20th Century Superstar

TIME

Curie



Elizabeth Cregan and
Dona Herweck Rice

Table of Contents

Radioactive! 4
The Girl from Poland. 8
Discovering Radium. 14
Bringing Her Work to the World 24
The Final Years 26
Glossary. 28
Index 29
Check It Out! 30
Try It! 31
About the Authors 32

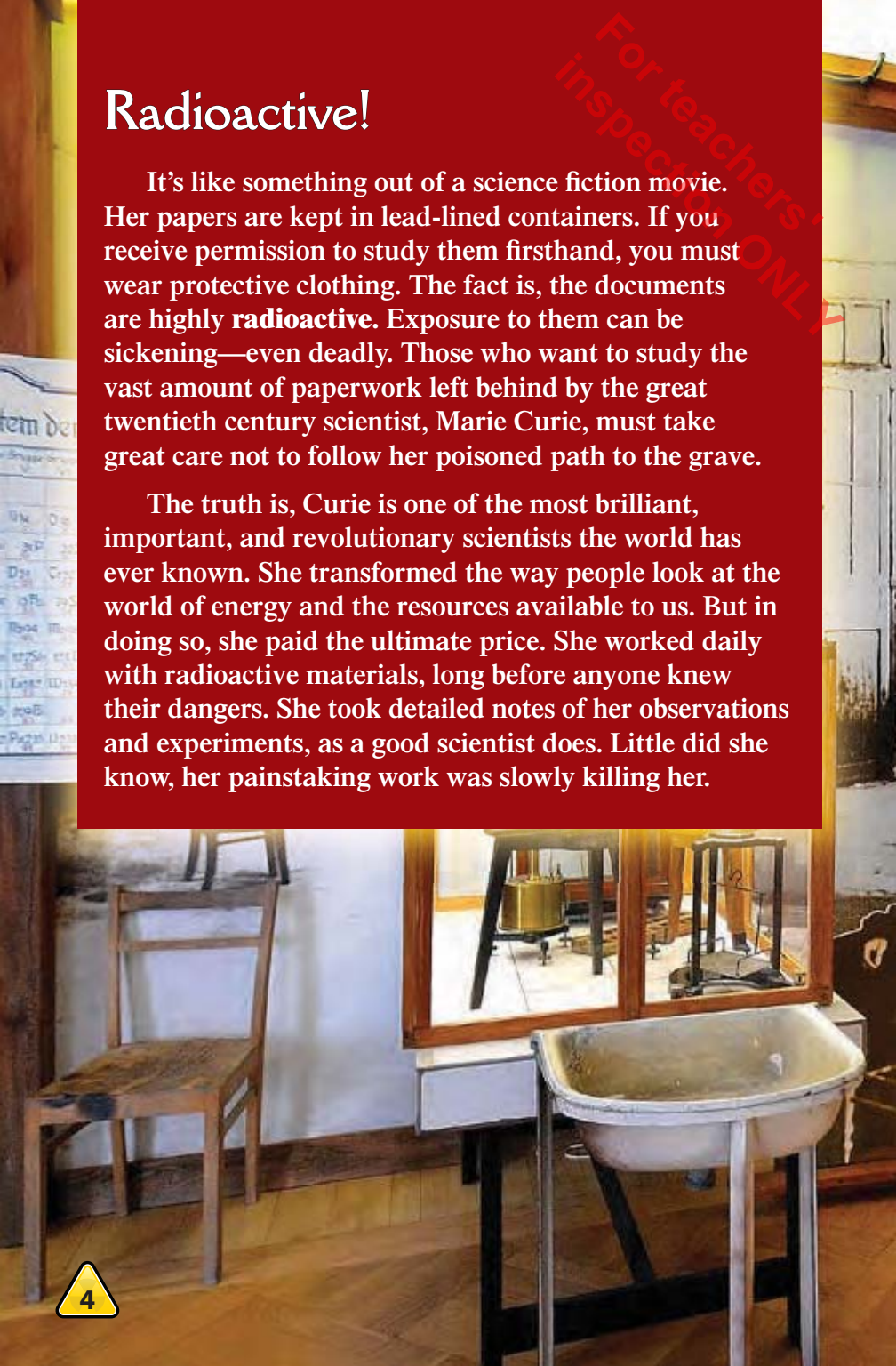
For teachers' inspection ONLY

Radioactive!

It's like something out of a science fiction movie. Her papers are kept in lead-lined containers. If you receive permission to study them firsthand, you must wear protective clothing. The fact is, the documents are highly **radioactive.** Exposure to them can be sickening—even deadly. Those who want to study the vast amount of paperwork left behind by the great twentieth century scientist, Marie Curie, must take great care not to follow her poisoned path to the grave.

The truth is, Curie is one of the most brilliant, important, and revolutionary scientists the world has ever known. She transformed the way people look at the world of energy and the resources available to us. But in doing so, she paid the ultimate price. She worked daily with radioactive materials, long before anyone knew their dangers. She took detailed notes of her observations and experiments, as a good scientist does. Little did she know, her painstaking work was slowly killing her.

For teachers' inspection ONLY



For teachers' inspection ONLY

Radioactivity

When something gives off energy, it produces **radiation.** For example, the sun radiates heat and light. Curie did not think *radiation* was the right word to describe the energy coming from substances she studied. She called it *radioactivity*. It is **generated** when the nuclei within the **atoms** of radioactive substances break down.



Marie Curie Museum in Warsaw, Poland

1,500 Years

Many people think that the materials Curie left behind will stay radioactive for the next 1,500 years. These include her notebooks, clothing, and furniture. People who are allowed access to her notebooks must sign a **liability waiver**.

For teachers' inspection ONLY

An Important Scientist

Marie Curie spent her life studying energy called *radiation*. In fact, she invented the word *radioactive* to describe this energy. Her investigations and experiments helped other scientists understand how atoms work. Curie also learned many things that became **instrumental** in finding new ways to treat **cancer**.

Curie was the first woman to win the world's highest award for science, the **Nobel Prize**, in 1903. Her work was so successful that she won a second Nobel Prize in 1911. Her husband, Pierre, with whom she won the first prize, was also a scientist of note. The two worked together until his untimely death. Their daughter Irène grew up to become a famous scientist and she, too, won a Nobel Prize. Irène's two children are also important scientists. They have continued the family legacy of scientific inquiry.

From her earliest days, Curie was known as a determined and focused worker and a brilliant scientist. She would not stop investigating until she found answers to her questions. Her work with radiation was also dangerous. She died from aplastic anemia, a cancer of the blood. It was caused by working with radioactive materials.

The Nobel Prize

The Nobel Prize was first awarded in 1901. It is given to men and women for their work in science, writing, medicine, economics, and efforts to bring peace to the world. The award includes a medal, a diploma, and money that can be used to continue the work.



"Fairy Lights"

The Curies kept radioactive **elements** such as **uranium** and **plutonium** in their home, and Pierre even carried them in his pockets. Curie thought the glow that **radium** gave off was pretty and magical, so she kept a sample on her nightstand to use as a nightlight. She wrote that it looked like "faint, fairy lights."

For teachers' inspection only



Pierre Curie

The Girl from Poland

Curie was born Maria Sklodowska in Poland, on November 7, 1867, the youngest of five children. Her father was a high school science teacher, and her mother was the principal of a private school for girls.

Curie was always a very good student, and she especially enjoyed studying science and language arts. She graduated from high school at age 15, but she wanted to keep learning. Unfortunately, at that time, Polish girls were not allowed to attend college.

Curie and her older sister, Bronislawa (called Bronia), started studying at a secret school. Professors taught classes in private homes. The sisters soaked up all the knowledge they could. Then, they made plans to travel to Paris, France, where girls were allowed to go to college. Bronia left first and studied to become a doctor. Curie stayed in Poland, working as a teacher to send money to Bronia. Finally, it was her turn. In 1891, she took the train to Paris and joined Bronia.



For teachers' inspection ONLY



For teachers' inspection ONLY

Here is Curie (far left) with her father and sisters. Her mother died when she was just 11 years old.

Free to Study

In the late 1800s, it was hard for anyone to study in Poland, let alone girls. This was because the Russian government ruled Poland and wanted everyone to speak and study only Russian subjects. Curie had to leave home to continue her education. France was one place where she could enjoy this freedom.

THINK LINK

- Why is it important that people sign a liability waiver to have access to Curie's notebooks?
- Would Curie have studied radioactivity if she knew the risks of the work?
- Historically, and even today, there are fewer opportunities for women around the world to be educated than there are for men. Why is that?

Reader's Guide

1. What motivated Marie Curie to achieve her goals?
2. What legacies did Curie leave behind, both in science and in life?
3. Would you pursue work with dangerous materials despite possible effects on your health? Explain your reasoning.
4. How might Curie's life have been different if she were born in the same time and place but as a man?

For teachers' inspection ONLY