

The Wright Brothers (goes with the crossword puzzle)

Childhood

On April 16, 1867, Milton and Susan Wright welcomed their third child into their household near Millville, Indiana. The newest member of the family, Wilbur, had two older brothers to contend with: Reuchlin, 6, and Lorin, 4. Little did Susan Wright know that she had given birth to the first half of one of the world's most famous inventive partnerships. The other half of the duo, Orville, was born four years later, on August 19, 1871, in the family's newly-built home at 7 Hawthorn Street in Dayton, Ohio. Orville's sister, Katharine, was also born in that house on his third birthday.



A minister in the Church of the United Brethren in Christ, Milton Wright moved his family to Dayton so he could edit the church newspaper published there. The Wrights stayed in Dayton until 1878, when Milton was elected bishop and moved the family to Iowa. In 1885, they returned to the house at 7 Hawthorn Street.



Wilbur and Orville in 1878, ages 12 and 8. IDs: P.62.167.2, .3

As youngsters, Wilbur and Orville looked to their mother for mechanical expertise and their father for intellectual challenge. Milton brought the boys various souvenirs and trinkets he found during his travels for the church. One such trinket, a toy helicopter-like top, sparked the boys' interest in flying. In school, Wilbur excelled, and would have graduated from high school if his family had not moved during his senior year. A skating accident and his mother's illness and subsequent death kept him from attending college. Orville was an average student, known for his mischievous behaviour. He quit school before his senior year to start a printing business.

The Wright cycle shop

The first time Wilbur and Orville referred to themselves as "The Wright Brothers" was when they started their own printing firm at the ages of 22 and 18. Using a damaged tombstone and buggy parts, they built a press and printed odd jobs as well as their own newspaper.

In 1892, the brothers bought bicycles. They began repairing bicycles for friends, then started their own repair business. They opened up a bicycle shop in 1893, and three years later, made their own bicycles called Van Cleves and St. Clairs. While nursing Orville, who was sick with typhoid in 1896, Wilbur read about the death of a famous German glider pilot. The news led him to take an interest in flying. On May 30, 1899, he wrote to the Smithsonian Institution for information on aeronautical research.



The Wright Cycle Shop in Greenfield Village

Within a few months after writing to the Smithsonian, Wilbur had read all that was written about flying. He then defined the elements of a flying machine: wings to provide lift, a power source for propulsion, and a system of control. Of all the early aviators, Wilbur alone recognized the need to control a flying machine in its [three axes of motion: pitch, roll, and yaw](#). His solution to the problem of control was 'wing warping.' He came up with the revolutionary system by twisting an empty bicycle tube box with the ends removed. Twisting the surface of each 'wing' changed its position in relation to oncoming wind. Such changes in position would result in changes in the direction of flight. Wilbur tested his theory using a small kite, and it worked.

The world's first airplane

In August of 1900, Wilbur built his first glider. He then contacted the U.S. Weather Bureau for information on windy regions of the country. Reviewing the list, he chose a remote sandy area off the coast of North Carolina named Kitty Hawk, where winds averaged 13 m.p.h. He and Orville then journeyed to Kitty Hawk where they tested the 1900 glider. The following year, they tested a new and improved glider with a 22-foot wingspan. A disappointing performance by the 1901 glider prompted the Wright brothers to construct a wind tunnel to test the effectiveness of a

variety of wing shapes. Using the results of the wind tunnel experiments, they constructed their 1902 glider. Testing it at Kitty Hawk in October, they met with success, gliding a record 620 feet. Once again they returned to Dayton and began work on developing a propeller and an engine for their next effort, a flying machine.



Wright Flyer at 10:35 am on
December 17, 1903.
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Having designed a propeller with the same principles they used to design their wings, Wilbur and Orville then built their own 4-cylinder, 12-horsepower engine. They built the 1903 Flyer in sections in the back room of their cycle shop at 1127 West Third in Dayton. When completed, it was shipped down to Kitty Hawk and assembled. On December 14, 1903, Wilbur won a coin toss and made the first attempt to fly the machine. He stalled it on take-off, causing some minor damage. The plane was repaired, and Orville made the next attempt on December 17. At 10:35 a.m., he made the first heavier-than-air, machine powered flight in the world. In a flight lasting only 12 seconds and covering just 120 feet, Orville did what men and women had only dreamed of doing for centuries, . . . he flew.