

Isaac Newton

Back to [Biographies](#)

- **Occupation:** Scientist, mathematician, and astronomer
- **Born:** January 4, 1643 in Woolsthorpe, England
- **Died:** March 31, 1727 in London, England
- **Best known for:** Defining the three laws of motion and universal gravitation



Isaac Newton by Godfrey Kneller

Biography:

Isaac Newton is considered one of the most important scientists in history. Even Albert Einstein said that Isaac Newton was the smartest person that ever lived. During his lifetime Newton developed the theory of gravity, the laws of motion (which became the basis for [physics](#)), a new type of mathematics called calculus, and made breakthroughs in the area of optics such as the reflecting telescope.

Early Life

Isaac Newton was born in Woolsthorpe, England on January 4, 1643. His father, a farmer who was also named Isaac Newton, had died three months before his birth. His mother remarried when Isaac was three years old and left young Isaac in the care of his grandparents.

Isaac attended school where he was an adequate student. At one point his mother tried to take him out of school so he could help on the farm, but Isaac had no interest in becoming a farmer and was soon back at school.

Isaac grew up mostly alone. For the rest of his life he would prefer to work and live alone focused on his writing and his studies.

College and Career

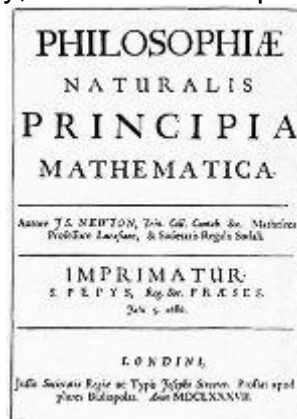
In 1661, Isaac began to attend college at Cambridge. He would spend much of his life at Cambridge, becoming a professor of mathematics and a fellow of the Royal Society (a group of scientists in England). He eventually was elected to represent Cambridge University as a member of parliament.

Isaac had to leave Cambridge from 1665 to 1667 because of the Great Plague. He spent these two years in study and isolation at his home in Woolsthorpe developing his theories on calculus, gravity, and the laws of motion.

In 1696 Newton became the warden of the Royal Mint in London. He took his duties seriously and tried to get rid of corruption as well as to reform the currency of England. He was elected President of the Royal Society in 1703 and was knighted by Queen Anne in 1705.

The Principia

In 1687 Newton published his most important work called the *Philosophiæ Naturalis Principia Mathematica* (which means "Mathematical principals of Natural Philosophy"). In this work he described the [three laws of motion](#) as well as the law of universal [gravity](#). This work would go down as one of the most important works in the history of science. It not only introduced the theory of gravity, but defined the principals of modern physics.



Scientific Discoveries

Isaac Newton made many scientific discoveries and inventions throughout his career. Here is a list of some of the most important and famous ones.

- Gravity - Newton is probably most famous for discovering gravity. Outlined in the Principia, his theory about gravity helped to explain the movements of the planets and the Sun. This theory is known today as Newton's law of universal gravitation.
- Laws of Motion - Newton's laws of motion were three fundamental laws of physics that laid the foundation for classical mechanics.
- Calculus - Newton invented a whole new type of mathematics which he called "fluxions." Today we call this math calculus and it is an important type of math used in advanced engineering and science.
- Reflecting Telescope - In 1668 Newton invented the [reflecting telescope](#). This type of telescope uses mirrors to reflect light and form an image. Nearly all of the major telescopes used in astronomy today are reflecting telescopes.

Legacy

Newton died on March 31, 1727 in London, England. Today, he is considered one of the

most influential scientists of all time alongside greats such as Albert Einstein, Aristotle, and Galileo.

Interesting Facts about Isaac Newton

- He studied many classic philosophers and astronomers such as Aristotle, Copernicus, Johannes Kepler, Rene Descartes, and Galileo.
- Legend has it that Newton got his inspiration for gravity when he saw an apple fall from a tree on his farm.
- He wrote his thoughts down in the Principia at the urging of his friend (and famous astronomer) Edmond Halley. Halley even paid for the book's publication.
- He once said of his own work "If I have seen further than others, it is by standing upon the shoulders of giants."