

Joseph Montgolfier and Jacques Montgolfier Biography

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Biography

The sons of a successful paper manufacturer, the Montgolfier brothers were skillful mathematicians and avid experimenters (Joseph Montgolfier constructed a parachute in 1799 that successfully carried a sheep to safety). They read extensively, becoming familiar with Benjamin Franklin's famous electrical experiment with a kite, and had read Joseph Priestley's treatise on the properties of air.

In 1782 Joseph Montgolfier made an interesting observation. During a fire, he witnesses some agent--smoke, perhaps, or some sort of gas--carrying sparks high into the sky. Maybe there was a way to harness this power to lift a man. He first started with an oblong bag made of fine silk that he filled with smoke from a paper burning beneath an opening in the bottom of the bag. The bag sailed to the ceiling of the room: a success. He and his brother repeated the experiment outdoors where the bag rose about seventy feet before gradually losing its buoyancy and returning to the ground. They began using fire made of chopped wool and straw, creating a pungent smoke. They believed this smoke contained an unknown gas that was lighter than air, unaware that the heated air was actually responsible for the upward pressure. The brothers' first full size balloon was a great success, shooting up to 6,000 feet (1,830 m) and landing a mile (1.6 km) away.

The brothers were soon invited to Paris where they impressed scientists and the royal family with their invention. In late September of 1782, they launched the first living things to see if the upper air could sustain life. A sheep, a rooster, and a duck spent eight minutes in flight and landed without harm. The Montgolfiers next planned balloons for manned flight. Some suggested a criminal should be sent since the flight could prove dangerous, but others who believed that the honor should go to a more distinguished citizen prevailed. The first pilot was Jean-Francois Pilatre de Rozier, a young physician whose curiosity and enthusiasm won him the job, and on November 20, 1783, Pilatre and the Marquis d'Arlandes, an infantry major, sailed aloft for twenty-five minutes. Their flight and others like it ignited a worldwide interest in ballooning. In 1785, however, Pilatre died in a balloon crash, and confidence in the Montgolfier's invention waned. Also, their rival, physicist Jacques Charles (1746-1823), had begun perfecting his hydrogen balloon, which would soon eclipse the Montgolfier's hot-air balloon.