

A Scientific  
Spotlight on...

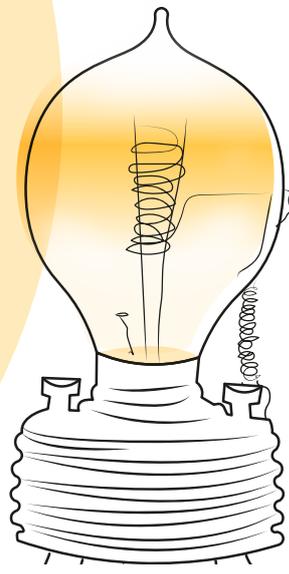


# John Ambrose Fleming



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He also fashioned a microphone with earphones attached which allowed him to hear his colleagues better. It is believed that John's hearing impairment allowed him to focus on his work with more intensity and clarity as he was not distracted by his surroundings.

Fleming became scientific adviser for the Marconi company and developed a wireless telegraphy set-up, which allowed signals to be transmitted and heard 1,800 miles away. This invention paved the way for future radio technology. Fleming's most notable invention was the thermionic valve which could turn alternating current into direct current. This invention allowed for the use of electricity as a power supply. Modern versions of this valve are used today in almost all electrical devices.

World Hearing Day is in March in the UK, March is also National Disability Awareness month in the USA. John Ambrose Fleming achieved many amazing things as a disabled scientist. He used his engineering skills to create a device to assist his hearing, enabling him to continue his work with others, and he invented world changing technology.

John Ambrose Fleming was a British electrical engineer and inventor born in 1849. He showed an interest in science from a young age and he would trial experiments at home, including making a voltaic battery. After attending a lecture as a teenager, he became fascinated with electricity. After studying a Bachelor of Science degree and becoming a teacher, John became scientific adviser to the Edison Telephone Company and the Edison Electric Light Company. He also became the first Professor of Electrical Engineering at University College, London.

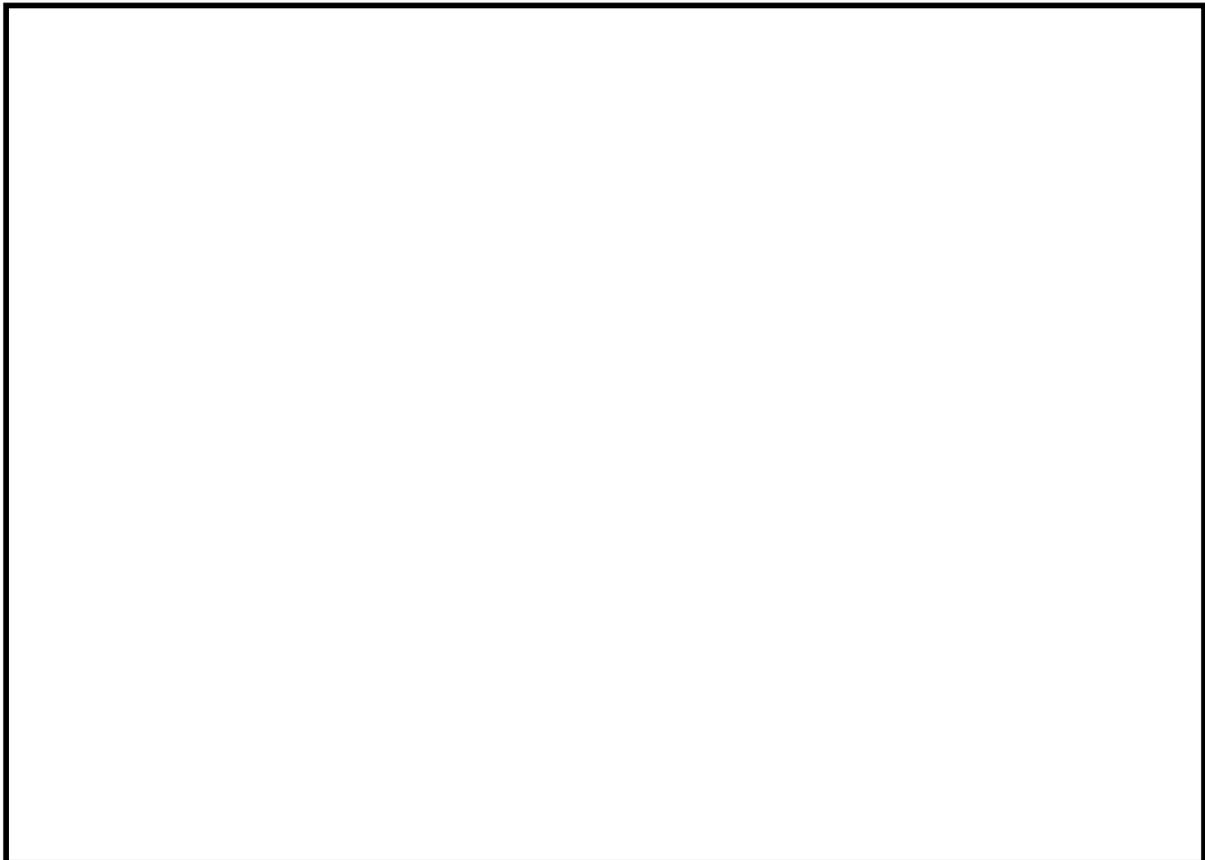
He had difficulty hearing from birth, and this worsened steadily with age. When his hearing loss started to affect his work, he took an assistant with him to meetings to take detailed notes. The notes allowed him to follow the discussions and to thoroughly challenge any points he wanted to argue against.



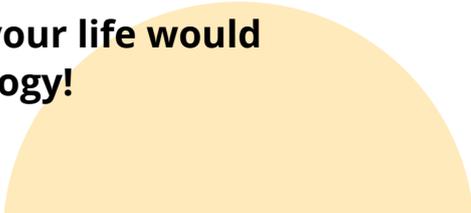
# Life after John Ambrose Fleming

Fleming's invention of thermionic valve allowed electricity to be the power supply for many of the electrical devices we use today. He also made huge contributions to radio technology.

In the box below write/draw all the devices you can think of that would not be in use if it was not for John Ambrose Fleming's contributions to science.



**Now discuss with the person next to you how your life would be different without these devices and technology!**



# Code breaker

Use the example to work out the codes below.  
(Hint: they are all related to John Ambrose Fleming)

## Examples:

John Ambrose Fleming =

16 5 3 1   6 12 21 7 5 32 2   20 9 2 12 8 1 14

World Hearing Day =

10 5 7 9 17   3 2 6 7 8 1 14   17 6 4

## Break the code!

A. 2 9 2 13 18 7 8 13 6 9   2 1 14 8 1 2 2 7 =

.....

B. 7 6 17 8 5   10 6 7 8 2 32 =

.....

C. 6 12 6 99 8 1 14   8 1 7 8 2 1 18 5 7 =

.....

Use the space below to work out which numbers represent each letter, the letter A has been done for you.

**Note:** Not all the letters are used in this code!

A = .....	N = .....
B = .....	O = .....
C = .....	P = .....
D = .....	Q = .....
E = .....	R = .....
F = .....	S = .....
G = .....	T = .....
H = .....	U = .....
I = .....	V = .....
J = .....	X = .....
K = .....	W = .....
L = .....	Y = .....
M = .....	Z = .....

**Challenge:** Come up with your own code to break and give it to someone to complete!