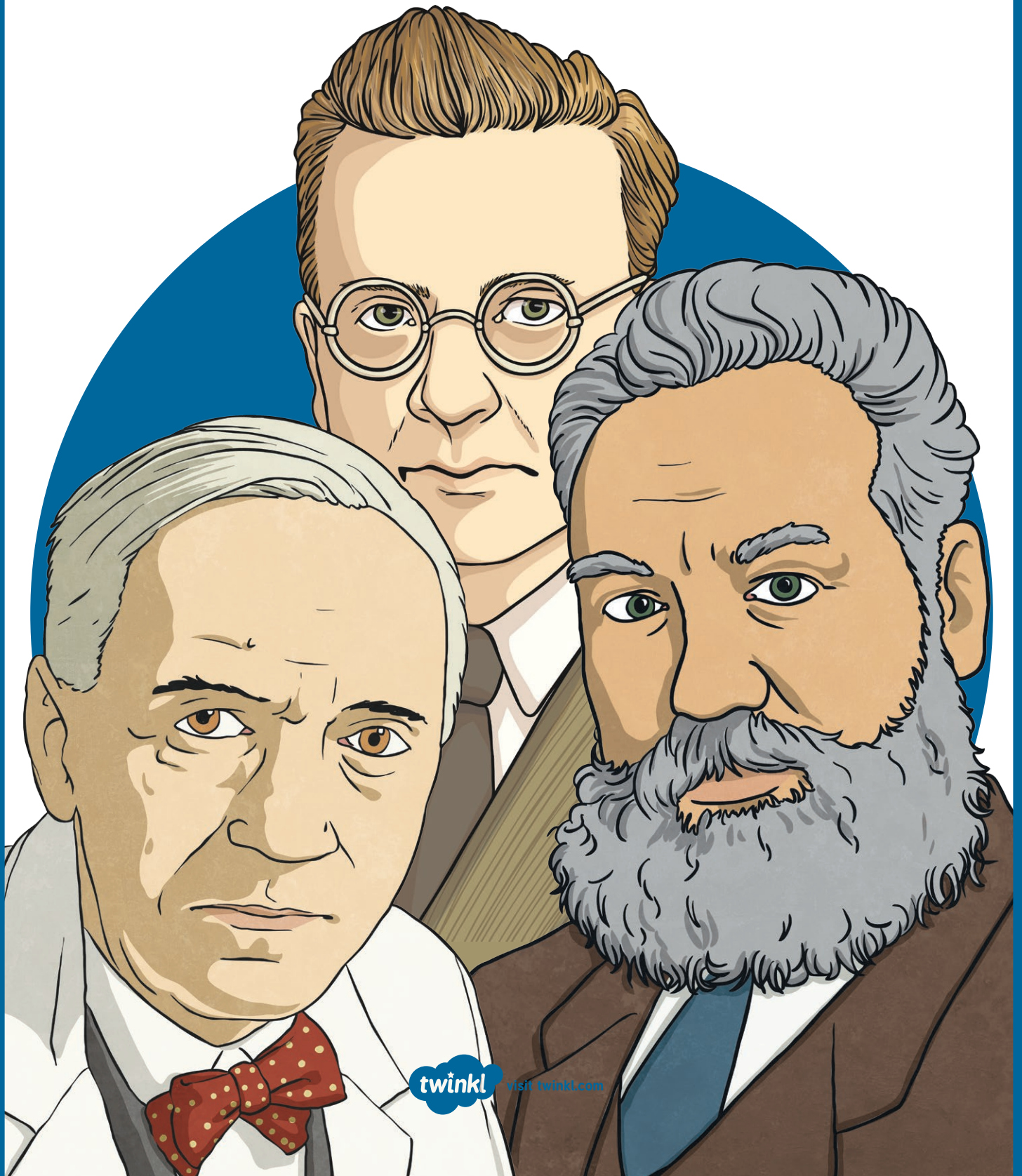


# Scottish Inventors



# Sir Alexander Fleming (1881 - 1955)

## Invented Penicillin

Alexander Fleming was born in Ayrshire on 6th August 1881, the son of a farmer. He moved to London at the age of 13 and later trained as a doctor. Alexander Fleming became a scientist involved in medical research, particularly the area of bacteria and antiseptics. In 1928, while working with the flu virus, he 'accidentally' discovered the antibiotic Penicillin. This is not only one of the most important findings in terms of Scottish inventions, but had a huge impact worldwide. He was knighted for his work in 1944 (that's why he is called 'Sir'), and in 1945 Sir Alexander Fleming, along with two other scientists, Florey and Chain, shared the Nobel Prize in Medicine. He died on 11th March 1955.



# John Logie Baird (1888 - 1946)

## Invented the Television

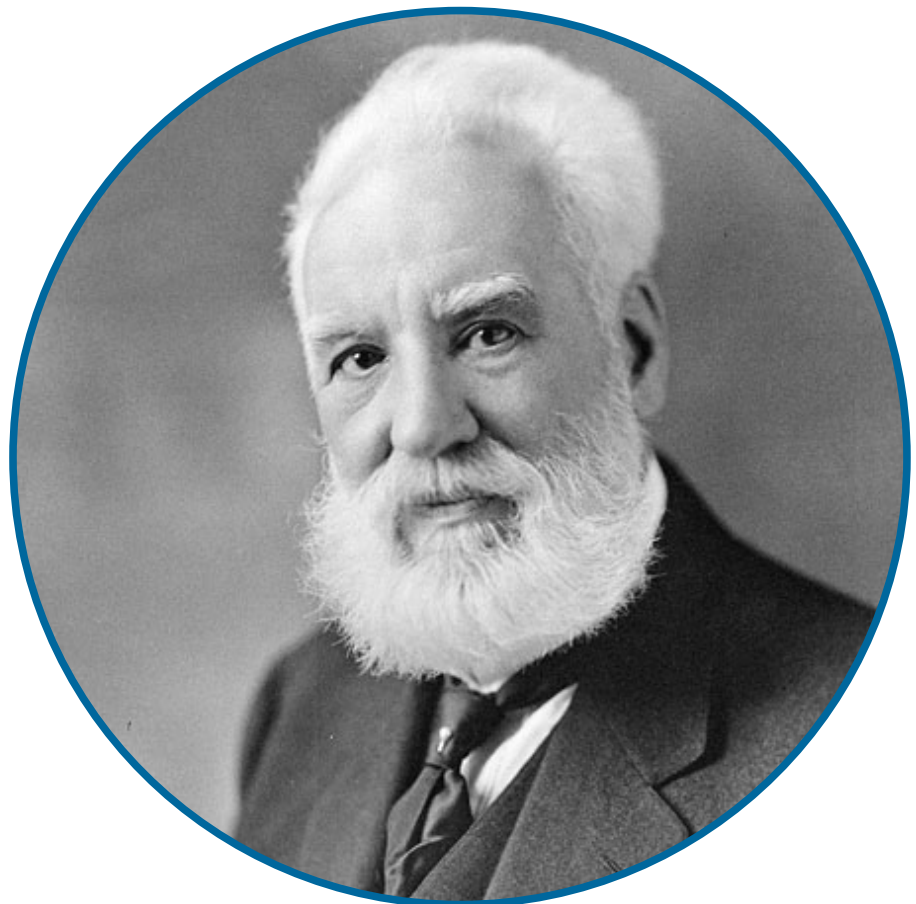
John Logie Baird was born on 14th August 1888 in Helensburgh on the west coast of Scotland. He studied at the Glasgow and West of Scotland Technical College but his studies were interrupted by the outbreak of the First World War. It was not until after the war ended that Baird was able to apply himself to creating a television, a dream of many scientists for decades. His first attempt was simply made of odds and ends, but by 1924 he managed to transmit a flickering image across a few feet. On 26th January 1926 he gave the world's first demonstration of true television in front of fifty other scientists. This is one of the Scottish inventions that almost everyone in the world has used, and probably uses nearly every day.



# Alexander Graham Bell (1847 - 1922)

## Invented the Telephone

Alexander Graham Bell was born on 3rd March 1847 in Edinburgh and was educated there and in London before emigrating to Canada with his family and later moving to America to teach. In America he pioneered a system developed by his father, to teach deaf-mute children. In 1872 he founded a school in Boston to train teachers of the deaf. In 1875 Alexander Graham Bell invented the telephone almost by accident while he was trying to build a device that would transmit sounds telegraphically so that deaf people could 'hear' them. Bell was granted a patent for the telephone on 7th March 1876. Alexander Bell was also responsible for a handful of other significant Scottish inventions, including a phonograph, hydrofoils and an iron lung.



# Charles Macintosh (1766 - 1843)

## Invented the Mackintosh (or 'Mac') Raincoat

Charles Macintosh was born in 1766 in Glasgow. He was a scientist, an inventor and an entrepreneur. He had a strong interest in chemistry. He made several inventions relating to the iron and steel industry, but his biggest achievement was developing the waterproof fabric that is used to make raincoats.

He patented this process in 1823 and the material was introduced in 1824 as Mackintosh (with the additional 'k'). Although there have obviously been further improvements and inventions in this area since his time, in the UK raincoats are often still called 'mackintoshes' or 'macs'.



# Sir Robert Alexander Watson-Watt (1892 - 1973)

## Invented Radar

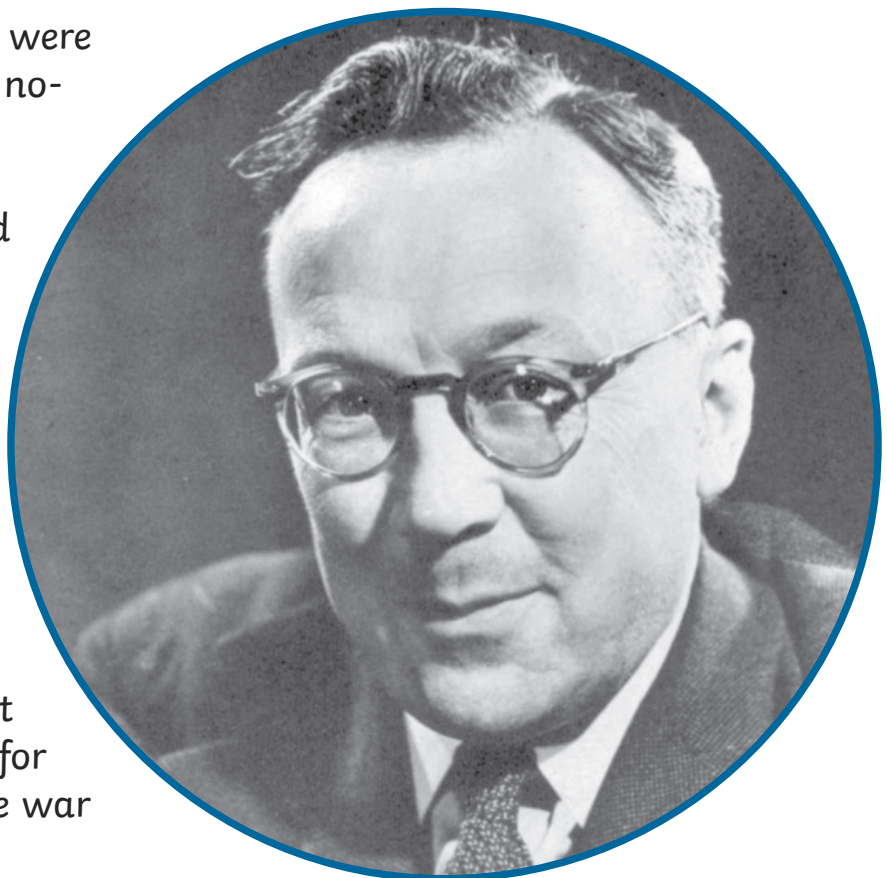
Robert Watson-Watt was born in April 1892 in Brechin, Scotland. He was the son of scientist and inventor, James Watt. In 1912, he graduated with a degree in engineering from University College, Dundee. After college, Watson-Watt worked with Professor William Peddie and it was as a result of this work that he developed a fascination with radio waves and what they could do.

In 1915, during the First World War, Watson-Watt worked as a meteorologist at the Royal Aircraft Factory trying to use radio waves to locate the whereabouts of severe weather so that pilots could be warned of the potential danger.

The principles of radar were known before this, but no-one had yet developed a workable system.

Watson-Watt developed his system to include a series of radars. It became known as Chain Home and is given much credit for turning back the German Luftwaffe during the Battle of Britain in 1940.

Alexander Watson-Watt was knighted in 1942 for his contributions to the war effort.



# Williamina Fleming (1857 – 1911)

## Invented a means of Categorising Stars

Williamina Fleming (nee Stevens) was born in May 1857 in Dundee, Scotland. When she was 21, Williamina emigrated to Boston in America, along with her husband, James Orr Fleming. Shortly after arriving in America, her husband abandoned her and her child. At this time she took a job as a maid for Professor Edward Charles Pickering. Pickering was the director of the Harvard College Observatory.

In 1881 after recognising her intellect, Pickering hired Williamina and taught her how to analyse stellar spectra (stars). She was the first of what would become a large group of women to work at the Observatory as Astronomers. Their mission was to map and categorise every star in the sky. Shortly after starting to work in the observatory, she invented a means of categorising stars based on their hydrogen content. In the 9 years Williamina worked at the Observatory she categorised over 10,000 stars.

In 1888, Williamina discovered the 'Horsehead Nebula'. This was a distinctive cloud of gas or smoke in space, which resembled a horse's head and is located close to Orion's Belt.

In 1906, Williamina was made the first female honorary member of the Royal Astronomical Society of London and in 1907, published a list of 222 stars she had discovered.

