

Leonardo da Vinci

Leonardo da Vinci was also a Renaissance painter, like Michelangelo. His famous works of art include *The Last Supper* and *The Mona Lisa*. Historians think he was born outside the village of Vinci, near Florence, Italy, in 1452. Leonardo was interested in and well-informed about many subjects—painting, sculpture, math, the human body, plant and animal life, and architecture. He was unable to go to school, so he taught himself. He sketched everything he saw and imagined. Today over 4,000 of his sketches and notes still exist. So other people would not be able to read his ideas, Leonardo wrote in “mirror writing”.

Can you decipher this message?

More than 1000 pages of
 his notes and drawings
 are still written in
 the same way that they
 are to a mirror. It is
 the way all of the words
 are written!

Anatomical Proportions



“He who does not know the supreme certainty of mathematics is wallowing in confusion.”

—Leonardo da Vinci

Leonardo da Vinci fit a lot of descriptions: artist, architect, sculptor, engineer, inventor, town planner, athlete, skilled horseback rider, gourmet cook, vegetarian, and more. But the label he liked the best was mathematician. He thought of putting away his easel on several occasions. “Mathematical experiments have absorbed his thoughts so entirely,” cried one patron, “he cannot bear the sight of a paintbrush.”

Da Vinci recorded his ideas in a notebooks kept from his youth. By the time he died at age 67, da Vinci had filled more than 5,000 pages with sketches, ideas for inventions, anatomy diagrams, and mathematical calculations.

Project

Here are some of da Vinci’s mathematical observations about the human body. Work with a partner to double-check da Vinci’s math by solving the following problems.

- 1 The span of a man’s outspread arms is equal to his height. How long are your outstretched arms? Is this equal to your height, as da Vinci claimed?
- 2 The length of the foot from the end of the toes to the heel goes twice into that from the heel to the knee, that is, where the leg-bone joins the thigh bone. Suppose the distance from the tip of your toes to your heel is 9 inches. According to da Vinci, how many inches is it from your heel to the knee? Check it out. Is his proportional relationship correct?
- 3 If you hold your hand with its five fingers extended and closed together you will find that it is as wide as the maximum width of the foot, that is where it is joined by the toes. Is this correct?
- 4 The ear is precisely as long as the nose. Are da Vinci’s calculations correct?
- 5 The length of the ear should equal the distance from the bottom of the nose to the top of the eyelid. Is this true?
- 6 The space between the eyes is equal to the size of one eye. Are these proportions accurate?