

Example of term paper on alexander graham bell

[Family](#), [Father](#)



“ The day is coming when telegraph wires will be laid on to houses just like water or gas -- and friends will converse with each other without leaving home.” (Alexander Graham Bell in a letter to his father in 1876; taken from PBS. org)

Alexander Graham Bell was born on March 3, 1847 in Edinburgh, Scotland and had two more brothers that both died of tuberculosis (Library of Congress), Melville James Bell, who was older than Alexander, and Edward Charles Bell, who was the youngest in the family (Bell Homestead). His father, Alexander Melville Bell, as well as his grandfather and older brother were all experts in speech correction and elocution (Bruce). Bell is best remembered for his innovative ideas and for inventing the telephone.

Early Life

At a very young age, Bell showed he was a special child as he requested to have a middle name, just like his brothers’, which was a plea that his father approved (The Franklin Institute). He was 10 when he made this request and was happy to have a middle name, that of “ Graham” as a present for his 11th birthday (Groundwater). “ Graham” was a name chosen by Alexander’s father, who looked up to Alexander Graham, a Canadian that had become a close family friend (Groundwater). As a result, after his 11th birthday, Bell was “ Aleck” to his family and friends, but also took pride in having a middle name (Bruce).

Like any other child of his age, young Alexander had a deep urge to explore everything about the world surrounding him, which resulted in him experimenting and gathering botanical specimens from a very young age. Alexander was so bright and resourceful that he managed to create his very

own homemade dehusking device at the age of 12 after he had asked his best friend, Ben Herdman, how his family operated their mill (Bruce). Bell's sensitive nature and talent in music, poetry and art were obvious from an early age; and, encouraged by his mother, Bell became an expert in playing the piano, without ever having a single piano lesson or any formal training whatsoever (Gray). As a child, he knew how to draw attention, and, from what is seems, he enjoyed it given that he liked performing voice mimics, entertaining his family and any guests they might have (Gray). What seems to have significantly influenced Bell's life's work is the fact that his mother had an acquired hearing impairment, and so had his wife later on in his life (Bruce). His mother lost her hearing when Bell was only 12, and he had to learn sign language to be able to communicate with her. For the same reason, he developed a speaking technique that made communication with his mother easier (Mackay). His preoccupation with his mother's hearing impairment, made Bell start experimenting on hearing devices and acoustics, in general.

It seems that he followed his family's long tradition and had a flair for opening new paths for the deaf-mute so they can understand what other people were saying by reading their lips and articulate words (MacKay). Actually, Bell's father had mastered teaching elocution and had published a variety of works, including *The Standard Elocutionist* that had sold over 250,000 million copies in the US alone (Gray). Being an expert, Bell's father taught his sons his techniques as well as how to write in a special writing system known as Visible Speech, and also how to identify sounds and symbols (Petrie).

Education

Bell attended Edinburgh Royal High School for only two years, but he was mainly educated at home (Bell Homestead). It seems it was a family tradition to receive home schooling from his father, exactly just like Bell's brothers did. Unlike what people might think, Bell's school years in Edinburgh Royal High were distinguished by lack of enthusiasm for learning and low academic achievements while his sole interest was in biology, and sciences in general (Gray). To his father's frustration, Bell showed no particular interest in any other school subject or learning.

As soon as Bell left school, he decided to live with his grandfather, which made him travel to London (Bruce). It was then, when he moved into his grandfather's house, when Bell actually became interested in learning.

Through long discussions with his grandfather on a variety of issues, Bell made the elder Bell very proud for his young pupil and his accomplishments (Bruce). It is no wonder that Bell had ensured a position in Weston House Academy, Moray, Scotland as a pupil-teacher of music and, of course, elocution (Bruce). He was not only a student attending Greek and Latin classes, but also a teacher instructing classes and getting paid for it (Bruce). A year later, he decided to join his brother Melville at University of Edinburgh and then continued his studies in the University of London (Bruce).

Bell's First Steps Working with the Deaf

The Visible Speech System had become famous in the US and the principal of the Boston School for Deaf Mutes, Sarah Fuller, send an invitation to Bell's father to introduce it to the school (Bruce). However, Bruce's father turned the invitation down so his son could be the one to travel all the way to

Boston and train the instructors of the Boston School, in 1871 (Town).

Because of his overwhelming success, Bell was asked to train the instructors of the Clarke School for the Deaf, in Massachusetts, and the American Asylum for Deaf Mutes, in Connecticut, too (Town).

After six full months abroad, Bell returns home and gets down to business, experimenting on a device that would allow messages to be traveling through a wire and make both transmitter and receiver of the message communicate in a way (Groundwater). However, not knowing what to do with his life, he first thought of going back to London and finish what he had left in the middle: his studies; in the end, he chose to head for Boston and work as a teacher (Town). With his father's assistance, he managed to set up his practice and teach what he had been taught by his father. Later on, in October 1872, Bell opened his very own School of Vocal Physiology and Mechanics of Speech that was warmly welcomed by the Boston community (Town). With strong determination to eradicate deafness, he practically devoted his life in trying to invent ways for the deaf to live a better life. A life where the use of sign language was needless and sound was a reality. He wanted so much to make the deaf become a part of society and not feel as exiles.

Bell's determination to replace sign language was so intense that he had been accused of patient mistreatment (Miller and Branson). It was said that he had children with their hands tied behind their backs, to prevent them from using the sign language to communicate, and be forced to follow his teachings and methods, in other words: oral communication (Miller and Branson).

Bell's Years of Continuous Experimentation

A year after Bell set up his practice in Boston, he became professor at the Boston University School of Oratory, teaching Vocal Physiology and Elocution (Town). In Boston, a place with many inventors and scientists residing in the city and picking on Bell's mind, he was absolutely drawn into his experiments. He became even more passionate to find a way to make articulate speech and music be transmitted; however, his time was rather limited, which put serious obstacles to Bell's need for further experimentation (Town). His days were shared between teaching and tutoring, and his nights became sleepless until the early morning hours. Bell consumed a great amount of his energy to continue his experiments and be left unnoticed by the rest of his fellow citizens (Town). He wanted to keep his experiments secret so badly that he had a specially designed table where he could lock his equipment and notes inside (Town). As a result, he began experiencing health problems out of fatigue, among others, with severe headaches (Groundwater). At this important turning point of his life, Bell decided to focus on his experiments and give up his Boston practice that had become extremely profitable at the time (Groundwater). He only kept two of his students, Sanders and Hubbard, both deaf, from birth and 16 years of age respectively. Sanders' father was a wealthy businessman and believed in Bell's vision. For that reason, Sanders provided Bell with a room at grandma Sanders' house so Bell could continue his experiments (Town). In return, Bell had to take Sanders Junior with him and work together. Hubbard, on the other hand, was a young, beautiful, clever girl that had lost her hearing after she got sick with scarlet fever at around her fifth birthday,

whose father was a close friend of Bell's and wanted his daughter to work with her teacher (Dunn).

Bell's experimentations on the harmonic telegraph as described in a previous section, were crown with a big success, in 1874. During his experimenting with a pen-like machine called the phonautograph, Bell wanted sound waves to be correspondent with electrical currents that he would generate somehow (Matthews). At that point, his phonautograph could already trace the vibrations of sounds and draw shapes on smoked glass, so why not take it a step further? Bell's mind was like a machine that generated more and more ideas in time. He even thought that if he could manage to capture sound in metal reeds similar to a harp's, meaning tuned in different frequencies, he might be able to change wavelike segments into sound (Matthews). However, all that was just wishful thinking at the moment as Bell did not have any working model to determine whether his ideas were possible or not (Matthews).

The same year, telegraph message traffic was very successful and Bell managed to speed things up in terms of communication. Then, the president of Western Union, William Orton, wished to take the invention a step ahead (Matthews). He wanted inventors to find a way to be able to transmit multiple telegraph messages per line, so they could avoid building new telegraph lines; thus, skip the enormous cost (Matthews). Inventors Thomas Edison and Elisha Gray were hired by Orton for this purpose. Of course, Bell could not be left out of such a challenge and, as soon as he mentioned he also wanted to try his luck and invent how to transmit many tones on a single telegraph line, the fathers of Sanders and Hubbard willingly supported

Bell's experiments by financing them (Town).

Before Bell's experimentation, he visited Anthony Pollok, Hubbard's patent attorney to talk over patent matters. Then, together they visited the director of the Smithsonian Institution, Joseph Henry, who was also a notorious scientist (Town). They asked for his advice on Bell's idea to create a machine that could use the telegraph to transmit the human voice (Town). Henry was thrilled with Bell's idea, and when Bell expressed his discouragement for not having the required knowledge or equipment for such an invention, Henry motivated Bell to move on and find all that he would need (Town). At a spin of the moment, Bell decided to hire Thomas Watson, a savvy electrical designer, whom he had met later on in 1874. With Sanders and Hubbard's financial support, Bell and Watson had been experimenting on acoustic telegraphy for about a year before Bell made an important notice. When Watson accidentally pulled out one of the reeds, Bell could actually hear the overtones of the reed, being at the receiving end of the wire. It was then when Bell realized that there was no need to experiment on multiple reeds and that a single reed was enough to transmit voice. At that exact moment, the sound-powered telephone was born, and it transmitted sounds that were similar to voices but not clear enough to make out what someone was saying (Popular Science).

Other Inventions with Bell's Signature

Ever since the first telephone conversation help by Bell and Watson with more than two miles of wire in between them, on October 9, 1876 (The New York Times), one can find Bell's signature on many inventions that have helped change the world to the better. In 1877, Bell had both his Bell

Telephone Company established and married to Mabel Hubbard (Eber). Some of Bell's great inventions after the telephone include the photophone and the metal detector while he also set the foundations for motor-powered aircrafts.

The photophone was a wireless telephone that both Bell and Charles Tainter, his assistant at the time, had invented (Bruce). The photophone's particularity was that it could transmit the human voice with amazing speed, so conversations were more comfortable with one another (Gray). About two decades before the world welcomed the radio transmissions in their daily routine Bell and Tainter had managed to invent a wireless device that transmitted a message a substantial distance. In detail, Bell was at his lab's window while his assistant was approximately 700ft away, on the roof of Franklin School (Bruce). To Bell, the photophone was his life's greatest achievement and he considered it far greater than the telephone (Phillipson and Nielson). Truth is Bell's photophone was the ancestor of the communication systems developed in the 1980 that used fiber optics (Miller).

The metal detector was another invention Bell got credited for, in 1881. It was a device that was developed in order to find the bullet in the body of James Garfield, the US President (Grosvenor and Wesson). The US President was shot by Charles Giteau and was seriously injured, lying in bed. Ever since the telephone was installed in the White House, Bell had become a good friend of the president. Bell wanted to help the president and help locate the bullet in his body, so he invented a rudimentary metal detector. Although the device did great in tests, it failed to find the bullet, mainly

because of the metal bed frame Garfield was lying on that interfered with the device's functions (Grosvenor and Wesson)

Honors and Honorary Degrees

Bell was recognized as a leading inventor and contributor to mankind for his inventions. He had received a great number of honorary degrees from educational institutes (Library of Congress) and his walls hosted dozens of medals and awards, such as the Franklin Institute's Elliott Cresson Medal and the AIEE's Edison Medal (IEEE). He may not have completed university, but many academic institutions, including the Harvard University in Cambridge, Massachusetts, the University of Edinburgh, in Edinburgh, Scotland and the Dartmouth College in Hanover, New Hampshire honoured him with Honorary Degrees.

The Bell Telephone Memorial was erected in 1917 as a token of appreciation for Bell's works (Osborne). His notes, writings, papers and personal correspondence, among other documents can be found under the Alexander Graham Bell Family Papers section in the US Library of Congress Manuscript Division (Library of Congress/Alexander Graham Bell Family Papers).

Also, historical sites located in the US and Europe bear his name while the list of Bell's list of powerful partnerships and initiatives is long. Indicatively, the publication Science was established with Bell's help, he was the second president of the National Geographic Society and a founding member, the founder of the American Institute of Electrical Engineers, and he also received the Volta Prize from the French government, represented by the Académie française (Crosland).

Death of Alexander Graham Bell

Alexander Graham Bell died on August 2, 1922 at the age of 75 (Gray). His death is attributed to health deterioration due to a combination of complications from diabetes and pernicious anemia (Gray). The last scene of Bell's life was played at his private estate in Nova Scotia, where at about 2 a. m. his wife, Mabel, asked her husband not to leave her and as soon as Bell replied in a way that meant " no" he finally deceased (Bruce).

Thanks to people like Alexander Graham Bell the world is a nicer place to live it and people are happier. Bell's pioneering work on the development of the telephone and photophone later on brought people closer. What seemed like a far-fetched top back in the 1800s, Bell managed to conquer it. He had a dream and he stuck to fulfilling it; and, from what it seems, he achieved his goals.

" Leave the beaten track occasionally and dive into the woods" (Bell, taken from pbs. org). Those are probably the words that define every inventor with a vision and determination. Inventors like Alexander Graham Bell.

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