

Sir isaac newton



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Newton, Sir Isaac (1642-1727), English natural philosopher, generally regarded as the most original and influential theorist in the history of science. In addition to his invention of the infinitesimal calculus and a new theory of light and color, Newton transformed the structure of physical science with his three laws of motion and the law of universal gravitation. As the keystone of the scientific revolution of the 17th century, Newton's work combined the contributions of Copernicus, Kepler, Galileo, Descartes, and others into a new and powerful synthesis. Three centuries later the resulting structure - classical mechanics - continues to be a useful but no less elegant monument to his genius. (Hatch 1998). Isaac Newton's life can be divided into three distinct periods. The first period is the boyhood period from 1643 up to his appointment in 1669. The second is the highly productive period from 1669 up to 1689. The last period, Newton got a high paying government job in London. Although a government official Newton was still doing mathematical research. Isaac Newton was born in the manor house of Woolsthorpe, near Grantham in Lincolnshire. Although by the calendar in use at the time of his birth he was born on Christmas Day 1642, we give the date of 4 January 1643 in this biography which is the " corrected" Gregorian calendar date bringing it into line with our present calendar. (The Gregorian calendar was not adopted in England until 1752.)Isaac Newton came from a family of farmers but never knew his father, also named Isaac Newton, who died in October 1642, three months before his son was born. Although Isaac's father owned property and animals which made him quite a wealthy man, he was completely uneducated and could not sign his own name. Isaac's mother Hannah Ayscough remarried Barnabas Smith the minister of the church at North Witham, a nearby village, when Isaac was two years old.

The young child was then left in the care of his grandmother Margery Ayscough at Woolsthorpe. Basically treated as an orphan, Isaac did not have a happy childhood. His grandfather James Ayscough was never mentioned by Isaac in later life and the fact that James left nothing to Isaac in his will, made when the boy was ten years old, suggests that there was no love lost between the two. There is no doubt that Isaac felt very bitter towards his mother and his step-father Barnabas Smith. When examining his sins at age nineteen, Isaac listed:- Threatening my father and mother Smith to burn them and the house over them. Upon the death of his stepfather in 1653, Newton lived in an extended family consisting of his mother, his grandmother, one half-brother, and two half-sisters. From shortly after this time Isaac began attending the Free Grammar School in Grantham. Although this was only five miles from his home, Isaac lodged with the Clark family at Grantham. However he seems to have shown little promise in academic work. His school reports described him as 'idle' and 'inattentive'. His mother, by now a lady of reasonable wealth and property, thought that her eldest son was the right person to manage her affairs and her estate. Isaac was taken away from school but soon showed that he had no talent, or interest, in managing an estate. An uncle, William Ayscough, decided that Isaac should prepare for entering university and, having persuaded his mother that this was the right thing to do, Isaac was allowed to return to the Free Grammar School in Grantham in 1660 to complete his school education. This time he lodged with Stokes, who was the headmaster of the school, and it would appear that, despite suggestions that he had previously shown no academic promise, Isaac must have convinced some of those around him that he had academic promise. Some evidence points to Stokes alsoPersuading Isaac's

mother to let him enter university, so it is likely that Isaac had shown more promise in his first spell at the school than the school reports suggest. Another piece of evidence comes from Isaac's list of sins referred to above. He lists one of his sins as:- ... setting my heart on money, learning, and pleasure more than Thee ... which tells us that Isaac must have had a passion for learning. While at Cambridge University, Newton became more interested in mathematics, optics, physics and astronomy. Towards the end of the year 1665, an epidemic caused the university to close down. The two years Newton spent there were very insightful for him. He researched about gravity, optics and mathematics. He also worked on out his ideas about 'fluxions' - calculus. (BBC). Newton's contributions

In 1664, while still a student, Newton researched on optics and light. He investigated the refraction of light using a glass prism. Over a few years he developed elaborate and more exact experiments. Newton also built the first practical reflecting telescope and developed a theory of color based on the observation that a prism decomposes white light into the many colors that form the visible spectrum. He also formulated an empirical law of cooling and studied the speed of sound. Newton's mathematical work has been said " to distinctly advance every branch of mathematics then studied". Newton's work on the subject usually referred to as fluxions or calculus is seen, for example, in a manuscript of October 1666, now published among Newton's mathematical papers. A related subject of his mathematical work was infinite series. Newton's manuscript " De analysi per aequationes numero terminorum infinitas" (" On analysis by equations infinite in number of terms") was sent by Isaac Barrow to John Collins in June 1669: in August 1669 Barrow identified its author to Collins as " Mr. Newton, a fellow of our

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College, and very young ... but of an extraordinary genius and proficiency in these things". In 1679, Newton returned to his work on mechanics, that is, gravitation and its effect on the orbits of planets, with reference to Kepler's laws of planetary motion. This followed stimulation by a brief exchange of letters in 1679-80 with Hooke, who had been appointed to manage the Royal Society's correspondence, and who opened a correspondence intended to elicit contributions from Newton to Royal Society transactions. Newton's reawakening interest in astronomical matters received further stimulus by the appearance of a comet in the winter of 1680-1681, on which he corresponded with John Flamsteed. After the exchanges with Hooke, Newton worked out a proof that the elliptical form of planetary orbits would result from a centripetal force inversely proportional to the square of the radius vector (see Newton's law of universal gravitation - History and *De motu corporum in gyrum*). Newton communicated his results to Edmond Halley and to the Royal Society in *De motu corporum in gyrum*, a tract written on about 9 sheets which was copied into the Royal Society's Register Book in December 1684. This tract contained the nucleus that Newton developed and expanded to form the *Principia*. The *Principia* was published on 5 July 1687 with encouragement and financial help from Edmond Halley. In this work, Newton stated the three universal laws of motion that were not to be improved upon for more than 200 years. He used the Latin word *gravitas* (weight) for the effect that would become known as gravity, and defined the law of universal gravitation. In the 1690s, Newton wrote a number of religious tracts dealing with the literal interpretation of the Bible. Henry More's belief in the Universe and rejection of Cartesian dualism may have influenced Newton's religious ideas. A manuscript he sent to John Locke in <https://assignbuster.com/sir-isaac-newton-essay-samples/>

which he disputed the existence of the Trinity was never published. Later works - *The Chronology of Ancient Kingdoms Amended* (1728) and *Observations upon the Prophecies of Daniel and the Apocalypse of St. John* (1733) - were published after his death. He also devoted a great deal of time to alchemy. Newton was also a member of the Parliament of England from 1689 to 1690 and in 1701, but according to some accounts his only comments were to complain about a cold draught in the chamber and request that the window be closed. Newton moved to London to take up the post of warden of the Royal Mint in 1696, a position that he had obtained through the patronage of Charles Montagu, 1st Earl of Halifax, then Chancellor of the Exchequer. He took charge of England's great recoinage, somewhat treading on the toes of Master Lucas (and securing the job of deputy comptroller of the temporary Chester branch for Edmond Halley). Newton became perhaps the best-known Master of the Mint upon Lucas' death in 1699, a position Newton held until his death. These appointments were intended as sinecures, but Newton took them seriously, retiring from his Cambridge duties in 1701, and exercising his power to reform the currency and punish clippers and counterfeiters. As Master of the Mint in 1717 in the "Law of Queen Anne" Newton moved the Pound Sterling from the silver standard to the gold standard by setting the bimetallic relationship between gold coins and the silver penny in favor of gold. This caused silver sterling coin to be melted and shipped out of Britain. Newton was made President of the Royal Society in 1703 and an associate of the French Academie des Sciences. In his position at the Royal Society, Newton made an enemy of John Flamsteed, the Astronomer Royal, by prematurely publishing Flamsteed's *Historia Coelestis Britannica*, which Newton had used in his

studies. In April 1705, Queen Anne knighted Newton during a royal visit to Trinity College, Cambridge. The knighthood is likely to have been motivated by political considerations connected with the Parliamentary election in May 1705, rather than any recognition of Newton's scientific work or services as Master of the Mint. Newton was the first scientist ever to be knighted.

Newton died in London on March 20, 1727 and was buried in Westminster Abbey, the first scientist to be accorded this honor. A review of an encyclopedia of science will reveal at least two to three times more references to Newton than any other individual scientist. An 18th century poem written by Alexander Pope about Sir Isaac Newton states it best: "Nature and Nature's laws lay hid in night: God said, Let Newton be! and all was light."