Leonardo da Vinci was born in Vinci, Italy, the son of an accountant and a peasant woman. When he was five years old, Leonardo was taken to live in his grandfather’s home. As a young child he was fascinated with nature, drawing, and mathematics. Leonardo was exceptionally curious and was constantly questioning and investigating the world around him. This love of learning continued throughout his life.

At age fifteen, he became an apprentice to the master painter and sculptor, Andrea de Verrocchio. In addition to painting and sculpting, at Verrocchio’s studio, he learned many technical skills. Verrocchio, his teacher, recognized that he was a gifted artist and gave his apprentice many assignments. Both Leonardo and his teacher received money for many artistic projects from the ruling family of Florence, The Medicis. When Leonardo was twenty years old, he was accepted into the guild organization of San Luca. Many important artists, chemists, and physicians were also members and it was a place to share ideas, especially focusing on the botany and anatomy studies (seen in Leonardo’s early paintings). Through the Medici family, Leonardo was introduced to a variety of great artists, mathematicians, and thinkers in the city. Florence, Italy, at this time called the Renaissance, was a major center of culture and business.

In 1482, when Leonardo was thirty he moved to the city of Milan where he created the masterpiece The Last Supper. At this time he also was involved with studying more anatomy and botany as well as astronomy, geology, geography, flight, military technology, and many scientific inventions.

By 1500, Leonardo had moved back to Florence. Two years later he became chief engineer to the commander of the Pope’s army which involved traveling around Italy. This allowed him to make extremely detailed maps. Around this same time, he painted his most famous work, a portrait of a nobleman’s wife called the Mona Lisa.

Leonardo was at the height of his fame and influence. He had many students and assistants. He also focused on his scientific ideas and always carried a notebook with him to write down questions, observations, drawings and sketches. It is estimated that his notebooks included close to six thousand pages. While reviewing his notebooks scholars noticed a unique type of shorthand writing and a mirror writing technique. Leonardo was left-handed and started at the right side of his pages and then moved to the left. When he wrote letters to other people, he wrote in the normal direction. There are many ideas as to why he wrote this


48 Same as footnote #37 except just p. 6 (Baumgaertel article on Leonardo)

way including making it more difficult for other people to take his ideas, disguising his thoughts from the Church who considered his ideas to be against their thinking, and writing as a left-handed person was messy and the ink would smudge as his left hand moved left to right.\textsuperscript{50}

Leonardo’s accomplishments are so numerous that they are difficult to list. Here are a few examples. As an \textit{artist}, he was one of the first to use oil paints and perspective. He was a talented architect who designed many buildings and he was a sculptor. As a \textit{scientist}, he studied many branches of science. He studied anatomy and was one of the first to draw cross sections especially of humans and horses and to make casts of the brain and heart. He studied botany, for instance, geotropism (attraction of earth on plants) and heliotropism (attraction of plants to the sun). He also studied geology focusing on soil erosion and fossilization. He studied physics including the theory of gravity (before Newton), ideas about optics, hydrostatics, and mechanics. He also focused on astronomy and the theory of the sun not moving (before Copernicus). Leonardo was an \textit{inventor}. He drew many sketches and ideas about mechanical clocks, flying machines, parachutes, helicopters, mechanical wings, self-propelled transmissions, three speed gears, bicycles, extendible ladders, snorkels, moving theater stage, hydraulic jack, automated looms for weaving, and map making and city planning designs.\textsuperscript{51}

Leonardo da Vinci’s extensive accomplishments are a tribute to his amazing powers of observation, his curiosity, ability to test and learn from mistakes, imagination and incredible use and development of technology. Many historical scholars consider Leonardo da Vinci to be one of the greatest geniuses of all time.
