

The First Airplane

from **Celebrating Chemistry**



At 10:35 a.m. on December 17, 1903, two brothers from Ohio flew the first successful airplane for 12 seconds and 120 feet along a beach in Kitty Hawk, North Carolina. Taking turns as pilot, they flew three more times that day. Each time they flew farther. On their fourth try, they managed to go 852 feet in 59 seconds—an amazing feat at the time. The two brothers had invented powered flight.

Orville and Wilbur Wright owned a bicycle shop in Dayton, Ohio. Although they had not gone to school to learn about airplanes or engineering, they were good mechanics. By repairing bicycles, they learned how gears and pulleys worked. They also learned to take careful notes about what they saw.

Each time they made a new design and tested a machine, they took notes and made drawings. They would study these to figure out what they could do better the next time.

Before the Wright brothers flew, they did many things to prepare for this extraordinary achievement. They started years before by reading everything they could find about air, balloons, and kites. Then they made careful sketches of what they wanted to build. They began by making model kites to learn how air flowed over wings. These kites were small at first, like the ones that we might fly on a windy day. They made them bigger and bigger until they had a glider—a kite that is big enough to hold a person. Unlike a plane, a glider has no engine.

The Wright brothers made three gliders before building their first airplane. Each time they made a glider, they would test it and make careful observations. Then they would use what they learned to make the next glider better.

When they made a glider that flew well, they added an engine. This step was harder than it sounds, because they had to find an engine that was both light-weight and strong. The engines that they could buy were either too heavy or too weak, so they asked their friend Charlie Taylor to help them build one. The first engine that Charlie built broke almost immediately, but the second one worked well.

After Orville and Wilbur installed the engine in their plane, they were almost ready. They simply had to wait for the

perfect day with just the right amount of wind. On December 14, 1903, the wind was just right, and Wilbur climbed aboard. Orville helped guide the plane as it slid down a ramp made of wood. Suddenly, the plane went almost straight up, then stopped and crashed to the ground. Wilbur was not hurt, but the airplane was damaged. The brothers fixed the plane and again waited for perfect conditions. On the morning of December 17, 1903, they had their chance. This time, with Orville as pilot, the airplane flew into history.



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TIMELINE: 100 YEARS OF POWERED FLIGHT

