
ENGLISH

Paper 1 Non-fiction

INSERT

0844/01

October 2019

1 hour



This document consists of **3** printed pages and **1** blank page.



Text A**Alexander Graham Bell and the invention of the telephone**

While experimenting with how to improve the telegraph machine, scientist Alexander Graham Bell came up with a clever idea. He realised that rather than sending a code along an electrical wire, it might be possible to send the actual sound of a human voice.

Bell started to experiment, but lacked the time and skill to make the equipment he needed. So, he engaged the help of Thomas Watson, who worked in a nearby electrical shop. The two became fast friends, and worked together to produce sounds over the 'harmonic telegraph', an early machine for transmitting sound. One day in June 1875, Bell was at one end of the wire while Watson worked on a broken transmitter in another room. By chance, Bell heard the twanging sound of Watson plucking a string coming to him along the wire.

The next day, Bell used the same instrument to transmit the sound of his voice along the wire to Watson. Recognisable voice sounds could be heard but not actual words. Bell and Watson experimented all summer, and in September 1875, Bell completed the documents asking for his first telephone patent*. The patent was granted to Bell on 7 March, 1876. It wasn't until three days later that Bell managed to transmit the first understandable words. The telephone was born!

Bell announced his discovery, first to scientists in Boston and then to a group of influential people in Philadelphia including Brazilian Emperor Dom Pedro II and eminent British physicist William Thomson. The emperor exclaimed, 'My gosh! It talks!' Thomson took news of the discovery to other countries and proclaimed it 'the greatest by far of all the marvels of the electric telegraph.'

By the summer of 1877, the telephone had become a business. The first private telephone exchange was built in Connecticut and the Bell Company was created. Bell was the owner of a third of the company's shares and quickly became a wealthy man.

Glossary

patent: permission to be the only person to sell a new invention

Text B**A short biography of Alexander Graham Bell**

Alexander Graham Bell was born on 3 March 1847 in Edinburgh. He was educated there and in London. His father and grandfather were both experts in the art of speaking clearly, and, at the age of 16, Bell himself began researching the mechanics of speech. In 1870, Bell's family emigrated to Canada, and the following year Bell moved to the United States to teach. There, he used a system called 'visible speech', which had been developed by his father, to teach children who could not hear or speak. In 1872, Bell founded a school in Boston to train teachers of the deaf. The school later became part of Boston University, where, in 1873, Bell was appointed professor of vocal physiology.

5

Bell had been fascinated by the idea of transmitting speech for a long time, and by 1875 had come up with a simple receiver that could turn electricity into sound. Other inventors were working on similar machines, including an Italian-American, Antonio Meucci. Debate continues today as to who should actually be recognised for inventing the telephone.

10

In 1880, Bell was awarded the French Volta Prize for his invention. With the prize money, he established the Volta Laboratory in Washington. There he continued experiments: in communication, in medical research and in techniques for teaching speech to the deaf. In 1888, Bell was one of the original members of the National Geographic Society; he served as its president from 1896 to 1904.

15

BLANK PAGE

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cambridgeinternational.org after the live examination series.

Cambridge Assessment International Education is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which itself is a department of the University of Cambridge.