

# The Wright Stuff

## The Wright Stuff

by Steve Perigard

Audience: Students in grades 3-8

### Additional Resources:

*First Flight: The Wright Brothers* (DK Readers, Level 4) by Leslie Garrett

Re-Living The Wright Way, National Aeronautical and Space Administration  
<https://wright.nasa.gov/index.htm>

The Inventive Wright Brothers: A Teacher's Guide, The Library of Congress  
<http://www.loc.gov/teachers/classroommaterials/primarysourcesets/flight/>

The Wright Brothers & The Invention of the Aerial Age, The Smithsonian National Air and Space Museum  
<https://airandspace.si.edu/exhibitions/wright-brothers/online/>

*The Wright Brothers for Kids: How They Invented the Airplane, 21 Activities Exploring the Science and History of Flight* by Mary Kay Carson

*Who Were the Wright Brothers?* by James Buckley Jr. and Tim Foley

Wright Brothers' Flying Machine, NOVA Science Programming, PBS  
<http://www.pbs.org/wgbh/nova/wright/>

Wright Brothers National Memorial, National Park Service  
<https://www.nps.gov/wrbr/index.htm>



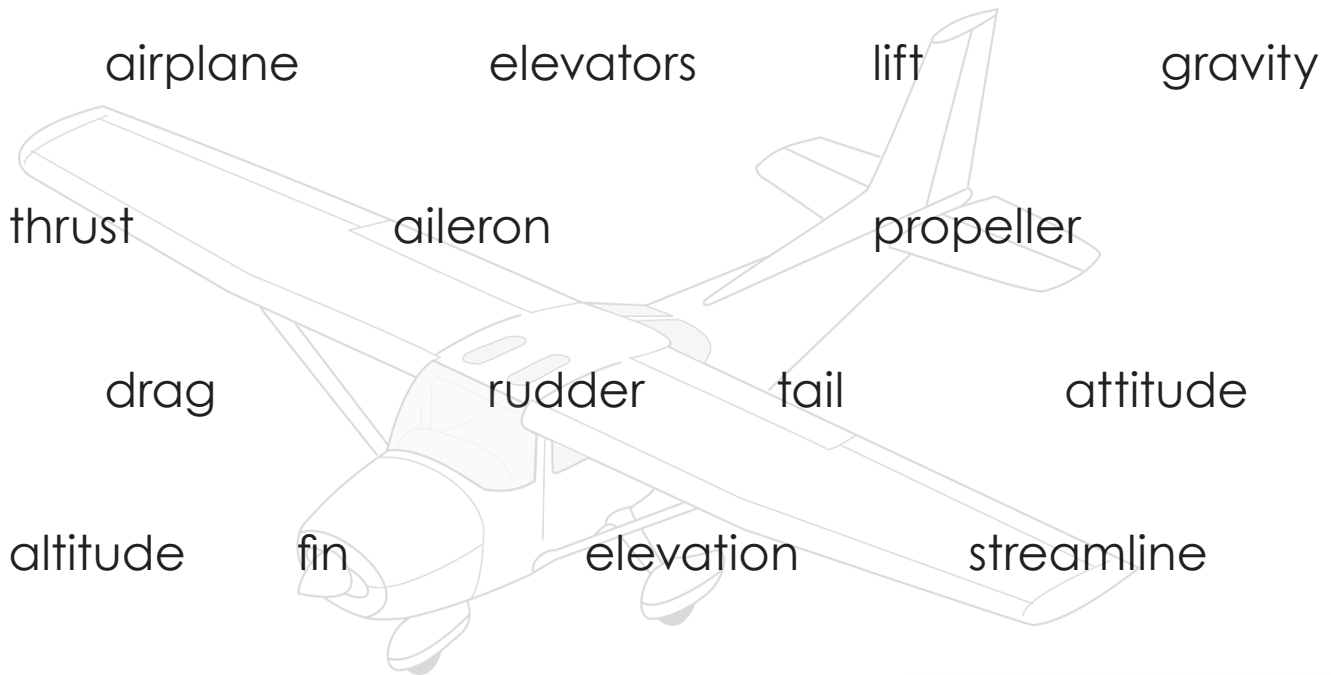
*Wilbur and Orville Wright with their second powered machine; Huffman Prairie, Dayton, Ohio, May, 1904. Glass negatives from the Papers of Wilbur and Orville Wright, Library of Congress Prints and Photographs Division, Washington, D.C. 20540. Call number LC-W86- 30 [P&P].*

**B**arely out of their teens, two enterprising, plucky bicycle mechanics team up with their studious sister to out-invent the world's top innovators and achieve the timeless dream of human flight. From their tiny workshop in Dayton, Ohio, Orville and Wilbur Wright travel to the sandy dunes of North Carolina where they launch the first powered, sustained, and controlled flight of an airplane, changing the world forever.

Join Virginia Repertory Theatre for this fun-filled story of great American innovators who helped make aeronautics and air travel what it is today. This is an inspirational story of determination as the Wright brothers never lost their heart nor their resolution, even through years of frustrating failure. Let this theatrical performance make you feel as if you were there in Kitty Hawk, North Carolina along with the Wright brothers in December of 1903 as the world took flight for the very first time!

# Aviation Vocabulary

Thanks to pioneers of flight such as the Wright brothers, the science of aviation is well understood. During the years when the Wright brothers and other innovators were experimenting with flight and discovering the science behind it, they used terminology to describe equipment, technology, and phenomena that characterize the field of aviation. Define the terms below:



Which of the words above describe equipment or parts of a plane? Highlight those words. Which of the words above describe a force? Circle those words. Then, use at least three of the terms you've learned in a paragraph about aviation.

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## Think and Discuss

Read "How the World Explores Space Together," by Caleb Wong, on the Smithsonian National Air and Space Museum website at <https://airandspace.si.edu/stories/editorial/how-world-explores-space-together>.

How is today's space exploration similar to and different from early experimentation with aviation and flight? In what ways is it easier today to share knowledge and experiences and to collaborate with others?

# Inspiring Flight

In the play, the Wright brothers receive a gift from their father, a small toy helicopter designed by French aviation pioneer Alphonse Pénau. The brothers were so enthralled with the little machine that they made several copies of it in various sizes before moving on to other pastimes. Orville recalled the little toy as being the spark that led to the brothers' fascination with flight.

Have you ever been inspired by a toy? Explain.

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The Wright brothers made their own toy helicopters, based on the toy given to them by their father. What would you like to try and make on your own? Explain.

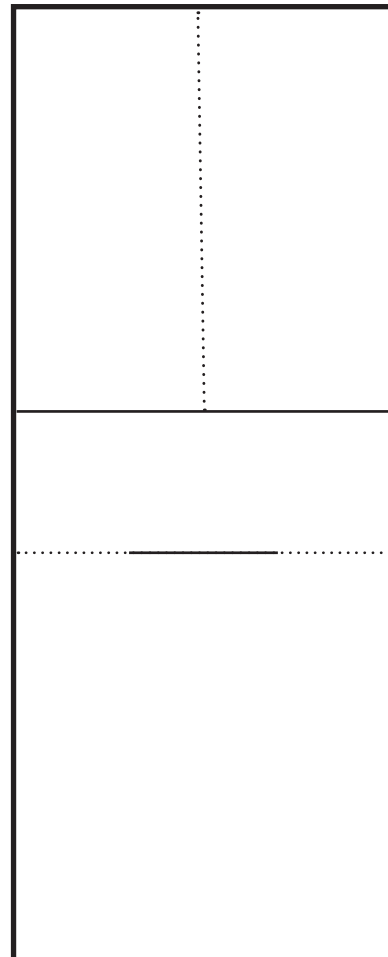
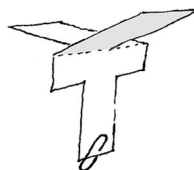
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## Make Your Own Helicopter

1. Begin by cutting out the rectangular pattern to the right.
2. Cut along the dotted line so that the top of the helicopter is cut into two one-inch sections. These will be the helicopter blades.
3. Fold each of those two sections in opposite directions along the line so that your helicopter is a "T" shape.
4. On the bottom part of the helicopter, cut a notch from each side along the other dotted lines.
5. Fold the two notched sections toward each other to create a narrow, thicker base for the helicopter.
6. Fold the base upward at about 1 inch from the bottom, and secure a paper clip to the bottom to add weight to your helicopter.

**Your helicopter is ready to fly!**



# Analyzing Primary Source Material

These two photographs were taken during the Wright brothers exploration of aviation (left: *Crumpled glider wrecked by the wind on Hill of the Wreck [named after a shipwreck]*, October 10, 1900, attributed to Orville or Wilbur Wright; and right: *First flight, Dec. 17, 1903*, attributed to John T. Daniels). The images portray tragedy and triumph. Use the organizer below to analyze the historical photographs by recording your observations, reflections, and questions about each.

**Primary sources** are the raw materials of history — original documents and objects which were created at the time under study. They are different from secondary sources, accounts, or interpretations of events created by someone without firsthand experience. *Source: U.S. Library of Congress*



Observe		Reflect		Question	
WRECK	FLIGHT	WRECK	FLIGHT	WRECK	FLIGHT

Imagine you were there in Kitty Hawk with Orville and Wilbur Wright. Describe the feelings they must have experienced when each of these photographs was taken. Use the back of this paper to record your ideas.

# The Wright Brothers: A Timeline

Match the following events in the lives of the Wright brothers with the dates on the timeline. Use Internet resources to check your work.

The Wright brothers begin repairing and manufacturing bicycles.

1878

Wilbur and Orville Wright begin a printing company operating under the name, "Wright Bros."

1889

The Wright brothers finally receive a patent for their invention.

1893

The Wright brothers begin testing gliders in the sand dunes near Kitty Hawk, North Carolina.

1896

German glider pilot Otto Lilienthal dies during a flight experiment; the Wright brothers begin to think more about aeronautics and flight.

1900

Milton Wright gives Orville and Wilbur a toy helicopter made of bamboo, paper, and cork. It is powered by just a rubber band, but it sparks the boys' interest in the science of flight.

1901

Wilbur and Orville develop a wind tunnel to study how their wing designs react to air resistance, resulting in improvements to the wing design.

1903

Orville Wright dies of a heart attack.

1906

The Wright brothers make their first manned, powered, and controlled flight over Kitty Hawk; it lasted 12 seconds and spanned 120 feet.

1912

Orville sells the Wright Company and the Wright's 1906 patent.

1915

Wilbur Wright dies of typhoid.

1948

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Virginia Rep Presents...

## The Wright Stuff

by Steve Perigard

Virginia Repertory Theatre

Nathaniel Shaw, Artistic Director  
 Phil Whiteway, Managing Director  
 Bruce C. Miller, Founding Producer

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### Theater Etiquette



#### **Clap, but know when to do so.**

You should clap after a play, act, or song, or right before intermission. If you loved the show, you can give a "standing ovation" at the end. That's when you stand up while applauding.

#### **It's quiet time (sort of).**

If the play makes you laugh or cry, that is fine, but you can chat with your friends afterwards. Be respectful and quiet so the actors can focus on their roles. Being quiet allows the rest of the audience to concentrate on the play.

# Behind the Curtains

Many people with different skills and talents work together to make a production such as *The Wright Stuff* come to life. Can you match these theater jobs with their descriptions?

**set designer**

a person who plays a role or character in stage plays, motion pictures, television broadcasts, etc.

**playwright**

a person who creates the look of each character by designing clothes and accessories the actors will wear in performance.

**stage manager**

this person's job is to pull together all the pieces and parts of a play – the script, actors, set, costumes, lighting and sound, and music to create a production.

**actor**

this job focuses on using light to create effects that match the mood of various scenes in a performance.

**costume designer**

this person is a writer of scripts for plays. The script tells a story through the actions and words of the characters.

**lighting designer**

this person creates the physical surroundings of a play, including any scenery, furniture, or props used throughout the play.

**director**

this person helps the director and helps organize the actors, designers, stage crew, and technicians throughout the production of a play.