Compose a Digital Magazine Article: Flying Machines to Machines of War

Activity Type: HTML

Grade Level: 6–8

A RIF Guide for Educators

Objective: Students will draft an article for a digital magazine using information gathered from primary and secondary sources.

Content Connections: Literacy, History

Standards:

- **CCSS.ELA-LITERACY.RH.6–8.1:** Cite specific textual evidence to support analysis of primary and secondary sources.
- **CCSS.ELA-LITERACY.RH.6–8.2:** Determine the central ideas or information of a primary or secondary source; provide an accurate summary of the source distinct from prior knowledge or opinions.
- **CCSS.ELA-LITERACY.RH.6–8.9:** Analyze the relationship between a primary and secondary source on the same topic.

Summary: In this activity, students take the role of a writer assigned to write an article for the online magazine *Just Planes Magazine.* To write the article, students will research the early development of aviation and airplane design by reading through several scrapbooks compiled by the Wright brothers. The article will explore some aspect of the evolution of aircraft designs between 1903 and the end of World War II, focusing on the evolution of aircraft as weapons of war. Students will compose their articles in Google Slides, using images and other graphic features to enhance them.

Before the Activity

Explore the following online exhibits with the class or instruct them to explore them on their own:

The Wright Brothers and The Invention of the Aerial Age: This online exhibit from the Smithsonian National Air and Space Museum has many interesting facts and images about the Wright brothers and their efforts.

The Golden Age of Flight: This online exhibit explores the American fascination with flight during the 1920s and 30s, a period when pilots and airplane designers pushed the limits of powered flight.

Interwar Military Aviation: This online exhibit traces the development of airplanes for military use during the Interwar period, the years between the end of World Wars I and the start of World War II.

World War II Aviation: This online exhibit explores the developmental leaps in military aviation design made during World War II.

Explore the Wilbur and Orville Wright Papers Teacher Page:

The Teachers Page to The Wilbur and Orville Wright Papers at the Library of Congress provides standards alignment information, links to the Collection Highlights page, the collection Finding Aid, and a list of additional Related Resources.

This activity was funded by a Library of Congress Teaching with Primary Sources Grant.

Explore the Readings: Students will be using the following readings and documents to complete this project.

Books:

- Nancy Robinson Masters, *Bombers of World War II* (Minnesota: Capstone Press, 1998).
    - In this overview of the bomber class of World War II military aircraft, Robinson Masters introduces the capabilities of different kinds of bombers, their special characteristics, and the types of missions they flew. There is additional information on how the bombers were used after the war.
- Nancy Robinson Masters, *Fighter Planes of World War II* (Minnesota: Capstone Press, 1998).
    - In this overview of the fighter class of World War II military aircraft, Robinson Masters introduces the aircraft used by the Army Air Force, Navy, and Marines during World War II. Information is included on how the fighters were used, the weapons they carried, and examples of missions flown. Robinson Masters also covers some of the German and Japanese fighters used during the war.

Archival Sources:

- Scrapbooks: January 1902-December 1908
    - This large collection of scrapbook materials contains newspaper clippings from the *Illustrated London News* and the Belgian periodical, *Les Sports.* The clippings include contemporary photos and news items about the Wright brothers' progress with their glider and, later, the motored aircraft.
- Scrapbooks: January-December 1909
    - This scrapbook documents world interest in the Wright brothers' activities. Different articles point out that the brothers have opened a flight school in Pau, France, and hosted their sister and the Contessa de Lambert in short flights. Other pages include early articles about other nations developing their own aircraft on the Wright model, including stories about the militaries of both Britain and Germany expressing interest in aircraft purposed for military applications.
- Scrapbooks: July-December 1910
    - This large scrapbook collection continues with articles from the United States and around the world detailing some of the flight efforts of emerging pilots and flight challenges. Page 8 in the scrapbook contains an article in which the governor of New Jersey declares that airplanes are "too noisy for war." Page 11 has the front page of an Arabic language newspaper featuring a photo of one of the early Wright brothers' planes. This shows the breadth of interest in flight reaching far around the world. Page 12 gives students an overview of the different types of aircraft that the newspaper calls "The Most Brilliant Stars of the Great Blue Way."
- Scrapbooks: January 1910-December 1913
    - This scrapbook contains clippings of the legal challenges to the Wright patent and, also, the many news reports on Wilbur Wright's death from typhoid fever. Students should be directed to the newspaper cartoon featured on page 53 of the scrapbook. It shows Uncle Sam with a plane in his hand and, below, caricatures of the American allies, the French, and the potential World War I enemy in the image of the Kaiser. Ask students to think about how this image contributes to the direction of using aircraft for military purposes as well as passenger or other applications.

This activity was funded by a Library of Congress Teaching with Primary Sources Grant.

Online Resources for Initial Research:

These links bring students to a number of great resources online. Students have been instructed to use these links to inform their research methods and adjust their search terms to find additional resources.

- Rebecca Maksel, "The World's First Warplane," *Air & Space*, October 21, 2011.
- The Editors, "100 Years of Naval Aviation," *Air & Space*, March 2011.
- History of Flight: U.S. Centennial of Flight Commission
- Michael A. Clarke, "The Evolution of Military Aviation," *The Bridge*, December 3, 2008.
- Tom D. Crouch, Walter James Boyne, Roger E. Bilstein, "History of flight," *Encyclopaedia Britannica*.
- "The Dream of Flight," *Library of Congress*
- Richard P. Hallion, "Airplanes that Transformed Aviation: Sixteen historic designs that changed the game," Air and Space Magazine, July 2008.

During the Activity

Warming Up:

Direct students to complete the Warming Up activity. Group students into mixed-ability pairs and have them take turns describing the airplanes they imagined. Then, have pairs explain how each person's idea of a plane is similar to or different from others in the class and also the 1903 Wright Flyer. If time permits, have volunteers share their observations with the class.

Sample observations:

The Wright Flyer is not very sophisticated when compared to modern aircraft, from the construction materials to the technology needed to fly the plane.

One of the most obvious changes from early aircraft to more modern designs is the nose of the plane. In modern aircraft designs, it is conical in shape, which allows air to pass over it without undue resistance. This makes it easier for the plane to go faster.

Fighter planes have sleeker designs than bombers. This is so the planes can go faster.

Getting Started:

Have students read the introductory paragraphs and real-world topics. After students read, lead the class in a brief discussion using the following discussion prompts:

- Did the Wright brothers believe their plane would ultimately be used for military applications?
- How might the interests of the militaries in other countries have encouraged the Wright brothers to keep design options in mind?
- How might military planes in the early years of aviation history have given a country an advantage on the battlefield?

This activity was funded by a Library of Congress Teaching with Primary Sources Grant.

Student responses:

Answers will vary, but students may note that military aircraft started to be developed very early on, especially in England and France. Early uses of aircraft included package and people transport, but the idea of the airplane as a possible war weapon appealed to some European nations facing a brewing war on their borders. Students may note that the Wright brothers recognized the military application almost as soon as they had a viable design for an airplane. With airplane clubs, demonstrations, air races, and other events, the governments of foreign nations were almost forced to pay attention to where aircraft technology was headed.

As students get started, direct them to the following LOC tools:

- Searching the Library of Congress: This tutorial will walk students through the process of searching the Library of Congress's many sources.
- Primary Source Analysis Tool: This tutorial will introduce students to primary sources and provide them with tools for reading and analyzing them.

Readings:

Students may read the suggested readings on their own or in pairs of small groups. For students who may need support understanding the key ideas, use the suggested comprehension questions below. Ask questions during or after students' reading time and encourage students to record the responses in the Research Note Taker.

Books:

- Nancy Robinson Masters, *Bombers of World War II* (Minnesota: Capstone Press, 1998)
    - What was a distinguishing feature of all bombers? *They were large and relatively slow compared to fighter aircraft. They needed to be heavy enough to carry bombs over great distances, but that great weight slowed them down.*
    - What were some of the key bombers for the different military forces? *Answers will vary, but should include an example from at least two different countries.*

- Nancy Robinson Masters, *Fighter Planes of World War II* (Minnesota: Capstone Press, 1998)
    - Compare the early Wright brothers' aircraft with World War II fighter planes. What distinguished the more modern planes from early aircraft? *Fighter craft were much faster, more maneuverable, had far more powerful engines, and carried military munitions and operators.*

Archival Sources:

- Scrapbooks: January 1902-December 1908
    - Find the long article from August 30, 1908 in the *Boston Sunday Post* (image 129). What does this article suggest about the future of planes in war? *It suggests that "[w]ithin a short time it will have been recognized as a war engine by every advanced nation in the world."*
- Scrapbooks: January-December 1909
    - Find the long article from June 18, 1909 in *The Dayton Herald* (image 148). What does this article indicate about the interest of military officials in airplanes? *The article describes a metal ceremony where a great number of military officials were present, implying that the military was very interested in encouraging continued aviation and aeronautic research and development.*

This activity was funded by a Library of Congress Teaching with Primary Sources Grant.

- Scrapbooks: July-December 1910
    - Find the long article from September 5, 1910 in the *New York Herald* (image 112). What does the competition described in this article suggest about how some at the time envisioned the military use of aircraft? *The bomb-throwing competition indicates that some may have believed that airplanes might be useful in raining weapons from the sky on armies on the ground.*
- Scrapbooks: January 1910-December 1913
    - What does the cartoon on page 53 of the scrapbook say about the role of the United States and its aircraft in the years leading up to World War I? *Possible answer: The United States in the form of Uncle Sam holds the aircraft, Peace, in his hand. The U.S. allies, the French, look pleased. The enemy of the French, the German soldier, looks distressed. The cartoon seems to show that all sides see the importance of aircraft in any upcoming conflict and, at the time, the United States had a head start on the idea of military aircraft.*

Activity: Develop a Digital Magazine Article on the Evolution of Aircraft:

Students will assume the role of a writer at *Just Planes Magazine*, a digital publication specializing in aeronautics news and information. They have been tasked with drafting a digital article on the evolution of the aircraft from 1903 to the 1950s. The editor wants an explanation of how aircraft designs changed to suit specific needs. He has instructed the writer to focus on the evolution of aircraft as weapons of war.

Students will conduct primary and secondary research into the history of the airplane.

Primary Sources:

- Scrapbooks: January 1902-December 1908
- Scrapbooks: January-December 1909
- Scrapbooks: July-December 1910
- Scrapbooks: January 1910-December 1913

Secondary Sources:

- Nancy Robinson Masters, *Bombers of World War II* (Minnesota: Capstone Press, 1998)
- Nancy Robinson Masters, *Fighter Planes of World War II* (Minnesota: Capstone Press, 1998)
- R. G. Grant, *Flight: The Complete History of Aviation* (New York: DK Publishing, 2017).

Supplementary Online Resources:

The student guide also suggests students look through a number of online resources to supplement their research. These are listed above.

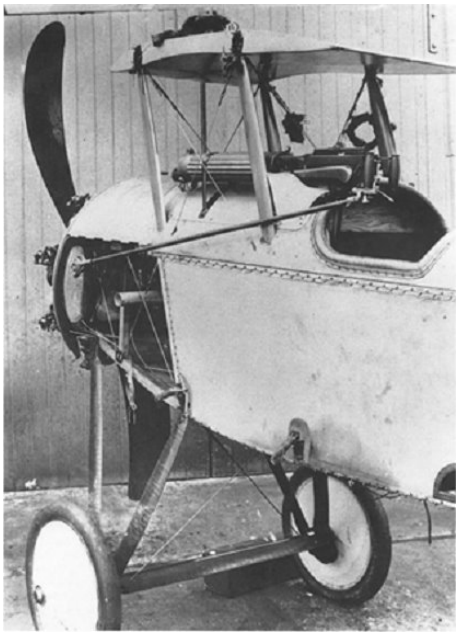
Students will build their articles in Google Slides and should include the following components:

- Two slides describing the decade-long attempt at developing an airplane useful for military goals.
- Four more slides documenting the evolution of aircraft, focusing on the evolution of airplanes used for military purposes. These slides will include:
    - An image of the aircraft
    - Text that describes the most important technological features of the aircraft
    - Possible additions: Labels or text boxes to point out features on the images

This activity was funded by a Library of Congress Teaching with Primary Sources Grant.

Sample Slide:

In a student-produced slide, the following slide components should be organized in a manner that is visually appealing and engaging.



Mounting of synchronized Vickers gun on Bristol Scout, using the Vickers-Challenger gear, Public Domain; https://en.wikipedia.org/wiki/Synchronization_gear#/media/File:Bristol_Scout_with_Vickers_Challenger.jpg

Description: This image shows a machine gun mounted on the front of a Bristol Scout, a British military aircraft. The machine gun points directly toward the front of the aircraft, making it possible for the pilot to also act as the gunner. This was only possible because of the development of the machine gun synchronizer.

Significance: The machine gun synchronizer was an important and difficult-to-achieve advancement in military aviation. It allowed the pilot to fire a machine gun while sitting in the cockpit and firing in the same direction. The synchronizer tied the firing of the machine gun to the placement of the drive shaft. When the trigger was pulled, the firing was delayed until the drive shaft reached a particular spot in its rotation. At that point, the machine gun fired. This allowed the bullet to pass through the spinning prop without hitting the blades. This advancement allowed pilots to engage in dogfighting and other fighting maneuvers that made the planes more useful as machines of war.

After the Activity

Elaborate: Consider having the students expand their exhibits to include more artifacts, longer descriptions, or a longer and more involved proposal statement. Alternatively, consider having students present their slideshows to the class or in small groups.

Analyze: Consider having students draft a short analysis paper of two to three pages explaining how the artifacts they selected function together to express a narrative or theme. They should elaborate in their writing on how they selected the images and how they decided on their focus.

Reflect: Consider the following reflection prompts, and submit your answers in the form of a short essay or through class discussion:

> How did the use of primary documents help you better understand the significance of the accomplishments of the Wright brothers? How did reading about technological developments following the Wright brothers' designs help you understand that technology builds upon previous successes and failures? How can a failure in design or production possibly contribute to future success in technological development?

This activity was funded by a Library of Congress Teaching with Primary Sources Grant.