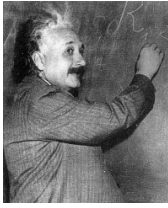


Albert Einstein



Albert Einstein is renowned for developing revolutionary theories of physics such as the general theory of relativity this is why he is inspirational and also because he did not do very well at school, but yet came up with revolutionary ideas. He also possessed a keen sense of social responsibility. His humanitarian efforts assisted Jews who had escaped from the clutches of Nazi Germany during World War II. Albert was intrigued by the needle of the compass. He wondered what forces were at work to make the needle always point north. The compass made a deep and lasting impression on him. Einstein was interested in the relationship between electricity and magnetism (electromagnetism) because these combined forces did not behave in a way that could be explained by traditional Newtonian physics. He also developed theories explaining the nature of light. He theorized that light was a shower of particles called photons that travelled in a wavelike fashion. Einstein won the Nobel Prize in 1921 for his photon theory. The theories that Einstein is most famous for, however, are his theories of relativity. The general theory of relativity deals with acceleration and gravity, while the special theory of relativity deals with energy, mass, and acceleration. According to the general theory of relativity, acceleration and gravity are the same force, and gravity has the effect of slowing time, i.e., as acceleration (gravity) increases, time slows down. This has interesting implications for future space travellers. For example, time will pass slower for an astronaut travelling at near the speed of light than it will for her friends on Earth. When she returns home, her spacecraft's chronometer might indicate that she had only been away for months, yet years would have passed for her friends on Earth. Experiments with time on Earth prove that Einstein's general theory of relativity is valid. Atomic clocks have demonstrated that time is slower at sea level than it is on a mountaintop. This is because gravity is greater at sea level than it is on a mountaintop. The time difference, just a few nanoseconds (billionths of a second), was as predicted by the general theory of relativity. The special theory of relativity includes the famous equation $E=mc^2$. What this equation essentially means is that as an object accelerates, the energy required to keep it accelerating, increases. The development of this theory led other scientists to try to harness the energy from rapidly moving subatomic particles through a process known as nuclear fission. In the 1930s, Einstein became a professor at Princeton University in New Jersey. During this time, he began to fear that Nazi Germany was developing atomic bombs based on nuclear fission. This led Einstein to write a letter to President Franklin D. Roosevelt in 1939. In it, he urged the president to authorize a project, which later became known as the Manhattan Project, to investigate the possibility of using nuclear fission to create an atomic bomb. The United States was able to create atomic weapons based on the knowledge gained from the Manhattan Project. Einstein was subsequently called "the father of the atomic bomb" by many, even though he did not participate in the project. Einstein greatly resented the title. He did not want to be associated with war in any way. In fact, he worked with other scientists to dissuade countries from using atomic weapons. Einstein worked tirelessly to help the Jewish people who had fled from Nazi Germany during the war. He gave speeches and even auctioned off a handwritten manuscript of his special theory of relativity to raise much needed funds for the Jewish people. In 1952 Einstein was asked to become the president of Israel, but he declined the offer. Einstein died in his sleep at a Princeton hospital in 1955. He will forever be remembered as a pre-eminent scientist and a humanitarian.