

Albert einstein 13182

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Albert Einstein

Albert Einstein was one of the greatest brains ever to come to the 20th century. Einstein contributed to the 20th century more than any other scientist ever. His theory of relativity is held as the highest quality of a human thought ever to come.

Albert Einstein was born on March 14, 1879 in Ulm, Wurttemberg, Germany. His family moved from Ulm to Munich and had an unsuccessful business that made them move later to Milan, Italy. His parents were dealing with electrical apparatus. At this time Albert left his German citizenship. He persuaded an exam that would give him the opportunity to study electrical engineering in Zurich Polytechnic but failed to pass it. After this he spent the next year in nearby Aarau at the cantonal secondary school, where he had excellent teachers and first rate facilities in physics. He later on returned in 1896 to the Zurich Polytechnic, where he graduated in 1900 as a secondary school teacher of mathematics and physics.

After two years Albert obtained a job at the Swiss patent office in Bern. While he was working there, Einstein completed an astonishing range of publications in theoretical physics at his spare time. In 1905 he submitted one of his science papers to the University of Zurich and obtained a Ph. D. In 1908 he sent a second paper to the University of Bern and became privatdocent, or lecturer. The next year Einstein became a regular associate professor of physics at the University of Zurich. These were important aspects of his life as he built up all his ideas and transferred them to formulas. 1909 recognized Einstein as a leading scientific thinker. After

holding chairs in Prague and Zurich he advanced in 1914 to a prestigious post at the Kaiser-Wilhelm Gesellschaft in Berlin. From this time he never taught a university courses. He became involved in research and development in top secret projects.

But I want to draw attention towards the work that Albert Einstein did in his early years where he generated new ideas and new approaches to Quantum Mechanics, Relativity and Statistical Mechanics. With his early work he generated the milestones for quantum physics and many more areas.

Einstein's first paper generated in 1905 explain the Photoelectric Effect, by which certain metals emit electrons when illuminated by light with a given frequency. The explanation of the photoelectric effect by Albert Einstein in 1905 accelerated the transition from classical to modern physics. The electromagnetic theory of light predicts a relationship between the intensity of incident light and the energy of the emitted electron. Einstein's theory formed the basis for much of Quantum Mechanics. Quantum mechanics is the fundamental theory used by 20th- century physicists to describe atomic and subatomic phenomena. It has been successful in tying together a wide range of observations into the universe. The second of Einstein's 1905 papers proposed what is today called the special theory of Relativity.

Einstein showed that we exist not in the flat, but in another environment such as curved space-time. The theory played a role in advances in physics that led to the nuclear era. This of course had potential for benefits as well as for destruction. This made it possible for use to understand the micro world of particles and their interactions. It has also revolutionized our view of Cosmology. This gave way for use to think about the Big Bang theory. The

third of Einstein's papers of 1905 concerned Statistical Mechanics. Einstein extended Boltzmann's work and calculated the average trajectory of a microscopic particle buffeted by random collisions with molecules in a fluid or in a gas. Einstein observed that his calculations could account for BROWNIAN MOTION. Einstein's paper provided convincing evidence for the physical existence of atom sized molecules, which had already received much theoretical discussion. Later in 1905 Einstein showed how mass and energy were equivalent expressing it in the famous equation: $E = mc^2$ (energy equals mass times the velocity of light squared). This equation became a cornerstone in the development of nuclear energy.

By 1911, Einstein was able to make preliminary predictions about how a ray of light from a distant star, passing near the Sun, would appear to be attracted, or bent slightly, in the direction of the Sun's mass. At the same time, light radiated from the Sun would interact with the Sun's mass, resulting in a slight change toward the infrared end of the Sun's optical spectrum. At this juncture Einstein also knew that any new theory of Gravitation would have to account for a small but persistent anomaly in the motion of the planet Mercury.

About 1912, Einstein began a new phase of his gravitational research, with the help of his mathematician friend Marcel Grossmann, by phrasing his work in terms of the tensor calculus of Tullio Levi-Civita and Gregorio Ricci-Curbastro. The tensor calculus greatly facilitated calculations in four dimensional space time, own special theory of relativity. Einstein called his new work the general theory of relativity. After a number of false starts, he published in late 1915 the final form of the general theory. In it the <https://assignbuster.com/albert-einstein-13182/>

gravitational field equations were similar to Maxwell's equations, the field equations took the same form in all equivalent frames of reference. In its original form, Einstein's general relativity has been verified numerous times in the past 60 years, especially during solar-eclipse expeditions when Einstein's light-deflection prediction could be tested.

With all this work he opened the doors for many scientific proofs of the creation of the universe and how it uses gravitation between each other and how the universe works. Soon afterward he proposed a static model of the universe, the expansion of the universe not yet being known. Later on many scientist developed new proposals such as Willem de SITTER proposal of a cosmological model based on Einstein's theory. Later on in 1922, Aleksandr FRIEDMANN derived a set of general cosmological models from Einstein's theory; it included Einstein's static model and de Sitter's model as particular cases. According to these mathematical solutions, the universe originated in and expanded from a single body of infinite density. Georges Lemaitre in 1927 and Arthur Eddington in 1930 put forward a physical theory, later known as the Big Bang theory.

Einstein received the Nobel Prize in 1921. With the rise of fascism in Germany, Einstein moved in 1933 to the United States and abandoned being pacifism in the political arena. He was convinced that the new Nazi Party had to be stopped and wrote to the president Franklin D. Roosevelt letters that the United States should build a Atomic Bomb before the Germans would. The letter that Einstein wrote would later urge the United States to build the atomic bomb. This project would be later called the Manhattan Project.

As we all can see Einstein was an inspirational man that had created a wide spectrum of theories that have lead mankind to new frontiers. Einstein was the pioneer that opened the door to a much bigger and more sophisticated world. He spent his last years in Princeton, NJ and died in 1955. He is believed to be one of the biggest scientists ever to come in this century and that is clearly visible with all the achievement that he has done. Einstein has brought us one step closer to understand the universe and how it works. I don't think there is a greater gift to mankind then that.

Word Count: 1234