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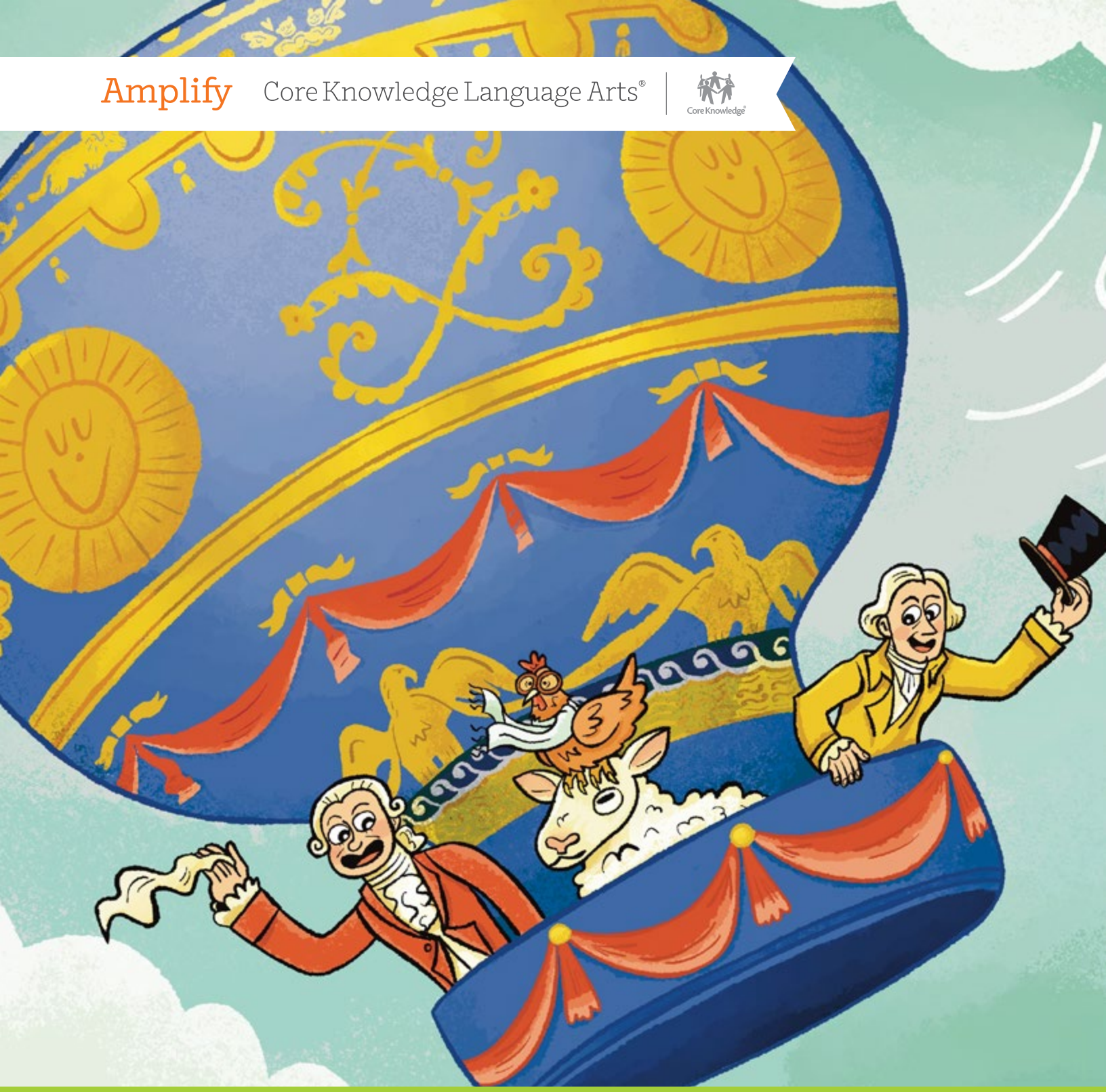

Knowledge Research

Teacher Guide | Grade 2

Up, Up, and Away: The Age of Aviation

English

Grade 2 | Knowledge Research

Up, Up, and Away: The Age of Aviation

Teacher Guide

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UP, UP, AND AWAY: THE AGE OF AVIATION

Grade 2 | Knowledge Research

Introduction

UP, UP, AND AWAY: THE AGE OF AVIATION

This introduction includes the necessary background information to be used in teaching the *Up, Up, and Away: The Age of Aviation* domain. The Teacher Guide for *Up, Up, and Away: The Age of Aviation* contains fifteen daily lessons, each of which is composed of two distinct parts so that the lesson may be divided into smaller chunks of time and presented at different intervals during the day. Each entire lesson will require a total of sixty minutes.

DOMAIN COMPONENTS

Along with this Teacher Guide, you will need:

- Activity Book for *Up, Up, and Away: The Age of Aviation*
- Image Cards for *Up, Up, and Away: The Age of Aviation*
- Digital Components for *Up, Up, and Away: The Age of Aviation*

Additional resources that you may wish to integrate into your classroom instruction include Read-Aloud videos for *Up, Up, and Away: The Age of Aviation*.

You will also need a classroom copy of each of the following trade books, which are available at physical and online bookstores:

- *Up and Away!: How Two Brothers Invented the Hot-Air Balloon* by Jason Henry
- *The Glorious Flight: Across the Channel with Louis Blériot* by Alice and Martin Provensen
- *The Flying Girl: How Aída de Acosta Learned to Soar* by Margarita Engle
- *Wood, Wire, Wings: Emma Lilian Todd Invents an Airplane* by Kirsten Larson
- *Helicopter Man: Igor Sikorsky and His Amazing Invention* by Edwin Brit Wyckoff
- *The Tuskegee Airmen Story* by Lynn Homan and Thomas Reilly
- *Skyward: The Story of Female Pilots in WWII* by Sally Deng
- *Aim for the Skies: Jerrie Mock and Joan Merriam Smith's Race to Complete Amelia Earhart's Quest* by Aimee Bissonette
- You will also need access to the ReadWorks passage "Overcoming Barriers: Amelia Earhart."

All domain components materials can also be found on the program's digital components site.

WHY UP, UP, AND AWAY: THE AGE OF AVIATION IS IMPORTANT

Students will head up, up, and away with this introduction to the soaring history of aviation. Students will learn the stories of early aviators, such as the Montgolfier brothers, the Wright brothers, Aída de Acosta, and Amelia Earhart. They will study the science of flight, including the physics concept of lift, and will research the social impacts of the world of flight. Finally, students will let their research skills take flight as they explore key figures from the world of aviation. This unit will build on the previous domains about the westward expansion, early Greek civilizations, and Greek myths in Grade 2, and will lay the foundation for learning about other periods of world history in future grades.

WHAT STUDENTS HAVE ALREADY LEARNED

The following domains, and the specific core content that was targeted in those domains, are particularly relevant to the Read-Alouds students will hear in *Up, Up, and Away: The Age of Aviation*. This background knowledge will greatly enhance students' understanding of the Read-Alouds they are about to enjoy:

The Ancient Greek Civilization (Grade 2)

Greek Myths (Grade 2)

Westward Expansion (Grade 2)

CORE VOCABULARY FOR UP, UP, AND AWAY: THE AGE OF AVIATION

The following list contains all the core vocabulary words in *Up, Up, and Away: The Age of Aviation* in the forms in which they appear in the Read-Alouds or, in some instances, in the "Introducing the Read-Aloud" section at the beginning of the lesson. Boldfaced words in the list have an associated Word Work activity. The inclusion of the words on this list does not mean that students are immediately expected to be able to use all these words on their own. However, through repeated exposure throughout the lessons, they should acquire a good understanding of most of these words and begin to use some of them in conversation.

Lesson 1	Lesson 5	Lesson 9
aircraft aviation blades curve determine glider ingredients legend **lift** myth observed recipe technology	confidence plantation inflated immigrant **spherical** wealth descend	airman escorted missions segregated squadrons **successful**
Lesson 2	**Lesson 6**	**Lesson 10**
astonishing hydrogen **innovations** technical tethered	aerial ballast bold chariot dazzled inspiration thicket	bittersweet **daunting** runway sluggish WASP
Lesson 3	**Lesson 7**	**Lesson 11**
designing exhibit invention powered orbit pitch roll yaw	breakthrough contraption patent **revise** tinkering tweaking	advocating altitude **barrier** massive sensation ticker-tape parade transatlantic
Lesson 4	**Lesson 8**	**Lesson 12**
aerostat cockpit **glorious** lever propeller sputters	**accomplishment** hovered invest rotor stalled	companions groggy **quest** stunned tailwinds throttle turbulence

CORE CONTENT OBJECTIVES

- Establish the purpose of reading about key figures in the history of aviation
- Explain how the Montgolfier brothers invented the hot-air balloon
- Make inferences about the impact of the Wright brothers' first flight on aviation
- Describe Louis Blériot's flight across the English Channel
- Explain key details about Alberto Santos-Dumont's flying machines
- Discuss how the text structures of repetition, rhyme, and simile contribute to the author's purpose
- Identify key details about the inventions of Emma Lilian Todd
- Make connections between the story of Igor Sikorsky and ideas in other texts
- Discuss the author's purpose for writing about the Tuskegee Airmen
- Make and confirm predictions about the female pilots of World War II
- Retell and paraphrase a passage about the barriers that Amelia Earhart faced in her quest to fly around the world
- Make connections between Jerrie Mock and Joan Merriam Smith's endeavor to complete Amelia Earhart's quest to be the first woman to fly solo around the world

WRITING

- In this domain, students will plan, research, draft, and present informational texts to be displayed in an Aviators Hall of Fame. Each lesson will build students' understanding of the research process, including brainstorming, asking questions, gathering information from texts, and writing about what they have learned.
- To show what they have learned, students will choose three aviators from the unit to write three informational texts.
- It is recommended that students keep all materials relating to the research element in a folder for easy access.

The following activities may be added to students' writing portfolios to showcase student writing within and across domains:

- Organizing information (Activity Page 2.2)
- Creating questions (Activity Page 3.1)
- Planning and conducting research (Activity Page 4.1)
- Final drafts of Aviators Hall of Fame presentations (Activity Page 13.1)

LESSON

1

UP, UP, AND AWAY: THE AGE OF AVIATION

Up, Up, and Away!

PRIMARY FOCUS OF LESSON

Speaking and Listening
Students will discuss whether they have ever been on a plane, or on any other flying machine, and how they felt during the flight. **[SL.2.4]**

Reading
Students will establish purpose for reading. **[RI.2.6]**

Language
Students will demonstrate understanding of the Tier 3 word *lift*. **[L.2.4]**

Writing
Students will develop and answer questions about the pioneers and the science of aviation using a Know-Wonder-Learn (KWL) chart. **[W.2.7, W.2.8]**

FORMATIVE ASSESSMENT

Quick Write	Name one of the topics we discussed during the Read-Aloud that you would like to find out more about. **[W.2.7, W.2.8]**

LESSON AT A GLANCE

	Grouping	Time	Materials
Introducing the Read-Aloud (10 min.)			
Core Connections	Whole Group	10 min.	❑ Image Cards from *The Ancient Greek Civilization, Stories from Mount Olympus,* and *Westward Expansion* domains
Domain Introduction			
Read-Aloud (25 min.)			
Purpose for Listening	Whole Group	25 min.	❑ world map or globe
"Wings That Work"			
Comprehension Questions			
Word Work: *Lift*			
Application (25 min.)			
KWL Chart	Whole Group/ Small Group	25 min.	❑ Activity Page 1.1 ❑ KWL Chart (Digital Components)

ADVANCE PREPARATION

Reading

- Display a world map or a globe.
- Prepare to group students in pairs for Think-Pair-Share.

Writing

- Prepare to distribute copies of the Quick Write to students.
- Prepare and display the following chart (Activity Page 1.1).

Know	Wonder	Learn

Universal Access

Reading

- Project Image Cards from *The Ancient Greek Civilization, Stories from Mount Olympus*, and *Westward Expansion* domains to review previously learned information.
- Have students discuss pictures of aviators and aircraft mentioned in the Read-Aloud to build knowledge and make connections.
- Create and post question word signs, such as "Who," "What," "Where," etc., for students to reference throughout the domain. Students will refer to these question words as they formulate questions throughout the domain.
- Provide the following sentence frames for ELL students to assist them in developing research topics/questions:

  "Some of the aviators I wonder about are _____."

  "For an airplane to fly it needs _____ and _____."

CORE VOCABULARY

aircraft, n. a vehicle (as an airplane or a helicopter) that can travel through the air and that is supported either by its own lightness or by the action of the air against its surfaces
Example: The Air and Space Museum is filled with all types of aircraft.
Variation(s): none

aviation, n. 1: the flying of aircraft; 2: the designing and making of aircraft
Example: My dad has always had an interest in the history of aviation.
Variation(s): none

blades, n. some things that widen out like the blade of a leaf
Example: The propeller was made up of eight blades.
Variation(s): blade

curve, n. something having a somewhat round shape
Example: The puzzle piece has a curve that helps it fit securely into the other puzzle piece.
Variation(s): curves

determine, v. to be the cause of or reason for
Example: The behavior of the class will determine if they receive an extra recess.
Variation(s): none

glider, n. an aircraft similar to an airplane but without an engine
Example: My grandpa and I made a glider from a kit we bought at the store.
Variation(s): gliders

ingredients, n. different things that are added together in a specific formula to make something
Example: The chocolate cake recipe had twenty different ingredients!
Variation(s): ingredient

legend, n. a story that is believed by many people but not proven to be true
Example: I don't believe the legends I heard about the old house at the end of my street.
Variation(s): legends

lift, n. an upward force (as on an airplane wing) that opposes the pull of gravity
Example: The inventors were interested in how lift can help an airplane fly.
Variation(s): none

myth, n. a story that was told in ancient cultures to explain a natural occurrence, practice, or belief
Example: The Greeks created myths to explain the seasons.
Variation(s): myths

observed, v. watched something carefully
Example: The team observed the playback footage of their loss for changes they could make.
Variation(s): observe

recipe, n. a list of instructions for making a certain type of food
Example: I followed the recipe instructions carefully, but my cake was a disaster.
Variation(s): recipes

technology, n. the use of science
Example: The use of technology in today's world is widespread.
Variation(s): none

Vocabulary Chart for "Wings That Work"

Vocabulary Type	**Tier 3 Domain-Specific Words**	**Tier 2 General Academic Words**	**Tier 1 Everyday Speech Words**
Vocabulary	aircraft aviation blades curve	determine ingredients legend myth observed recipe technology	
Multiple Meaning	glider **lift**		
Sayings and Phrases			

Lesson 1: Up, Up, and Away!

Introducing the Read-Aloud

10M

Speaking and Listening: Students will discuss whether they have ever been on a plane, or on any other flying machine, and how they felt during the flight. **[SL.2.4]**

CORE CONNECTIONS (5 MIN.)

- Review the following past domains: *The Ancient Greek Civilization*, *Stories from Mount Olympus*, and *Westward Expansion*.
- Tell students that the class will be starting a new domain about the dream of flying.
- Tell students that people have been interested in flight for as long as they have been around, including civilizations from thousands of years ago like the ancient Greek civilizations.
- Explain that people have always wanted to explore new frontiers. Ask students to think about the *Westward Expansion* domain. Tell them that just like the pioneers who dreamed about exploring the West, they will learn about the pioneers of aviation and their dream of exploring the sky.
- Introduce the word *aviation*. Explain that *aviation* can have many meanings, but in this domain they will learn about how it relates to the flying of aircraft or flying machines and the designing and making of aircraft.

DOMAIN INTRODUCTION (5 MIN.)

- Explain to students that good readers ask and answer questions while they are reading. Tell them that a fancy word for questioning is *inquiry*. A good way to organize this information is on a KWL chart.
- Project the KWL chart.

KWL Chart

- Ask students what they already know about airplanes.

Activity Page 1.1

- Record this information in the "Know" column on the class copy and have students record what they know on their copies of the chart.
- Ask students to preview the illustrations embedded in the Read-Aloud and to think of questions they have about airplanes.
- Have students record their questions on the chart. Ask for volunteers to share questions they have and record them on the classroom copy.
- Point out to students that, as they read, they should look for answers to these questions and add new questions to their charts.

Lesson 1: Up, Up, and Away!

Read-Aloud

25M

Reading: Students will establish purpose for reading. **[RI.2.6]**

Language: Students will demonstrate understanding of the Tier 3 word *lift*. **[L.2.4]**

PURPOSE FOR LISTENING

- Tell students to listen carefully to identify some of the aviators, flying machines, and events that they will hear about in this domain.

"WINGS THAT WORK" (15 MIN.)

- Read aloud "Wings That Work." As you read, incorporate the following information and guided reading supports.

Show Image 1A-1: Dreaming of flight

Have you ever wished you could fly? Think about all the things you could do. You could visit the birds roosting in the top of a tree. You could say hello to the window washer on the side of a skyscraper. You could see whole towns stretched out below you, just like looking at a map. *If you had the power to fly, what is the first thing you would do?*

Show Image 1A-2: Wings made of wax

People have dreamed of flight for as long as we have been around. Many **myths** and **legends**, or imaginary stories people tell about the past, feature people who learn to fly. In Greece, there was the story of Daedalus [/DAY-dah-luss/]. Daedalus was an inventor who created a set of wings to escape from a wicked king who had trapped him in a tower. Daedalus created two sets of wings made of wax, one for himself and one for his son Icarus [/IH-cah-russ/]. Daedalus escaped, but Icarus was not so lucky. He flew too high, and the heat of the sun melted his wings. Even in ancient times, people knew flying was not easy.

Show Image 1A-3: All in the curve

The myth of Daedalus shows us that people knew birds' wings had something to do with flying. What they may not have known is why. Birds fly because of something called lift. A wing is shaped like a **curve**. *The word* lift *means something that pushes something upward; a curve is something that has a kind of rounded shape.* Lift happens when air moves quickly over the curve of a bird's wing, which causes the air beneath the wing to push upward. It is easy for birds, because they are born with wings.

Show Image 1A-4: A recipe for flying

But it is not so easy for humans to create lift. To understand how to create it, imagine that you are a cook and you want to make cookies. You would need **ingredients**, or things to cook together into something else. (In this case, butter, flour, eggs, and of course chocolate chips!) And you would need a **recipe**, or a way to cook the ingredients to make something to eat from them. (In this case, mix them all together, shape them into cookies, put them in the hot oven for about ten minutes, and presto—cookies!) If you have both ingredients and a recipe, you can make something. Do you think that is just true for cooking or for everything? Exactly, it is not just true for cooking, but for everything we can make. *Have you ever used a recipe to make something yummy to eat?*

Lift has a recipe too! And it has two ingredients. One is a strong wing. The shape and strength of a wing **determines**, or controls, the amount of lift you can create from it. (It is just the same as how the amount of flour you have determines how many cookies you can make: if you just have one cup of flour, you cannot make as many cookies as you could if you had a whole pound of flour.) The stronger the wing is, the more lift you can get from it. That is one ingredient. Can you guess the other ingredient? Here is a hint: have you ever been out on a windy day with an umbrella and seen the wind blow the umbrella up? That happens because the wind moving over the umbrella is fast enough to create a lot of lift under it. And that is the second ingredient of lift! The faster you can make air move over a wing, the more lift you create.

So those are the two basic ingredients of lift. You need a strong wing and you need a way to move air over it very quickly. Anyone who knew the myth of Daedalus and watched birds flying understood a little bit of this. But the trick was to find the right recipe to turn those two ingredients into wings that worked. And no one understood that for a long time.

Show Image 1A-5: Bamboo-copters

One of the first working wings appeared in China around the year 320 CE—over 1,700 years ago. And surprisingly, it was a toy! Here is a bamboo helicopter, or a bamboo-copter. It has two long blades attached to a stick. When you twirl the stick of a bamboo-copter, it moves air over the **blades**. Take a look at the shape of the blades. *What do you notice about them?* It is the same shape as a bird's wing! By twirling a bamboo-copter, you are moving air over the blades and you are creating lift. It is not a huge amount of lift—just as much as your hands can create. But the bamboo-copter is small, so it does not need much lift to send it soaring. It is literally child's play.

Show Image 1A-6: The age of balloons

But a bamboo-copter was not strong enough to carry a person up into the air. Instead, people tried other experiments. Maybe, they reasoned, there was a way to fly without using wings at all. This man, Joseph Montgolfier [moan-GOLF-ee-ay], was an inventor who lived in France in

the 1700s, about three hundred years after Leonardo da Vinci. One day, while he was watching small pieces of paper floating in a fireplace, he **observed**, or noticed, that the sheets closest to the fire were blowing upward from hot air. If the heat was making the sheet pull itself into the air, was there a way to pull other things into the air too? Joseph kept trying his ideas in bigger and bigger ways, carefully experimenting, until he and his brother hit on the idea of shaping the sheets into a cloth balloon and heating the air beneath it. They tested their theory by building a massive cloth balloon. When they lit the burner to heat the air, though, the balloon flew away without them! As they watched it slowly disappear in the distance, the brothers knew they were onto something. The brothers attached baskets strong enough to carry people to the bottom of their balloons, and more and more people were flying every day. Soon, hot-air balloons filled the skies above France.

Show Image 1A-7: Is lift enough?

But balloons could only take you so high and so far. Because of this, many serious inventors kept trying to find wings that worked. As they continued working on the problem for years—in the end, over a hundred years after the Montgolfiers—**technology**, or the kinds of machines and tools people have to help solve problems, kept getting better. *Do you remember the recipe for lift?* Faster air and stronger wings! As technology got better, people slowly realized that they could probably make vehicles for flying, or aircraft, that would go fast enough and be strong enough to fly. Inventors started building flying machines that could go very high and very fast. But they ran into a problem. *Can you guess what it was?* Think back to Montgolfier's hot-air balloon and to the bamboo-copter. Both of them could fly, but both of them flew away. That was fine when someone wasn't riding in them. But people were starting to realize that the problem wasn't just creating lift. You also had to be able to steer.

Show Image 1A-8: The Wright answer at last

Here are two brothers, Orville and Wilbur Wright. They ran a bicycle shop in a place called Kitty Hawk, in North Carolina, in the early 1900s. The Wrights believed that they could make wings that worked. But they also thought that other inventors were looking in the wrong place. Lots

of inventors thought that if they could just build an engine that was powerful enough, they could make an aircraft go fast enough to remain stable in the sky. But the Wright brothers decided not to worry about speed. Their aircraft would use no motor at all, only wind. Just like a bird!

The Wright brothers kept studying birds and they kept studying bicycles. *Who knows how to make a turn on a bicycle? You turn the wheel, but do you do anything else?* Exactly, you lean into the turn. By leaning into the turn, you help the bike stay balanced. Orville and Wilbur noticed that birds were leaning when they wanted to turn in the air. The Wright brothers started to experiment with that idea. Soon they had built a **glider**, or a kind of aircraft that flies without an engine, that had flexible wings. That let the Wright brothers use instruments to carefully control how much lift was on each wing. If a pilot turned the controls to move the left wing so that it had more lift than the right wing, that would start to tilt the airplane upward to the left, which would make the airplane turn. That meant that, even without an engine, a pilot had control over an airplane. Airplanes today still use controls based on the Wright brothers' designs.

Show Image 1A-9: Higher and higher

We have learned a lot from birds, and people use aircraft to fly all over the world. Jet engines let us fly farther and faster than ever across oceans, over mountains, and far above the clouds. With rockets we can even fly into space! But we are still dreaming of flying higher. People are still asking just how far and how high we can go. It is the same question the Wright brothers asked, and the Montgolfiers, and the children playing with bamboo-copters, and the unknown author of the myth of Daedalus. All of us still dream of wings that work.

COMPREHENSION QUESTIONS (5 MIN.)

1. **Inferential.** Why do you think people have always been interested in flying? *(Answers may vary.)*
2. **Literal.** Why did Daedelus want to fly? *(He wanted to create wings so he could escape from a tower.)*
3. **Literal.** Why are birds able to fly? *(They have wings and, as air moves quickly over the bird's wings, it causes lift.)*
4. **Literal.** What is the recipe for lift? *(a strong wind and a way to move air quickly over a wing)*
5. **Evaluative.** *Think-Pair-Share:* How have airplanes changed over time? *(Answers may vary.)*

Challenge

After briefly reviewing the information about lift in the text, ask students to make an illustration of how lift works.

Support

Have students refer to the illustrations in the Read-Aloud to explain how airplanes have changed over time.

WORD WORK: LIFT (5 MIN.)

1. In the Read-Aloud you heard the sentence, "Birds fly because of something called lift."
2. Say the word *lift* with me.
3. *Lift* in this sentence means an upward force that goes against the force of gravity.
4. *Lift* is the force that holds an airplane in the air.
5. Can you think of other things that use lift to fly?
6. What is the word we have been talking about?

Use a Word to World Activity for follow-up. Ask students to discuss how lift helps a paper airplane to fly. If feasible, have students construct paper airplanes and take turns flying them in a controlled setting. Ask them to observe and think about the factors that make some of the airplanes fly farther, faster, or higher than others. Ask for volunteers to share their thoughts.

Challenge

Ask students to change the design of their paper airplanes to see how the modifications affect lift.

Support

Ask students yes/no questions about the text to check for understanding.

Lesson 1: Up, Up, and Away!

Application

25M

Writing: Students will develop and answer questions about the pioneers and the science of aviation using a KWL chart. **[W.2.7, W.2.8]**

KWL CHART (25 MIN.)

- Have students refer to the KWL chart. Ask them to review the questions they recorded prior to listening to the Read-Aloud.
- Have students think about any questions that were answered during the reading of the text and record this information in the "Learn" section of the chart.
- Ask students to share other information they learned with the class. Record this information on the class copy if it answers any questions that were raised before the Read-Aloud.
- Have students record any new questions that were raised during the reading of the text.
- Explain that good readers create new questions as they are reading to better understand what they read and stay engaged with the text.
- Introduce the word *research* to students.
- Tell students that *research* means to learn new information about a topic. Write the word and the definition on the board or chart paper.
- Tell students that they are going to create more questions and research the answers about aviators and aviation. Remind students that aviators are the drivers or pilots of aircraft or flying machines.
- Tell students that *research* means finding answers to questions in order to learn more about something.
- Draw a line on the KWL chart. Ask students to brainstorm what else they already know about aviators and aviation. Write their responses on the board or chart paper.

Challenge

Have students write down what they specifically wonder about the core vocabulary. For example, "I wonder about how lift works to make an airplane stay in the air."

Support

Students may draw or sketch one topic for the "Wonder" column.

Application

Entering/Emerging
After reviewing their KWL chart with a partner, students will develop research questions.

Transitioning/Expanding
Provide sentence frames for developing research questions/topics. For example, "Some of the aviators I wonder about are _____." "For an airplane to fly, it needs _____ and _____."

Bridging
Encourage students to use the question word signs that are posted around the classroom to develop research questions.

- Ask students to suggest topics they want to learn more about in the domain, including historical figures they heard about in the Read-Aloud, the how and why of flight, types of aircraft or flying machines, etc. Record this information on the "Wonder" column of the chart. Students will use these ideas and topics to generate questions for research later on in the domain.

Check for Understanding

What does *research* mean? *(finding answers to questions)*

Quick Write

Create a question about one of the topics we discussed during the Read-Aloud that you would like to find out more about. **[W.2.7, W.2.8]**

End Lesson

LESSON

2

UP, UP, AND AWAY: THE AGE OF AVIATION

Lighter Than Air

PRIMARY FOCUS OF LESSON

Reading
Students will establish purpose for reading text and identify what the author wants to answer, explain, or describe. **[RI.2.6]**

Language
Students will demonstrate understanding of the Tier 3 word *innovations*. **[L.2.4]**

Writing
Students will generate questions and find answers about aviation and the historical figures within the areas of the unit using question starters. **[W.2.8]**

FORMATIVE ASSESSMENT

Quick Write	**Language** How was the invention of the hot-air balloon an innovation in aviation? **[L.2.4]**
Activity Page 2.2	**Writing** What else do you wonder about hot-air balloons? **[W.2.8]**

LESSON AT A GLANCE

	Grouping	Time	Materials
Introducing the Read-Aloud (10 min.)			
What Have We Already Learned?	Whole Group	10 min.	❑ world map ❑ Activity Page 1.1
Essential Background Information			
Read-Aloud (25 min.)			
Purpose for Listening	Whole Group	25 min.	❑ Aviation Timeline (Digital Components) ❑ *Up and Away!: How Two Brothers Invented the Hot-Air Balloon* by Jason Henry
Up and Away!: How Two Brothers Invented the Hot-Air Balloon			
Comprehension Questions			
Word Work: *Innovations*			
Application (25 min.)			
Generating Research Questions	Whole Group/ Partner	25 min.	❑ Activity Pages 2.1, 2.2

ADVANCE PREPARATION

Introducing the Read-Aloud

- Prepare to display the Aviation Timeline.

Reading

- Prepare to read aloud the trade book *Up and Away!: How Two Brothers Invented the Hot-Air Balloon* by Jason Henry. As you preview the book, you may wish to add page numbers and reference the guided reading supports included in this lesson. This trade book does not have numbered pages, but for ease of use we have referred to page numbers in our materials. We begin with page 1, which has an illustration of Joseph Montgolfier, and number each page in order after that.

Application

- Prepare to distribute copies of the Quick Write.
- Prepare to distribute Activity Page 2.1 to students.
- Prepare to group students in pairs for the Application activity.
- Prepare to distribute Activity Page 2.2 to students.

Universal Access

- Have a large world map displayed. Point to some of the places where the earliest flying machines were invented and tested; for example, France, Kitty Hawk, North Carolina.

Writing

- Bring in pictures of different types of flying machines, such as a hot-air balloon, the Wright brothers' glider, early war planes, etc. Be prepared to tell students a few things about each flying machine.

CORE VOCABULARY

astonishing, adj. causing a feeling of great surprise or wonder
Example: The truck can hold an astonishing amount of stuff.
Variation(s): astonish, astonished, astonishingly

hydrogen, n. a colorless, odorless, and tasteless flammable gas that is the lightest of the chemical elements
Example: The car runs on hydrogen gas.
Variation(s): none

innovations, n. new ideas, methods, or devices
Example: The company's latest innovation is a talking car.
Variation(s): innovation

technical, adj. having special knowledge, especially of a mechanical or scientific subject
Example: He was a technical expert in the field of computer science.
Variation(s): none

tethered, adj. something that is tied up to another object with a type of line such as a rope.
Example: The boat was tethered to the dock with a rope.
Variation(s): tether

Vocabulary Chart for *Up and Away!: How Two Brothers Invented the Hot-Air Balloon*

Vocabulary Type	**Tier 3 Domain-Specific Words**	**Tier 2 General Academic Words**	**Tier 1 Everyday Speech Words**
Vocabulary	hydrogen **innovations** tethered	astonishing technical	
Multiple Meaning			
Sayings and Phrases			

Lesson 2: Lighter Than Air

Introducing the Read-Aloud

10M

Reading: Students will establish purpose for reading text and identify what the author wants to answer, explain, or describe. **[RI.2.6]**

Activity Page 1.1

WHAT HAVE WE ALREADY LEARNED? (5 MIN.)

- Direct students' attention to Activity Page 1.1. Remind them that the new domain they are studying is about aviation. Ask students to define *aviation* in their own words.
- Ask students to name some of the types of aviation they heard about yesterday. Ask them to name some of the earliest flying machines they heard about in the Read-Aloud from yesterday.

ESSENTIAL BACKGROUND INFORMATION (5 MIN.)

- Tell students that today they are going to hear a story about two brothers named Joseph and Étienne Montgolfier. They will find out how these brothers discovered that hydrogen is lighter than air and how they used this information to figure out how to fly. Tell students that hydrogen is a type of gas like oxygen that they may have learned about in science class.
- Explain that the setting of the story is a country named France. Locate France on a map.
- Tell students that, while you read, they should try to remember who the main characters are and how they achieve their goal.

Lesson 2: Lighter Than Air

Read-Aloud

25M

Reading: Students will establish purpose for reading text. **[RI.2.6]**

Language: Students will demonstrate understanding of the Tier 3 word *innovations*. **[L.2.4]**

PURPOSE FOR LISTENING

- Introduce and model how to ask and answer questions while reading a text to help students identify what the author is trying to answer, explain, or describe. Mention that we ask who, what, when, where, why, and how questions as we read. Show students the cover of the Read-Aloud and say, "I wonder why there are animals in the basket of a hot-air balloon. Do you think we will find out if we keep reading?" Ask the students what they think the author may be looking to answer, explain, or describe.
- Have students think about the title of the text and ask them, "What might the author want to ask, explain, or describe in this text?"

UP AND AWAY!: HOW TWO BROTHERS INVENTED THE HOT-AIR BALLOON (10 MIN.)

- Read aloud *Up and Away!: How Two Brothers Invented the Hot-Air Balloon* by Jason Henry. As you read, incorporate the following information and guided reading supports.
  - Continue modeling the concept of asking and answering questions. Pause on page 2 and say, "I wonder what Joseph will invent. We have to keep reading to find out."
  - On page 4, explain that *technical* means the skills, methods, and processes used to achieve goals.
  - Tell students that innovations are new ideas, devices, or the introduction of something new. When the hot-air balloon was first introduced, it was a great innovation.
  - Pause on page 5 and ask, "What do you think Joseph is thinking when he sees the papers floating in the air?" Invite two or three students to share their responses with the class.

- Pause on page 6 and explain that hydrogen is a gas. Oxygen is also a gas. We breathe oxygen. Gases are colorless and odorless and are found in the air all around us. Hydrogen is the lightest gas.
- Make a prediction. Ask students, "What do you think will happen next now that Joseph made a discovery about the paper floating into the air above the fire?"
- Pause on page 7 and explain that something that is astonishing is something that causes a feeling of great surprise or wonder.
- Pause on page 15 and explain that *tethered* means something is tied up so it will not get away.
- After reading, discuss with students how the pictures help the reader imagine what it must have been like to see one of the very first flying machines.
- Think-Pair-Share: Ask, "How would you feel if you were the first human to ride in a hot-air balloon? Would you be scared or excited?"
- After reading, ask students where the Montgolfier brothers are on the Aviation Timeline. *(1783)*

COMPREHENSION QUESTIONS (10 MIN.)

1. **Literal.** Who were the main characters in the story? *(Joseph and Étienne Montgolfier)*
2. **Inferential.** What is the first discovery that Joseph makes that leads him to invent the hot-air balloon? *(a gas that is lighter than air that provides lift)*
3. **Evaluative.** Is this story fiction or nonfiction? How do you know? *(Nonfiction. Answers may vary, but may include that it is about historical events and figures.)*
4. **Inferential.** Explain how the brothers' determination helped them achieve their goal. *(Answers may vary, but should include that, even though they experienced setbacks, they never gave up and eventually achieved their goal of flying.)*
5. **Inferential.** *Think-Pair-Share:* How do you think the Montgolfiers' invention inspired other inventors to build more flying machines? *(They saw that with determination they could achieve their goals too. Explain the meaning of* determination*.)*

WORD WORK: INNOVATIONS (5 MIN.)

1. In the Read-Aloud you heard the sentence,"... the brothers shared a common interest in science and the latest technical innovations of the day."
2. Innovations are new ideas, devices, or the introduction of something new. When the hot-air balloon was first introduced, it was a great innovation.
3. Scientists are responsible for many innovations in computer science.
4. Can you think of any new innovations in the world today?

Use a Turn and Talk activity for follow-up. I am going to name some innovations:

- automobile
- telephone
- automatic washing machine

Turn to a partner and brainstorm other innovations.

Challenge

Ask students to choose one of the innovations they came up with and research who was responsible for it.

Support

Ask students to draw a picture of one of the innovations they brainstormed.

Lesson 2: Lighter Than Air

Application

25M

Writing: Students will generate questions and find answers about aviation and the historical figures within the areas of the unit using question starters. **[W.2.8]**

GENERATING RESEARCH QUESTIONS (25 MIN.)

- Tell students that they will be using question words on Activity Page 2.1 to answer questions about the aviators and their invention of the hot-air balloon from today's Read-Aloud.
- Tell students that they will practice asking questions (inquiry) and looking for answers (researching) to use in their culminating task.
- Ask students to take out Activity Page 2.1.
- Review the activity instructions with students and answer any questions that they may have. Have students complete the activity page with a partner.

Challenge

Have students generate one or more questions. Use the text to answer their questions.

Support

Allow students to work in pairs to complete Activity Page 2.1.

Activity Page 2.1

- After students have completed the activity, have them participate in a **Turn and Talk** as a wrap-up for the lesson. Say, "Turn to your partner and explain how you found your answers. Have your partner ask you one question about what you drew or wrote, and answer that question. Then, have your partner share their answers. Ask a question about their drawing or writing, and have your partner answer that question." Have several students share the questions asked and the answers given.

Check for Understanding

Have several students share with the class the questions created during the activity and the answers given.

Quick Write

- How was the invention of the hot-air balloon an innovation in aviation? **[L.2.4]**
- Writing: Activity Page 2.2: What else do you wonder about hot-air balloons? **[W.2.8]**
- Have students complete Activity Page 2.2 with the name of the aviator and any questions they have about hot-air balloons that were not answered during the Application activity.
- Activity Page 2.2 will be used as a way for students to track and organize information from the Read-Alouds during the unit. This graphic organizer will then be used when creating their culminating task.

End Lesson

Application

Entering/Emerging
Have students draw and talk to a partner to discuss what they learned in the first lesson about aviation. Have students sketch or draw images to ask questions about hot-air balloons.

Transitioning/Expanding
Have students talk to a partner to discuss what they learned in the first lesson about aviation. Have students develop one question with teacher assistance, using question starters (e.g., who?, what?, where?, when?).

Bridging
Have students talk to a partner to discuss several details they learned in the first lesson about aviation. Have students develop more than one question and read the questions aloud to a partner or teacher.

Activity Page 2.2

LESSON

3

UP, UP, AND AWAY: THE AGE OF AVIATION

The Amazing Flying Machine

PRIMARY FOCUS OF LESSON

Reading
Students will ask questions and make inferences about the impact of the Wright brothers' first flight on aviation. **[RI.2.1]**

Language
Students will demonstrate understanding of the Tier 2 word *designing*. **[L.2.4]**

Writing
Students will generate questions and look for answers about aviation and the historical figures within the areas of the unit using question starters. **[W.2.8]**

FORMATIVE ASSESSMENT

Quick Write	**Writing** Describe the design of the Wright brothers' flying machine. **[L.2.4]**
Activity Page 2.2	What else do you wonder about the Wright brothers? **[W.2.8]**

LESSON AT A GLANCE

	Grouping	Time	Materials
Introducing the Read-Aloud (10 min.)			
What Have We Already Learned?	Whole Group	10 min.	❑ world map
Essential Background Information			
Read-Aloud (25 min.)			
Purpose for Listening	Whole Group	25 min.	❑ Aviation Timeline (Digital Components) ❑ Who, What, When, Where, Why, and How (Digital Components) ❑ Activity Page 3.1
"The Amazing Flying Machine"			
Comprehension Questions			
Word Work: *Designing*			
Application (25 min.)			
Who, What, Where, When, Why, How	Whole Group/ Partner	25 min.	❑ Activity Pages 2.2, 3.1

ADVANCE PREPARATION

Introducing the Read-Aloud

- Prepare to display the Aviation Timeline.

Reading

- Prepare to display Activity Page 3.1.
- Prepare to read aloud the ReadWorks passage "The Amazing Flying Machine." As you preview the article, consider referencing the guided reading supports included in this lesson.

Application

- Prepare copies of the Quick Write to distribute to students.
- Prepare to distribute Activity Page 3.1.
- Plan to group students in pairs for the Application activity.

Universal Access

Reading

- Gather photos of Charles Lindbergh and the Spirit of St. Louis, Chuck Yeager and the Glamorous Glennis, and John Glenn in the Mercury Friendship 7 space capsule for students to refer to during the Read-Aloud.

Writing

- Gather images of the Wright brothers' designs to share with the class.

CORE VOCABULARY

designing, v. drawing or making plans that show how something will look or how it will be made
Example: My brother is designing a plan to build a tree house.
Variation(s): design, designed

exhibit, n. something that is put on display
Example: The artist's work is on exhibit at the museum.
Variation(s): exhibits

invention, n. an original device or process
Example: The light bulb was one of the most important inventions of the 19th century.
Variation(s): inventions

powered, v. supplied with a form of energy
Example: The factory is powered by solar energy.
Variation(s): none

orbit, v. to move in a circle around another object
Example: The moon orbits the earth every twenty-four hours.
Variation(s): orbits

pitch, v. to move in such a way that one end falls while the other end rises
Example: The ship pitched in a rough sea.
Variation(s): pitched

roll, v. to swing from side to side
Example: The ship rolled in the giant waves.
Variation(s): rolled

yaw, v. to turn suddenly from a straight course
Example: The boat yawed in heavy seas.
Variation(s): yawed

Vocabulary Chart for "The Amazing Flying Machine"

Vocabulary Type	**Tier 3 Domain-Specific Words**	**Tier 2 General Academic Words**	**Tier 1 Everyday Speech Words**
Vocabulary	invention roll yaw	**designing** exhibit orbit	
Multiple Meaning	pitch	powered	
Sayings and Phrases			

Lesson 3: The Amazing Flying Machine

Introducing the Read-Aloud

10M

Reading: Students will ask questions and make inferences about the impact of the Wright brothers' first flight on aviation. **[RI.2.1]**

WHAT HAVE WE ALREADY LEARNED? (5 MIN.)

- Review the Aviation Timeline to discuss what was learned in the previous lesson's Read-Aloud.
- Ask, "What is the topic of the domain that we are learning about?" *(aviation)*
- Ask, "What is a characteristic or trait that the Montgolfier brothers had?" *(Guide students to the word* determination*.)* Ask students how the Montgolfiers' determination helped them achieve their goal of flying.
- Ask two or three students for their responses.

ESSENTIAL BACKGROUND INFORMATION (5 MIN.)

- Say, "Today we are going to hear a story about two determined aviators from the United States (Dayton, Ohio) and their amazing flying machine." Mark the place on the map.

Lesson 3: The Amazing Flying Machine

Read-Aloud

25M

Reading: Students will make inferences about the impact of the Wright brothers' first flight on aviation. **[RI.2.1, L.2.1]**

Language: Students will demonstrate understanding of the Tier 2 word *designing*. **[L.2.4]**

PURPOSE FOR LISTENING

- As you read the story, ask students to listen for how the Wright brothers' flying machine is different from the hot-air balloon and how it will have an impact on future flying machines.

"THE AMAZING FLYING MACHINE" (10 MIN.)

Activity Page 3.1

- Have students turn to Activity Page 3.1. Explain to students that they will use the text to formulate questions using question words.
- Read aloud the ReadWorks passage "The Amazing Flying Machine." As you read, incorporate the following information and guided reading supports.
  - Model the concept of asking and answering questions. Direct students' attention to the photograph in the passage and ask, "What do you think the two men are doing in the picture? What is the machine they are on?" Write these questions in the "What" section on the class copy of Activity Page 3.1 and instruct students to do the same.
  - Pause after the first paragraph and explain that something that is powered is something that produces its own energy, like a car or a speed boat.
  - Ask students, "How is the Wright brothers' flying machine different from the Montgolfier brothers' hot-air balloon?" Write this question in the "How" section on the class copy of Activity Page 3.1 and instruct students to do the same.

- Continue reading to the end of the section and explain that when something is on exhibit, it means it is shown to many people in one place. Museums are places where people go to see exhibits. Ask, "Why do you think the Wright brothers' flying machine is on exhibit at the National Air and Space Museum in Washington, D.C.?"
- Stop after reading the second section and explain that, when you design something, you draw or make plans to show how something will work. Tell students that an invention is something that is made that has never been made before. The Wright brothers invented a type of powered airplane. Ask, "Can you name any inventions that have made our lives easier? Have you ever thought of designing an invention?"
- Continue reading to the end of the article.
- Ask students to write or draw answers to the questions on Activity Page 3.1. Ask two or three students to share their answers.
- Think-Pair-Share: Ask, "How is the Wright brothers' flying machine different from the Montgolfier brothers' hot-air balloon?" Ask two or three students to share their responses.
- Ask students where the Wright brothers are on the Aviation Timeline. *(Dec. 17, 1903)*

COMPREHENSION QUESTIONS (10 MIN.)

1. **Literal.** What was the only way to fly before the Wright brothers invented the flying machine? *(hot-air balloon)*
2. **Literal.** Describe the Wright brothers' flying machine. *(It was a powered, glider-type machine that resembled a box kite.)*
3. **Inferential.** Why do you think the Wright brothers' flying machine is displayed at the National Air and Space Museum? *(Answers may vary, but should include that it is a part of the history of aviation.)*
4. **Inferential.** Why does the author describe Orville's flight as "short but very sweet"? *(He flew for only 59 seconds and went a distance of 852 feet, but it was successful.)*
5. **Evaluative.** *Thumbs-Up/Thumbs-Down:* The Wright brothers achieved their goal of flying. *(thumbs-up)*
6. **Inferential.** *Think-Pair-Share:* What are some of the ways in which the Wright brothers' discoveries about flying are still being used today? *(Airplanes today are controlled in the same way that the Wright brothers controlled their airplane: roll, pitch, and yaw.)*

WORD WORK: DESIGNING (5 MIN.)

1. In the Read-Aloud you heard the sentence, "Designing and building the flying machine took years."
2. Say *designing* with me.
3. *Designing* means drawing or making plans that show how something will look or how it will be made.
4. Inventors use designs to plan their invention. Have you ever designed something?
5. What is the word we have been talking about?

Use a Turn and Talk activity for follow-up. I am going to name some jobs in which people make designs:

- architect
- engineer
- cake decorator

Turn to a partner and brainstorm other jobs in which people design things.

Challenge

Ask students to design a new emoji and describe their design.

Support

Ask students to design a new emoji.

Challenge

Challenge students to come up with another title for the Read-Aloud.

Support

Provide question frames for formulating questions.

Application

Entering/Emerging
Have students sketch or draw images to ask questions about the Wright brothers.

Transitioning/Expanding
Have students work with their partner to find answers to their partner's questions.

Bridging
Advise students to use key words in the questions as they go back to the Read-Aloud to find the answers. Remind them that key words are the most important words in the question.

Lesson 3: The Amazing Flying Machine

Application

Writing: Students will generate questions and look for answers about aviation and the historical figures within the areas of the unit using question starters. **[W.2.8]**

WHO, WHAT, WHERE, WHEN, WHY, HOW (25 MIN.)

- Direct students' attention to Activity Page 3.1. Ask students to work with a partner to think of questions that they could ask about the text for each question word. Ask them to record the questions on their graphic organizer.
- After students have generated questions, have them go back to the reading to search for answers.
- **Turn and Talk:** Turn to your partner and share your answers. Have your partner ask you one question about what you wrote, and answer that question. Then, have your partner share their writing. Ask a question about their writing, and have your partner answer that question.

Check for Understanding

Have several students share with the class some of the questions they created and the answers given.

Quick Write

- Writing: Today you learned the word *designing*. Explain what designing means in the following sentence: The Wright brothers used the designing of the flying machine to plan their invention. **[L.2.4]**
- Activity Page 2.2: What else do you wonder about the Wright brothers?
- Have students complete Activity Page 2.2 with the name of the aviators/invention/aircraft from today's lesson. Have them write any questions/topics that were not answered during the Application activity.

End Lesson

Activity Page 2.2

LESSON

4

UP, UP, AND AWAY: THE AGE OF AVIATION

The Glorious Flight

PRIMARY FOCUS OF LESSON

Speaking and Listening
Students will share information and ideas that focus on the topic of determination. **[SL.2.1b]**

Reading
Students will generate questions to gain a deeper understanding of the reading. **[RI.2.1]**

Language
Students will demonstrate understanding of the Tier 2 word *sputters*. **[L.2.4]**

Writing
Students will develop a research plan about how the historical figures in this unit had an impact on aviation. **[W.2.8]**

FORMATIVE ASSESSMENT

Quick Write	**Writing** Name at least three research steps you would use to find out more about aviators and aviation. **[W.2.7]**
Activity Page 2.2	**Writing** What else do you wonder about Louis Blériot? How can you find the answers? **[W.2.8]**

LESSON AT A GLANCE

	Grouping	Time	Materials
Introducing the Read-Aloud (10 min.)			
What Have We Already Learned?	Whole Group	10 min.	❑ world map or globe
Essential Background Information			
Read-Aloud (25 min.)			
Purpose for Listening	Whole Group	25 min.	❑ Aviation Timeline (Digital Components) ❑ *The Glorious Flight: Across the Channel with Louis Blériot* by Alice and Martin Provensen
The Glorious Flight: Across the Channel with Louis Blériot			
Comprehension Questions			
Word Work: *Sputters*			
Application (25 min.)			
Research Plan	Whole Group/ Partner	25 min.	❑ Activity Pages 2.2, 4.1 ❑ My Research Plan (Digital Components)

ADVANCE PREPARATION

Introducing the Read-Aloud

- Display a world map or a globe.
- Prepare to group students in pairs for Think-Pair-Share.

Read-Aloud

- Prepare to read aloud the trade book *The Glorious Flight: Across the Channel with Louis Blériot* by Alice and Martin Provensen. As you preview the book, you may wish to reference the guided reading supports included in this lesson.
- Prepare to display the Aviation Timeline.

Application

- Prepare to distribute copies of the Quick Write.
- Students will need Activity Page 2.2 for review.
- Prepare and display the chart below. The chart can also be accessed in the digital materials for the domain. Display the completed chart throughout the study of the domain.

My Research Plan (Digital Components)

My Research Plan
Step 1: Choose a research topic.
Step 2: Search for information.
Step 3: Organize information.
Step 4: Prepare the final research project.
Step 5: Present and share the final research.

Universal Access

Reading

- Display photos of Louis Blériot and his flying machine.
- Prepare to display a list of Roman numerals I–XI and the corresponding Arabic numerals to help students sequence the events in the story.

CORE VOCABULARY

aerostat, n. a lighter-than-air aircraft (such as a balloon or a blimp)
Example: Blimps are a kind of aerostat.
Variation(s): aerostats

cockpit, n. a space in an airplane for the pilot
Example: The cockpit is usually at the front of the airplane.
Variation(s): cockpits

glorious, adj. having or deserving praise or admiration
Example: The orchestra performed a glorious version of "The Four Seasons" by Vivaldi.
Various(s): none

lever, n. a bar or rod used to run or adjust something
Example: In a car with a manual transmission, the driver has to move the gearshift lever to change gears.
Variations(s): levers

propeller, n. a device with two or more blades that turn quickly and cause a ship or aircraft to move
Example: The C-130 Hercules plane has four large propellers.
Variations(s): propellers

sputters, v. to make explosive popping sounds
Example: The motor sputters whenever I step on the gas pedal.
Variation(s): sputter

Vocabulary Chart for *The Glorious Flight: Across the Channel with Louis Blériot*

Vocabulary Type	**Tier 3 Domain-Specific Words**	**Tier 2 General Academic Words**	**Tier 1 Everyday Speech Words**
Vocabulary	aerostat cockpit propeller	glorious lever **sputters**	
Multiple Meaning			
Sayings and Phrases			

Lesson 4: The Glorious Flight

Introducing the Read-Aloud

10M

Speaking and Listening: Students will share information and ideas that focus on the topic of determination. **[SL.2.1b]**

WHAT HAVE WE ALREADY LEARNED? (5 MIN.)

- Review the Aviation Timeline to revisit what was learned in the previous Read-Aloud.
- Ask, "What does it mean to have determination?"
- Ask students to name some characters from the previous lessons that have a lot of determination. *(the Montgolfier brothers, the Wright brothers)*
- Ask students why these figures are important in the world of aviation.
- Ask students to describe the Montgolfier brothers' flying machine. Then ask them to describe the Wright brothers' flying machine.
- Think-Pair-Share: Ask, "If you have determination, what kinds of characteristics, or qualities, do you need to have? Can you think of some people you know who have a lot of determination?"

ESSENTIAL BACKGROUND INFORMATION (5 MIN.)

- Tell students that today they are going to meet another aviator from France who had a lot of determination. Mark the country on the map. Ask, "Who else was from France that we have learned about?" *(the Montgolfier brothers)*
- Tell students to try to listen for the important events that happen during the Read-Aloud.

Lesson 4: The Glorious Flight

Read-Aloud

25M

Reading: Students will generate questions to gain a deeper understanding of the reading. **[RI.2.1]**

Language: Students will demonstrate understanding of the Tier 2 word *sputters*. **[L.2.4]**

PURPOSE FOR LISTENING

- Tell students to listen carefully for the important events that happen during the Read-Aloud.

THE GLORIOUS FLIGHT: ACROSS THE CHANNEL WITH LOUIS BLÉRIOT (15 MIN.)

- Read aloud *The Glorious Flight: Across the Channel with Louis Blériot* by Alice and Martin Provensen. As you read, incorporate the following information and guided reading supports.
  - Pause on page 12 and ask students, "Why do you think some of the words are written in capital letters?" Encourage students to recognize that by making the letters big, the authors help us "hear" the loudness of the airplane. Ask, "Why might an author use capital letters for some words? *(for example, to show feelings such as anger and surprise)*
  - Pause on page 14 and ask, "Why do you think Papa compares his flying machine to "a great white bird"?
  - On page 20, explain that a propeller is a device that is made to turn rapidly by an engine and that causes a ship, power boat, or airplane to move.
  - Pause on page 22 and explain that an aeroplane is the same thing as an airplane.
  - Pause on page 4 and tell students that the English Channel is a body of water between France and England, which is about 20 miles wide. Point out the English Channel on a map.
  - On page 26, tell students that a cockpit is the place where pilots sit while they are flying a plane.

- Pause on page 26 and tell students that the white cliffs of Dover are cliffs on the coast of England. Point it out on a map.
- Ask for a volunteer to show the class where Louis Blériot is on the Aviation Timeline. *(July 25, 1909)*

Challenge

Have students create a timeline based on the flying machines of Louis Blériot.

Support

Have students use numbers to help them sequence the events in the story.

COMPREHENSION QUESTIONS (5 MIN.)

1. **Inferential.** Why do you think it took Papa so many tries to build a flying machine that worked? How many airplanes did he build? How do you know? *(Answers may vary, but should include that he was determined to achieve his goal of flying across the English Channel. He built eleven airplanes, which he named with Roman numerals.)*
2. **Literal.** In what year did Papa attempt to fly across the English Channel? *(1909)*
3. **Inferential.** How do you think Papa felt when he and his airplane landed in England? *(Answers may vary, but should include that he probably felt proud for achieving his goal.)*
4. **Inferential.** What do you think kept Papa from getting discouraged? *(Help students recognize his determination, as well as other positive traits.)*
5. **Evaluative.** *Think-Pair-Share:* What is something you have worked hard at? What helped you to keep on trying even though it was hard? *(Answers may vary.)*
6. **Evaluative.** Write a question that will help you gain deeper understanding of the reading. *(Questions may vary.)*

WORD WORK: SPUTTERS (5 MIN.)

1. In the story, you heard the phrase "The motor coughs. Sputters. Roars. Down the grassy field Blériot XI bumps."
2. Say *sputters* with me.
3. When something sputters, it makes popping or explosive sounds.
4. The old car sputtered to a stop when the engine stopped running.
5. Tell me something else that might sputter.
6. What is the word we have been talking about?

Use a Making Choices activity for follow-up. I am going to read several items. If the item I read might be something that could sputter, say, "That could sputter." If the item is not something that could sputter, say, "That could not sputter."

- a math book *(That could not sputter.)*
- my grandpa's old truck *(That could sputter.)*
- the fireworks at the 4th of July party *(That could sputter.)*
- the rocks on the side of the road *(That could not sputter.)*
- my school bus *(That could sputter.)*

Challenge

Ask students to find more definitions of the word *sputter*.

Support

Ask students to draw a picture of something that sputters.

Lesson 4: The Glorious Flight

Application

25M

Writing: Students will develop a research plan about how the historical figures in this unit had an impact on aviation. **[W.2.8]**

RESEARCH PLAN (25 MIN.)

- Tell students that they are going to make a research plan using Activity Page 4.1.
- Explain that we need a plan to help us organize our thoughts and the information we collect. We will then use this information to make our presentation for the Aviators Hall of Fame.
- Display the My Research Plan chart. Explain that there are five steps that we follow when we are trying to find information about something. These are called research steps.
- Ask students to look at the first step on the chart. Explain that this is the beginning of the research process. Inform them that we can use this chart to determine our research topics.
- Explain to students that in this step we brainstorm ideas, explore question options, and generate questions about the topic. Write "brainstorm questions" on the chart and have students copy it on their charts.
- Remind students that they have already been creating questions for each lesson on Activity Page 2.2. Tell them that we will use these questions when we start the next step.
- Next, instruct students to look at the second step: search for information. Tell students that there are many different tools we can use to look for answers to our questions. Some of these include identifying key words, finding sources of information (articles, magazines, books, Internet), and taking notes. Write "key words, sources, and notes" on the chart and have students copy it on their charts.

Activity Page 4.1

Challenge

Have students create a visual of the steps in the research process, such as a poster or a flow chart.

Support

Have students make drawings next to the steps on their activity page to help them remember how to use each step.

Activity Page 2.2

- Move on to the third step and explain that this step is used for organizing information into categories. We can organize information using our notes or graphic organizers. Write these details on the classroom chart in the corresponding box and have students do the same on their charts. Ask students if they can think of any other ways to organize information.
- Explain that the fourth step is for creating or preparing the project. Explain that this is the drafting and revising stage. We can use a rubric to make sure we are including everything we need in the final presentation. We can also use feedback from others to revise our final presentation. Write "drafting and revising" in the corresponding box and have students do the same.
- The last step is for presenting our research. In this step, we rehearse presenting to an audience, practice speaking and listening skills with our classmates, and then present our final research project to an audience. Write "practice and present" on the chart in the corresponding box and have students do the same on their charts.

Check for Understanding

What are the five steps in a research plan?

Quick Write

- Name at least three research steps you would use to find out more about aviators and aviation. **[W.2.7]**
- Writing: Activity Page 2.2: What else do you wonder about Louis Blériot? How can you find the answers? **[W.2.8]**
- Have students complete Activity Page 2.2 with the name of the aviator and any questions/topics they have about Louis Blériot's flying machines. Also have them start to think about ways they could find answers to their questions, such as through the Read-Aloud or the Internet.

End Lesson

Application

Entering/Emerging
Provide students with a completed research plan. Have them review it with their teacher.

Transitioning/Expanding
Provide students with a completed research plan and have them read it to a classmate.

Bridging
After completing the "My Research Plan" chart, ask students to orally explain the research plan while collaborating with a classmate.

LESSON

5

UP, UP, AND AWAY: THE AGE OF AVIATION

The Race Is On

PRIMARY FOCUS OF LESSON

Reading
Students will evaluate key details from the text and use evidence to support understanding. **[RI.2.1]**

Language
Students will demonstrate understanding of the Tier 3 word *spherical*. **[L.2.4]**

Writing
Students will identify resources to find answers to research questions about aviators and their contributions to aviation. **[W.2.8, W.2.7]**

FORMATIVE ASSESSMENT

Quick Write	Use evidence from the text to explain how Alberto Santos-Dumont may have felt when he learned of the Wright brothers and their flying machine. **[RI.2.1]**
Activity Page 2.2	**Writing** Writing What else do you wonder about Alberto Santos-Dumont's flying machines? **[W.2.7]**

LESSON AT A GLANCE

	Grouping	Time	Materials
Introducing the Read-Aloud (10 min.)			
What Have We Already Learned?	Whole Group	10 min.	❑ world map or globe
Essential Background Information			
Read-Aloud (25 min.)			
Purpose for Listening	Whole Group	25 min.	❑ Aviation Timeline (Digital Components) ❑ Read-Aloud: "Alberto Santos-Dumont"
"Alberto Santos-Dumont"			
Comprehension Questions			
Word Work: *Spherical*			
Application (25 min.)			
Alberto vs. Louis	Whole Group	25 min.	❑ Activity Pages 2.2, 4.1

ADVANCE PREPARATION

Introducing the Read-Aloud

- Display a world map or a globe.
- Prepare to group students in pairs for Think-Pair-Share.

Read-Aloud

- Prepare to read aloud "Alberto Santos-Dumont."
- Prepare to display the Aviation Timeline.

Aviation Timeline

The Montgolfier Brothers	The Wright Brothers	Aída de Acosta	Alberto Santos-Dumont	Louis Blériot	Emma Lilian Todd	Amelia Earhart	Igor Sikorsky	Women Pilots of WWII The Tuskegee Airmen	Jerrie Mock and Joan Merriam Smith
1783	**December 17, 1903**	**1903**	**November 1906**	**July 25, 1909**	**1910**	**1932, 1937**	**May 13, 1940**	**1941–1945**	**1964**

Application

- Prepare to distribute copies of the Quick Writes to students.
- Students will need Activity Page 2.2 for review.
- Prepare to have students review Activity Page 4.1.

Universal Access

Reading

- Create an anchor chart using the following sentence frame:
- When _____ happened, it was a key detail, because _____.

CORE VOCABULARY

confidence, n. a feeling or belief that something can be done well or successfully
Example: One must have a lot of confidence to sing in front of a crowd.
Variant (s): none

descended, v. moved from a higher place or level to a lower one
Example: Firefighters descended a pole to quickly get out of the firehouse.
Variant (s): descend

spherical, adj. having the shape of a sphere
Example: Oranges are spherical fruits.
Variant (s): spherical

inflated, v. filled with air or gas
Example: My partner inflated the flat tire.
Variant (s): inflate

immigrant, n. a person who comes to a country to live there
Example: My grandfather was an immigrant from Italy.
Variant (s): immigrants

plantation,n. a large area of land where plants are grown and harvested
Example: There were many crops growing on the plantation.
Variant (s): plantations

Vocabulary Chart for "Alberto Santos-Dumont"

Vocabulary Type	Tier 3 Domain-Specific Words	Tier 2 General Academic Words	Tier 1 Everyday Speech Words
Vocabulary	spherical	confidence plantation inflated immigrant wealth descend	
Multiple Meaning			
Sayings and Phrases			

Lesson 5: The Race Is On

Introducing the Read-Aloud

10M

Reading: Students will evaluate key details from the text and use evidence to support understanding. **[RI.2.1]**

WHAT HAVE WE ALREADY LEARNED? (5 MIN.)

- Ask students how the aviators they have learned about so far are similar. *(They all have determination.)* Ask students how the aviators are different.
- Ask, "What does it mean to have determination? Can you tell me how Papa (Louis Blériot) used determination to achieve his goal of flying across the English Channel?"

ESSENTIAL BACKGROUND INFORMATION (5 MIN.)

- Say, "Today we are going to read a story about another aviator with a lot of determination. He was from Brazil but lived in Paris, France." Point out Brazil and France on a map.
- Ask, "Who else was from France that we have learned about?"*(the Montgolfier brothers, Louis Blériot)*
- Tell students to try to think about the important events that happen during the Read-Aloud.

Lesson 5: The Race Is On

Read-Aloud

25M

Reading: Students will evaluate key details from the text and use evidence to support understanding. **[RI.2.1]**

Language: Students will demonstrate understanding of the Tier 3 word *spherical*. **[L.2.4]**

PURPOSE FOR LISTENING

- Display the previously prepared anchor chart.
- Tell students to listen carefully during the reading for ways in which they can fill in the blanks in the sentence frames to demonstrate their understanding of the events in the story.
- Have students jot down key words or phrases that they hear in the text as evidence and be prepared to explain why it is a key detail.
- Tell students that you will model this for them first before they try it on their own.

ALBERTO SANTOS-DUMONT (15 MIN.)

- Begin reading aloud the story, *"Alberto Santos-Dumont".* As you read, incorporate the following information and guided reading supports.
  - Introduce the concept of identifying key details. Pause after the first paragraph and model how to identify a key detail. Explain that a key detail in this text is that Alberto Santos-Dumont likes to float over Paris in a flying machine.
  - Tell students that they will be listening for key details, or important events in the story and may jot down words or phrases that they hear during the reading.
  - Repeat the process of modeling for students by thinking aloud the identification of a key detail in the text. Then, gradually release students to tell you the key details they hear.
  - Create a list of the key details from the text shared by students on the board or chart paper, after each paragraph.

Show Image 5A-1: A young Santos-Dumont bound for Paris

Alberto Santos-Dumont could have done anything he wanted. His parents owned a giant plantation in Brazil. They sent coffee beans all over the world, and this business had made them, and their son Alberto, very rich. It would have been simple for the young Santos-Dumont to take it easy and enjoy his family's money for the rest of his life.

But Santos-Dumont didn't want to do that. He knew that he had been very lucky, and he also knew that it was only fair to give something back. He wanted to do something other than run a coffee plantation, something that would help many people. But what should that be? He didn't know yet. But he guessed that by leaving his home in Brazil for Paris, an exciting city full of culture and new inventions, he might start to find the answer for himself.

Show Image 5A-2: Santos-Dumont in a spherical balloon

In Paris, Santos-Dumont studied many subjects and sought out many adventures. In the year 1897, when he was twenty-four years old, he decided to take a balloon ride.

On the day of the flight, Santos-Dumont sat in the basket of a giant spherical balloon more than five times his height. His guide inflated the balloon, and it grew larger and larger as it filled with lighter-than-air gas. Then suddenly, Santos-Dumont and his guide were rising into the sky!

The flight was smooth and almost silent. From where Santos-Dumont was standing in the basket, it looked like the earth was dropping away beneath his feet. He and his guide ate a delicious lunch above the clouds, and ice dusted the ropes and the edges of the basket. When he landed, Santos-Dumont knew what he wanted his dream to be. He would use his wealth to become a great aviator himself.

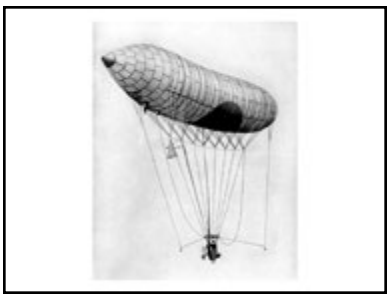
Show Image 5A-3: Santos-Dumont flying the *Brazil*

Santos-Dumont had soon built his own balloon. When you make your own balloon, you of course get to choose what to name it! Santos-Dumont thought long and hard about this choice. Despite his riches, it had not always been easy being an immigrant in France. Some French people treated him well, but others took the opportunity to let Santos-Dumont know that they thought less of him because of where he had been born. So with pride, Santos-Dumont named his balloon "*Brazil*." Now everyone in Paris would look up and see the name of his home country soaring over their heads.

Show Image 5A-4: Santos-Dumont in his *Number 6* dirigible

The "*Brazil*" was only the beginning. Santos-Dumont kept building balloons, each more complicated than the last. He moved on from spherical balloons, which could only really go where the wind decided to carry them. His next balloons were dirigibles, from the French word that meant "to steer." Now he could fly his balloons wherever he wanted.

Santos-Dumont was as natural as a bird at flying. He began to enter races and competitions to show off his skill and ingenuity. He entered one balloon, named "*Number 6*," in a race to circle the Eiffel Tower and return to the starting line in less than thirty minutes. Santos-Dumont won the race, which earned him a huge cash prize. But he was rich, he thought. What did he need with more money? He gave away the prize to his mechanics and to the poor of Paris. After that, the people all knew his name, and they loved him.



Show Image 5A-5: Santos-Dumont in his airship

Santos-Dumont loved being famous. He especially loved showing people that flying could be a part of everyday life. One of his favorite things to do was to fly one of his airships to his favorite restaurant to have dinner. He would soar down the streets of

Paris, wearing a wide-brimmed hat that he would tip to the people below him as he passed. On arriving at the restaurant, he would drop a guide rope and descend from the basket of his dirigible on a ladder. He would tie the rope to a lamppost and go in to eat his dinner while the giant balloon floated just outside the windows.

Behind this confidence, there was a dream. When he had flown in his first balloon, he noticed how small and peaceful people looked from up high. If everyone could fly like he had, everyone would become more thoughtful and appreciative of one another. Flying could change the world, he thought. So he would continue to explore ways to make flying safer and easier for everyone.

Show Image 5A-6: Santos-Dumont in 1906

Other people were working to solve the problem of flight, of course! Across the ocean in the United States, the Wright brothers reported in December 1903 that they had successfully flown in something called an airplane. Inspired, Santos-Dumont set dirigibles aside and threw himself into building his own fixed-wing planes with motors. He made his first successful powered flight in his plane "*No. 14-bis*" before cheering crowds in 1906. He was the first person since the Wrights to succeed in flying a plane he'd built.

Show Image 5A-7: Santos-Dumont's *Desmoiselle*

Then, in 1909, he improved on the Wrights by creating one of the world's first single-wing planes, the "*Desmoiselle*." If he sold his new design to manufacturers, he knew, he could earn a lot of money and become even richer. But Santos-Dumont again thought about his luck. He had been so rich that he never had to worry about an ordinary job. He had been free to pursue his dream. Lady luck had given him that. It was time at last, he knew, to give something back.

Santos-Dumont gave away the plans to the *Desmoiselle* by publishing them in the magazine *Popular Mechanics*. Anyone who wanted to start building their own planes could use Santos-Dumont's discovery as a guide, absolutely free. It was an amazing gift. But sometimes when we give a gift away, we get a greater gift back. (Ask: what do you think that means?) By giving his plane designs away, Santos-Dumont knew he was inspiring the world to dream

of flying, just as the aviator who had agreed to take Santos-Dumont on his first balloon flight in 1897 had once inspired him. He was helping to build the peaceful world he had always wanted, where everyone could fly. Smiling to think of it, he again tipped his hat.

(Ask: do you think Santos-Dumont's dream will ever come true?)

- Allow a few students to share their understanding of key details in the text, using the anchor chart sentence frame you have prepared: When _____ happened, it was a key detail, because _____.

COMPREHENSION QUESTIONS (5 MIN.)

1. **Literal.** What kind of transportation did Alberto Santos-Dumont use to get around? *(a dirigible or balloon)*
2. **Evaluative.** Why didn't Alberto want to stay and manage his family's plantation in Brazil? *(He wanted to try to contribute something that would help people.)*
3. **Inferential.** Why do you think some people in France treated Alberto badly because he was an immigrant? *(Answers may vary, but they must include that Alberto was an immigrant from Brazil, since at the time the French considered Brazil to be an inferior country to France.)*
4. **Literal.** How did Alberto improve the Wright brothers' design? *(He Invented the one-wing airplane.)*
5. **Inferential.** Why do you think Alberto wanted to help others? *(He had had good luck his entire life and wanted to help others who were not as lucky as him.)*

WORD WORK: SPHERICAL (5 MIN.)

1. In the story, you heard the sentence "On the day of the flight, Santos-Dumont sat in the basket of a giant spherical balloon more than five times his height."
2. Say *spherical* with me.
3. *Spherical* means it is shaped like a sphere.
4. A hot air balloon is spherical because it is spherical in shape.
5. Can you think of why a balloon could fly better if it is spherical in shape?
6. What is the word we have been talking about?

Challenge

Ask students to research why some people think Alberto Santos-Dumont made the world's first powered flight and not the Wright brothers.

Support

Have students refer to Activity Page 2.2 to review Louis Blériot.

Use a Draw It, Describe It activity for follow-up. Ask students to think of something that is spherical and make a drawing of it. Then have them describe their picture with a sentence that has the word spherical in it.

Challenge

Ask students to find variations of the word spherical (round, circular, globular, ball-shaped, etc.). Have them create sentences using the variations.

Support

Provide a sentence frame for students. For example, _____ is spherical.

Lesson 5: The Race Is On

Application

25M

Writing: Students will identify resources to find answers to research questions about aviators and their contributions to aviation
[W.2.7, W.2.8]

RESEARCHING ANSWERS- (25 MIN.)

- Ask students to find Activity Page 4.1 in their Activity Book.
- Tell students that they have been working on step 1 and that they will now move on to step 2. Ask a volunteer to read step 2 aloud.
- Explain to students that they need to identify resources where they can find answers to their questions. Explain that the resources are other places they can use to find answers to their questions other than the story itself. Ask students for ideas or resource suggestions they can use to find answers. Write them in the class copy on Activity Page 4.1.
- If students have difficulty thinking about resources, provide categories and examples for each category, such as print (books, encyclopedias, magazines, articles), non-print (videos, photos), virtual field trips (Smithsonian Air and Space Museum, NASA) and online (research databases; check with your librarian for current databases).
- Model some of the resources you have prepared for the students. Explain that they would have to use the resources that are available at the school.
- Think-Gather-Share: Ask students to look at the resource ideas that were generated and discuss with a partner what resources they think they could use to find answers to their questions. Ask them to turn to Activity Page 2.2 and review the questions they have generated so far.

- Bring the class back together and ask for ideas about the resources available at the school. Cross out the resources that were generated that would not be available at the school on the class copy.
- Ask students to choose at least three of the resources they would like to use to find answers to their research questions. Ask them to write the name of the resources on Activity Page 4.1, in step 2.

Check for Understanding

What resource can we use to find answers to our questions? *(the Read-Aloud texts, print* (books, encyclopedias, magazines, articles), *non-print* (videos, photos), *virtual field trips and online* (research databases)*, etc.*

Quick Write

- Name three resources that you could use to learn more about Alberto Santos-Dumont. **[W.2.7, W.2.8]**
- Writing: Activity Page 2.2: What else do you wonder about Alberto Santos-Dumont? Where can you find the answers? **[W.2.7]**
- Have students complete Activity Page 2.2 with the name of the aviator and any questions/topics they have about the flying machines of Alberto Santos-Dumont. Also, have them list any resources they could use to answer their questions, such as the Read-Aloud or the Internet.

End Lesson

Challenge

Ask students to create 3-5 more questions to their charts.

Support

Work with students individually to identify resources where they can find answers to their questions.

Application

Entering/Emerging
Allow students to draw resources they used to find answers.

Transitioning/Expanding
Provide students with a completed list of resources and review it orally.

Bridging
After completing the Questions chart, ask students to orally explain it.

LESSON

6

UP, UP, AND AWAY: THE AGE OF AVIATION

If You Can Dream It, You Can Do It

PRIMARY FOCUS OF LESSON

Reading
Students will ask and answer questions about key details in the text. **[RI.2.1]**

Language
Students will discuss the meaning and use of repetition, rhyme, and simile in the story. **[RL.2.4]**

Writing
Students will generate questions about aviators and their contributions to aviation. **[W.2.7]**

FORMATIVE ASSESSMENT

Quick Write	If you had the opportunity to meet Aída de Acosta, what questions would you ask her? **[W.2.7]**
Activity Page 2.2	**Writing** What else do you wonder about Aída de Acosta? Where can you find the answers? **[W.2.7, W.2.8]**

LESSON AT A GLANCE

	Grouping	Time	Materials
Introducing the Read-Aloud (10 min.)			
What Have We Already Learned?	Whole Group	10 min.	❑ Activity Page 2.2 ❑ world map
Essential Background Information			
Read-Aloud (25 min.)			
Purpose for Listening	Whole Group	25 min.	❑ Aviation Timeline (Digital Components) ❑ *The Flying Girl: How Aída de Acosta Learned to Soar* by Margarita Engle
The Flying Girl: How Aída de Acosta Learned to Soar			
Comprehension Questions			
Language			
Application (25 min.)			
Creating Better Questions	Whole Group/ Independent	25 min.	❑ Activity Pages 2.2, 3.1, 6.1 ❑ Question Starters (Digital Components)

ADVANCE PREPARATION

Introducing the Read-Aloud

- Students will need Activity Page 2.2 for review.
- Display a world map or a globe.
- Prepare to group students in pairs for Think-Pair-Share.

Read-Aloud

- Prepare to display Question Starters (Digital Components).
- Prepare to display the chart below (Activity Page 3.1).

Who, What, When, Where, Why, and How (Digital Components)

Who, What, When, Where, Why, and How Create a question about the text using Who, What, When, Where, Why, and How. For example: Who invented the world's first powered airplane?	
Who?	
What?	
When?	
Where?	
Why?	
How?	

- Prepare to read aloud the trade book *The Flying Girl: How Aída de Acosta Learned to Soar* by Margarita Engle. As you preview the book, you may wish to add page numbers and reference the guided reading supports included in this lesson. This trade book does not have numbered pages, but for ease of use we have referred to page numbers in our materials. We begin with page 1, which starts with "One day . . .," and number each page in order after that.
- Prepare to display the Aviation Timeline.

Application

- Prepare to distribute copies of the Quick Write to students.
- Students will need Activity Page 2.2 for reference.
- Prepare to display Activity Page 4.1.
- Prepare Activity Page 6.1. The chart can also be accessed in the digital materials for the domain.
- Prepare to display the Read-Aloud from Lesson 5.
- Prepare question stems such as "When should . . .?" or "How could . . .?" and write them on chart paper.

Universal Access

Introducing the Read-Aloud

- Students may refer to Activity Page 2.2.
- Prepare examples of question frames to use during the Application segment, such as "When should . . .?" or "How could . . .?"

CORE VOCABULARY

aerial, n. performed or occurring in the air
Example: We were amazed by the aerial stunts of the circus performers.
Variation(s): none

ballast, n. heavy material used to make a ship steady or to control the rising of a balloon
Example: The weight of the ship's ballast was 345 tons.
Variation(s): none

bold, adj. not polite and modest
Example: The customer made a bold remark when he was asked to leave the store.
Variation(s): none

chariot, n. a vehicle of ancient times that had two wheels, was pulled by horses, and was used in battle and in races and parades
Example: The emperor entered the arena on a chariot pulled by six horses.
Variation(s): chariots

dazzled, v. greatly impressed or surprised (someone) by being very attractive or exciting
Example: The crowd was dazzled by the magician's trick.
Variation(s): dazzle

inspiration, n. a person, place, experience, etc., that makes someone want to do or create something
Example: His paintings take their inspiration from nature.
Variation(s): none

thicket, n. thick and usually small patch of bushes or low trees
Example: I got lost in a thicket of blackberry bushes when I went on a hike.
Variation(s): thickets

Vocabulary Chart for *The Flying Girl: How Aída de Acosta Learned to Soar*

Vocabulary Type	**Tier 3 Domain-Specific Words**	**Tier 2 General Academic Words**	**Tier 1 Everyday Speech Words**
Vocabulary	aerial ballast	bold chariot dazzled inspiration thicket	
Multiple Meaning			
Sayings and Phrases			

Lesson 6: If You Can Dream It, You Can Do It

Introducing the Read-Aloud

Reading: Students will ask and answer questions about key details in the text. **[RI.2.1]**

WHAT HAVE WE ALREADY LEARNED? (5 MIN.)

- Say, "We have been reading lots of stories in the past week. What are some of the stories we have read?"
- Direct students to Activity Page 2.2. Ask them to review the questions they have recorded and to think whether any of the questions have been answered from the stories that they have read so far. Explain that one way in which we can find answers to our questions is to look for them in books. Books are a type of resource.
- Ask two or three volunteers to share any questions that may have been answered.
- Ask, "What characteristic do all the aviators share in those stories?" *(determination)*
- Explain that all the aviators they have read about so far have something in common besides determination. Ask if they can think of what it is. *(Guide students to realize that they are all men.)*
- Ask students to turn and talk with a partner about why they think the aviators they have learned about so far were all men. Ask volunteers to share some of their thoughts with the class.

ESSENTIAL BACKGROUND INFORMATION (5 MIN.)

- Tell students that today they are going to read a story about a woman named Aída de Acosta. She was from New Jersey, United States. Point out the place on a map.
- Explain that, just like all the other aviators we have learned about, she has a lot of determination and the dream to fly.
- Tell students that, as today's story is read, they should think about questions they would want to ask Aída about her dream of flying.

Lesson 6: If You Can Dream It, You Can Do It

Read-Aloud

25M

Reading: Students will ask and answer questions about key details in the text. **[RI.2.1]**

Language: Students will discuss the meaning and use of repetition, rhyme, and simile in the story. **[RL.2.4]**

PURPOSE FOR LISTENING

- Project Activity Page 3.1 and remind students to think about questions they can create using the question words on the activity page.

THE FLYING GIRL: HOW AÍDA DE ACOSTA LEARNED TO SOAR (15 MIN.)

- Read aloud *The Flying Girl: How Aída de Acosta Learned to Soar* by Margarita Engle. As you read, incorporate the following information and guided reading supports.
  - On page 1, explain that *dazzled* means to confuse, surprise, or delight by being or doing something special and unusual. Aída was dazzled when she saw the big hot-air balloon. Ask, "Why do you think she was dazzled?"
  - Pause after reading page 2 and explain that repeating words and phrases provides emphasis and rhythm. Ask, "Why do you think the author repeats the words *no* and *ay*?" *(to emphasize Aída's mother's strong feelings)*
  - Ask, "Can you name the rhyming words in the first three lines?" *(fly, I, try)*
  - Explain that when someone is bold it can mean that they are courageous or fearless, but it can also mean that they are not polite or modest. Ask, "Which meaning of *bold* do you think Aídas's mother is using to describe her?" *(not polite or modest)*
  - On page 8, explain that ballast is something heavy that is used to control the rising of an airship. Ask, "Why do you think Alberto tells Aída to drop ballast?" *(so the machine would go higher)*
  - On page 9, explain that *aerial* refers to something that is high in the air. For example, "We were amazed by the aerial stunts of the circus performers."

Challenge

Ask students why they think the author included a photograph of Aída.

Support

Ask students to draw a picture of one of the details from the story.

- On page 10, explain that a chariot is a vehicle of ancient times that had two wheels, was pulled by horses, and was used in battle and in races and parades. Ask, "Why do you think Alberto says that flying machines should be 'chariots of peace'?" *(They should not be used for war but as a tool for understanding other people and cultures by being able to travel to other countries.)*
- Pause after reading page 9 and ask students to use any of the key details in the text to create questions. If students have difficulty creating questions, model several examples. *(Who is the flying girl? Why did her mother think it was not proper for Aída to want to fly an airplane?)* Ask two or three volunteers to share their questions. Write these examples on the class copy of Activity Page 3.1.
- On page 19, the author writes, "Alberto got tangled in a thicket of trees and fell far behind." Ask students, "Can you figure out what a thicket is from the picture and the words around it?" *(a thick patch of trees or shrubs)*
- Pause after reading page 20 and explain that sometimes authors use something called a simile to make the story more interesting and add emphasis. Similes compare two things with the word *like*; for example, "the fluffy clouds looked like cotton candy."
- Direct students to Think-Pair-Share. Ask them what two things are being compared in this sentence: ". . . a green field where swift polo ponies twirled and leaped like dancers." *(polo ponies and dancers)*
- Alberto told Aída she was an "inspiration for all the girls of the world." Do you think she is an inspiration? If so, how? *(Answers may vary.)*
- After reading, ask students to think of questions for each of the remaining question words on Activity Page 3.1.
- Ask a volunteer to point out Aída de Acosta on the Aviation Timeline. *(1903)*

COMPREHENSION QUESTIONS (5 MIN.)

1. **Literal.** What was Aída's dream? *(She dreamed of flying.)*
2. **Inferential.** Who is Alberto? *(Alberto Santos-Dumont from the previous lesson)*
3. **Inferential.** In the author's note at the end of the book, readers are given more information about the people mentioned in the text. Why do you think the author included this information at the end of the book? *(to explain more key details of the people and events that happened during the story)*
4. **Inferential.** How was Aída an inspiration for others? *(Answers may vary, but could include that she had the courage to follow her dream.)*

LANGUAGE (5 MIN.)

- Remind students that the author uses three techniques to make the language memorable and appealing: repetition, rhyme, and simile.
- Explain that repetition is repeating a word for emphasis. Go back to the Read-Aloud and ask students to find words that are repeated in the story. Ask students to describe how the repeated words make them feel when they read them.
- Explain that rhyming words make the story more pleasant to hear. Ask students to find rhyming words.
- Explain that similes compare two things with the word *like*. Ask students to find similes in the story.

Use a Repetition, Rhyme, or Simile? activity for follow-up. I am going to share several phrases. If you think the phrase is an example of repetition, say, "repetition." If you think the phrase is an example of rhyme, say, "rhyme." If you think the phrase is an example of a simile, say, "simile."

- balloon, moon *(rhyme)*
- The cat was black like a little piece of coal. *(simile)*
- No, no, no! *(repetition)*
- Going out into the blizzard was like stepping into a snow globe. *(simile)*
- why, fly, I *(rhyme)*

Challenge

Ask students to think of their own examples of repetition, rhyme, and simile.

Support

Work with students to go back through the story to find more examples of rhyme, repetition, and simile.

Activity Page 6.1

Challenge

Ask students to choose a sentence starter from the "Even Better Sentence Starters" list that they haven't used yet to create a new question.

Support

Provide question frames for students to use. For example, "When should . . .?" or "How could . . .?"

Lesson 6: If You Can Dream It, You Can Do It

Application

25M

Writing: Students will generate questions about aviators and their contributions to aviation. **[W.2.7]**

CREATING BETTER QUESTIONS (25 MIN.)

- Review with students what research is.
- Display the class research plan (Activity Page 4.1). Discuss which steps have been taken and which step the class is currently working on.

- Create research questions.
- Ask students to take out Activity Page 2.2. Project the Question Starters chart and ask students to find Activity Page 6.1 in their Activity Book.
- Tell students that they created good questions during the Read-Aloud. Tell them that now they are going to make the questions even better by using different question starters.
- Model how to use one of the questions that was recorded during the reading of the story and turn it into an even better question.
- For example, tell students that you are going to use the question "Who is the flying girl?" Using one word from each column on the chart, model how to create an even better question.
- Say, "If I use the words *why* and *is*, I could ask, 'Why is Aída de Acosta called the flying girl?'" Write the new question on the board or chart paper.
- Ask students to choose some of the questions they have recorded from previous lessons on Activity Page 2.2.
- Explain that they are going to turn them into even better questions using Activity Page 6.1.
- Have students create at least three new questions.
- Ask several volunteers to share the new questions they created.

Quick Write

- If you had the opportunity to meet Aída de Acosta, what questions would you ask her? **[W.2.7]**
- Writing: Activity Page 2.2: What else do you wonder about Aída de Acosta? Where can you find the answers? **[W.2.7, W.2.8]**
- Have students complete Activity Page 2.2 for this lesson. Have them list any resources they could use to answer their questions, such as the Read-Aloud or the Internet.

End Lesson

Application

Entering/Emerging
Provide 1:1 support when students are generating questions. Practice distinguishing sounds and intonation patterns of English with increasing ease.

Transitioning/Expanding
Have students work with a partner to generate questions.

Bridging
Provide students with question starter combinations to use when generating questions. For example, "Where does . . .?" or "Why might . . .?"

LESSON

7

UP, UP, AND AWAY: THE AGE OF AVIATION

Never Stop Trying!

PRIMARY FOCUS OF LESSON

Reading
Students will listen actively and ask relevant questions to clarify information. **[RI.2.1]**

Language
Students will demonstrate understanding of the Tier 3 word *revise*. **[L.2.4]**

Writing
Students will identify resources to find answers to research questions about aviators and their contributions to aviation. **[W.2.7, W.2.8]**

FORMATIVE ASSESSMENT

Quick Write	Name three resources you could use to find out more about some of the other inventions in the story. **[W.2.7, W.2.8]**
Activity Page 2.2	What else do you wonder about Emma Lilian Todd and her inventions? Where can you find the answers? **[W.2.8]**

LESSON AT A GLANCE

	Grouping	Time	Materials
Introducing the Read-Aloud (10 min.)			
What Have We Already Learned?	Whole Group	10 min.	❏ Activity Pages 2.2, 6.1 ❏ world map or globe
Essential Background Information			
Read-Aloud (25 min.)			
Purpose for Listening	Whole Group	25 min.	❏ Aviation Timeline (Digital Components) ❏ *Wood, Wire, Wings: Emma Lilian Todd Invents an Airplane* by Kirsten Larson ❏ Activity Page 7.1 ❏ Creating Better Questions (Digital Components)
Wood, Wire, Wings: Emma Lilian Todd Invents an Airplane			
Comprehension Questions			
Word Work: *Revise*			
Application (25 min.)			
Searching for Answers	Whole Group/ Independent	25 min.	❏ Activity Pages 2.2, 4.1

ADVANCE PREPARATION

Introducing the Read-Aloud

- Students will need Activity Page 2.2 for review.
- Display a world map or a globe.
- Prepare to group students in pairs for Think-Pair-Share.

Read-Aloud

- Prepare to display the chart below (Activity Page 7.1).

Creating Better Questions (Digital Components)

Creating Better Questions
Questions I have before reading: I wonder whether this book is about _____. I wonder whether I will learn about _____. What do I already know about this topic?
Questions I have while reading: I wonder . . . How come . . .? Why does . . .? Why is the character . . .? How did . . .?
Questions I have after reading: How were my questions answered? Which questions were left unanswered? How can I find answers to my questions?

- Prepare to read aloud the trade book *Wood, Wire, Wings: Emma Lilian Todd Invents an Airplane* by Kirsten Larson. As you preview the book, you may wish to add page numbers and reference the guided reading supports included in this lesson. This trade book does not have numbered pages, but for ease of use we have referred to page numbers in our materials. We begin with page 1, which starts with "To Emma Lilian Todd . . .", and number each page in order after that.
- Prepare to display the Aviation Timeline.

Application

- Prepare to distribute copies of the Quick Write to students.
- Students will need Activity Page 2.2 for reference.
- Prepare to display class copies of Activity Pages 4.1 and 7.1.
- Prepare a research question and the resource where the answer can be found to model how to find information.
- Gather various resources that students might use in their research, such as approved search engines, trade books from the unit, additional books from the school library, multimedia, etc.

Universal Access

Introducing the Read-Aloud

- Students may refer to Activity Page 2.2.

CORE VOCABULARY

breakthrough, n. a sudden advance or successful development
Example: The researchers announced a breakthrough on the development of a vaccine.
Variation(s): none

contraption, n. a piece of equipment or machinery that is unusual or strange
Example: My sister wanted to create a contraption that would clean her room.
Variation(s): contraptions

patent, n. a document that gives the inventor of something the right to be the only one to make or sell the invention for a certain number of years
Example: Alexander Graham Bell had a patent for the telephone.
Variation(s): patents

revise, v. to make changes that correct or improve
Example: I revised my book report.
Variation(s): revised

tinkering, v. repairing or adjusting something in an unskilled or experimental manner
Example: My brother is always tinkering with something in the garage.
Variation(s): tinkered

tweaking, v. making a small change to improve something
Example: The students were tweaking their drafts before they made their final presentations.
Variation(s): tweaked

Vocabulary Chart for *Wood, Wire, Wings: Emma Lilian Todd Invents an Airplane*

Vocabulary Type	**Tier 3 Domain-Specific Words**	**Tier 2 General Academic Words**	**Tier 1 Everyday Speech Words**
Vocabulary	contraption patent **revise** tinkering tweaking	breakthrough	
Multiple Meaning			
Sayings and Phrases			

Lesson 7: Never Stop Trying!

Introducing the Read-Aloud

10M

Reading: Students will listen actively and ask relevant questions to clarify information. **[RI.2.1]**

WHAT HAVE WE ALREADY LEARNED? (5 MIN.)

- Ask students to find Activity Page 6.1 in their Activity Book.
- Display the class copy of Activity Page 6.1.
- Remind students that yesterday they generated questions using the details from the Read-Aloud and topics and questions they had from the other stories.
- Ask volunteers to share some of the questions they created yesterday on Activity Page 6.1. Ask students what they think the answers might be.

ESSENTIAL BACKGROUND INFORMATION (5 MIN.)

- Tell students that today they are going to read about another woman who is very interested in aviation—Emma Lilian Todd. Tell them she was from Washington, D.C. Mark the place on the map.
- Explain that she was determined to improve the design of airplanes. At the time she was inventing, it was very uncommon for women to work outside the home, but she did not let that discourage her. She had the determination to achieve her goals.
- Ask, "Who else have you learned about who was determined to reach her goal, even though others told her that girls should stay home?" *(Aída de Acosta)*

Lesson 7: Never Stop Trying!

Read-Aloud

25M

Reading: Students will listen actively and ask relevant questions to clarify information. **[RI.2.1]**

Language: Students will demonstrate understanding of the Tier 3 word *revise*. **[L.2.4]**

PURPOSE FOR LISTENING

- Tell students that they are going to practice developing questions before, during, and after reading. Remind them that this is what good readers do when reading.

WOOD, WIRE, WINGS: EMMA LILIAN TODD INVENTS AN AIRPLANE (15 MIN.)

Activity Page 7.1

- Ask students to find Activity Page 7.1 and display a class copy of the chart.
- Ask students to look at the front cover of the story with you. Model how to fill in the chart with questions they may have before reading. For example, "I wonder when this story takes place" and "I wonder whether I will learn why the story is called *Wood, Wire, Wings*." Write these questions on the chart. Ask volunteers to share what they already know about the topic. Write some of their responses on the chart.
- Give students a few minutes to fill out the first column on their activity page.
- Ask students to review the "Questions I have while reading" column.
- Read aloud *Wood, Wire, Wings: Emma Lilian Todd Invents an Airplane* by Kirsten Larson. As you read, incorporate the following information and guided reading supports.
  - Pause on page 3 and explain that *tinkering* means repairing or adjusting something. Model how this can be turned into a question. Say, "As I read the word *tinkering*, it made me wonder how tinkering leads to new inventions." Write this on the class copy and have students do the same on their copies.
  - Explain to students that sometimes, while reading, their questions will be answered later on in the book. Other times they will have to find the answers using different resources, like the Internet or other books.

- Pause after reading page 11 and explain that a patent is a document that gives the inventor of something the right to be the only one to make or sell the invention for a certain number of years. Model how to create the question. For example, "Why does Lilian take a job in the U.S. Patent Office?" Write this on the chart and have students do the same on their charts. Also explain that a contraption is a device or a gadget.
- Continue to read and model asking questions while reading. Encourage students to share questions they may have. Continue writing these on the chart.
- On page 20, explain that a breakthrough is a sudden success.
- On page 31, tell students that *tweaking* means to make small changes to something.
- After reading, review the questions that were generated before and while reading. Discuss any answers that you may have found to the questions, as well as inferences that can be made for unanswered questions. Be sure to also address any lingering questions that students might have after finishing the story.
- Ask a volunteer to locate Emma Lilian Todd on the Aviation Timeline. *(1910)*

COMPREHENSION QUESTIONS (5 MIN.)

1. **Literal.** Name two famous inventions that were created during Emma Lilian Todd's childhood. *(Answers may vary.)*
2. **Literal.** What was it about the first full-sized airplanes that Lilian did not like? *(Answers may vary, but should include that they were more fantastical than practical.)*
3. **Inferential.** How did Lilian want her airplane to do something different? *(She wanted to design an airplane with sloping wings to glide like a bird and a cockpit for two.)*
4. **Evaluative.** Why did Lilian choose to wait for the wind to die down before her airplane took off? *(She did not want to waste her chance to show her airplane could fly. She had waited four years and decided she could wait a little longer.)*
5. **Inferential.** Although she did not create the first airplane, how did Lilian advance the field of aviation? *(Answers may vary, but should include that some of her inventions are still used today and that she helped to make it more acceptable for women to work in the field of aviation.)*

Challenge

Ask students to generate more questions about the story.

Support

Ask students to share one of their questions that was answered after reading the story.

WORD WORK: REVISE (5 MIN.)

1. In the story, you heard the sentence "Study motors and revise her design."
2. Say *revise* with me.
3. *Revise* means to make changes that correct or improve.
4. Emma Lilian Todd was determined to reach her goal, so she revised her design many times until she succeeded.
5. Tell me about a time you had to revise something.
6. What is the word we have been talking about?

Use a Turn and Talk activity for follow-up. Turn to a partner and talk about something you would revise to make better. For example, how would you revise your bicycle to make it better?

Challenge

Ask students to list three things they could revise and how they would revise them.

Support

Ask students to draw a smiley face on one side of a piece of paper. Then, ask them to revise the face with a change on the other side of the paper.

Lesson 7: Never Stop Trying!

Application

25M

Writing: Students will identify resources to find answers to research questions about aviators and their contributions to aviation. **[W.2.7, W.2.8]**

SEARCHING FOR ANSWERS (25 MIN.)

- Ask students to find Activity Page 4.1 in their Activity Book.
- Explain to students the difference between primary sources and secondary sources.
- Tell students that they have been working on step 1 and they will now move on to step 2. Ask for a volunteer to read step 2 aloud.
- Explain to students that they need to identify and gather resources where they can find information to answer their questions. Explain that resources are other places they can use to find answers to their questions in addition to the story. Ask students for ideas or suggestions of resources they could use to find answers. Write these on the class copy of Activity Page 4.1.

- If students have difficulty thinking of resources, provide them with categories and examples for each category, such as print (books, encyclopedias, magazines, articles), nonprint (videos, photographs), virtual field trips (Smithsonian Air and Space Museum, NASA), and online (research databases such as Britannica Online and Kidtopia; check with your librarian for current databases).
- Model some of the resources you prepared for the students. Explain that they would have to use resources that are available at the school.
- Think-Pair-Share: Ask students to look at the resource ideas that were generated and discuss with a partner which resources they think they would be able to use to find answers to their questions. Have them refer to Activity Page 2.2 to review the questions they have generated so far.
- Gather the class together again and ask for ideas of which resources are available at the school. Cross out on the class copy any resources that were generated that would not be available at the school.
- Tell students to choose at least three of the resources they would like to use to find answers to their research questions. Ask them to write the name of the resources on Activity Page 4.1 under step 2.

Quick Write

- Name three resources you could use to find out more about some of the other inventions in the story. **[W.2.7, W.2.8]**
- Writing: Activity Page 2.2: What else do you wonder about Emma Lilian Todd and her inventions? Where can you find the answers? **[W.2.8]**
- Have students complete Activity Page 2.2 for this lesson. Also, have them list any resources they could use to answer their questions.
- What is the difference between primary and secondary sources? **[W.2.8]**

End Lesson

Challenge

Have students find a resource to answer a question on Activity Page 2.2. Then ask them to write the answer to the question.

Support

Have students work with a teacher to identify appropriate resources for their research and where they can find them.

Application

Entering/Emerging
Provide a list of specific research resources for students.

Transitioning/Expanding
Have students work with a partner to choose appropriate resources.

Bridging
Have students explain why the resource they are using is helpful or appropriate for their research.

LESSON

8

UP, UP, AND AWAY: THE AGE OF AVIATION

Rise to the Challenge

PRIMARY FOCUS OF LESSON

Reading
Students will make connections to ideas in other texts. **[RI.2.1]**

Language
Students will demonstrate understanding of the Tier 2 word *accomplishment*. **[L.2.4]**

Writing
Students will practice finding answers to research questions about aviators and their contributions to aviation. **[W.2.8]**

FORMATIVE ASSESSMENT

Quick Write	Pick one of the aviators you have learned about so far and describe one of their accomplishments. **[L.2.4]**
Activity Page 2.2	What else do you wonder about the flying machines of Igor Sikorsky? **[W.2.7]**

LESSON AT A GLANCE

	Grouping	Time	Materials
Introducing the Read-Aloud (10 min.)			
Making Connections	Whole Group	10 min.	❑ Activity Page 2.2 ❑ world map or globe
Essential Background Information			
Read-Aloud (25 min.)			
Purpose for Listening	Whole Group	25 min.	❑ *Helicopter Man: Igor Sikorsky and His Amazing Invention* by Edwin Brit Wyckoff ❑ Aviation Timeline (Digital Components) ❑ Activity Page 2.2
Helicopter Man: Igor Sikorsky and His Amazing Invention			
Comprehension Questions			
Word Work: *Accomplishment*			
Application (25 min.)			
Searching for Answers	Whole Group/ Partner	25 min.	❑ Activity Pages 2.2, 4.1

ADVANCE PREPARATION

Introducing the Read-Aloud

- Prepare to group students in pairs for Think-Pair-Share.
- Students will need to reference Activity Page 2.2.
- Prepare to display a picture of Leonardo da Vinci's helicopter sketch.

Application

- Prepare to distribute copies of the Quick Write to students.
- Display Activity Page 4.1.
- Group students in pairs to work together at various times during the Application activity.
- Prepare resources that students can use for their research, such as website addresses for school-permitted search engines, trade books from the unit, examples of primary and secondary sources, and additional books from the school library.

Universal Access

Introducing the Read-Aloud

- Students may reference Activity Page 2.2 throughout the lesson.

CORE VOCABULARY

accomplishment, n. something done or achieved successfully
Example: My little sister was proud of her accomplishment of learning to ride a bike.
Variation(s): accomplishments

hovered, v. flied or floated in the air without moving far in any direction
Example: The bees hovered around the hive.
Variation(s): hover

invest, v. to put out money in order to gain profit
Example: I am going to invest my allowance in my sister's lemonade stand.
Variation(s): invested, investing

rotor, n. a system of spinning horizontal blades that support a helicopter in the air
Example: The cargo helicopter has a rotor on the front and another on the back.
Variation(s): rotors

stalled, v. stopped or caused to stop usually by accident
Example: The engine on my mom's car stalled when she stopped at the stop sign.
Variation(s): stall

Vocabulary Chart for *Helicopter Man: Igor Sikorsky and His Amazing Invention*

Vocabulary Type	**Tier 3 Domain-Specific Words**	**Tier 2 General Academic Words**	**Tier 1 Everyday Speech Words**
Vocabulary	hover rotor stalled	**accomplishment** invest	
Multiple Meaning			
Sayings and Phrases			

Lesson 8: Rise to the Challenge

Introducing the Read-Aloud

Reading: Students will make connections to ideas in other texts. **[RI.2.1]**

MAKING CONNECTIONS (5 MIN.)

- Ask students to find Activity Page 2.2 in their Activity Book.
- Discuss with students what they have already learned about the topic of the domain.
- Have students refer to Activity Page 2.2. Ask students how the stories they have read so far are related. Talk about the different types of flying machines mentioned in the stories.
- Display the front cover of today's Read-Aloud and read the title.
- Ask students for ideas of what this story may be about.
- Model making a connection to previous Read-Alouds. Think aloud, "The cover and title of this book remind me of the story we read during the first lesson about Leonardo da Vinci's flying machine and the bamboo-copter. I wonder whether this story will be about the invention of the helicopter."
- Turn to the table of contents. Remind students that the table of contents gives an overview of what the story is about. After reading the table of contents, model it as a way to make connections to previous stories.
- Say, "In the Read-Aloud from Lesson 1, we learned that airplanes need wings to fly. I see one of the chapters is called 'Flying without Wings.' I know helicopters do not have wings. I wonder whether this chapter will explain how helicopters fly."

ESSENTIAL BACKGROUND INFORMATION (5 MIN.)

- Tell students that Igor Sikorsky was an engineer (a person who builds or designs things) and an inventor from Russia. Point out the country on a map.
- Explain that, just like the other aviators we have read about, Igor was determined to invent the helicopter even if it meant revising his plans many times.
- Tell students that you will read the story and see whether Igor achieves his goal.

Lesson 8: Rise to the Challenge

Read-Aloud

Reading: Students will make connections to ideas in other texts. **[RI.2.1]**

Language: Students will demonstrate understanding of the Tier 2 word *accomplishment*. **[L.2.4]**

PURPOSE FOR LISTENING

- Remind students to think about what they already know about aviation as the Read-Aloud is being read.

HELICOPTER MAN: IGOR SIKORSKY AND HIS AMAZING INVENTION (15 MIN.)

- Tell students that they may refer to Activity Page 2.2 as the story is being read to connect prior knowledge to today's story.
- Read aloud *Helicopter Man: Igor Sikorsky and His Amazing Invention* by Edwin Brit Wyckoff. As you read, incorporate the following information and guided reading supports.
  - Pause after reading page 7 and ask students to share what they already know about the Wright brothers.
  - Ask students, "What characteristic does Igor share with the other aviators you have learned about?" *(determination)*

Challenge

Ask students for more examples of connections with previous stories.

Support

Remind students to look at text features such as photographs, images, and graphs to better understand the events in the story.

- On page 11, explain that *stalled* is when something stops working or running, such as an engine. Ask, "What caused Igor's engine to stall?" *(a mosquito in the fuel line)*
- On page 16, explain that *invest* means to give someone money to do or make something in the hope of making a profit. Ask, "What did Igor do with the money?" *(He made airplanes.)*
- On page 21, explain that a rotor is a system of spinning horizontal blades that support a helicopter in the air. Ask, "How did Igor use the rotor blades to steer his helicopter?" *(He tipped them up and down.)*
- On page 22, read the "Genius at Work" section and ask students whether it provides them with a better understanding of how a helicopter works.
- On page 24, explain that *hover* means to fly or float in the air without moving far in any direction. Ask students whether they can think of other things that hover.
- On page 27, explain that an accomplishment is something done or achieved successfully. Invite students to share their accomplishments.
- After reading, discuss with students how making connections between the information in the text and what they have already learned helps them understand and remember what they have read.
- Ask a volunteer to point out Igor Sikorsky on the Aviation Timeline. *(May 13, 1940)*

COMPREHENSION QUESTIONS (5 MIN.)

1. **Inferential.** How did a mosquito lead Igor to design airplanes with more than one engine? *(He realized that, after the mosquito caused his engine to stop working, he would not have crashed if he had had another engine to use.)*
2. **Evaluative.** Why did Igor think the greatest danger in aviation was starvation? *(because there are many failures and few successes)*
3. **Literal.** Name some ways helicopters are used today. *(Answers may vary.)*
4. **Inferential.** Why do you think Igor kept on inventing even though he experienced so many setbacks? *(Answers may vary, but should include that he had determination and curiosity.)*
5. **Literal.** What keeps a helicopter from spinning out of control as it is flying? *(the tail rotor)*

WORD WORK: ACCOMPLISHMENT (5 MIN.)

1. In the story, you heard a sentence about the helicopter invention being Igor Sikorsky's greatest accomplishment.
2. Say *accomplishment* with me.
3. An accomplishment is something done or achieved successfully. Igor Sikorsky invented many types of aircraft, but the invention of the helicopter was his greatest accomplishment.
4. Tell me some of the accomplishments you are most proud of.
5. What is the word we have been talking about?

Use a Turn and Talk activity for follow-up. Turn to a partner and talk about an accomplishment you are proud of. Explain why you are proud of it and how you achieved it.

Challenge

Ask students to think of the people they have learned about in this domain and explain one of their accomplishments.

Support

Ask students to draw a picture of an accomplishment that they have made.

Lesson 8: Rise to the Challenge

Application

25M

Writing: Students will practice finding answers to research questions about aviators and their contributions to aviation. **[W.2.8]**

SEARCHING FOR ANSWERS (25 MIN.)

- Review the Research Plan using the class copy of Activity Page 4.1.
- Tell students that it is time to start finding answers to their research questions. Explain that as a class you will begin researching the flying machines of Igor Sikorsky.
- Ask students to brainstorm topics or questions to find out more about Igor Sikorsky. Write three appropriate questions on the board or chart paper.
- Select one of the questions to research and explain that you are going to choose several sources to find information about the topic. Refer to Activity Page 4.1 for ideas of sources that are available to use at the school.
- Explain that searching is easy, but doing a good search can be tricky. In order to do a good search, students will need to know what search terms to type in, which search results apply to the topic or question, and which results provide reliable information.
- Tell students that search terms are the words that are typed into search engines when searching for something. Choose a research resource, such as a school-approved search engine, and explain that it is best to start with a simple search term or key word.
- Explain that many search results will be displayed and that it is important to choose appropriate sources.
- Tell students that they can start by looking carefully at each item in the list.
- Show students how to choose appropriate and relevant sources. For example, explain that they can look at the domain as a clue to whether the resource is reliable.

Challenge

Have students find and compare information from multiple sources and note any differences in the information they find.

Support

Work with students individually to clarify the information from research resources that can be used as they search for answers to their topics and questions.

- Tell students that domains that end in ".edu" are always going to be schools of some kind, and domains that end in ".gov" are always going to be government websites. Both types have a good chance of providing reliable information. Also, advise students that it is good to check multiple sources to see whether they are finding similar information.
- Once you find an appropriate website, show students how to paraphrase key information about the topic that answers the question. Explain that when you paraphrase you put the text in your own words. Write the information you found on the board or chart paper.
- Repeat this process with another topic or question generated by the class about Igor Sikorsky.
- Have students work with a partner to research the answer to the last topic or question about Igor Sikorsky.
- After students have finished researching, gather the class together and ask what information they were able to find about the topic.
- Have students share some of the information they found and record it on the board or chart paper.
- Point out any information that does not seem to be reliable and explain why it is not reliable. For example, it greatly deviates from the other information that was found.

Quick Write

- Pick one of the aviators we have learned about so far and describe or draw one of their accomplishments. **[L.2.4]**
- Writing: Activity Page 2.2: Identify and gather relevant sources and information to answer:
  - What are Igor Sikorsky's flying machines?
  - How do Igor Sikorsky's flying machines work? **[W.2.8]**
- Have students complete Activity Page 2.2 for this lesson. Also, have them list any resources they could use to answer their questions.

End Lesson

Application

Entering/Emerging
Have students use specific teacher-suggested search engines to locate information to understand the general meaning, main points, and important details.

Transitioning/Expanding
Allow students to draw or sketch the information they found about their topic or question to understand the general meaning, main points, and important details.

Bridging
Have students paraphrase the information they found in their research to understand the general meaning, main points, and important details.

LESSON

9

UP, UP, AND AWAY: THE AGE OF AVIATION

Heroes

PRIMARY FOCUS OF LESSON

Reading
Students will discuss the author's purpose for writing the text. **[RI.2.1]**

Language
Students will demonstrate understanding of the Tier 2 word *successful*. **[L.2.4]**

Writing
Students will identify primary sources of information to be used in their culminating project. **[W.2.7, W.2.8]**

FORMATIVE ASSESSMENT

Quick Write	Name a primary and secondary source of information. **[W.2.8]**
Activity Page 2.2	Students will record information about the Tuskegee Airmen and their contributions to the world of aviation. **[W.2.7, W.2.8]**

LESSON AT A GLANCE

	Grouping	Time	Materials
Introducing the Read-Aloud (10 min.)			
Making Connections	Whole Group/ Small Group	10 min.	❑ Activity Page 2.2 ❑ world map or globe
Essential Background Information			
Read-Aloud (25 min.)			
Purpose for Listening	Whole Group	25 min.	❑ Aviation Timeline (Digital Components) ❑ *The Tuskegee Airmen Story* by Lynn Homan and Thomas Reilly ❑ Activity Page 2.2
The Tuskegee Airmen Story			
Comprehension Questions			
Word Work: *Successful*			
Application (25 min.)			
Searching for Answers	Whole Group/ Independent	25 min.	❑ Activity Pages 2.2, 4.1, 9.1 ❑ scissors for each student ❑ glue sticks for each student

ADVANCE PREPARATION

Introducing the Read-Aloud

- Prepare to project the Read-Alouds from Lessons 2 and 6.
- Prepare to group students in small groups of four or five.
- Students will need to reference Activity Page 2.2.

Read-Aloud

- Prepare to read aloud the trade book *The Tuskegee Airmen Story* by Lynn Homan and Thomas Reilly. As you preview the book, you may wish to add page numbers and reference the guided reading supports included in this lesson. This trade book does not have numbered pages, but for ease of use we have referred to page numbers in our materials. We begin with page 1, which contains the headline "The Tuskegee Airmen Story," and number each page in order after that.

Application

- Prepare to distribute copies of the Quick Write to students.
- Display Activity Pages 4.1 and 9.1.
- Prepare various examples of primary and secondary sources of information, such as photographs, textbooks, encyclopedias, interviews, posters, magazine articles, etc. You may also wish to access the YouTube video "Louis Blériot on His Cross-Channel Flight."
- Have enough scissors and glue sticks for each student.

Universal Access

Introducing the Read-Aloud

- Students may reference Activity Page 2.2 throughout the lesson.

CORE VOCABULARY

airman, n. an enlisted person in the air force in one of the ranks below sergeant
Example: My uncle was an airman in the Air Force during the Vietnam War.
Variation(s): airmen

escorted, v. accompanied (a person or group) someone to give protection or show courtesy
Example: The police escorted the president's car to the airport.
Variation(s): escort

missions, n. a flight by an aircraft or spacecraft to perform a specific task
Example: The pilots completed many missions behind enemy lines.
Variation(s): mission

segregated, v. being separated from the rest of society by race, class, or group
Example: In 1954, segregated schools were outlawed.
Variation(s): segregate

squadron, n. a group of soldiers, ships, or aircraft moving and working together
Example: There are over six hundred soldiers in the army squadron on its way to the base.
Variation(s): squadrons

successful, adj. resulting or ending well
Example: My attempt to swim across the harbor was successful.
Variation(s): none

Vocabulary Chart for *The Tuskegee Airmen Story*

Vocabulary Type	**Tier 3 Domain-Specific Words**	**Tier 2 General Academic Words**	**Tier 1 Everyday Speech Words**
Vocabulary	airman missions squadron	escorted segregated **successful**	
Multiple Meaning			
Sayings and Phrases			

Lesson 9: Heroes

Introducing the Read-Aloud

10M

Reading: Students will discuss the author's purpose for writing the text. **[RI.2.1]**

MAKING CONNECTIONS (5 MIN.)

- Ask students to find Activity Page 2.2 in their Activity Book.
- Discuss with students what they have already learned about the topic of the domain. Have them refer to Activity Page 2.2.
- Ask students how the stories they have read so far are related. Talk about the different types of flying machines from the stories.
- Explain that authors have a purpose, or reason, for writing. Write the words *inform*, *entertain*, and *persuade* on the board or chart paper.
- Explain that *inform* means to give information to the reader, *entertain* means to amuse the reader, and *persuade* means to try to convince the reader to think the same way the author does.
- Model identifying the author's purpose using the Read-Aloud from Lesson 6, *The Flying Girl: How Aída de Acosta Learned to Soar.*
- Think aloud, "In the book *The Flying Girl: How Aída de Acosta Learned to Soar*, there are words that rhyme, and Aída and Alberto eat dinner at a restaurant with tall tables and waiters that walk on stilts. When I read this story, I am amused. The sound of the words that rhyme and the pictures of waiters on stilts make me smile. The book also teaches me about how Aída de Acosta became the first woman to pilot a powered aircraft. Since the book gives me information about a topic and amuses me, I know the author had two purposes for writing the story: to inform and to entertain."
- Explain to students that they can figure out the author's purpose by the effect the book has on them. Point out that the author can have more than one purpose.

- Review with students the Read-Aloud from Lesson 2, *Up and Away!: How Two Brothers Invented the Hot-Air Balloon*.
- Have students work in groups of four or five to discuss the author's purpose for the book.
- Invite groups to share their interpretation of the author's purpose with the rest of the class.

ESSENTIAL BACKGROUND INFORMATION (5 MIN.)

- Show students the cover of the Read-Aloud and read the title together. Explain that the aviators in this story are called the Tuskegee Airmen because they trained in Tuskegee, Alabama. Point out the place on a map.
- Use the map to give other background information about where World War II was fought and the fact that Germany was considered the primary enemy.

Lesson 9: Heroes

Read-Aloud

Reading: Students will discuss the author's purpose for writing the text. **[RI.2.1]**

Language: Students will demonstrate understanding of the Tier 2 word *successful*. **[L.2.4]**

PURPOSE FOR LISTENING

- Tell students to think about the author's purpose for writing about these aviators.

THE TUSKEGEE AIRMEN STORY (15 MIN.)

- Read aloud *The Tuskegee Airmen Story* by Lynn Homan and Thomas Reilly. As you read, incorporate the following information and guided reading supports.
  - Explain to students that an airman is someone who has joined the U.S. Air Force. They are not all pilots. Some may be other types of aviators, such as navigators or technicians. An airman can be a man or a woman.

- Pause after reading page 11 and review the definition of *segregated* with students.
- Ask students to use the pictures and what was just read on pages 10 and 11 to try to explain the details that depict characters being segregated.
- On page 18, explain that a squadron is a group of soldiers, ships, or aircraft moving and working together. Ask, "What kind of squadron were the Tuskegee Airmen part of?" *(a fighter squadron)*
- On page 20, explain that a mission is a flight by an aircraft or spacecraft to perform a specific task. Ask, "How many missions did the Tuskegee Airmen complete?" *(more than 1,500)* Also explain that *escort* means to accompany someone or something to support or protect them. Ask, "Who did the Tuskegee Airmen escort?" *(the American bomber airplanes)*
- On page 21, explain that when someone is successful it means that they were able to achieve whatever they set out to do.
- Ask a volunteer to locate the Tuskegee Airmen on the Aviation Timeline. *(1941–1945)*

Challenge

Ask students to give examples from the book that explain the author's purpose.

Support

Draw a picture of an example from the story of how the author tries to inform or persuade the reader.

COMPREHENSION QUESTIONS (5 MIN.)

1. **Literal.** What war did the Tuskegee Airmen serve in? *(World War II)*
2. **Evaluative.** What are some ways that the United States was segregated during the Tuskegee Airmen's time? *(Answers may vary, but should include Black people could not have some of the same jobs, drink out of the same water fountains, or eat at the same restaurants, and the military did not think Black people could be pilots.)*
3. **Inferential.** How did the Tuskegee Airmen help to change some of the segregation laws? *(They proved that African Americans could fly airplanes and do a lot of other jobs really well.)*
4. **Literal.** What are some of the jobs that the Tuskegee Airmen did? *(nurses, parachute riggers, office workers, guards, and mechanics)*
5. **Inferential.** *Think-Pair-Share:* How were the Tuskegee Airmen successful in their fight for freedom during the war and at home? *(Answers may vary.)*
6. **Evaluative.** *Think-Pair-Share:* Share with a partner why the author's purpose is to inform the reader. *(Explain that the author had another purpose: to persuade the reader.)* What do you think the author is trying to persuade the reader to feel? *(Guide students to the conclusion that the Tuskegee Airmen were brave men and women who helped the country and changed it for the better.)*

WORD WORK: SUCCESSFUL (5 MIN.)

1. In the story, you heard the sentence "The Tuskegee Airmen proved that African Americans had the ability to be successful . . ."
2. Say *successful* with me.
3. When someone is successful, it means that they were able to achieve whatever they set out to do.
4. The Tuskegee Airmen completed many successful missions that helped win the war.
5. Share a time when you were successful.
6. What is the word we have been talking about?

Use an Interview a Partner activity for follow-up. Have students make a drawing of a time they were successful and write a sentence describing how they felt.

Challenge

Ask students to think of famous people who have been successful and why they were successful.

Support

Provide students with a sentence starter for describing their own successes. For example, "I feel successful when I . . ."

Lesson 9: Heroes

Application

25M

Writing: Students will identify primary sources of information to be used in their culminating project. **[W.2.7, W.2.8]**

SEARCHING FOR ANSWERS (25 MIN.)

- Review the Research Plan using the class copy of Activity Page 4.1. Ask students to name some of the sources of information that were identified in step 2.
- Introduce the concept of primary and secondary sources by playing a quick telephone game: write a message on a piece of paper and then whisper it in a student's ear.
- Have students continue whispering the message in each others' ears until the last student states the message out loud.
- Compare what was written on the piece of paper to what was said by the last student.
- Explain that by the time the message gets back to the original person, the information has usually changed—sometimes drastically.
- Explain how information changes from its original form as it gets passed around. Ask students why they think it would be important to use the first source of the information. What could happen if they use information from someone further down the line?
- Explain that there are two types of sources: primary sources and secondary sources. Write "primary" and "secondary" on the board or chart paper.
- Direct students' attention to the word *primary* on the board and ask, "What do you know about the word *primary*?"
- Direct students' attention to the word *secondary* on the board and ask, "What do you know about the word *secondary*?"

Challenge

Have students think of more examples of primary and secondary sources.

Support

Have students work with a partner to cut out and place sources in the correct category.

- Explain that primary sources are documents that give firsthand accounts or testimonies from direct witnesses. Some examples are diaries and photographs. Ask students to brainstorm other ideas for primary resources, such as newspaper articles, videos or recordings of interviews, and letters.
- Write appropriate responses under "primary."
- Explain that a secondary source is written by someone who has looked at and evaluated (developed an informed opinion about) a primary source. Secondary sources describe facts and information.
- Tell students that they should look for secondary sources written by experts. Textbooks and trusted websites are good secondary sources.
- Ask students to think of other reliable secondary sources, such as encyclopedias, books, and articles. Write appropriate responses under "secondary."
- Check for understanding by holding up previously prepared primary and secondary sources. Ask students to raise one finger if they think the source is a primary source. Ask them to raise two fingers if they think the source is a secondary source.
- Direct students' attention to Activity Page 9.1. Ask them to write the definition of primary source and secondary source in their own words in the two boxes at the top. Then, have them cut the sources on the second page apart and glue them into the correct place on the chart.
- To finish up the Application section of this lesson, take a few minutes and ask students to share some ideas of primary and secondary sources they could use for their culminating task.

Quick Write

- Name a primary and secondary source of information. **[W.2.8]**
- Writing: Activity Page 2.2: What else do you wonder about the Tuskegee Airmen? **[W.2.7, W.2.8]**
- Have students complete Activity Page 2.2 for this lesson. Also, have them list any resources they could use to answer their questions.

End Lesson

Application

Entering/Emerging
Provide pictures of specific examples of primary and secondary sources of information for students to add to their charts to monitor understanding of spoken language during the lesson. Ask students to point out examples of primary and secondary sources.

Transitioning/Expanding
Students may work with a partner to complete Activity Page 9.1 to monitor understanding of spoken language during the lesson. Ask students to describe primary and secondary sources.

Bridging
After completing Activity Page 9.1, ask students to orally explain and give examples of primary and secondary sources to monitor understanding of spoken language during the lesson.

LESSON

10

UP, UP, AND AWAY: THE AGE OF AVIATION

Heroines

PRIMARY FOCUS OF LESSON

Reading
Students will make and confirm predictions. **[RI.2.1]**

Language
Students will demonstrate understanding of the Tier 2 word *daunting*. **[L.2.4]**

Writing
Students will identify and gather relevant information about aviators and their contributions to aviation. **[W.2.8]**

FORMATIVE ASSESSMENT

Quick Write	**Complete the sentences** Think about details in the story we read to answer the following question: "Why do you think the missions that the Tuskegee Airmen completed were daunting?" **[L.2.4]**
Activity Page 2.2	What else do you wonder about the female pilots of World War II? **[W.2.7]**

LESSON AT A GLANCE

	Grouping	Time	Materials
Introducing the Read-Aloud (10 min.)			
Making Connections	Whole Group	10 min.	❑ Activity Page 2.2 ❑ world map
Essential Background Information			
Read-Aloud (25 min.)			
Purpose for Listening	Whole Group	25 min.	❑ Aviation Timeline (Digital Components) ❑ Activity Page 2.2 ❑ *Skyward: The Story of Female Pilots in WWII* by Sally Deng
Skyward: The Story of Female Pilots in WWII			
Comprehension Questions			
Word Work: *Daunting*			
Application (25 min.)			
Organizing Information	Whole Group/ Independent	25 min.	❑ Activity Pages 2.2, 4.1, 10.1 ❑ Aviation Graphic Organizer (Digital Components)

ADVANCE PREPARATION

Introducing the Read-Aloud

- Students will need to reference Activity Page 2.2.

Read-Aloud

- Prepare to read aloud the trade book *Skyward: The Story of Female Pilots in WWII* by Sally Deng. As you preview the book, you may wish to reference the guided reading supports included in this lesson. Also note that because of the length of the text, the Read-Aloud will only include the following chapters: "First Flight" (pages 9–22), "Just like the Military" (pages 37–49; omit page 44 due to the mention of going to a bar), and "The Flights After" (pages 79–80).

Application

- Prepare to distribute copies of the Quick Write to students.
- Prepare to choose an aviator that you will use for modelling how to identify a resource and find information to answer research questions.
- Display Activity Pages 4.1 and 10.1.
- Group students in pairs to work together at various times during the Application activity.
- Prepare resources that students can use for their research, such as website addresses for school-permitted search engines, trade books from the unit, examples of primary and secondary sources, additional books from the school library, etc.

Universal Access

Introducing the Read-Aloud

- Students may reference Activity Page 2.2 throughout the lesson.

CORE VOCABULARY

bittersweet, n. being partly bitter or sad and partly sweet or happy
Example: He had bittersweet memories of summer camp.
Variation(s): none

daunting, adj. discouraging or frightening
Example: Climbing the mountain was a daunting challenge.
Variation(s): none

runway, n. a paved strip of ground on a landing field for the landing and takeoff of aircraft
Example: There were many airplanes on the runway waiting to take off.
Variation(s): runways

sluggish, adj. slow in movement or reaction
Example: He felt sluggish all day after hardly getting any sleep the night before.
Variation(s): none

WASP, acronym. (Women Airforce Service Pilots) a civil aviation unit that was started during World War II to assist in the war effort
Example: My great-grandmother was a pilot in the WASP program during World War II.
Variation(s): none

Vocabulary Chart for *Skyward: The Story of Female Pilots in WWII*

Vocabulary Type	**Tier 3 Domain-Specific Words**	**Tier 2 General Academic Words**	**Tier 1 Everyday Speech Words**
Vocabulary	runway	bittersweet **daunting** sluggish	
Multiple Meaning			
Sayings, Phrases, and Acronyms	WASP		

Lesson 10: Heroines

Introducing the Read-Aloud

10M

Reading: Students will make and confirm predictions. **[RI.2.1]**

MAKING CONNECTIONS (5 MIN.)

- Ask students to find Activity Page 2.2 in their Activity Book.
- Discuss with students what barriers the Tuskegee Airmen faced and how they were successful in achieving their goals. Have them refer to Activity Page 2.2. Ask students how the stories they have read so far are related. Talk about the different types of flying machines from the stories.
- Tell students that guessing or predicting what may happen in the story is a fun way to read and will help them understand what happens in the story.
- Show students the front and back covers of the text and read the title. Ask them what they think this book may be about.
- Encourage students to make predictions about the three figures on the cover of the book.

ESSENTIAL BACKGROUND INFORMATION (5 MIN.)

- Explain that this story is about female pilots during World War II. Encourage students to think about the prediction they made and determine whether, with this new information, they can confirm their prediction. Ask students which other aviators they have learned about were pilots during World War II. Use the map to review background information about where World War II was fought and the fact that Germany was considered the primary enemy. Also mention that Japan was an enemy during the war.
- Explain that the characters in this story are from the United States, England, and Russia. Point out the countries on a map.

Lesson 10: Heroines

Read-Aloud

25M

Reading: Students will make and confirm predictions. **[RI.2.1]**

Language: Students will demonstrate understanding of the Tier 2 word *daunting*. **[L.2.4]**

PURPOSE FOR LISTENING

- Tell students that, as you read the story, they should make predictions about what they think will happen based on what the characters say, do, and think. Remind them to revise or confirm their predictions as they learn more about the events of the story.

SKYWARD: THE STORY OF FEMALE PILOTS IN WWII (15 MIN.)

- Read aloud *Skyward: The Story of Female Pilots in WWII* by Sally Deng. As you read, incorporate the following information and guided reading supports.

Note: Because of the length of the text, the Read-Aloud will only include the following chapters: "First Flight" (pages 9–22), "Just like the Military" (pages 37–49; omit page 44 due to the mention of going to a bar), and "The Flights After" (pages 79–80).

  - On page 10, explain that *sluggish* means to move slowly. Say, "Sometimes I feel sluggish if I stay up too late the night before." Also explain that a runway is a paved strip of ground (as at an airport) for the landing and takeoff of aircraft.
  - Pause on page 19. Ask students for ideas of why each girl wanted to fly. Model making, revising, and confirming predictions. Think aloud, "When I looked at the cover of this story, I predicted that it was about three female aviators. So far my prediction is right. From what we have read about Marlene, Hazel, and Lilya, it seems like they really love flying and want to keep on doing it. On the first page it said they were going to fly and they did."
  - Explain that when World War II started, everyone wanted to help win the war. Since women were not allowed to serve in the military, they took up other jobs to help the war effort, such as sewing parachutes, making rivets, nursing soldiers, operating radios, and driving trucks. Women

pilots wanted to help too and pleaded with the government to let them fly airplanes for the military. The military soon realized that there just were not enough male pilots to fly the airplanes. Ask, "Do you think the military will allow women pilots? Will Marlene, Hazel, and Lilya join?" Tell them that you will keep reading and that they can find out whether their prediction was correct.

- Omit the chapter "Change."
- Read the first sentence on page 37 of the chapter "Just like the Military." Ask students whether their predictions were correct.
- On page 37, explain that *daunting* means something that is difficult and likely to discourage someone.
- As you continue reading, encourage students to make, revise, and confirm their predictions.
- Tell students that WASP stands for Women Airforce Service Pilots. This was the program started for female pilots to fly airplanes in support of the war effort.
- On page 46, after reading the sentence about Lilya getting her hair cut short like a boy's, explain that the length of one's hair has nothing to do with gender.
- Skip to page 79 and continue reading to the end of the book.
- On page 79, explain that *bittersweet* is something that is partly bitter or sad and partly sweet or happy. Ask students why they think the end of the war may have been bittersweet for Marlene, Hazel, and Lilya.
- After reading, discuss with the students how making predictions about what will happen in the story keeps the reader involved in the reading process and helps the reader understand and remember what was read.
- Ask a volunteer to locate the female pilots of World War II on the Aviation Timeline. *(1941–1945)*

Challenge

Have students add on to the story by making up a section about what the characters did after the war.

Support

Have students refer to the map to review where the characters were located during their training.

COMPREHENSION QUESTIONS (5 MIN.)

1. **Literal.** What did all three characters in this story dream of doing? *(becoming pilots)*
2. **Inferential.** Why do you think the first chapter is called "First Flight"? *(Answers may vary, but should include that it tells about the first flight each of the characters saw, which inspired them to become pilots.)*
3. **Inferential.** Why do you think the military did not want female pilots? *(Answers may vary.)*

4. **Literal.** What are some ways the characters helped one another get through difficult times during the training? *(Answers may vary, but should include that they developed deep friendships and were encouraging to one another.)*
5. **Inferential.** How do you think the training experience for female pilots was different from that of male pilots? *(Answers may vary, but should include that it was harder for women because many people did not believe they could do the job, and the training facilities equipment were designed for men.)*
6. **Evaluative.** *Think-Pair-Share:* In what ways were the characters successful in achieving their goal of flying? *(Answers may vary.)*

WORD WORK: DAUNTING (5 MIN.)

1. In the story, you heard the sentence "It was extremely daunting arriving at Avenger Field in Sweetwater."
2. Say *daunting* with me.
3. *Daunting* means something that might discourage or frighten.
4. It must have been daunting for the characters in the story to leave their homes and families to pursue their dream of flying.
5. Share a daunting experience that you may have had.
6. What is the word that we have been talking about?

Use a Making Choices activity for follow-up. I am going to read several statements. If the statement I read is an example of something that is probably daunting, say, "That is probably daunting." If the statement I read is probably not an example of something that is daunting, say, "That is probably not daunting."

- attending a birthday party *(That is probably not daunting.)*
- climbing a mountain *(That is probably daunting.)*
- watching television *(That is probably not daunting.)*
- jumping out of an airplane for the first time with a parachute *(That is probably daunting.)*
- going to a new school *(That is probably daunting.)*

Challenge

Have students use the word *daunting* in a sentence.

Support

Ask students to draw a picture of something that could be daunting.

Lesson 10: Heroines

Application

25M

Writing: Students will identify and gather relevant information about aviators and their contributions to aviation. **[W.2.8]**

ORGANIZING INFORMATION (25 MIN.)

- Review the Research Plan using the class copy of Activity Page 4.1.
- Tell students that they are going to use the information they have learned about finding resources to continue answering their questions about aviation.
- Explain that they are going to choose three aviators (or group of aviators) to focus on for their culminating task. They will begin identifying and organizing their information for one of the aviators today using a graphic organizer.
- Give them a few minutes to review Activity Page 2.2, the class timeline, and any other resource materials.
- Have them circle one of the aviators that they are going to focus on today on Activity Page 2.2.
- Tell students to find Activity Page 4.1 in their Activity Book. Project the class copy of Activity Page 4.1 and review with students some of the sources of information that were identified as a class.
- Direct students to find Activity Page 2.2 and review the questions and topics they have written down for their chosen aviators.
- Direct students' attention to Activity Page 4.1 again. Ask students which steps have been completed and which step is next. Explain that they will be moving on to step 3 of the Research Plan.
- Direct students to find Activity Page 10.1 in their Activity Book. Explain that they will use this page to help them organize their research about their chosen aviator.

Challenge

Have students use primary and secondary resources to answer their questions.

Support

Provide 1:1 support to students to help them find answers to their questions.

Activity Page 10.1

- Project a class copy of Activity Page 10.1. Complete this copy as a class to model for students how to organize their research information. Choose an aviator/aviators to model and write the name(s) on the line.
- Model identifying a resource and finding information to answer the first question.
- Next, ask a student to read question 2. Ask students to identify a resource they could use to find the answer. Work together to use the resource to find the information that answers the question. Repeat the same procedure with questions 3 and 4.
- Allow students to work in pairs to complete their graphic organizers with their chosen aviator(s) using the information they have recorded on Activity Page 2.2. If students find it necessary to supplement the information that they have researched in previous lessons, allow them to use the resources to do so.
- After students have had a chance to find information to answer their questions, invite several volunteers to share their questions with the class and the answers they found.

Quick Write

- **Complete the sentences.** Think about details in the story we read to complete the following sentences: "The Tuskegee Airmen and female pilots of World War II are similar because . . ." and "The Tuskegee Airmen and female pilots of World War II are different because . . ." **[L.2.4]**
- Writing: Activity Page 2.2: What else do you wonder about the female pilots of World War II? **[W.2.7, W.2.8]**
- Have students complete Activity Page 2.2 for this lesson. Also, have them list any resources they could use to answer their questions.

End Lesson

Application

Entering/Emerging
Group students in pairs to find answers to research questions.

Transitioning/Expanding
Have students answer research questions using key words and phrases while spelling them with increased accuracy.

Bridging
Students will answer research questions using complete sentences with increased accuracy spelling familiar English words.

LESSON

11

UP, UP, AND AWAY: THE AGE OF AVIATION

I Knew I Had to Fly!

PRIMARY FOCUS OF LESSON

Reading
Students will retell and paraphrase texts in ways that maintain meaning and logical order. **[RI.2.3]**

Language
Students will demonstrate understanding of the Tier 2 word *barrier*. **[L.2.4]**

Writing
Students will find answers to research questions about aviators and their contributions to aviation. **[W.2.7, W.2.8]**

FORMATIVE ASSESSMENT

Quick Write	Students will use information about Amelia Earhart located during their research to write or illustrate a news story about a barrier in her life and how she dealt with it. **[L.2.4, W.2.8]**
Activity Page 2.2	What else do you wonder about Amelia Earhart? **[W.2.7, W.2.8]**

LESSON AT A GLANCE

	Grouping	Time	Materials
Introducing the Read-Aloud (10 min.)			
Making Connections	Whole Group	10 min.	❑ Aviation Timeline (Digital Components) ❑ Activity Page 2.2 ❑ world map
Essential Background Information			
Read-Aloud (25 min.)			
Purpose for Listening	Whole Group	25 min.	❑ Aviation Timeline (Digital Components) ❑ Activity Page 2.2 ❑ world map
"Overcoming Barriers: Amelia Earhart"			
Comprehension Questions			
Word Work: *Barrier*			
Application (25 min.)			
Organizing Information	Whole Group/ Independent/ Partner	25 min.	❑ Activity Pages 2.2, 4.1, 11.1

ADVANCE PREPARATION

Introducing the Read-Aloud

- Prepare to project the Aviation Timeline.
- Students will need to reference Activity Page 2.2.

Read-Aloud

- Prepare to read the ReadWorks passage "Overcoming Barriers: Amelia Earhart."

Application

- Prepare to distribute copies of the Quick Write to students.
- Prepare a research question that you will use for modelling how to identify a resource and find information to answer your question.
- Display class copies of Activity Pages 4.1 and 10.1.
- Group students in pairs to work together at various times during the Application activity.
- Prepare resources that students can use for their research, such as website addresses for school-permitted search engines, trade books from the unit, examples of primary and secondary sources, additional books from the school library, etc.

Universal Access

Introducing the Read-Aloud

- Students may reference Activity Page 2.2 throughout the lesson.

CORE VOCABULARY

achievement, n. something that has been done or achieved through effort; a result of hard work
Example: Learning how to ride a bicycle is a great achievement.
Variation(s): achievements

advocating, v. speaking in favor of; arguing for
Example: The president of the student council is advocating for an extra recess everyday.
Variation(s): advocated

altitude, n. the height of something (such as an airplane) above the level of the sea
Example: The airplane was flying at an altitude of 30,000 feet above sea level.
Variation(s): none

barrier, n. something that keeps apart or makes progress difficult
Example: The colonists faced many barriers in their fight for independence.
Variation(s): barriers

massive, n. very large, heavy, and solid
Example: The cargo ship in the harbor was massive.
Variation(s): none

sensation, n. a state of excited interest or feeling
Example: The rumor caused a sensation in the third grade.
Variation(s): sensations

ticker-tape parade, n. a parade in which small pieces of paper are thrown into the air to celebrate something
Example: When the football team won the state championship, the town had a ticker-tape parade.
Variation(s): none

transatlantic, n. crossing or being beyond the Atlantic Ocean
Example: My parents went on a transatlantic cruise last summer.
Variation(s): none

Vocabulary Chart for "Overcoming Barriers: Amelia Earhart"

Vocabulary Type	**Tier 3 Domain-Specific Words**	**Tier 2 General Academic Words**	**Tier 1 Everyday Speech Words**
Vocabulary	altitude transatlantic	achievement advocating ticker-tape parade	
Multiple Meaning		**barrier** massive sensation	
Sayings and Phrases			

Lesson 11: I Knew I Had to Fly!

Introducing the Read-Aloud

10M

Reading: Students will retell and paraphrase texts in ways that maintain meaning and logical order. **[RI.2.3]**

MAKING CONNECTIONS (5 MIN.)

- Ask students to find Activity Page 2.2 in their Activity Book.
- Explain that events in a text are often told in a specific order, from beginning to end. Sometimes authors use words such as *first*, *next*, and *last*. Write these three words on the board or chart paper.
- Direct students' attention to the Aviation Timeline and ask what was one of the first discoveries in the history of aviation. Ask them to name some of the other aviators we learned about. Ask students to share who were the last aviators they have learned about so far.
- Show students the ReadWorks passage and have them predict what will happen based on the photograph and the section titles.

ESSENTIAL BACKGROUND INFORMATION (5 MIN.)

- Tell students that they are going to hear a story about another aviator named Amelia Earhart, who was from the United States. Point out the country on a map.
- Explain that she persisted despite many challenges. Ask students to think of some other aviators who persisted even when faced with many challenges.

Lesson 11: I Knew I Had to Fly!

Read-Aloud

25M

Reading: Students will retell and paraphrase texts in ways that maintain meaning and logical order. **[RI.2.3]**

Language: Students will demonstrate understanding of the Tier 2 word *barrier*. **[L.2.4]**

PURPOSE FOR LISTENING

- Tell students to listen carefully to find out more about Amelia Earhart and why she is considered by many to be a legend. Remind them that she faced many barriers in her life and was able to overcome many of them to achieve her dream of flying.

"OVERCOMING BARRIERS: AMELIA EARHART" (15 MIN.)

- Read aloud the ReadWorks passage "Overcoming Barriers: Amelia Earhart." As you read, incorporate the following information and guided reading supports.
  - Explain that a barrier is something that can get in the way of trying to achieve something. Ask, "Can you think of any other aviators you have learned about that faced barriers?"
  - Pause after reading the first section and model sequencing events of the article. Say, "This article is providing me with many events from Amelia Earhart's life. First she was born in Kansas in 1897. She saw her first airplane when she was twelve years old and did not take her first flight until she was twenty-three. Then she took lessons to learn how to fly, bought an airplane, and earned her pilot's license. I will continue reading to find out what happens next."
  - Explain that altitude is the height of something above sea level. Airplanes usually fly at an altitude of 35,000 feet above sea level.
  - An achievement is something that is done or achieved through a lot of effort. Ask students to share an achievement that they are proud of.

- A sensation is a state of excited interest or feeling. Ask students to think of someone or something that happened that would cause a media sensation.
- A ticker-tape parade is a parade in which small pieces of paper are thrown into the air to celebrate something. New York City has had many ticker-tape parades.
- *Advocating* means that you speak in favor of someone or something. Ask students to think of a time when someone has advocated for them.
- *Transatlantic* means crossing the Atlantic Ocean. Point out the Atlantic Ocean on the map.
- *Massive* means really big. It can also mean something that is very heavy.
- Ask a volunteer to point out Amelia Earhart on the Aviation Timeline. *(1932, 1937)*

Challenge

Have students research one of the other aviators mentioned in the article.

Support

Provide sentence frames to help students sequence events of the article.

COMPREHENSION QUESTIONS (5 MIN.)

1. **Inferential.** Name a barrier that Amelia Earhart faced. *(Answers may vary, but should include that in her time women were not afforded the same opportunities as men.)*
2. **Literal.** Who was Neta Snook? *(She was Amelia's first flight instructor and one of the first women to graduate from the Curtiss School of Aviation.)*
3. **Literal.** What was the first record that Amelia Earhart set? *(an altitude record for women of 14,000 feet)*
4. **Literal.** How would you describe the sequence of events after Amelia Earhart flew across the Atlantic Ocean? Use sequencing words such as *first*, *next*, and *last*. *(Answers may vary.)*
5. **Inferential.** *Think-Pair-Share:* What do you think would have happened if Amelia Earhart had completed her flight around the world? *(Answers may vary.)*

WORD WORK: BARRIER (5 MIN.)

1. The title of the article is "Amelia Earhart: Overcoming Barriers."
2. In this article, a barrier is something that must be overcome to achieve a goal.
3. Many of the aviators we have learned about had to overcome many barriers to achieve their dream of flying.
4. Can you think of any other people who have had to overcome barriers to achieve their goals?
5. What is the word we have been talking about?

Use a Making Choices activity for follow-up. I am going to read sentences about some people. If the sentence describes someone who overcame barriers, say, "She/he overcame a barrier." If the sentence does not describe someone who overcame a barrier, say, "She/he did not overcome a barrier."

- As a child, Albert Einstein was reluctant to say anything or talk at all, but he went on to become one of the world's greatest scientists. *(He overcame a barrier.)*
- Helen Keller was deaf and blind, but she went on to be the first deaf and blind person to earn a college degree. *(She overcame a barrier.)*
- Ruby Bridges became the first African American student in the South to enter a previously all-white elementary school. *(She overcame a barrier)*
- At a time when few women were able to be educated, Marie Curie became one of the most important scientists of her generation. *(She overcame a barrier.)*

Challenge

Have students research more historical figures who overcame barriers.

Support

Have students use two or three academic words when discussing a barrier that Amelia Earhart faced.

Lesson 11: I Knew I Had to Fly!

Application

25M

Writing: Students will find answers to research questions about aviators and their contributions to aviation. **[W.2.8]**

ORGANIZING INFORMATION (25 MIN.)

- Follow the same procedure as Lesson 10 Application for modeling and partner work.
- Direct students to find Activity Page 11.1 in their Activity Book. Explain that they will use this page to help them organize their research about their second chosen aviator. Project the class copy of Activity Page 10.1. Review this copy with the class.
- Have students work in pairs to complete their graphic organizers with their second chosen aviator using the information they have recorded on Activity Page 2.2. If students find it necessary to supplement the information that they have researched in previous lessons, allow them to use the resources to do so.
- After students have had a chance to find information to answer their questions, invite several volunteers to share their questions and the answers they found with the class.

Activity Page 11.1

Challenge

Have students use primary and secondary resources to answer their questions.

Support

Work individually with students to help them find answers to their questions.

Quick Write

- Write a sentence about a barrier in Amelia Earhart's life and how she dealt with it using evidence from the article. **[L.2.4, W.2.8]**
- Writing: Activity Page 2.2: What else do you wonder about Amelia Earhart? **[W.2.7, W.2.8]**
- Have students complete Activity Page 2.2 for this lesson. Also, have them list any resources they could use to answer their questions.

End Lesson

Application

Entering/Emerging
Group students in pairs to orally answer the research questions using sentence starters.

Transitioning/Expanding
Have students orally answer research questions using 1–2 sentences using sentence starters.

Bridging
Have students write and explain their answers to their research questions using a variety of complete sentences.

LESSON

12

UP, UP, AND AWAY: THE AGE OF AVIATION

Aim for the Skies

PRIMARY FOCUS OF LESSON

Reading
Students will make connections to ideas in other texts. **[RI.2.9]**

Language
Students will demonstrate understanding of the Tier 2 word *quest*. **[L.2.4]**

Writing
Students will find answers to research questions about aviators and their contributions to aviation. **[W.2.7, W.2.8]**

FORMATIVE ASSESSMENT

Quick Write	Write a sentence that explains how Jerrie Mock and Joan Merriam Smith are different from Amelia Earhart. Write a sentence that explains how Jerrie Mock and Joan Merriam Smith are similar to Amelia Earhart. **[RI.2.9]**
Activity Page 2.2	What questions do you have about the contributions of these aviators? **[W.2.7, W.2.8]**

LESSON AT A GLANCE

	Grouping	Time	Materials
Introducing the Read-Aloud (10 min.)			
Making Connections	Whole Group	10 min.	❑ Aviation Timeline (Digital Components) ❑ Activity Page 2.2 ❑ world map
Essential Background Information			
Read-Aloud (25 min.)			
Purpose for Listening	Whole Group	25 min.	❑ Aviation Timeline (Digital Components) ❑ Activity Page 2.2 ❑ *Aim for the Skies: Jerrie Mock and Joan Merriam Smith's Race to Complete Amelia Earhart's Quest* by Aimee Bissonette ❑ world map
Aim for the Skies: Jerrie Mock and Joan Merriam Smith's Race to Complete Amelia Earhart's Quest			
Comprehension Questions			
Word Work: *Quest*			
Application (25 min.)			
Searching for Answers	Whole Group/ Independent/ Partner	25 min.	❑ Activity Pages 2.2, 4.1, 12.1

ADVANCE PREPARATION

Introducing the Read-Aloud

- Prepare to project the Aviation Timeline.
- Students will need to reference Activity Page 2.2.

Read-Aloud

- Prepare to read aloud the trade book *Aim for the Skies: Jerrie Mock and Joan Merriam Smith's Race to Complete Amelia Earhart's Quest* by Aimee Bissonette. As you preview the book, you may wish to add page numbers and reference the guided reading supports included in this lesson. This trade book does not have numbered pages, but for ease of use we have referred to page numbers in our materials. We begin with page 1, which contains an illustration of a little girl looking out the window of an airplane, and number each page in order after that.

Application

- Prepare to distribute copies of the Quick Write to students.
- Prepare a research question that you will use for modelling how to identify a resource and find information to answer questions.
- Display Activity Pages 4.1 and 12.1.
- Group students in pairs to work together at various times during the Application activity.
- Prepare resources that students can use for their research, such as website addresses for school-permitted search engines, trade books from the unit, examples of primary and secondary sources, additional books from the school library, etc.

Universal Access

Introducing the Read-Aloud

- Students may reference Activity Page 2.2 throughout the lesson.

CORE VOCABULARY

companions, n. people or things that accompany another
Example: My teddy bear was my constant companion when I was a toddler.
Variation(s): companion

groggy, adj. weak and unsteady on the feet or in action
Example: I was so groggy from not sleeping last night that I almost poured coffee in my cereal instead of milk!
Variation(s): none

quest, n. an act or instance of seeking
Example: They went on a quest for gold.
Variation(s): quests

stunned, v. having been overcome with astonishment or disbelief
Example: I was stunned at the news that I had won the lottery.
Variation(s): stun

tailwinds, n. winds that blow in the same direction as something (such as a ship or an airplane) that is moving forward
Example: The tailwind helped the marathon runner to complete the race.
Variation(s): tailwind

throttle, n. a valve controlling the flow of steam or fuel to an engine
Example: The pilot pulled up on the throttle just in time to avoid a collision with the mountain.
Variation(s): none

turbulence, n. irregular movements of air currents
Example: The ride got rough when the plane hit turbulence.
Variation(s): none

Vocabulary Chart for *Aim for the Skies: Jerrie Mock and Joan Merriam Smith's Race to Complete Amelia Earhart's Quest*

Vocabulary Type	**Tier 3 Domain-Specific Words**	**Tier 2 General Academic Words**	**Tier 1 Everyday Speech Words**
Vocabulary	tailwinds throttle turbulence	companions groggy **quest**	
Multiple Meaning		stunned	
Sayings and Phrases			

Lesson 12: Aim for the Skies

Introducing the Read-Aloud

Reading: Students will make connections to ideas in other texts. **[RI.2.9]**

MAKING CONNECTIONS (5 MIN.)

- Ask students to find Activity Page 2.2 in their Activity Book.
- Discuss with students the aviator from the previous lesson (Amelia Earhart). Ask them to share what she was trying to do when her plane went missing.
- Have students preview the front and back covers of today's Read-Aloud and read the title. Have them discuss what kind of book this is (fiction or nonfiction) and what it might be about.
- Model making a connection to prior knowledge. Think aloud, "The title of this book and the cover remind me of yesterday's story. I thought the story of Amelia Earhart's life was very interesting. Because I already know that she was not able to achieve her goal to be the first woman to fly around the world, I am looking forward to finding out whether the two aviators mentioned in the title are able to complete Amelia's quest."
- Explain that a quest is when someone is seeking or looking for something. Ask, "Can anyone explain what Amelia Earhart's quest was?" *(to be the first woman to fly around the world)*

ESSENTIAL BACKGROUND INFORMATION (5 MIN.)

- Tell students that they are going to hear a story about two more aviators from the United States. One is named Jerrie Mock, from Ohio (point it out on a map). The other is named Joan Merriam Smith and she was from California (point it out on a map).

Lesson 12: Aim for the Skies

Read-Aloud

25M

Reading: Students will make connections to ideas in other texts. **[RI.2.9]**

Language: Students will demonstrate understanding of the Tier 2 word *quest.* **[L.2.4]**

PURPOSE FOR LISTENING

- Have students think about what they already know about aviation and Amelia Earhart's quest in particular as the story is read in order to identify the important events that take place.

AIM FOR THE SKIES: JERRIE MOCK AND JOAN MERRIAM SMITH'S RACE TO COMPLETE AMELIA EARHART'S QUEST (15 MIN.)

- Read aloud the trade book *Aim for the Skies: Jerrie Mock and Joan Merriam Smith's Race to Complete Amelia Earhart's Quest* by Aimee Bissonette. As you read, incorporate the following information and guided reading supports.
  - On page 8, explain that *stunned* means when something happens that causes someone to feel shocked or disbelief. Joan was stunned when she heard Jerrie was setting out to fly around the world.
  - On page 10, explain that a companion is someone or something that goes along with someone or something else. Ask, "Who were Joan's companions on her flight around the world?" *(a stuffed koala bear and a stuffed polar bear)*
  - On page 12, explain that a throttle is a lever that controls the engine on an airplane, like the accelerator pedal of a car.
  - Pause after page 12 and ask students whether they remember the story that was read about another competition between two aviators. *(Louis Blériot and Alberto Santos-Dumont)*
  - On page 20, explain that *groggy* means to feel weak or unsteady. Ask, "Why do you think it would be dangerous to fly an airplane if you feel groggy?" *(Answers may vary.)*

- Also explain that turbulence is irregular currents in the atmosphere that cause an up-and-down motion.
- After reading, discuss with students how making connections to information in the story keeps them actively involved in the reading process and helps them understand and remember what they have read.
- Ask a volunteer to point out Joan Merriam Smith and Jerrie Mock on the Aviation Timeline. *(1964)*

Challenge

Have students read the author's note and write a brief summary of why the author thought that Jerrie and Joan's quest should not have been turned into a race.

Support

Point out specific sections of the text that will help students find answers to the questions.

COMPREHENSION QUESTIONS (5 MIN.)

1. **Literal.** What was Joan Merriam Smith and Jerrie Mock's quest? *(to be the first woman to fly around the world)*
2. **Inferential.** How did Joan and Jerrie end up competing to see who would be the first to fly around the world? *(They had the goal of being the first woman to fly around the world. The newspapers found out about the two aviators and turned their dream into a competition.)*
3. **Evaluative.** How did the competition push each of the aviators to try harder to win? *(Answers may vary, but should include that each of the aviators pushed each other because they both wanted to be the first woman to fly around the world.)*
4. **Inferential.** *Think-Pair-Share:* Why do you think Joan decided to finish the trip even though Jerrie had already won? *(Answers may vary.)*

WORD WORK: QUEST (5 MIN.)

1. The title of the story contains the line ". . . race to complete Amelia Earhart's quest."
2. A quest is something that is trying to be completed or achieved.
3. In yesterday's lesson, you learned what Amelia Earhart's quest was. What was her quest?
4. Can you think of other historical figures that have set forth on a quest?
5. What is the word we have been talking about?

Use a Making Choices activity for follow-up. I am going to read statements. If the statement describes a quest, say, "That is a quest." If the sentence does not describe a quest, say, "That is not a quest."

- the colonists coming to America to start a new life *(That is a quest.)*
- walking from the living room to the kitchen to get a snack *(That is not a quest.)*
- climbing Mount Everest *(That is a quest.)*
- astronauts going to Mars *(That is a quest.)*
- going grocery shopping *(That is not a quest.)*

Challenge

Ask students to name some of the quests of the other aviators they have learned about.

Support

Provide students synonyms for the word *quest*.

Lesson 12: Aim for the Skies

Application

25M

Writing: Students will find answers to research questions about aviators and their contributions to aviation. **[W.2.7, W.2.8]**

SEARCHING FOR ANSWERS (25 MIN.)

- Follow the same procedure as Lesson 10 Application for modeling and partner work.
- Direct students to find Activity Page 12.1 in their Activity Book. Explain that they will use this page to help them organize their research about their third chosen aviator. Project a class copy of Activity Page 10.1. Review this copy with the class.
- Have students work in pairs to complete their graphic organizers with their third chosen aviator using the information they have recorded on Activity Page 2.2. If students find it necessary to supplement the information that they have researched in previous lessons, allow them to use the resources to do so.
- After students have had a chance to find information to answer their questions, invite several volunteers to share their questions with the class and the answers they found.

Activity Page 12.1

Challenge

Have students use primary and secondary resources to answer their questions.

Support

Provide 1:1 support to students to help them find answers to their questions.

Quick Write

- Write a sentence that explains how Jerrie Mock and Joan Merriam Smith are different from Amelia Earhart. Write a sentence that explains how Jerrie Mock and Joan Merriam Smith are similar to Amelia Earhart. **[RI.2.9]**
- Writing: Activity Page 2.2: What else do you wonder about Jerrie Mock and Joan Merriam Smith? **[W.2.7, W.2.8]**
- Have students complete Activity Page 2.2 for this lesson. Also, have them list any resources they could use to answer their questions.

End Lesson

Application

Entering/Emerging
Have students orally express answers they have found to research questions.

Transitioning/Expanding
Have students answer research questions using key words and phrases.

Bridging
Have students answer research questions using complete sentences.

LESSON

13

UP, UP, AND AWAY: THE AGE OF AVIATION

Organizing and Drafting

PRIMARY FOCUS OF LESSON

Writing

Students will organize and write a draft of their presentation for the Aviators Hall of Fame. **[W.2.7]**

FORMATIVE ASSESSMENT

Activity Page 11.1	Students will use graphic organizers to organize the information they found in their research and write a draft of their presentation for the Aviators Hall of Fame. **[W.2.7]**

LESSON AT A GLANCE

	Grouping	Time	Materials
Application (60 min.)			
Drafting	Whole Group/ Independent/ Partner	60 min.	❑ Activity Pages 2.2, 4.1, 10.1, 11.1, 12.1, 13.1 ❑ Aviation Timeline (Digital Components) ❑ My Research Plan (Digital Components) ❑ Aviators Hall of Fame (Digital Components) ❑ Focus Words (Digital Components) ❑ Informational Writing Rubric (Digital Components)

ADVANCE PREPARATION

Application

- Prepare to distribute three copies of Activity Page 13.1 to each student.
- Gather and display all trade books from the unit.
- Display the Aviation Timeline.
- Students may need to reference Activity Page 2.2.
- Prepare to display the Informational Writing Rubric.
- Display Activity Pages 4.1 and 13.1 and the writing of Activity Page 10.1.
- Prepare and display a list of the focus words from the unit Focus Words (Digital Components):

1. aviation
2. innovations
3. designing
4. sputters
5. spherical
6. revise
7. accomplishment
8. contribution
9. persisted
10. barrier
11. quest

Informational Writing Rubric (Digital Components)

Informational Writing Rubric			
	Advanced	**Proficient**	**Basic**
Composition **[W.2.7]**	• My writing includes a clear topic and 3–4 supporting details in each paragraph. • Related information is grouped together. • Details include accurate facts and information. • Clear and supportive linking words and phrases connect details in each paragraph. • A concluding section or statement reflects the topic.	• My writing includes a topic and supporting details. • Information may be grouped together. • Details may include facts or information. • Linking words may be used throughout the report. • A concluding statement may reflect the topic.	• My writing includes a topic and details. • Information is listed in no particular order. • Facts or information are listed. • Linking words may be used, but may confuse the reader. • A concluding statement is made, but may not relate to the topic.
Writing Conventions and Language Standards **[W.2.7]**	• I used a variety of complete sentences with subject-verb agreement. • I used correct capitalization at the beginning of sentences and the names of people, places, and things, as well as correct punctuation. • I used correct spelling, including high frequency words, throughout my entire story with no more than 3–4 errors.	• I wrote simple sentences with inconsistent subject-verb agreement. • I used correct capitalization at the beginning of sentences and the names of people, places, and things with 2–3 errors and some use of punctuation. • I used correct spelling throughout my entire story with 5–6 errors.	• I wrote simple, incomplete sentences with no evidence of subject-verb agreement. • I used capitalization at the beginning of sentences and the names of people, places, and things, but have 4 or more errors and inconsistent use of punctuation. • I tried spelling words correctly throughout my writing, but have more than 7 errors.
Use an appropriate mode of delivery, whether written, oral, or multimodal, to present results. **[SL.2.2]**	• The presenter: ◦ communicates ideas effectively, ◦ uses language purposefully to convey meaning.	• The presenter: ◦ communicates ideas clearly, ◦ uses language to convey meaning.	• The presenter does not do one or more of the following: ◦ communicate ideas clearly, ◦ use language to convey meaning.

Lesson 13: Organizing and Drafting

Application

60M

Writing: Students will organize, research, and write a draft of their presentation for the Aviators Hall of Fame. **[W.2.7]**

DRAFTING (60 MIN.)

- Ask students to find Activity Page 2.2 in their Activity Book.
- Give them a few minutes to review Activity Page 2.2, the class timeline, and any other resource materials.
- Gather students together again and project Activity Page 4.1. Ask students which steps have been completed and which step is next.
- Tell students that they will be moving on to step 4 of the research plan.
- Direct students to find Activity Pages 10.1, 11.1, and 12.1. Explain that they will use these pages to help them write about their chosen aviators.
- Tell students that they will now use the information from the graphic organizer to draft an informative text.
- Use the graphic organizer that was completed with the class in Lesson 10 to model for students how to use the information to write an informative paragraph about their chosen aviators.
- As you are modeling, be sure to refer to the focus words of the unit and incorporate them where possible in the example.
- Create a class copy of the paragraph for students to use as reference as well as an example to show the procedure for editing in Lesson 14.
- Tell students that first they need to create a topic sentence. Explain that this is the very first sentence of the paragraph and tells who your paragraph is going to be about. Remind students that the first sentence of the paragraph is always indented. Model writing a topic sentence. For example, " _____ is an aviator who _____."

Challenge

Encourage students to incorporate complete sentences with subject-verb agreement in their paragraphs.

Support

Work with students in small groups or individually to complete the graphic organizer.

- Next, model writing by showing how to add at least three details to their paragraphs using the information that was recorded on each of the boxes of the graphic organizer using sentence starters. For example, "This aviator is important because . . ." "Something interesting about this aviator is . . ." "Another fact about this aviator is . . ." Have students turn to a partner to practice adding three details using the sentence starters.
- Lastly, model writing by showing that they will need to use a closing sentence to finish the paragraph. Tell students that this would be a good place to explain why people should learn about this person.
- Direct students' attention to the Informational Writing Rubric and model how to use it as a checklist to assess the example paragraph.
- Have students work in pairs to draft informative paragraphs about their three chosen aviators. They will use an individual copy of Activity Page 13.1 for each aviator. Remind students to refer to the focus words of the unit and incorporate at least one in each paragraph.
- After students have composed their paragraphs, remind them to go back and use the Informational Writing Rubric as a checklist to be sure that they have incorporated all necessary elements in their writing.
- Collect students' drafts to distribute in the next day's lesson.

End Lesson

Application

Entering/Emerging
Have students dictate the information to an adult.

Transitioning/Expanding
Have students collaborate with a peer to write their information on a graphic organizer.

Bridging
Have students work independently on a graphic organizer to write their information and read it aloud to a teacher.

LESSON

14

UP, UP, AND AWAY: THE AGE OF AVIATION

Editing and Practicing

PRIMARY FOCUS OF LESSON

Writing
Students will edit the draft of their presentation. **[W.2.7]**

Speaking and Listening
Students will share their writing with a partner. **[SL.2.2]**

FORMATIVE ASSESSMENT

Activity Page 14.1	Students will work with a partner to edit the draft of their presentation and practice sharing it with a partner. **[W.2.7]**

LESSON AT A GLANCE

	Grouping	Time	Materials
Application (60 min.)			
Editing and Practicing	Whole Group/ Independent/ Partner	60 min.	❑ class copy of draft from Lesson 13 ❑ Activity Pages 4.1, 10.1, 13.1, 14.1 ❑ Peer Editing Checklist (Digital Components)

ADVANCE PREPARATION

Application

- Prepare to return students' drafts (Activity Page 13.1) to each student.
- Display the writing of Activity Pages 4.1 and 10.1. Modify class copy of Activity Page 13.1 with common errors the students might make in their drafts, such as capitalization, spelling, and punctuation errors.
- Display the checklist and make enough copies to give to each student.
- Make enough copies of Activity Page 13.1 for students to use for their final copies.
- Prepare and display a list of the focus words from the unit Focus Words (Digital Components):

    1. aviation
    2. innovations
    3. designing
    4. sputters
    5. spherical
    6. revise
    7. accomplishment
    8. contribution
    9. persisted
    10. barrier
    11. quest

- Group students in pairs for peer editing.

Start Lesson

Lesson 14: Editing and Practicing

Application

60M

Writing: Students will edit the draft of their presentation. **[W.2.7]**

Speaking and Listening: Students will share their writing with a partner. **[SL.2.2]**

EDITING AND PRACTICING (60 MIN.)

- Tell students that during the next lesson they will be presenting their writings to the class. So, during this lesson, they will be editing their presentations with a partner (or peer).
- Explain that this is called peer editing. Explain that editing means to review what they have written and make any changes that are necessary to make it ready to present.
- Distribute students' drafts from the previous lesson and project the class copy of Activity Page 13.1 that has been modified with various capitalization, punctuation, and spelling errors. Also, project the checklist.
- Distribute copies of the checklist to students. Explain that they will be using it to have a partner review their writing and then they will do the same for their partner.
- Tell students that peer editing can be very useful because sometimes it is hard to see mistakes in our own writing.
- Ask for a volunteer to help you model the process of peer editing. Begin by reading the example paragraph to the volunteer.
- Explain that this is the first step in the review process.
- Next, ask the volunteer to look at the writing with you and use the checklist to determine which areas need improvement.

Challenge

Have students record themselves as they practice giving their presentation. Then have them watch the video of themselves to note areas of improvement that they can apply when they present to the class.

Support

Work with students in small groups or individually to make corrections to their drafts.

Application

Entering/Emerging
Assist students with editing and writing the final copy for one aviator, orally presenting to a teacher during and after their writing.

Transitioning/Expanding
Have students edit and write the final copy for a chosen aviator, orally presenting to a teacher after their writing.

Bridging
Have students orally present their writing to a teacher before writing their final copy.

- Explain that all areas that receive a "no" or "sometimes" will need to be corrected.
- Tell students that, after they take turns editing their writing with their partner, they will edit their own writing by making any necessary corrections.
- Model for students how to make corrections on the writing.
- Tell students that they will be given paper to write their final copy once their editing is complete.
- Have students group with their partners for peer editing.
- As they work collaboratively, circulate through the classroom and make sure they are reading their paragraphs to their partner. Some students might need support as to how to proceed with the checklist since they may get confused about how to check off what they are doing with their partner and then what they will be checking on their own.
- When partners are done editing each others' drafts, you may wish to conference with them to clear up any confusion and take a look at their editing before they begin making corrections on their drafts.
- After conferencing, students will be ready to transition into their own editing.
- As students work, circulate through the classroom to support them. Some may need redirection as to what to do next. Others will need to be reminded to read each sentence at a time and fix it.
- Once students have finished editing their writing, give them three more copies of Activity Page 13.1 to write their final copy.
- After writing their final copy, have them use the frame to illustrate the aviator or an important event in their life.
- Collect final copies.

End Lesson

LESSON

15

UP, UP, AND AWAY: THE AGE OF AVIATION

Sharing What We Have Learned

PRIMARY FOCUS OF LESSON

Speaking and Listening
Students will share their writing by presenting it to the class.
[SL.2.2]

FORMATIVE ASSESSMENT

Student Presentations	Students will share their writing by presenting it to the class. **[SL.2.4]**

LESSON AT A GLANCE

	Grouping	Time	Materials
Application (60 min.)			
Sharing Our Presentations	Whole Group/ Independent	60 min.	❑ class copy of Activity Page 13.1 ❑ students' final copy of presentation (Activity Page 13.1)

ADVANCE PREPARATION

Application

- Designate an area in the classroom or the school, such as a bulletin board, for the Aviators Hall of Fame.
- Return final copies of presentations to students.
- Have the class copy of Activity Page 13.1 available to model presenting with the class.

Start Lesson

Lesson 15: Sharing What We Have Learned

Application

60M

Speaking and Listening: Students will share their writing by presenting it to the class. **[SL.2.2]**

SHARING OUR PRESENTATIONS (60 MIN.)

- Congratulate students for participating in the domain and being great researchers.
- Tell students that they can now share with the class what they have found out about the aviators they chose to research. Explain that they will then be able to display their writings in the Aviators Hall of Fame.
- Tell them that before they begin, you will model how to present to the class.
- Before you begin, brainstorm skills for presenting with students.
- Write "Skills for Presenting" on the board or chart paper. Some ideas might be: speak clearly and loud enough so everyone in the classroom can hear, speak at an appropriate pace, look at the audience from time to time.
- Present the class copy of Activity Page 13.1.
- After you have finished, tell students that they will be allowed to ask questions and offer feedback.
- Tell students that it is important to offer feedback in a positive way. Some ways they could do this is by telling the presenter something they liked about the presentation and something that could make it even better. Allow students to share three positives and one suggestion.
- Have students present their writing to the class.
- Consider introducing each presenter with their name and the aviators they chose to write about to the class.
- After all students have presented, display their presentations in the Aviators Hall of Fame.

End Lesson

Challenge

Have students choose one or more of the questions posed by the class during the presentation to do more research on.

Support

Allow students to choose a partner to accompany them when presenting.

Application

Entering/Emerging
Students may have an assistant with them when presenting their writing on one aviator.

Transitioning/Expanding
Students may have an assistant with them when presenting their writing on two aviators.

Bridging
Students may choose an assistant when presenting to the class.

Teacher Resources

Grade 2	Knowledge Research

Teacher Guide

Teacher Resources

In this section you will find:

- Quick Write Answer Key
- Activity Book Answer Key

Quick Write Suggested Answers	
QUESTION	ANSWER
Lesson 1	
Name one of the topics we discussed during the Read-Aloud that you would like to find out more about.	Answers may vary.
Lesson 2	
How was the invention of the hot-air balloon an innovation in aviation?	Answers may vary, but could include that the Montgolfier's discovered a gas that is lighter than air that provides lift; this innovation led to other discoveries; etc.
Lesson 3	
Describe the Wright brothers' flying machine.	It was a powered, glider-type machine that resembled a box kite.
Lesson 4	
Name at least three research steps you would use to find out more about aviators and aviation.	Answers may include: create research questions; search for information; organize information; prepare the final research project; present and share the final research.
Lesson 5	
Use evidence from the text to explain how Alberto Santos-Dumont may have felt when he learned of the Wright brothers and their flying machine.	Answers may include that Alberto felt inspired.
Lesson 6	
If you had the opportunity to meet Aída de Acosta, what questions would you ask her?	Answers may vary.
Lesson 7	
Name three resources you could use to find out more about some of the other inventions in the story.	Answers may vary, but could include the rest of the text, books, and Internet.
Lesson 8	
Pick one of the aviators you have learned about so far and describe one of their accomplishments.	Answers may vary.

Lesson 9	
Name a primary source of information.	Answers may vary and may include documents that give firsthand accounts or testimonies from direct witnesses, such as diaries, photographs, newspaper articles, videos or recordings of interviews, and letters.
Lesson 10	
Complete the sentences. Think about details in the story we read to answer the following question: "Why do you think the missions that the Tuskegee Airmen completed were daunting?"	Answers may vary, but may include: The missions of the Tuskegee Airmen were daunting because many people did not believe they could do the job, and the training facilities equipment was designed for men.
Lesson 11	
Use information about Amelia Earhart located during your research to write or illustrate a news story about a barrier in her life and how she dealt with it.	Answers may vary and must include evidence from the text.
Lesson 12	
Write a sentence that explains how Jerrie Mock and Joan Merriam Smith are different from Amelia Earhart. Write a sentence that explains how Jerrie Mock and Joan Merriam Smith are similar to Amelia Earhart.	Answers may vary, but may include they were different because they had different experiences. They were similar because they wanted to be the first woman to fly around the world.

ACTIVITY BOOK ANSWER KEY

NAME: _____
DATE: _____

1.1 Activity Page

KWL Chart

Know	Wonder	Learn
Answers may vary.	Answers may vary.	Answers may vary.

NAME: _____
DATE: _____

2.1 Activity Page

The Montgolfier's Invention

Write a sentence and draw pictures to answer the "Who," "Where," "What," and "How" questions.

Who?	Who invented the hot-air balloon? Answers may vary.
Where?	Where did the Montgolfiers live? Answers may vary.
What?	What did Joseph discover? Answers may vary.
How?	How did the Montgolfiers achieve their goal of flying? Answers may vary.

NAME: _____
DATE: _____

2.2 Activity Page

The Age of Aviation

Lesson #	Aviator(s)/ Invention/ Aircraft	Question/ Answer	Question / Answer	Question/ Answer	Research Resources
1	Answers may vary.	Answers may vary.	Answers may vary.	Answers may vary.	Answers may vary.
2	Answers may vary.	Answers may vary.	Answers may vary.	Answers may vary.	Answers may vary.
3	Answers may vary.	Answers may vary.	Answers may vary.	Answers may vary.	Answers may vary.
4	Answers may vary.	Answers may vary.	Answers may vary.	Answers may vary.	Answers may vary.
5	Answers may vary.	Answers may vary.	Answers may vary.	Answers may vary.	Answers may vary.
6	Answers may vary.	Answers may vary.	Answers may vary.	Answers may vary.	Answers may vary.

The Age of Aviation

Lesson #	Aviator(s)/ Invention/ Aircraft	Question/ Answer	Question / Answer	Question/ Answer	Research Resources
7	Answers may vary.	Answers may vary.	Answers may vary.	Answers may vary.	Answers may vary.
8	Answers may vary.	Answers may vary.	Answers may vary.	Answers may vary.	Answers may vary.
9	Answers may vary.	Answers may vary.	Answers may vary.	Answers may vary.	Answers may vary.
10	Answers may vary.	Answers may vary.	Answers may vary.	Answers may vary.	Answers may vary.
11	Answers may vary.	Answers may vary.	Answers may vary.	Answers may vary.	Answers may vary.
12	Answers may vary.	Answers may vary.	Answers may vary.	Answers may vary.	Answers may vary.

NAME: _____
DATE: _____

3.1 Activity Page

Who, What, When, Where, Why, and How

Create a question about the text using Who, What, When, Where, Why, and How. For example: Who invented the world's first powered airplane?

Who?	Answers may vary.
What?	Answers may vary.
When?	Answers may vary.
Where?	Answers may vary.
Why?	Answers may vary.
How?	Answers may vary.

NAME: _____
DATE: _____

7.1 Activity Page

Creating Better Questions

Questions I have before reading:

I wonder whether this book is about Answers may vary..

I wonder whether I will learn about Answers may vary..

What do I already know about this topic? Answers may vary.

Questions I have while reading: Answers may vary.

I wonder . . .

How come . . .?

Why does . . .?

Why is the character . . .?

How did . . .?

Questions I have after reading: Answers may vary.

How were my questions answered?

Which questions were left unanswered?

How can I find answers to my questions?

NAME: _____
DATE: _____

9.1 Activity Page

Primary and Secondary Sources

A primary source is . . .	A secondary source is . . .
Photograph	Encyclopedia
Interview	Magazine Articles
Speech	Textbooks
Diaries and Journals	Books

Cut the sources apart and glue them into the correct place on the above chart.

Photograph	Encyclopedia
Interview	Magazine Articles
Speech	Textbooks
Books	Diaries and Journals

NAME: _____
DATE: _____

10.1 Activity Page

Aviation Graphic Organizer

Aviator: Answers may vary for all questions.

1) What are three facts about this aviator?

2) What are two important things this aviator has accomplished?

3) What are three words that describe this aviator?

4) Why should people learn about this aviator?

NAME: _____

DATE: _____

11.1 Activity Page

Aviation Graphic Organizer

Aviator: Answers may vary for all questions.

1) What are three facts about this aviator?

2) What are two important things this aviator has accomplished?

3) What are three words that describe this aviator?

4) Why should people learn about this aviator?

NAME: _____

DATE: _____

12.1 Activity Page

Aviation Graphic Organizer

Aviator: Answers may vary for all questions.

1) What are three facts about this aviator?

2) What are two important things this aviator has accomplished?

3) What are three words that describe this aviator?

4) Why should people learn about this aviator?

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