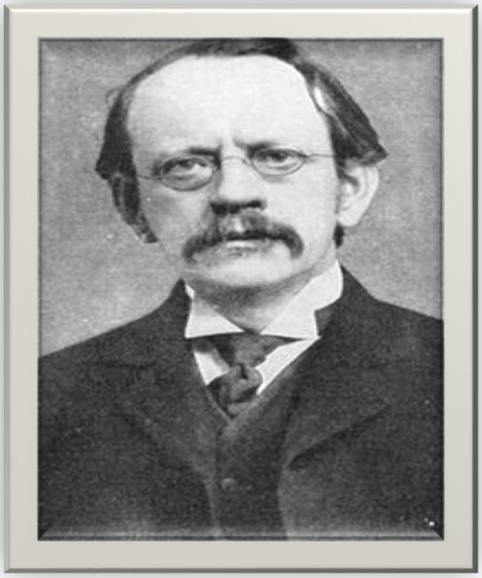
JOSEPH JOHN THOMSON

(18 December 1856 – 30 August 1940)



Sir J.J. Thomson was born in Cheetham Hill, Manchester, England. His father was a bookseller who wished Thomson to become an engineer. His early education was in smaller schools where he was motivated in science and demonstrated outstanding talent. In 1876, he received scholarship to pursue his further studies in Mathematics at Trinity College, Cambridge. In 1897, Thomson suggested that one of the fundamental units was more than 1,000 times smaller than an atom. These subatomic particles are now known as the electrons. Thomson discovered this through his explorations on the properties of cathode rays. He argued that these cathode rays were composed of very light, negatively charged particles and he considered them as building blocks of atoms.

Thomson was awarded the 1906 Nobel Prize in Physics for his work on the theoretical and experimental investigations on the conduction of electricity by gases. Thomson published a number of papers addressing both mathematical and experimental issues of electromagnetism. He examined the electromagnetic theory of light given by James Clerk Maxwell. He introduced the concept of electromagnetic mass of a charged particle, and demonstrated that a moving charged object would apparently increase in mass.

In 1884, Sir Thomson was elected as Fellow of the Royal Society. He was also the President of Royal Society during 1916-1920. He was awarded the Royal Medal (1894), Hughes Medals (1902), and the Copley Medal in 1914.

Sir Thomson is considered as a highly gifted teacher. Six of his research assistants, namely Charles Glover Barkla, Niels Bohr, Max Born, William Henry Bragg, Owen Willans Richardson and Charles Thomson Rees Wilson also won Nobel Prizes in physics, while Francis William Aston and Ernest Rutherford won Nobel prizes in chemistry. In addition, Thomson's son (George Paget Thomson) also won the 1937 Nobel Prize in physics for proving the wave-like properties of electrons.

Teachers may suggest students to make a collage of photographs of scientists in physics depicting the advancements in the subject