

Leonardo
DA VINCI
MAN INVENTOR GENIUS & MAN ARTIST GENIUS

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Leonardo da Vinci: Man Inventor Genius & Man Artist Genius

Leonardo da Vinci: Man

Leonardo da Vinci created some of the most famous images in European art. Though many of his works were never finished, were lost, or have deteriorated through time, he has influenced artists and thinkers for centuries.

Leonardo was born near the small Tuscan town of Vinci, about 20 miles from Florence. As an illegitimate child, he was unable to attain an education and was raised by his paternal grandfather. Through his father's connections in Florence, Leonardo received his early artistic training with artist Andrea del Verrocchio.

In 1477 he formed his own workshop and began working on commissions for paintings. He became increasingly highly regarded among artists and patrons alike. But he was unable to win commissions for the major projects of the time and had difficulty earning a living. He blamed this to a large degree on people believing he was not well educated enough to be part of the highest circles of society in Florence. So he left for Milan.

He arrived in Milan in 1481 or 1482. Within two years, Leonardo had won the favor of the Ludovico Sforza, who was acting as Duke of Milan. While his painting career became successful, he also had other interesting duties, including wedding planner for high-level officials. When the marriage between Ludovico's nephew (who was the rightful heir to lead Milan) and his new bride failed to produce a child, Leonardo was summoned to create an extravaganza called the Masque of Planets, essentially a magical variety show based on astronomy and astrology that was designed to encourage fertility. A child was produced within a year!

When the French conquered Milan in 1499, Leonardo left and began to move from city to city, depending on where the best opportunities arose. He returned to Milan in 1506 at the request of the French, for whom he conducted parades and other spectacles, designed a royal palace, and improved the city's system of dams and locks.

While living in Rome in 1516, Leonardo was invited by King Francois I of France to move with him to his chateau in Amboise, located southwest of Paris. He was awarded the title, "Royal Painter and Engineer." He primarily occupied himself with his notes and chatting with the king about all he had seen, done, and learned. Leonardo died on May 2, 1519, and was buried in Amboise.

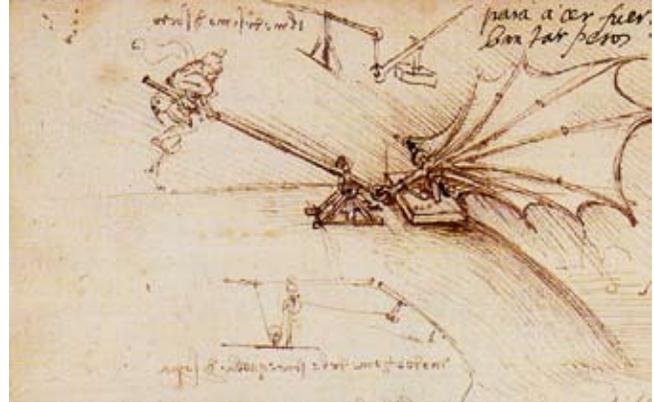
front cover

Leonardo da Vinci (1452-1519)

Self Portrait, ca. 1512 (detail)

Leonardo da Vinci, Illustration from Codex B, ca. 1487-1490, Collection of Institut de France, Paris

Aerial Screw, based on illustration by Leonardo da Vinci



Leonardo da Vinci: Inventor

Perhaps because he lacked formal education, Leonardo placed great value on his own ability to learn from observing the world around him. As an adult, he read the ideas of scientists from ancient Greece and Rome. Improvements to book printing in 1439 meant that Leonardo had access to all forms of books, so he could read the ideas of scientists from the ancient world as well as the newest treatises on military engineering. He even taught himself Latin so that he could read books that were not yet translated into Italian. As he read, he made his own notes and diagrams to better understand the designs behind the ideas. Fortunately, thousands of pages of his notes and sketches still exist.

Many of the inventions in this exhibition that demonstrate basic mechanical devices such as gears, pulleys, chains, wheels, and ratchets existed before Leonardo. However, Leonardo's studies of the details behind these devices led to clearer designs and often greater efficiencies.

On his own, he studied things like: hydraulics, the voice, the horse, the flight of birds, the eye and vision, ballistics, building construction, the air, the stars, painting, and metal casting. He loved mathematics. He performed autopsies or dissections of over thirty corpses, leading to an extensive knowledge of human anatomy and the most precise medical drawings up to the 18th century.



For much of Leonardo's life, his desire was to be an engineer. Engineers were well paid and had the power to reshape cities and the countryside. Wherever he lived, he made proposals to city leaders on projects ranging from canal and dam construction to military defense systems and bridge designs. Some of these were put into practice and were successful; others were either ignored or altered in a way that made them unworkable.

Among his best known studies and inventions were those related to flight. He studied birds with great anatomical precision. But he was never able to overcome the weight of the pilot and the flying machine to achieve the ability to fly.

Inside
Leonardo da Vinci, Illustration from Codex B, ca. 1487-1490,
Collection of Institut de France, Paris

Flapping Wing, based on illustration by Leonardo da Vinci

Leonardo da Vinci, *Mona Lisa*, ca. 1503-1519, oil on poplar,
30 x 21 inches, Collection of the Louvre Museum

Leonardo da Vinci: Artist

Because Leonardo da Vinci is the painter of the world's most famous artwork, *Mona Lisa*, he is probably best known as an artist. He did create artworks that are known to us from as early as 1472 and until near the time of his death in 1519. However, there are no more than a couple dozen of his paintings and full-scale drawings (often known as "cartoons") that still exist. Some of his works have been lost or have deteriorated over time. But many were not completed, either because of a financial dispute, because of damage, or because Leonardo stopped to work on a new project.

By the 1480s, Leonardo was widely known as one of the great artists throughout the Italian peninsula. Living in Milan and working for Ludovico Sforza, the acting Duke of Milan, Leonardo painted portraits of Ludovico's wife and mistress, completed *The Last Supper* in 1498, and worked toward a bronze equestrian sculpture that would have been the largest of the Renaissance. War broke out, however, and all bronze was diverted into the creation of weapons.

Leonardo received two commissions for large mural paintings, *The Last Supper* (begun in 1495) and the *Battle of Anghiari* (begun in 1504). In both cases Leonardo experimented unsuccessfully with new painting techniques. Typical murals were painted on a surface of wet plaster applied to the wall—this is known as "fresco" painting. Leonardo did not want to paint *The Last Supper* in this way because it does not permit artists the flexibility to add new layers of paint on top of the first layer. So he painted *The Last Supper* on a dry wall after covering it with a layer of pitch, gesso and mastic. The mural began to decay 20 years after he completed it.

When he began to paint the *Battle of Anghiari*, he was determined to use oil paint, his favorite medium. Unfortunately the paint did not dry quickly and began dripping down the surface of the painting. He tried to hang large containers of fire as close as possible to the painting to help it dry, but he was unable to save the upper part of his massive painting. He abandoned the project without repairing the damage.

Leonardo began *Mona Lisa* in 1503 in Florence, just before taking on the *Battle of Anghiari* project. Because he was so busy with this mural project, he did not complete *Mona Lisa*; so he took it with him when he left Florence. This was one of several incomplete paintings that traveled with him to France in 1516.

Oil painting was relatively new to Italian painters when Leonardo began his career. Its advantage over water-based paint is that it allowed artists to paint in layers and create smooth contours. The technique of "chiaroscuro," which simply means "light, dark," was used by Leonardo to make painted shapes appear three-dimensional by using light and dark tones. His late painting *John the Baptist* demonstrates this well. Leonardo also became the first master of "sfumato," a term that literally means "in the manner of smoke." By using subtle gradations of darks and lights in detailed areas, as in *Mona Lisa*, he can make her face seem astonishingly realistic.

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