

## Newton's Life

- 1642** Born in Woolsthorpe, England, on December 25.
- 1654** Enrolls at King's School in Grantham, England, and boards with the town apothecary, Mr. Clark.
- 1659** Leaves school and returns to Woolsthorpe to learn to manage the family farm.
- 1661** Enters Trinity College at the University of Cambridge in England.
- 1664** Becomes more immersed in the study of mathematics and optics.
- 1665** Graduates from Trinity.
- 1665-67** Plague breaks out in Cambridge. Newton returns to Woolsthorpe, where he establishes the fundamentals of calculus and continues thinking about gravitation.
- 1667** Made Fellow of Trinity College.
- 1668** Builds the first functioning reflecting telescope.
- 1669** Becomes the Lucasian Professor of Mathematics at Cambridge University. Begins experiments in alchemy.
- 1672** Elected Fellow of the Royal Society. Publishes his theory on light and color in the Royal Society's journal.
- 1687** Publishes *Philosophiæ Naturalis Principia Mathematica*.
- 1689** Elected as a Member of Parliament for Cambridge University.
- 1696** Appointed Warden of the Royal Mint, and moves to London.
- 1699** Becomes Master of the Mint.
- 1701** Resigns as Lucasian Professor.
- 1703** Elected President of the Royal Society, a post he holds until his death.
- 1704** Publishes *Opticks*.
- 1705** Knighted by Queen Anne.
- 1713** Publishes the second edition of the *Principia*.
- 1727** Dies on March 20.

### A Note About Dates

At the time Newton lived, the English calendar ran 10-11 days behind the calendar used in most of Europe and elsewhere. This time line reflects the English calendar in use during Newton's lifetime.

### Tune In

Research is revealing new information about who Newton really was. Find out more in NOVA's "Newton's Dark Secrets" program airing on PBS November 15, 2005. (Check local listings as dates and times may vary.) Visit the companion Web site at [www.pbs.org/nova/newton](http://www.pbs.org/nova/newton)

# Who Was Sir Isaac Newton?

Isaac Newton was one of the leading figures of the scientific revolution in the seventeenth century. Considered one of the greatest scientists who ever lived, Newton devoted his life to the study of the natural world, discovering the laws of gravity and motion, analyzing light, and developing the mathematics of calculus.



Newton was born prematurely on December 25, 1642, in Woolsthorpe, England, to a poor farming family. His father had died before his birth, and he grew up in the care of his mother and grandmother. At the age of 16, after his stepfather's death, Newton was taken out of school to work on the family farm. However, Newton preferred to spend his time reading. So, at his uncle's urging, the family sent him back to school.

Newton arrived at Trinity College, University of Cambridge, in 1661. He learned of the scientific revolution that had been going on in Europe through the work of Galileo Galilei, Nicolaus Copernicus, Johannes Kepler, and René Descartes. Newton began to question the environment around him, including the nature of matter, light, and color. At the same time, to better understand the texts he was reading, Newton began to study mathematics in earnest, laying the foundation for his later discoveries.

The summer after Newton graduated, in 1665, the plague was spreading in Cambridge. Newton, who had returned to the family farm for the summer, stayed there for the next two years. During this time, Newton established the fundamentals of what is now known as calculus. He also worked on the law of universal gravitation and began forming his three laws of motion.

After the plague subsided in 1667, Newton returned to Cambridge, where he later became the Lucasian Professor of Mathematics. Some people believe that in 1669, Newton began experimenting with alchemy (a medieval philosophy that sought, among other goals, to transform base metals into silver or gold) with the hopes of unraveling the nature and structure of all matter.

In 1672, Newton was elected to the Royal Society. His theories on light and color were published that year in the Royal Society's journal. After his work criticized because of possible plagiarism (a claim Newton denied), Newton vowed that he would no longer publish scientific papers, a vow he kept for many years. Then, in 1687, after spending more than 20 years developing his ideas, Newton published what is generally acknowledged to be the greatest scientific book ever written, the *Philosophiæ Naturalis Principia Mathematica*. The book, which described Newton's theories on celestial motion and gravity, established his reputation throughout Europe as one of the greatest mathematicians and scientific thinkers of his day. He published his second major work, *Opticks*, in 1704.

After dedicating time to public affairs, Newton died in London on March 20, 1727, at the age of 84. He was the first scientist to be honored with a burial in Westminster Abbey.