

**Cornerstones**

Marie Curie – detective and scientist

Group:	Whole school
Key message:	Science can change the world
Props:	Assembly board

Engage

Show the Assembly board and point out the X-ray images.

Ask: Have you ever had an X-ray?

Invite children to describe an X-ray they or any family members have had. Explain that, before the invention of X-rays, doctors had no way of knowing what was going on inside people's bodies. They had to guess where broken bones or injuries were, meaning that many people died.

In 1895, a scientist called Dr Röntgen discovered that rays could be used to see through the outer layers of the human body to reveal what was underneath. The scientist, Marie Curie, was fascinated by this discovery and was determined to find out more. She spent the rest of her life researching, and because of this, discovered something else that was to change medicine forever.

Develop

Marie Curie was born in Poland in 1867. She was very intelligent, but even though she did well at school, she was not allowed to go to University because at that time, it was only for men. So Marie moved to Paris where she continued her studies. She had very little money, lived in a tiny apartment, and was often hungry.

While in Paris, she married her husband, Pierre, a fellow scientist. Together, they began to investigate uranium, a material used in X-rays. Marie thought she knew why uranium was able to help us see through materials – but she had to prove it! During their research, they discovered new elements that gave out these rays. They named these polonium (named after Marie's homeland) and radium. Their research was difficult and required years of very detailed investigation.

As they worked, Marie and Pierre discovered that radium also helped to kill diseased cells faster than healthy cells. This discovery led to one of the most important medical improvements ever – the discovery of radiation. Scientists used Marie's discovery to develop machines which used radiation and radiation is now used to treat diseases such as cancer.

Marie was becoming famous as a brilliant scientist, but she was still not allowed to speak in universities because she was a woman. In 1903, Marie was awarded a very important prize, called the Nobel Prize. She was the first woman ever to receive this award, and in 1911, she won a second Nobel Prize.



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Sadly, Pierre was killed in an accident. But, Marie continued to work and investigate radiation. She also set up many mobile X-ray machines and helped drive them onto battlefields during the First World War, so that injured soldiers could be treated quickly.

After the war, she visited many countries, sharing her discoveries with other scientists. She received many awards and money, which she gave away to other scientists doing research, and was at last recognised as an important, female scientist.

Unfortunately, Marie had not realised that working with radium was dangerous. She often carried it around in her pocket and kept it in her desk drawer. Nowadays, doctors are careful when using radiation and X-rays, and know how to keep themselves and their patients safe. Marie died in 1934, of an illness caused by radiation.

Innovate

Ask: What do you think was most important about Marie Curie?

Was it that she:

- was the first woman to receive a Nobel Prize?
- discovered new elements which helped develop X-rays and radiation treatment?
- inspired other scientists?
- was brave?
- gave away her money to help other scientists?
- wanted to find things out?

There is no right answer – they are all important!

Express

Marie Curie inspired many people, including the founders of the Marie Curie Memorial Foundation, an organisation that provides care for people who are suffering from serious illnesses, such as cancer. They provide nurses and hospitals, and money for research into cancer.

Every year they hold the Daffodil Appeal to raise money. This means that Marie Curie's work is continued, and is used to help people all over the world.

Ask: Can you think of any ways that we could support the Daffodil Appeal?