact checker, and word user. Then create a space (real or virtual) to capture the information. If students have access to technology, [Padlet \(padlet.com\)](https://padlet.com) works very well for this experience. If not, a large piece of centrally located chart paper with sticky notes can be used. Word finders are responsible for finding and posting words they come across in their reading that they do not use in their everyday speech. They have to write the word, the sentence from the text using the word, and the page number. Context guessers make an educated guess about the meaning of the word. Fact checkers add to the work of the context guessers by either modifying the guess or correcting it with an actual definition they have verified with an outside source (such as a dictionary). Word users synthesize the information and write one or two new sentences using the word. After all stages of the process are completed, all students should make an effort to use the new words throughout the day. Assigned tasks should be rotated to give every student the opportunity to take on each role. This could be rotated by chapter or by time period (such as daily).

### Argument Writing Evaluation

The author, Lawrence Goldstone, claims: “The first years of powered flight became one of the most exciting and important eras in human history.” Ask students to evaluate this claim. Begin by brainstorming the evaluation criteria. What does a strong argument need to have? As a class, develop an evaluation checklist. Students may determine that an argument must have specific evidence-based details. They may be looking for the author to draw a clear connection between the evidence and the claim. If students

are not already familiar with argument writing, sharing a few exemplars may be necessary to help them develop their criteria for evaluation. Once a checklist is developed, ask students to use the checklist as a guide and write an evaluation of the claim made by the author. They should include the specific evidence Lawrence Goldstone uses to support his claim, as well as their thoughts regarding the strength of the evidence and the overall argument.

### Developing Argument

Stunt pilots pushed the boundaries of human experience. There are several stunt pilots featured in the text. Ask students to make a chart listing the character traits of each pilot. Then ask them to look for commonalities. Are there certain character traits that seem to be associated with the stunt pilots? Would these same traits apply to other people throughout history who are scientists, artists, or inventors? Challenge students to research a famous person who pushed the boundaries of human experience and to make a claim that the common character traits found among stunt pilots either apply or do not apply to the famous person they chose to study. Ask students to creatively present their claim, evidence, and reasoning as an oral argument.

### Narrative Writing: If You Were There

Give students the opportunity to practice narrative writing from the perspective of someone who may have witnessed one of the early flight events. Ask each student to choose a flight event described in *Higher, Steeper, Faster* and to describe it from the point of view of someone who might have witnessed that event. They should include details from the text but use a narrative format, describing the event from a first-person perspective. They should consider their audience and include details from that person’s perspective.

## ELA

### Mentor Text Analysis: A New Style of Information Writing

*Higher, Steeper, Faster* uses a combination of primary sources and a narrative style to share information. This is a unique approach that engages readers in a different way than traditional informational text. Help students understand the structure of the text and why it is an effective way of sharing information. Challenge students in small groups to analyze the structure of the text and to create a map that shows how the author hooks the reader, the different types of writing he uses to share information, and the use of primary source documents and images. Once students have examined the text through this lens, discuss the findings as a class and create a class chart that shows an analysis of the text structure. Then challenge students to create their own informational text mirroring this style. They should research and write about a topic of interest using the same style and voice as Lawrence

Goldstone. The topics could be connected to science or social studies curriculum, or students might choose topics of personal interest. The finished pieces should be consistent with the criteria in the class chart but will likely have primary source documents, sidebars, and a conversational tone.

### Poetry of Flight

Many famous writers and poets describe the wonder of flight or use flying as a metaphor. Explore this topic from the perspective of a poet. Provide students with several examples of prose and poetry that address flying or flight and ask them to analyze how the authors use figurative language and other poetic devices to describe flight. Then encourage students to write their own poems about flying. To build background for this lesson, explore a variety of poetry styles before focusing on poems about flight.

## SCIENCE

### Maker Space Challenge

Many museums and libraries offer “maker spaces.” These creative spaces can range from simple tables of craft supplies to rooms full of circuit boards and engineering components. For this project, encourage students to design a maker space. If the goal is to make something fly, what types of supplies might be necessary? Students may suggest balloons, fabric, dowels, craft sticks, balsa wood, various kinds of paper, etc. Gather materials and then set up several research stations with books, articles, and other media that describe basic scientific principles

about flight. This is a great way to differentiate. Depending on the age, reading level, and background knowledge of students, introductory or more complex information may be shared. Divide the class into teams and then challenge them to make something fly. As a class, define what they will consider “flight.” Is gliding acceptable? Ask students to make predictions about which invention will fly the farthest or highest. Test the inventions and collect data over a number of trials. Ask students to evaluate their predictions and to offer thoughts about what they might change after observing their inventions.

## ART

### Art of Flying Gallery

Humans throughout time have been fascinated by the idea of flying. Paintings, sculptures, and other art forms capture this longing of humans to fly. Challenge groups of students to curate their own online art galleries by gathering examples of artwork that show human fascination with flight. Visiting museum websites is a great starting point. Students may include artwork that depicts clouds, birds, angels, airplanes, hot air balloons, etc. The goal is for each group of students to find five to eight pieces of art that represent flight and then explain why they chose those particular pieces. Before assigning this project, visit an art museum (either in person or through a virtual tour) and examine how collections are put together. Students should use these ideas as a guide for choosing pieces for their collections. As an extension, encourage students to create their own flight-inspired art to include in their galleries.



## SOCIAL STUDIES

### Mapping Early Flight

Flight maps are incredibly important for pilots. Early pilots used maps to determine the best places to land and to chart their courses. Although complex maps are used today to chart flights, plotting departure and arrival sites on a map may help students understand the flight paths of early pilots. This could be accomplished by using either paper maps or an online tool such as Google Maps. Ask groups of students to choose one of the flights described in *Higher, Steeper, Faster* and chart its course (or the imagined course after locating the departure and arrival locations).

Extend student learning by asking them to identify any major landmarks, rivers, or mountains that the pilot would have flown over. Students can display their maps or (if using an electronic resource) demonstrate the flight path. As an alternative, students may want to simply create a map of locations discussed in the text.

### The World's Fair

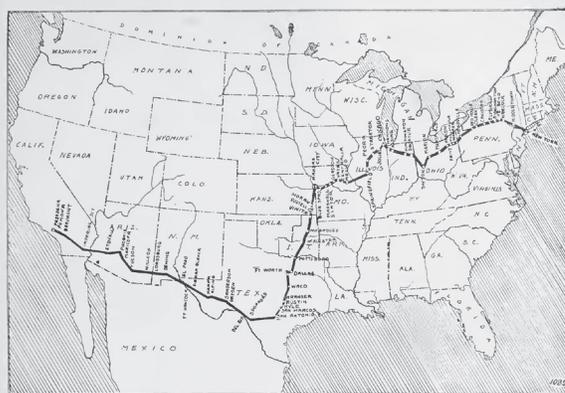
The earliest international expositions were an opportunity to showcase new technology and advances in industrialization. Countries around the world used the World's Fair and other international expositions to establish

## SOCIAL STUDIES

themselves as players on the world stage. Roy Knabenshue (featured in *Higher, Steeper, Faster*) successfully piloted the California Arrow to the delight of attendees at the 1904 Louisiana Purchase Exposition, proving that airships could be maneuvered just like land and sea vehicles. International expositions helped the world see the future of flight, but throughout time they also featured many different kinds of exhibits. Ask students to explore the types of “new” technologies first introduced at international expositions. Assign groups of students different time periods to investigate and challenge them to create a poster or other presentation sharing some of the featured technology, architecture, and even food at international expositions. A starting place for research is [expomuseum.com](http://expomuseum.com). Encourage students to think about why the focus of the World’s Fair has changed over time. As an extension, brainstorm as a class a list of exhibits they would include if they could design a World’s Fair for today.

AERONAUTICS

November, 1911



MAP OF RODGERS' FLIGHT.

Total Distance measured in straight lines between towns . . .	Miles	3390
Air line, New York-Pasadena . . .	Stops	2540
Number of stops including start and end . . . . .	Stops	65
Longest single flight, Stovall to Imperial Jet . . . . .	Miles	133
Longest day's journey, Kansas City to Vinita . . . . .	Days	174
Days consumed (Sept. 17—Nov. 5) . . . . .	Days	59
<b>Best Previous Records.</b>		
H. N. Atwood, St. Louis-New York . . . . .	Miles	1155
German Flight Circuit . . . . .	Miles	1096
British Circuit . . . . .	Miles	1010
European Circuit . . . . .	Miles	1073

**RODGERS MAKES TRANSCONTINENTAL FLIGHT.**

IT is extremely unlikely that the flight of Calbraith P. Rodgers in his Model B Wright aeroplane will be beaten before the end of this year, nor perhaps for another year. He has tripled the longest continuous flight, or series of flights, yet made in the history of aviation in the world. He started from New York on September 17 and finished at Pasadena, California, on the Pacific Coast, on November 5th, a distance measured as the crow flies, from town to town, of 3390 miles. This has been measured by AERONAUTICS on state maps and checked on a very large national map. The airline distance from New York to Pasadena is 2540 miles.

As will be noted by the map, the most direct course was not taken. There were no doubt, particular reasons why certain towns were "made". The trip was conducted throughout as an advertising campaign of a new soft drink, at the same time having in mind the Hearst \$20,000 prize for a flight across the country in thirty days. He figured he had until October 17 in which to complete the distance to be eligible for the prize but on that day he was at McAlester, Tex. A special car accompanied him, with a store of spare parts. The Men Muzette was used throughout. At the present time the flight must be considered as a wonderful feat in many respects. Compared with an automobile trip, the latter has the better of it, for the coast-to-coast trip has been made in 15 days, with two crows. A record of some years back for a one-man trip was something like 41 days, as we remember it. Two weeks total of Rodgers' time was spent waiting for bad weather to pass over or in making repairs.

From Texas Rodgers followed the line of the Southern Pacific railroad and climbed steadily from Del Rio on the Mexican border through Alpine, Marfa, Sierra Blanca to El Paso, which towns run from 2000 to 4000 feet above sea level. From here the altitudes gradually dropped until he got to Pasadena.

**Fowler On Way East.**

At Tucson Rodgers met Robert G. Fowler on his way east. Fowler started his second attempt to cross the country from Los Angeles on October 18; also in a Wright Model B, fitted with a windshield. His previous attempt started from San Francisco on Sept. 11, when he reached Colfax, Calif. By Nov. 5 Fowler had gotten as far as Mastodon, N. M., about 760 miles.

**NEW CROSS COUNTRY RECORD.**

Fowler came within an ace of beating Gill's new duration record when, on October 29, he was in for 3 hours 25 minutes, unofficially, flying cross country . . . miles from Yuma, Ariz. to Maricopa.

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## COLLEGE AND CAREER READINESS

### Pilot Interview

Interviews are an excellent way to find out information from an expert, but developing the questions is also an important academic exercise. Share examples of interviews and discuss the kinds of questions that journalists ask. Then challenge students to develop a list of questions they

would like to ask a pilot. Remind students to consider questions about how the person decided to become a pilot, the education he or she pursued, and any anecdotes to help them understand what it is like to be a pilot. There are a number of websites with contact information for pilots. [The International Society of Women Airline Pilots \(iswap.org\)](http://TheInternationalSocietyofWomenAirlinePilots(iswap.org)) is one site to consider.

## DISCUSSION GUIDE

### Introduction

How does the author “hook” the reader? What does he do to gain the reader’s attention and set the direction of the rest of the book? Use details from the text to support your answer.

### Part I: Birds and Balloons

- How did the Montgolfier brothers (Joseph-Michel and Jacques-Etienne) and Otto Lilienthal, early flight pioneers, contribute to the future of human flight? Use details from the text to explain your answer. Be sure to identify the accomplishments of the pioneers and connect those accomplishments to the future of flight.
- How would you describe Thomas Scott Baldwin? What do you think was his most significant contribution? Use evidence from the text and support your claim with sound reasoning.
- How did Glenn Hammond Curtiss influence the future of flight?
- How were Lincoln Beachey and Thomas Baldwin connected? What character traits did Lincoln Beachey have that probably helped him with his career?
- Who was Alberto Santos-Dumont? How is he described in the text?

### Part II: Wings

- Why were the Wright brothers known as *bluffeurs* (fakers) in France?
- How was Santos-Dumont’s design different from others?

- How did Wilbur Wright learn about the science behind flight? What does his unconventional education help you conclude about Wilbur Wright?
- What was unique about the Wright Flyer?
- One of the most famous photographs in the world shows the Wright Flyer at Kitty Hawk in 1903. Why is this photograph important? What does it represent?
- What is a patent? Why did the Wright brothers refuse to fly their airplane even in front of potential buyers? Do you think their refusal was reasonable? Why or why not?
- Using evidence from the text, compare and contrast the triumphs outlined in Chapter 8 with the tragedy described in Chapter 9. Do you think the triumphs are enough to outweigh the tragedy? Why or why not?
- Why was flying over the English Channel such a big accomplishment? Who attempted this feat? What happened to each of the pilots?

### Part III: Higher, Steeper, Faster

- Why did the *New York Times* call the Reims meet a “week of miracles”? Use specific details from the text to explain your answer.
- What did Dick Ferris do? How did he help bring about a “week of miracles” in America? What does the author mean when he says this “would be every bit as important in inspiring the American public’s thirst for flying as Reims had been for Europe”? Use evidence from the text and clear reasoning to support your answer.

## DISCUSSION GUIDE

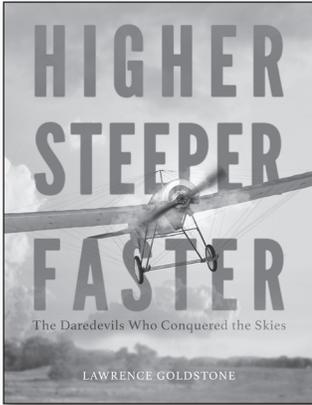
- What did the Wright brothers come to realize about their plans to sell airplanes? What actions did they take?
- What was it like to work for the Wright brothers? How did this compare to working for Curtiss? What were some of the dangers of being a pilot?
- What does the author mean when he says, “John B. Moisant burst on the aviation scene like a comet”? What did Moisant do that was important? How was his rise similar to a comet? Use details from the text to explain your answer.
- If you were a news reporter, how would you describe the race from Belmont Park to the Statue of Liberty and back? What would be the important details to include? How did spectators react?
- Who were some of the first female pilots? How did they become pilots? What obstacles did they have to overcome?
- What were some of the early ideas for combining airplanes and ships? How successful were these early attempts?



### Part IV: Pushing to the Edge and Beyond

- Upon the deaths of Hoxsey and Moisant, many newspapers predicted the end of daredevil flying. Was this prediction accurate? Use evidence from the text to support your thinking.
- What did Lincoln Beachey become most known for?
- How did the accomplishments of others push aviators to do increasingly more daring feats? Share specific examples described in the text. What were some of the results of this peer pressure?
- Why did Lincoln Beachey declare he would never fly again? What did Beachey do while “grounded”?
- How did Adolphe Pégoud’s accomplishments lead to Beachey’s return to aviation? Describe Pégoud’s feats and explain what Beachey did to reclaim his place in the world of daredevil flying. What additional challenges did Beachey take on in the next few years?
- Explain this statement: “The death of Lincoln Beachey marked the end of the exhibition era.” What does the author mean by this? How did Beachey and other early aviators contribute to the advancement of controlled powered flight? Use specific details from the text to explain your answer.
- What do you think was the author’s purpose when he wrote this book? Use evidence from the text to explain your reasoning.

## about the book



**HIGHER, STEEPER, FASTER**

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Also available as an audiobook and ebook

★ “For those who love history, aviation, or stories of great daring, this is pure pleasure.”

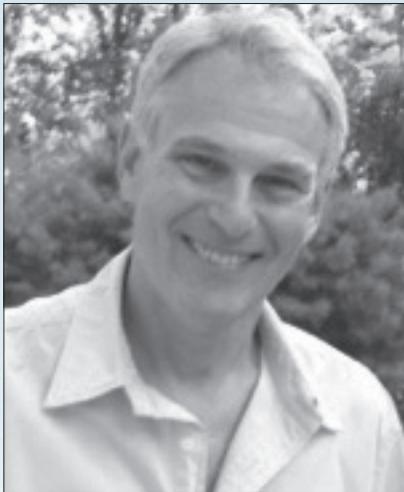
—*Kirkus*

★ “Goldstone deftly combines captivating descriptions of the personalities—male and female—with discussion of the many improvements and ever-present hazards of early flying . . . Goldstone’s book enthralls.”

—*Publishers Weekly*

★ “Readers will breathlessly follow the race to conquer the sky as these early aviators perform daring stunts and break achievement records that seem unbelievable today.”

—*School Library Connection*



LEE GOLDSTONE

## about the author

Lawrence Goldstone is the author and co-author of more than a dozen critically acclaimed books for adults. Goldstone has appeared on NPR, PBS, and C-SPAN, and his writing has been featured in *The Wall Street Journal*, *The Boston Globe*, and the *Los Angeles Times*, among others. *Higher, Steeper, Faster* is his first book for young readers.



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BOOKS FOR YOUNG READERS

[LittleBrownLibrary.com](http://LittleBrownLibrary.com)

This educator's guide was prepared by Dr. Jennifer McMahon, education consultant.