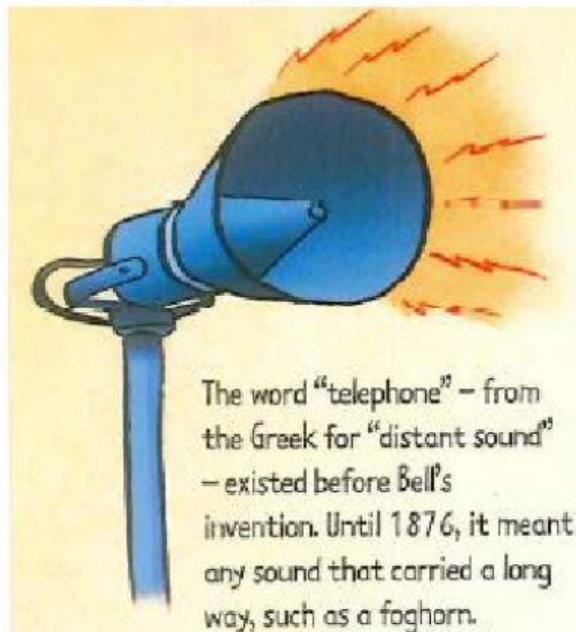


# Technology

## Invention of the telephone



The word "telephone" – from the Greek for "distant sound" – existed before Bell's invention. Until 1876, it meant any sound that carried a long way, such as a foghorn.

Where does the word telephone come from and what does it mean?

**A**lexander Graham Bell is famous for inventing the telephone. In fact, many inventors came up with similar ideas, but Bell's was the first proper, working telephone to be fully patented.

Who invented the telephone?

In 1870s Boston, USA, Scottish-born inventor Alexander Graham Bell was working on improving the telegraph. This was an invention that used wires to carry long-distance, coded messages in the form of electrical signals. Bell hoped to find a way to send several signals at once.

But, in 1874, his experiments gave him another idea. He saw how he might be able to turn the human voice into an electrical signal, and send that along a wire instead.

Bell and his assistant Thomas Watson worked on this idea for months, in secret. By the summer of 1875 they had managed to send some muffled sounds along a wire.

What was Bell trying to improve?

But what did Bell think he could do instead?

The key to making the telephone work lay in converting the varying sound of speech into a varying electric current. Here's how Bell did this:

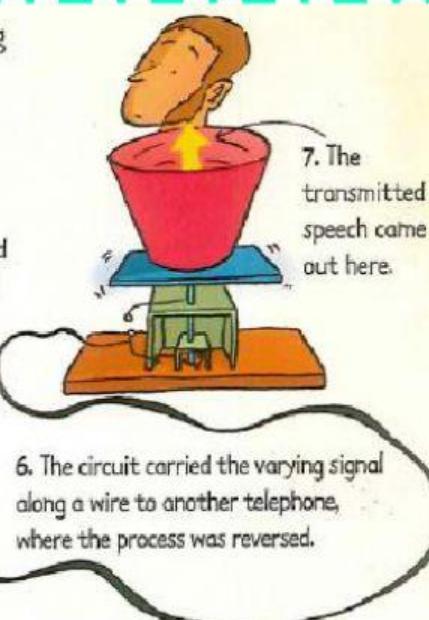
1. This cone collected sound waves – vibrations in the air made by speaking.

2. The vibrations made this thin membrane vibrate up and down.

3. The vibrating membrane made this needle move up and down too.

4. The moving needle was held in a container full of acid. As it moved up and down, it changed how well the acid could conduct (carry) a flow of electricity.

5. The acid was part of a circuit carrying an electric current. As the conductivity of the acid changed, the current in the circuit varied.



7. The transmitted speech came out here.

6. The circuit carried the varying signal along a wire to another telephone, where the process was reversed.

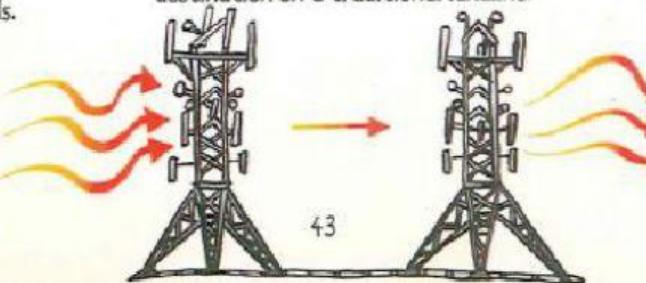
Imagine a four year old asked you how Bell's phone worked. How will you describe it to Skyler?

Landline telephones today work just like Bell's telephone, by turning sound vibrations into a varying electrical current – although they have modern electronic parts instead of acid and a needle. But many people nowadays use mobile phones, which work another way – using radio waves.

A mobile phone is a mini radio set. It converts your voice vibrations into radio signals.



The nearest base station collects the signals and sends them to their destination on a traditional landline.



Another base station transmits radio signals to send your call to another mobile phone.



**Do you think this is a good invention? Why?**

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