

FLIGHT OF THE WRIGHT BROTHERS

Orville and Wilbur Wright are often known as the **Wright Brothers**, and are credited with the first successful flight of an engine based airplane. Born to Milton and Susan Wright, Wilbur was born in 1867 and Orville in 1871. They had five other siblings, and their family heritage went back to 1636 Massachusetts. In 1878, their father, who was a travelling bishop for the Church of the United Brethren in Christ, brought home a helicopter toy for his sons. They loved it so much that they played with it until it broke, then built their own, starting them down their path of **aviation**, the design, development, operation, production, and use of aircraft.

Neither one of the Wright brothers graduated from high school, though they were gifted. They both tried their hands in some ventures, Orville dropping out of school to start his own printing business with Wilbur joining shortly after. They launched their own paper, *The West Side News*, with Orville being the publisher and Wilbur being the editor. They eventually dropped this venture with the national bicycle craze, starting their own bike shop known as the Wright Cycle

Company. With the money they gathered from this, they started to fund their aviation projects

1896 was a landmark year for aviation, with three important events occurring during this year. Samuel Langley was the first person to fly a steam powered fixed wing model aircraft. That same year, **Octave Chanute** tested several **gliders**, or devices that use wind and lift to move through the air without any outside help, over the shore of Lake Michigan. The Wright Brothers saw pictures of **Otto Lilienthal** from Germany flying in his many gliders, but met his end in 1896 to a tragic accident. His death was the turning point for the Wright Brothers, when they started to put all their effort into aviation.

The Wright Brothers pulled work from many different sources, including **Leonardo da Vinci**, a famous 16th century **polymath** (A person whose expertise goes across many areas). They concluded that practicing gliding was the best way to achieve aerial flight, despite Lilienthal's death. Their goal was to create a method to reliably control yourself in a glider while remaining safe. **Control** was deemed the unsolved third part of 'the flying problem'.

Wilbur spent a lot of time observing birds, and concluded that they changed the angles of the ends of their wings to move swiftly left or right through the air. This was like a bicycle, something they were very

familiar with. They managed to achieve it with a system of pulleys and levers, creating the emulation of bird flight, which eventually came to be known as **wing warping**. Wilbur tested his theory in July of 1899 on a grounded plane sat on a bicycle. This helped him fine tune his wing warping techniques.

The Wright Brothers moved to **Kitty Hawk, North Carolina** in 1900 to start testing their manned gliding experiments. This was to give them privacy as well as the breezes from the Atlantic coastline. They went through many tests, with Wilbur originally thinking they didn't need a tail for the plane, something that was quickly corrected. Until 1902, Wilbur did all the gliding to protect his younger brother.

These tests eventually led to the first powered flight. Having perfected their glider, they went on to adding power to the glider. The **flyer**, a term used to describe a powered glider, cost less than a thousand dollars to make, and had 12 horse power. On their first attempt on December 14th, 1903, Wilbur won a coin toss to be the first one to pilot the flyer. However, the flyer stalled, causing minor damage to it. This was caused by lack of experience, and with proper experience Wilbur was confident that he could make the Flyer work. Following repairs, the first successful flight was flown by Orville on December 17th, 1903. He flew 120 feet in 12 seconds, going only 6.8 miles per hour. The

following flights went 175 and 200 feet, by Wilbur and Orville respectively. This marked the first flight of a powered aircraft worldwide.

The design that the Wright Brothers used has been analyzed over the years. It was determined to be so unstable that only the Wrights could pilot it, largely due to their training in the gliders from 1900-1902. Their legacy lived on though, and they went down in history as the first people to invent powered flight. While Wilbur was the leader of the project, ultimately, it was Orville's initial ambition that got them there. As such, they were inseparable when in the public eye, and for the most part always referred to their accomplishments in the plural form.

1) Which of the following was the Wright Brother's first non-aviation project?

A: Printing company

B: Bicycle shop

C: Entrepreneurs

D: A & C

2) Which of the following was NOT a pioneer of aviation?

A: Wilbur Wright

B: Leonardo da Vinci

C: Milton Wright

D: Octave Chanute

3) Which of the following tells where the Wright Brothers moved in 1900?

A: Kitty Hawk, North Carolina

B: Cape Cod, Massachusetts

C: Lake Michigan

D: None of the above

4) How many years did the Wright Brothers test their gliders?

A: 1

B: 3

C: 2

D: 4

5) Which of the following tells how much horse power their first Flyer had?

A: 24

B: 12

C: 31

D: 21

6) Which of the following was the date of the Wright Brothers first successful flight?

A: December 17th, 1903

B: December 13th, 1903

C: December 15th, 1903

D: December 14th, 1903