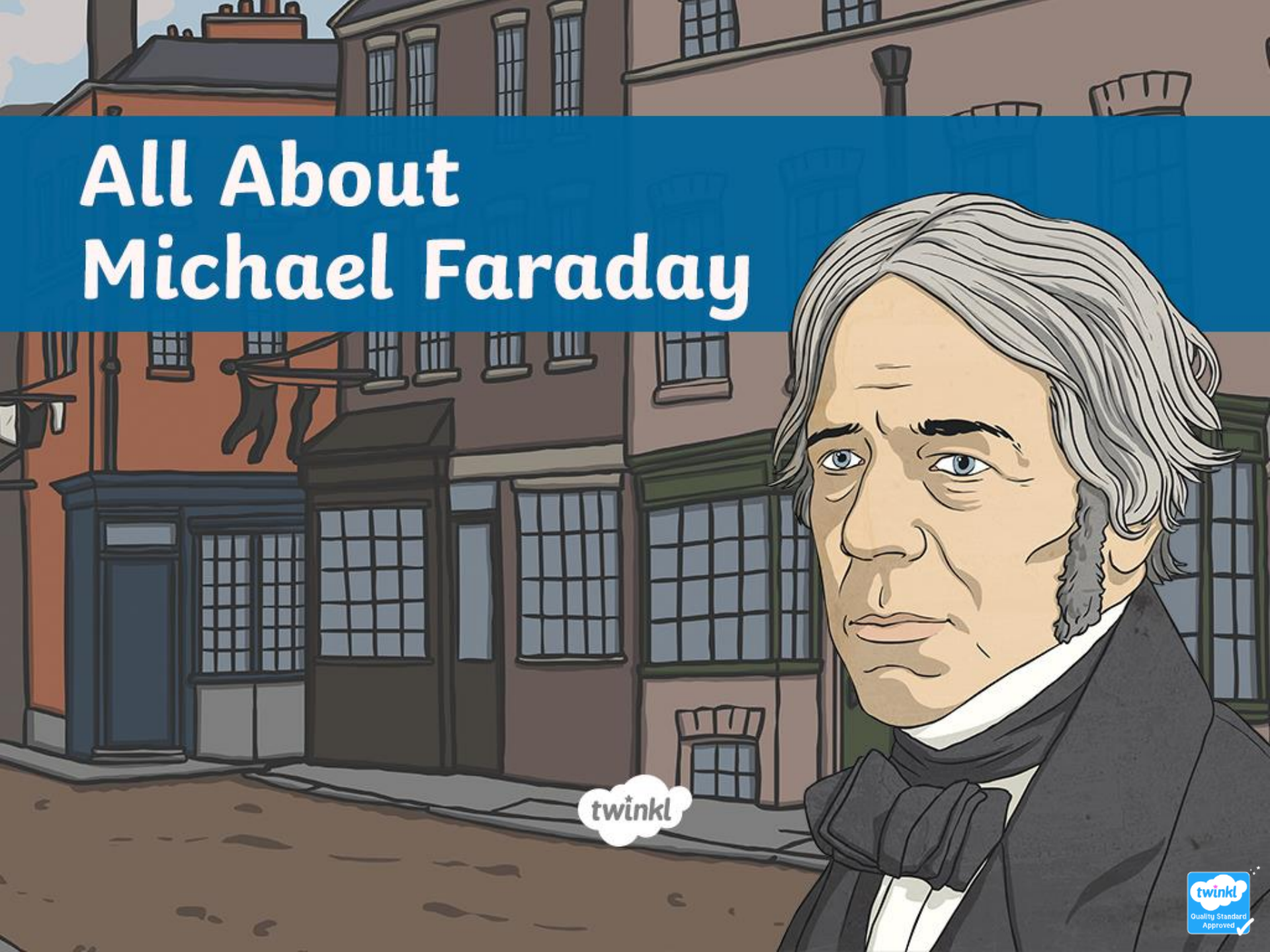


All About Michael Faraday



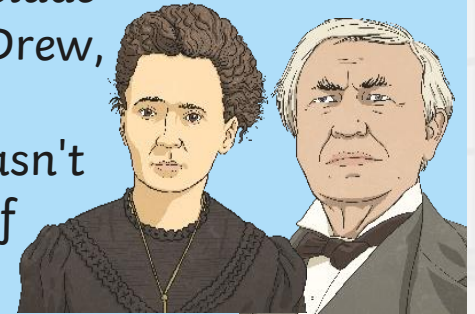
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Famous Scientists

Talk About It

Do you know the name of any famous scientists or important scientific discoveries?

Throughout history, scientists have made important discoveries that have changed the way we live. They include Marie Curie, who pioneered radiotherapy, and Charles Drew, who developed blood banks. Although Thomas Edison is often credited with the invention of the lightbulb, he wasn't the only inventor who contributed to the development of this revolutionary technology.

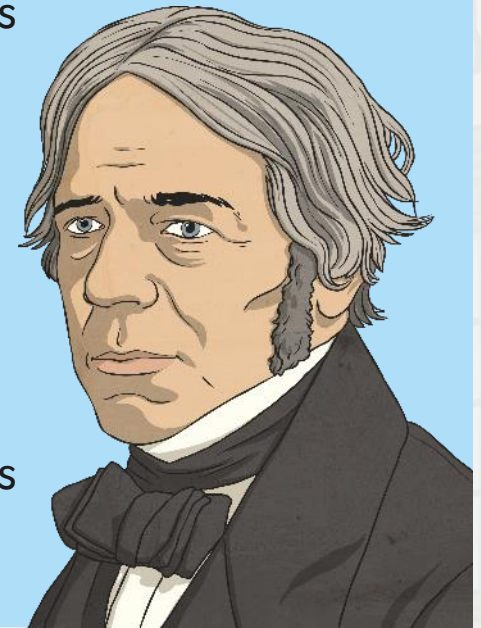


Some scientists came from wealthy backgrounds and because of this had lots of privileges. Today, we are going to learn about a scientist who came from a very poor background, yet overcame challenges to make important discoveries.

Michael Faraday

Michael Faraday was born on 22nd September 1791 in London. His family were very poor. Michael's father was a **blacksmith** but he couldn't always work due to ill health.

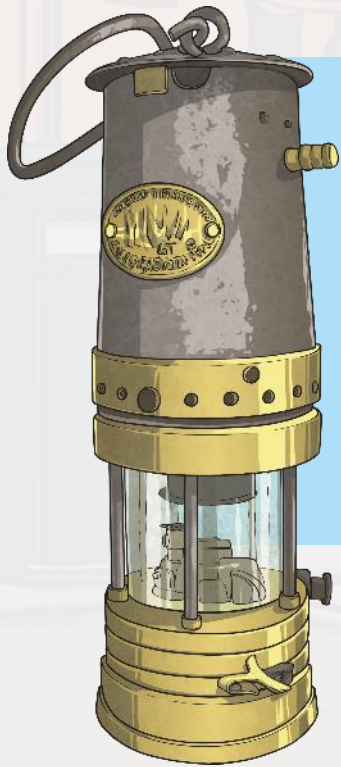
Michael attended a charity school and only received a basic education. When he was 14 years old, he became an **apprentice** to a **bookbinder**. Michael was an apprentice for seven years. During this time, he educated himself by reading as many scientific books as possible.



- apprentice** – Someone who does a job with a skilled person to learn the skill.
- blacksmith** – A person who makes objects, like tools, out of metal (iron).
- bookbinder** – Someone who makes books.

Michael Faraday

Michael continued his commitment to developing knowledge by attending lectures at the Royal Institution. The Royal Institution is an organisation connected to scientific education and research.



In 1812, Michael attended lectures given by a scientist called Sir Humphry Davy. Sir Humphry Davy is famous for many things, including inventing the miners' safety lamp that saved many lives.

In 1813, Sir Humphry Davy gave Michael a job as his chemical assistant at the Royal Institution.

The Royal Institution

Michael worked at the Royal Institution helping scientists with their experiments while improving his own scientific knowledge.

Michael became interested in **electromagnetism**. In 1821, he published some scientific discoveries he had made about electric motors.

In 1826, Michael started the Royal Institution's Friday Evening Discourses, where scientists give lectures about their discoveries. He also started the Royal Institution's Christmas Lectures in the same year. Both of these events still happen today.

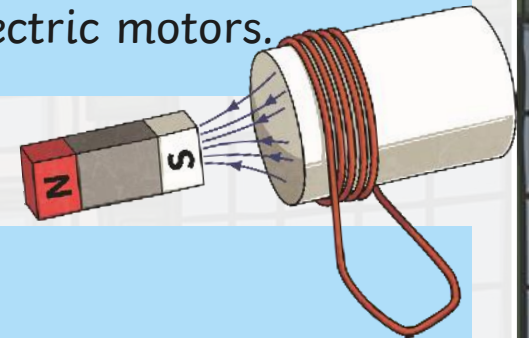
Michael gave many lectures and became known as an important scientist.

electromagnetism – An area of science studying the magnetic force made by electricity.

Major Discoveries

Electromagnetic Induction

Michael discovered that by making a wire into a coil and placing a strong magnet inside, it gained a magnetic force. He also found out that if the magnet was moved in and out of the coil, an electrical current was produced. This work led to the first generators and electric motors.



Fridges

One of Michael's discoveries showed that pumps could change a gas into a liquid. The liquid would then evaporate back into a gas, which would cause a drop in temperature. The process would then be constantly repeated. This led to the invention of refrigeration.

Major Discoveries

Scientific Vocabulary

Michael Faraday was partly responsible for introducing scientific words that are still used to describe electricity today. These include:

- **cathode** – A type of electrode.
- **electrode** – An electric conductor that carries electric current.
- **farad** – A unit of measure used for showing how much electricity something is capable of conducting. It is named after Michael Faraday.
- **ion** – An atom with an electrical charge.

Faraday Cage

A Faraday cage is a piece of equipment that acts as a shield against electrical current and is based on Faraday's work. Faraday cages are still used by people working with electricity today. Standing behind a Faraday cage prevents people from being harmed by the strong electrical current.



Michael Faraday

Michael was twice offered the Presidency (leadership) of the Royal Society but said no. It is thought he was offered a knighthood by Queen Victoria, which he also turned down.

Michael was a devout Christian, who served as an elder (leader) in his local church.

He married Sarah Barnard in 1821. They had no children.

Michael died in 1867 at the age of 75.

Did You Know?

Albert Einstein, one of the world's greatest scientists, had pictures of three scientists in his study. One of the pictures was of Michael Faraday.





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