



Science & Art



In the introduction to this episode of **SCIENTIFIC AMERICAN FRONTIERS**, Alan Alda comments on how much scientists and artists have in common:

“They are both playful, precise, creative, inspired revolutionaries.” On **FRONTIERS** we meet many people who blend art and science in the work they’re doing today. But this isn’t just a 20th-century phenomenon. History offers examples of others on whose shoulders today’s innovators stand. Two of these exemplary individuals are described below. Can you name any others, past or present, whose lives and work combined science and art?

Leonardo da Vinci: Scientist, Artist, Inventor

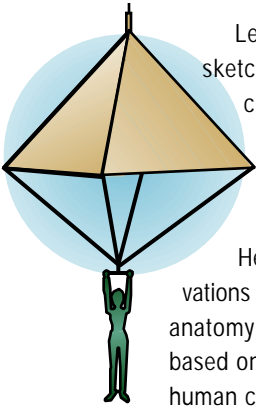
Leonardo da Vinci was the original Renaissance man. His creative genius as artist, engineer, scientist, musician, inventor and sculptor was nothing short of remarkable.

Born in 1452 in Vinci, near Florence, Italy.

At the age of 17, he was apprenticed to a painter in Florence.

In his early 20s, he experimented with a new painting medium, tempera.

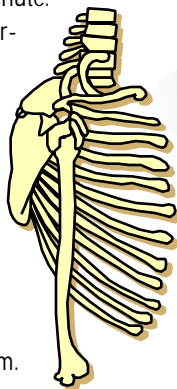
In 1482, he moved to Milan, where he worked as a military engineer, designing some remarkable machines, including a model tank.



Leonardo filled thousands of pages with sketches and notes written backwards so they could only be read in a mirror.

Many of his sketches were of prophetic devices like flying machines and a parachute.

He also drew detailed observations of human anatomy. His anatomy studies were the first based on actual dissections of human corpses.



Leonardo painted masterpieces like the *Mona Lisa* and *The Last Supper* fresco, and continued working on scientific and mathematical research until his death in 1519. Above all else, he was deeply curious about the world around him.

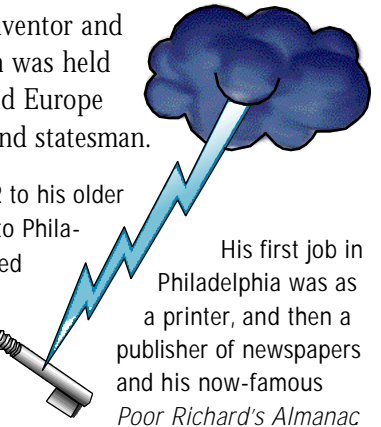
Try painting a fresco.
See pp. 10-11 of this guide.

Benjamin Franklin: Scientist & Statesman

A leading writer, scientist, inventor and founder of the U.S., Franklin was held in high regard in America and Europe as a distinguished scientist and statesman.

Apprenticed at the age of 12 to his older brother, a printer, he ran away to Philadelphia at age 17, where he lived until his death in 1790.

Franklin studied subjects from algebra to zoology, becoming one of the best self-educated people of his time.



His first job in Philadelphia was as a printer, and then a publisher of newspapers and his now-famous *Poor Richard's Almanac*

He later became a famous statesman, and helped draft the Declaration of Independence.

Franklin's major contribution as a scientist was the discovery of electricity. He demonstrated the electrical nature of lightning with the legendary key-and-kite experiment in 1752.



Franklin was an accomplished musician. He played the violin, harp and guitar. In 1761, he built his mechanical glass “armonica,” as he called it. He wrote, “Of all my inventions, this has given me the greatest personal satisfaction.”

For more about the reinvention of the glass harmonica, see pp. 6-7 of this guide.