

Albert Einstein (1879-1955) Einstein's career began as a teacher for mathematics and physics while he was expanding the idea of Max Planck's quantum theory by adding the hypothesis of the light quantum. Einstein's discoveries were revolutionary even for today's physics: it develops a new understanding of the relation between space and time, and also of the force of gravity. Of course, he won a Nobel prize for his discoveries.

Before he achieved this success it was a long journey for him.

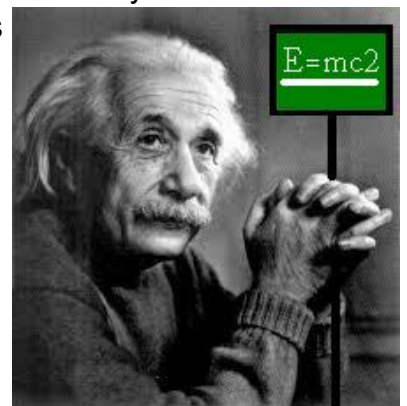
Albert Einstein was born on the 14th March 1879 in Ulm, Germany. His family was his mother Pauline and his father Hermann and his sister Maja. He attended elementary school in Munich. In his free time he loved to play the violin and listen to music. At the age of 5 he got in contact with a compass and at the age of 12 he had a geometry book which influenced him very much. Moreover the medical student Max Talmund, who visited Einstein's family, began to teach him mathematics and electricity. At the age of 16 he wrote his first exploration called "The Investigation of the State of Aether in Magnetic Fields". This paper was about the relative speed influenced him very much. Since 1894 Einstein's family lived in Milan, Italy because of his father's work. Afterwards he went to the Swiss Federal Polytechnic School in Switzerland and was really successful with mathematics and physics. During his studies he met his wife Mileva Maric. They had a daughter and two sons but they were divorced later. The year 1902 was the beginning of his career. He worked as an employee in the Swiss patent office. There he got in contact with electromagnetic devices and later on electrical signals. For more knowledge he studied James Maxwell's electromagnetic theories. In the year 1905 the journal "Annalen der Physik" published four papers of him where he wrote about the mathematic formula $E=mc^2$. From 1913 to 1933 he was the director of the Kaiser Wilhelm Institute for Physics and taught young students.

His enormous success came over night in 1919. Over 7 years he worked on the relativity and published his theory about relativity in 1916. People from all over the world honored and invited him and in 1921 he received the Nobel Price for Physics.

In December, 1932, he decided to leave Germany because of political reasons. He moved to the United States and got a position at the newly formed Institute for Advanced Study where he wanted to develop a new theory. Moreover he became political active and wanted world peace. On the 18th April 1955 he died at the age of 76.

What is his “Theory of Relativity” exactly?

This theory consist of two parts: special and general Relativity. It says that two objects that are moving to each other will need different time and space. Included are also the length, gravity, time and mass. Just imagine you sit in a car that drives 40 miles an hour and your best friend sits in a car that drives 10 miles an hour. Your real speed is 40 miles



an hour but your relative speed, the speed difference between your car and the car of your friend, is 30 miles per hour. It is impossible to tell the difference between the gravity and the energy of a moving object.

The theory also says that you need an object in front of you to decide if you are moving or not. Imagine you are in space and around you is nothing. You can not decide if you move or not. If there is a star that you can fix with your eyes you can decide (= special relativity).