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Sir Isaac Newton

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Newton was born in village Woolsthorpe-by-Colsterworth in the county of Lincolnshire in January 4, 1643. His father had died three months before Newton's birth, and two years later his mother went to live with her new husband, leaving her son in the care of his grandmother.

According to E.T. Bell and H. Eves, Newton began his schooling in the village school and later was sent to Grantham Grammar School, where he became the top boy in the school[1]. There he met his only love Miss Storey. But Newton became engrossed in his studies and she went away from him. It is said, that Newton kept a warm memory of she. He was never married after.

Newton was educated at Grantham Grammar School. In 1661 he joined Trinity College in Cambridge. In 1665 he discovered the binomial theorem and began to develop a mathematical theory that would later become calculus. Soon after Newton had collected his degree in 1665, the University closed down as a precaution against the Great Plague. For the next two years Newton worked at home on calculus, optics and gravitation.

There is a tradition that Newton was sitting under an apple tree when an apple fell on his head, and this made him understand that earthly and celestial gravitation are the same. This is an exaggeration of Newton's own tale about sitting by the window of his home and watching an apple fall from a tree. However it is now generally considered that even this story was invented by him in his later life, to try to show how clever

he was at drawing inspiration from everyday events. Newton became a member of Trinity College in 1667. In the same year he circulated his findings in «Analysis by Infinite Series» and, later, in «the Methods of Series and Fluxions». Newton and Leibniz developed the theory of calculus independently and used different notations. Though Newton belongs among the brightest scientists of his era, the last twenty-five years of his life were marred by a bitter dispute with Leibniz, whom he accused of plagiarism. In 1669 Newton was elected Lusian professor of mathematics. From 1670 to 1672 Newton lectured on optics. During this period he investigated the refraction of light. In his «Hypothesis of Light» of 1675, Newton relied on the existence of the ether to transmit forces between particles. Today's quantum mechanics recognizes a "wave-particle duality" however photons bear very little semblance to Newton's corpuscles (e.g., corpuscles refracted by accelerating toward the denser medium). In 1679, Newton returned to his work on gravitation and its effect on the orbits of planets, with reference to Kepler's laws of motion, and consulting with Hooke and Flamsteed on the subject. He published his results in «De Motu Corporum» (1684). This contained the beginnings of the laws of motion that would inform «the Principia»[2]. «Philosophiae Naturalis Principia Mathematica» (now known as «the Principia») was published in 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 the next three hundred years. He used the Latin word gravitas (weight) for the force that would become known as gravity, and defined the law of universal gravitation. In the same work he presented the first analytical determination, based on Boyle's Law, of the speed of sound in air. With «The Principia», Newton became internationally recognized.

Newton was also a member of Parliament from 1689 to 1701. In 1696 Newton moved to London to take up the post of

warden of the Royal Mint. He took charge of England's great recoining. In 1699 Newton became master of the Mint. These appointments were intended as sinecures, but Newton took them seriously, exercising his power to reform the currency and punish clippers and counterfeiters. He retired from his Cambridge duties in 1701. The same year Newton anonymously published a law of thermodynamics now known as «Newton's law of cooling» in the «Philosophical Transactions of the Royal Society». In 1703 Newton became President of the Royal Society and an associate of the French Academie des Sciences. Newton was knighted by Queen Anne in 1705. He died in London in March 31, 1727 and was buried in Westminster Abbey[3].

Thus, Newton's laws of motion and gravity provided a basis for predicting a wide variety of different scientific or engineering situations, especially the motion of celestial bodies. His calculus proved vital to the development of further scientific theory. Finally, he unified many of the isolated physics facts that had been discovered earlier into a satisfying system of laws.

For this reason, he is generally considered one of history's greatest scientists, ranking alongside such figures as Einstein and Gauss.

References:

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