

Historical Highlight

Leonardo da Vinci

Leonardo da Vinci (1452–1519) was a true Renaissance man. He had a strong curiosity about how things worked. Although he is best known as a painter, his interests and talents were far-reaching. He studied everything from botany to mechanics, using his creative mind to innovate and expand almost every field that captured his attention.

Leonardo developed an interest in nature and the arts while still quite young and received encouragement from his Uncle Francesco. His interest continued to flourish even after he moved away to Florence with his father. It was there that he was apprenticed to an artist named Verrocchio. In Verrocchio's workshop, Leonardo learned painting techniques and how to use artists' tools. One such technique was the making of preliminary sketches and drawings, a skill that Leonardo already had been developing and continued to use throughout his life. It is because of Leonardo's drawings that we know of many machines of the time and of many of Leonardo's studies and ideas.

Some Renaissance artists studied human anatomy and botany to help them create more realistic works of art, and Leonardo was no exception. He took his studies further than most artists did, though, because he not only had an artistic interest, but also a scientific one. He knew enough about plants to be a botanist and made important studies and drawings of different muscle groups in the human body and of the fetus in the mother's womb.

Leonardo also studied various methods of transportation. He was the inventor of the lock (the kind used in canals), and

he also studied birds in flight, which led to him designing a flying machine much like the modern hang glider. We even know from his drawings that he anticipated both the parachute and the helicopter.

Yet another one of Leonardo's areas of interest was machines of war. In this area Leonardo was ahead of his time. His designs were too impractical to be built during the Renaissance, but many of them resembled modern machines. For example, he designed a motor that fired explosive shells, a many-barreled machine-gun-like gun, and a vehicle resembling a tank. He even designed a fortress similar to World War II fortifications.

Because Leonardo was motivated by his desire to know how things worked, it is not surprising that he was also knowledgeable about mechanics. As in his other areas of interest, Leonardo made many drawings of mechanical tools. Some of his drawings were from the ideas of other people, and some were his own, but they were all very detailed and easy to understand. They were so well done that it is relatively easy to reproduce the machines that they represent.

We know about many of the machines, tools, and ideas of the Renaissance because of the curiosity of Leonardo da Vinci and his habit of accurately drawing and writing things down. Leonardo supplemented many of his writings with sketches to better describe his thoughts. Today, sketching still is an important method of communicating our thoughts and designs and is used quite often by engineers and technologists.