MARIE CURIE: UNLIKELY REVOLUTIONARY

Chapter 1 – Polish Origins (2:42)

In 1867, the woman we know as Marie Curie is born Maria Sklodowska, in Poland, at a time when Warsaw is under Russian rule. A brilliant student, she is not allowed to attend university in her own country and must work for six years as a governess before, at age 24, she finally gets her chance to study science in Paris.

Chapter 2 – Marie in Paris (2:07)

Marie delights in the sights and sounds and freedom of 1890s Paris – the most modern city in the world. She dives into her studies at the Sorbonne, thrilled to be learning math and physics from some of the leading lights of French science, including her mentor, future Nobel laureate Gabriel Lippmann.

Chapter 3 – Pierre (2:18)

After graduating first in her class in physics, Marie meets a Frenchman named Pierre Curie. The shy physicist pursues her as he has nothing else in his life. Marie is torn, because her plan is to return to Poland to teach and care for her aging father. But her feelings for Pierre are too powerful to resist. The couple is married in 1895.

Chapter 4 – Mysterious Rays (2:37)

In 1897, even with a daughter to care for, Marie sets out to get what no other woman has ever received in France: a doctorate in physics. While all her colleagues are smitten with newly discovered X-rays, Marie decides to study a different kind of ray given off by the element uranium. Her secret weapon: Pierre.

Chapter 5 – The Curies' Instruments (2:48)

The "uranic rays" Marie has chosen to study make air a better conductor of electricity, and Pierre is a world expert on measuring tiny electrical currents. Using instruments Pierre has invented, Marie sets out to study this new phenomenon, never dreaming it will occupy the two of them for the rest of their lives.

Chapter 6 – Discovering Radioactivity (2:47)

Marie soon makes two startling findings: first, that the element thorium also gives off these rays, which Marie calls "radioactivity;" and second, that pitchblende, the raw ore from which uranium is taken, is *four times* as radioactive as uranium itself. That means the ore must contain a more powerful undiscovered element.

Chapter 7 – Two New Elements (3:27)

The Curies discover that two distinct parts of the pitchblende are both radioactive. That means not one but *two* new elements lie hidden in the ore. In July 1898, they announce the discovery of polonium, named for Marie's native country. A few months later, they reveal the existence of a second, even more powerful element: radium.

Chapter 8 – Isolating Radium (3:06)

When chemists are doubtful about this new element, Marie sets out to isolate enough of it to prove it is real. She spends four years, working in a drafty old shed, to isolate one tenth of a gram of radium chloride *from ten tons* of pitchblende. The skeptical chemists are finally convinced. Radium officially exists.

Chapter 9 – The Nobel Prize (2:25)

By 1903, it's clear that radioactivity is a pivotal scientific discovery. But when it comes time to recognize the discovery, a group of Frenchmen – including her mentor, Gabriel Lippmann – makes no mention of Marie in their Nobel Prize nomination letter. Only after Pierre's vehement protest does Marie share in the prize.

Chapter 10 – What's Inside the Atom? (3:20)

In isolating radium, Marie discovers that it eerily glows in the dark. Other scientists conclude this energy must come from the disintegration of radium atoms. But if radioactivity is atoms falling apart, then atoms must *have* parts. Thanks to Marie Curie, scientists have a pressing new question to pursue: What's inside the atom?

Chapter 11 – Curie's Legacy (1:30)

Through her scientific work, Marie Curie profoundly changed our understanding of matter. Just as important, her perseverance in the face of the obstacles women faced in science has served as an inspiration to thousands and showed that women have a place in science too.