

Hailey Heider
Mrs.Kelly
Period 6
11/17/16



Marie Curie

By Hailey Heider

Marie Sktodowska Curie, born as Maria Salomea Sktodowska, was a Polish naturalized-French chemist and physicist who was a pioneer in the research of radioactivity. Marie Curie made history in 1903 when she became the first woman to ever receive a Nobel Prize in physics, for her work in radioactivity. In 1911, Marie received a great honor when winning her second Nobel Prize, this time in chemistry. Marie contributed to the first world war with portable x-ray units. She and her husband, Pierre, were recognized for discovering Polonium and Radium.

Marie's parents were both teachers, and she was also the youngest of five children, following siblings Zosia, Jozef, Bronya, and Hela. As a child Marie looked up to her father, Wladyslaw, who was a math and physics teacher. Marie had a bright and curious mind and excelled in school. Tragedy struck when she was only 10, losing her mother, Bronislawa, who died of tuberculosis.

As a top student in her secondary school, Marie could not attend the men-only University of Warsaw. She instead continued her education in Warsaw's "Floating University", a set of underground, informal classes, which were held in secret. Marie and her sister Bronya dreamed of earning an official degree, but lacked financial resources to pay for more schooling. Marie and Bronya worked out a deal. Marie would support Bronya while in school, and Bronya would return the favor while Marie completed her studies.

Marie worked as a tutor and governess for roughly five years. She used any spare time for her studies, reading about physics, chemistry, and mathematics. In 1891, Marie made her way to Paris where she enrolled at the Sorbonne in Paris. She put all her dedication into her studies, but all her hard work had a personal cost. With little money, she lived of bread, butter, and tea. Her health was often poor because of her lacking diet.

In 1893 she completed her masters degree in physics and the following year earned one in mathematics. She received a commision to study steel and its magnetic properties. Marie lacked a lab, so one of her colleagues introduced her to Pierre Curie,

a French Physicist. Between the brilliant pair, a romance developed. “And they became a scientific dynamic duo.” The pair of scientists were married on July 26, 1895. They were both dedicated scientists and devoted to their eternal love.

Marie was fascinated by the work of a French physicist, Henri Becquerel, who discovered that uranium casts off rays. Conducting her own experiments, Marie took Becquerel’s work a couple steps farther, while working on uranium rays. She discovered, no matter the condition or form, uranium produces constant rays. She theorized, that the rays come from the elements atomic structure. The field of atomic physics was created by this revolutionary idea. Marie used the word *radioactivity* to describe the phenomenon.

In 1903, Marie Curie made history for being the first woman to win a Nobel Prize in physics. She won the honor along with her husband and Henri Becquerel, for their work on radioactivity. With their Nobel Prize win, the Curies developed an international reputation for their scientific efforts, and they used their prize money to continue their research.

In 1906, Marie suffered a tremendous loss. Her husband Pierre was killed in Paris after he accidentally stepped in front of a horse-drawn wagon. Despite her tremendous grief, she took over his teaching post at the Sorbonne, becoming the institute's first female professor.

Curie received another great honor in 1911, winning her second Nobel Prize, this time in chemistry. She was selected for her discovery of radium and polonium, and became the first scientist to win two Nobel Prizes. While she received the prize alone, she shared the honor jointly with her late husband in her acceptance lecture.

Around this time, Curie joined with other famous scientists, including Albert Einstein and Max Planck, to attend the first Solvay Congress in Physics. They gathered to discuss the many groundbreaking discoveries in their field. When World War I broke out in 1914, Curie devoted her time and resources to helping the cause. She championed the use of portable X-ray machines in the field, and these medical vehicles earned the nickname "Little Curies." After the war, Curie used her celebrity to advance her research. She traveled to the United States twice— in 1921 and in 1929— to raise funds to buy radium and to establish a radium research institute in Warsaw.

All of her years of working with radioactive materials took a toll on Curie's health. She was known to carry test tubes of radium around in the pocket of her lab coat. In

1934, Curie went to the Sancellemoz Sanatorium in Passy, France, to try to rest and regain her strength. She died there on July 4, 1934, of aplastic anemia, which can be caused by prolonged exposure to radiation.

Marie Curie made many breakthroughs in her lifetime. She is the most famous female scientist of all time, and has received numerous posthumous honors. In 1995, her and her husband's remains were interred in the Panthéon in Paris, the final resting place of France's greatest minds. Curie became the first and only woman to be laid to rest there.

Curie also passed down her love of science to the next generation. Her daughter Irène Joliot-Curie followed in her mother's footsteps, winning the Nobel Prize in Chemistry in 1935. Joliot-Curie shared the honor with her husband Frédéric Joliot for their work on their synthesis of new radioactive elements.