

# Isaac newton

[Life](#), [Friendship](#)



Name: Course: Instructor: Date: Isaac Newton The word calculus originates from the description of the physical characteristics of the universe. This includes the movement of planets and molecules. Calculus looks at the path of moving objects, as functions or curves. It then determines the functions' values to calculate volume, change or area. One of the contributors to calculus is Isaac Newton. Newton was an English physicist and Mathematician.

Isaac was born in 1642 at Woolsthorpe in Lincolnshire, England (Hatch). After his birth, he was not expected to survive, as he was too small. His father died when he was three months and his mother got married to a clergyman, when he was three. Newton's mother went to live with her husband and left Isaac under the care of his grandmother. She came back after eight years with three children, upon the death of the clergyman. After two years, Isaac was to Grantham to a Grammar and with an apothecary. This is where his love for chemicals began.

At the age of seventeen, he went back home to look after the farm, but failed in this sector. In 1661, he went for college, after his uncle, who was a clergyman, convinced his mother that Isaac should attend university. He paid for three years of college using the money he got from cleaning rooms for the rich students and some members of the faculty and from waiting tables. In 1664, he was given a four-year scholarship. After the plague reached Cambridge in 1665, he went home and concentrated in physics and mathematics for two years. This is the time that he started understanding the gravitational theory and the optics theory, where he discovered that the rainbow colors make up white light. His understanding was also deepened in <https://assignbuster.com/isaac-newton/>

definite series, integral calculus and differential calculus in mathematics. In 1667, he returned to Cambridge where he started working on Alchemy (Gleick).

After the publishing of the infinite series book by Nicholas Mercator, in 1668, Newton wrote on his own results. This got the attention of mathematicians, as Isaac Barrow, Newton's friend told a mathematician in London about Isaac's work. After a short while, he became the Lucasian professor after Barrow's resignation. His mathematical skills were so great that it took nearly 50 years for other mathematicians to understand his whole work. To summarize the discoveries that he had made about the physical world, Newton started writing Principia, which is the principles of mathematics of the Natural Philosophy, in 1684. He also wrote the Universal Arithmetic, which gave an understanding of the Equations theory. There were also papers for curves, optics, analytical geometry and calculus. His reluctance to publish his work, led to Leibniz', a mathematician in German, creation and publication of calculus that was similar to his work.

This led to a debate on who had created the work. Later, the French used both of these works to teach mathematics, but the dispute did not end until the death of Leibniz (BBC). He was credited by England as the Master of the Mint, in 1699. This was in honor of Newton's service to England.

He often solved problems that other mathematician could and then sent them anonymously sent the solutions to his friends. He died in 1727 at the age of 85. In mathematics, he is most known for the solutions he gave for problems in analytical geometry. This included differentiation, which is the drawing of

tangents to curves, and integration, which is defining of areas in the curves. He discovered that these two are inversely related to each another. He also gave solutions to curvature problems. This included inverse methods of fluxions and methods of fluxions.

The word fluxion means flow in Latin. Newton used it to show the flow of a quantity from a magnitude to another. He expressed the fluxions in an algebraic way. He later stated that he preferred the Classical Greeks' method of geometry. One of his letters to Leibniz, he suggested these calculus problems: " 1. Given the length of the space continuously [i. e.

, at every instant of time], to find the speed of motion [i. e., the derivative] at any time proposed. 2. Given the speed of motion continuously, to find the length of the space [i. e.

, the integral or the antiderivative] described at any time proposed" (Saint Joe, 4). This shows his understanding for calculus. Newton referred to derivatives as variable fluxions, which were symbolized by  $\dot{x}$  and referred to antiderivatives as fluents. He expressed that lines were generated from points in motion, the lines in motion made planes, whereas the motion of planes generated bodies. These were known as fluents. Fluxions referred to the velocity of the fluents.

He also published tracts on cubic curves classification and curves quadrature. Leibniz work was ignored by most mathematicians of England. They followed Newton's ideas on fluents and fluxions, until the early 1800s. However, both Leibniz and Newton gave an intuitive look of calculus.

Mathematicians such as Cauchy later showed the formal proofs. Some of his other work included discoveries in gravity under physics and alchemy and chemistry.

Work Cited BBC. Isaac Newton (1643 – 1727). History. BBC, 2012. Web 7 June 2012. Gleick, James.

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