

The Amazing Flying Machine

More than one hundred years ago, two brothers stood on a sand dune at Kitty Hawk, North Carolina. Nearby was a big, odd-looking machine they had built. The brothers were Orville and Wilbur Wright. The machine was the world's first powered airplane.

Today, that amazing flying machine is on display at the National Air and Space Museum in Washington, D.C. The museum has the largest collection of historic aircraft and spacecraft in the world.

A new exhibit at the museum marks the 100th anniversary of the Wright brothers' famous flight.

The Wright brothers' flying machine looks something like a box kite with an engine. But it made all future flight possible.

Wheels to Wings

In 1896, the Wright brothers made bicycles in Dayton, Ohio. But they dreamed of wings, not wheels.

At that time, the only way to fly was in a basket under a hot-air balloon. Not many people did so, as the balloons were hard to control.

Orville and Wilbur set out to build a machine that could fly. It would have glider-type wings and an engine.

Designing and building the flying machine took years. When it was finally ready, bad weather set in. The Wrights had to wait months to test their invention.

Flying was a dangerous mission. Other people had died trying to fly. On December 17, 1903, however, the Wright brothers were ready to take their chances.

Orville was the machine's first pilot. His flight lasted only 12 seconds. The flyer traveled just 120 feet and landed with a thud. The flight was short but very sweet. It proved that humans could fly.

Orville and Wilbur made four flights that day. They took turns as pilots. Wilbur made the longest flight. He flew for 59 seconds and went a distance of 852 feet.

Roll, Pitch, and Yaw

The Wright brothers' invention began the age of flight. Their machine was important not only because it flew, but because it could be controlled in the air.

The Wrights could control their craft in three important ways-roll, pitch, and yaw. They could *roll* the wings right or left. They could *pitch* the plane's nose up or down. And they could yaw the nose from side to side.

Being able to control the plane in those three ways made all the difference. All pilots use those same controls when flying today.

To the Stars

After the Wright brothers' success, flying really took off.

In May 1927, Charles Lindbergh flew a small, one-seater plane across the Atlantic Ocean. He was the first person to do such a feat alone.

That plane, the *Spirit of St. Louis*, can be seen at the Air and Space Museum.

The museum also displays a jet named *Glamorous Glennis*. Its pilot was Chuck Yeager. In October 1947, Yeager flew the plane 700 miles per hour. It was the first plane to fly faster than the speed of sound. With jets, humankind pushed toward the edge of space and beyond!

In 1962, John Glenn became the first man to orbit Earth. He flew in the Mercury *Friendship 7* space capsule. That tiny craft is now at the museum. The craft that first flew men to the moon is there, too.

For the Wright brothers, flight was an amazing adventure. Today, the adventure goes on. In the past hundred years, human flight has soared from Kitty Hawk to the moon!

Name: _____ Date: _____

1. Who of the following was the first to fly faster than the speed of sound?
 - A Orville Wright
 - B Charles Lindbergh
 - C Chuck Yeager
 - D John Glenn

2. Which of the following does the author describe last in the passage?
 - A Orville and Wilbur Wright's first flight
 - B Orville and Wilbur Wright's work making bicycles
 - C the flying machine designed by Orville and Wilbur Wright
 - D other men who achieved firsts in flight

3. It can be inferred from the passage that the Wright brothers' flying machine is displayed at the National Air and Space Museum because
 - A it was the first machine to fly across the Atlantic Ocean
 - B it was better than flying in a basket under a hot-air balloon
 - C it can be controlled in three important ways
 - D it is an important part of the history of flight in the United States

4. The passage states, "In 1962, John Glenn became the first man to orbit Earth."

In the sentence **orbit** means

- A circle
 - B leave
 - C fly near
 - D display

5. What would be another good title for this passage?
 - A How to Build a Flying Machine
 - B The Wright Brothers Take Flight
 - C Bicycles, Hot Air Balloons, and Flying Machines
 - D Flying Across the Atlantic Ocean

6. Before the Wright brothers invented a flying machine, what was the only way to fly?

7. Why do you think the author describes Orville's flight as "short but very sweet"?

8. The question below is an incomplete sentence. Choose the word that best completes the sentence.

The Wright Brothers originally made bicycles _____ they really wanted to build a flying machine.

- A and
- B so
- C because
- D but

9. Answer the following questions based on the sentence below.

The Wright brothers made 4 flights that day in their flying machine in Kitty Hawk, North Carolina

Who? the Wright brothers

(did) What? _____

When? _____

How? _____

Where? _____

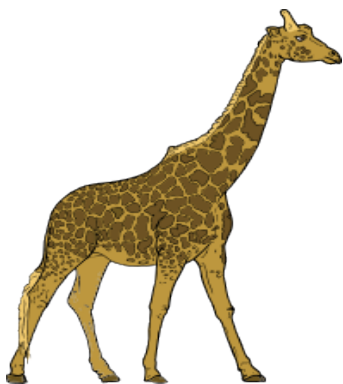
10. Read the vocabulary word and definition below and complete questions 10a, 10b, and 11.

Vocabulary Word: historic (his · tor · ic): famous or important in history.

10a. Read the sentences below and underline the word **historic**.

1. I was so glad to be alive on the historic day that the United States elected an African-American President.
2. All the books in the historic library are from before the Revolutionary War.
3. It was historic when the first woman was given the right to vote.
4. The appointment of Sonia Sotomayor to the Supreme Court was historic because she was the first Hispanic justice.
5. All of the aircraft and spacecraft in the National Air and Space Museum are historic.

10b. Which image shows a historic animal?



11. Is your cousin's diary a historic book? Why or why not?

Teacher Guide & Answers

Passage Reading Level: Lexile 680

Featured Text Structure: Descriptive – the writer explains, defines or illustrates a concept or topic

Passage Summary: This passage is about the Wright Brothers and their invention of the first flying machine. It describes their work to build the machine, their first flight, and ways their machine was innovative. The passage ends with a description of other “firsts” in flight, including breaking the sound barrier and orbiting the moon.

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- A Orville Wright
- B Charles Lindbergh
- C **Chuck Yeager**
- D John Glenn

2. Which of the following does the author describe last in the passage?

- A Orville and Wilbur Wright’s first flight
- B Orville and Wilbur Wright’s work making bicycles
- C the flying machine designed by Orville and Wilbur Wright
- D **other men who achieved firsts in flight**

3. It can be inferred from the passage that the Wright brothers’ flying machine is displayed at the National Air and Space Museum because

- A it was the first machine to fly across the Atlantic Ocean
- B it was better than flying in a basket under a hot-air balloon
- C it can be controlled in three important ways
- D **it is an important part of the history of flight in the United States**

4. The passage states, “In 1962, John Glenn became the first man to orbit Earth.”

In the sentence **orbit** means

- A **circle**
- B leave
- C fly near
- D display

5. What would be another good title for this passage?

- A How to Build a Flying Machine
- B **The Wright Brothers Take Flight**
- C Bicycles, Hot Air Balloons, and Flying Machines
- D Flying Across the Atlantic Ocean

6. Before the Wright brothers invented a flying machine, what was the only way to fly?

Suggested answer: Before the Wright brothers invented a flying machine, the only way to fly was in a basket under a hot-air balloon. [paragraph #6]

7. Why do you think the author describes Orville's flight as "short but very sweet"?

Suggested answer: Orville's flight was "short but very sweet" because although it only lasted 12 seconds, it was extremely thrilling because it proved that people could fly. [paragraph #10]

8. The question below is an incomplete sentence. Choose the word that best completes the sentence.

The Wright Brothers originally made bicycles _____ they really wanted to build a flying machine.

- A** and
- B** so
- C** because
- D** but

9. Answer the following questions based on the sentence below.

The Wright brothers made 4 flights that day in their flying machine in Kitty Hawk, North Carolina

Who? the Wright brothers

(did) What? **made 4 flights**

When? **that day**

How? **in their flying machine**

Where? **in Kitty Hawk, North Carolina**

10. ReadWorks recommends that you teach this vocabulary word to the whole class out loud using the four steps listed below.

Vocabulary Word: historic

Step 1: Introduce the word

- a. Teacher writes the word on the board and divides it into syllables: (his · tor · ic)
- b. Teacher says: "This word is historic. What is the word?" [All students reply together out loud: "historic."]

Step 2: Provide a child-friendly definition

- a. Teacher says: "Historic means famous or important in history."
- b. Teacher says: "In the text, the author states that the National Air and Space Museum has the largest collection of historic aircraft and spacecraft in the world. This means that this museum has lots of aircraft and spacecraft that are famous or important in history. Historic means famous or important in history."
- c. Teacher says: "What is the word?" [All students reply together out loud: "historic."]

Step 3: Practice the word

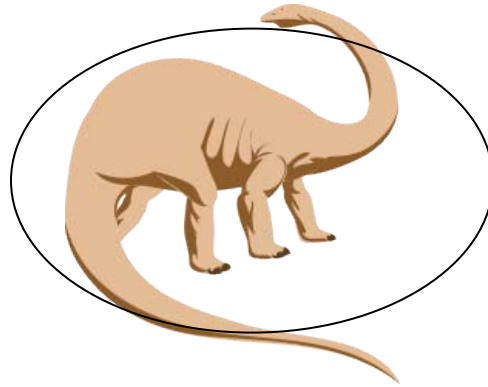
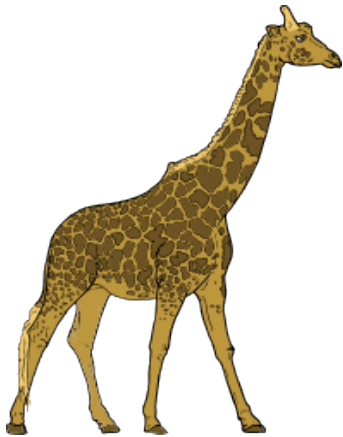
Teacher provides examples and additional opportunities to repeat the word. Read the 1st sentence out loud to your students. Begin reading it again and when you come to the vocabulary word prompt students to say the vocabulary word out loud. Then, finish reading the sentence out loud to your students.

- 10a.**
1. I was so glad to be alive on the historic day that the United States elected an African-American President.
 2. All the books in the historic library are from before the Revolutionary War.
 3. It was historic when the first woman was given the right to vote.
 4. The appointment of Sonia Sotomayor to the Supreme Court was historic because she was the first Hispanic justice.
 5. All of the aircraft and spacecraft in the National Air and Space Museum are historic.

Step 4: Check for student understanding

This step can be completed as a whole class activity or as an independent practice.

- 10b.** Which image shows a historic animal?



- 11.** Is your cousin's diary a historic book? Why or why not?

Suggested answer: No, my cousin's diary is not a historic book because it is not important or famous in history.

Suggested Additional Vocabulary: anniversary, invention, thud, pilot, control, feat, orbit