

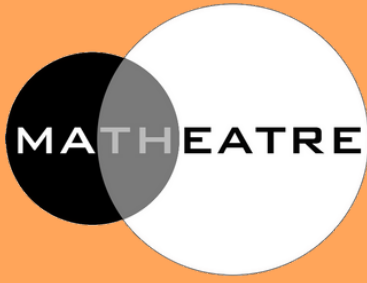
Activity and discussion guide



Marie Curie

History Science Theatre ON DEMAND
A production of Matheatre

Copyright 2022



Marie Curie



Dear Teacher,

Thank you for bringing Matheatre's *History Science Theatre ON DEMAND* into your classroom or home learning curriculum. Matheatre's mission is to use live theatre to tell stories that inspire excitement about math and science. We hope that the personal storytelling and character interpretations in this video series will make the many faces of science relatable and alive for modern students.

In this guide you will find:

- A brief biography of the historical figure
- A summary of key concepts presented in the video story
- Suggested discussion questions
- Suggested activities
- Suggested reading

We believe that *stories* hold immense power to engage the imagination, foster empathy, encourage creative and critical thinking, and educate by way of entertainment. We hope the stories in this series inspire lively conversation, exploration, experimentation, curiosity, and perspective for each of your students as they make history in their own way.

Sadie Bowman
Co-founder, Managing Director
Matheatre

Who was Marie Curie?

MARIE SKŁODOWSKA CURIE (1867-1934) was the first to isolate the elements Radium and Polonium and coined the term “radioactivity.” She is famed for being the first woman to win the Nobel Prize, and first person to win the prize twice in two different categories (Physics, in 1903, and Chemistry, in 1911).

Born Marya Salomea Skłodowska in Warsaw, she grew up in Poland during Russian occupation. It was illegal for girls to pursue a higher education, so her story is one of immense commitment and persistence.

She married French scientist Pierre Curie in 1895, and their partnership dynamic was a rare one for the time. While gender norms led many to assume Marie was Pierre's assistant, he was insistent on sharing the credit for their collaborative work. Their daughter Irene grew up to be the second woman to win the Nobel Prize, for her work on artificial radioactivity in the 1930s.

While Curie is famous for eventually dying of radiation poisoning due to her work, she lived to be 64 years of age and lived a full and dynamic life, despite chronic health problems and suffering from depression.

Key lesson concepts:



Minerals and
elements



Radioactivity



The scientific
method



Persistence in the
face of obstacles



*Young Marya Skłodowska
in Poland.*

Suggested discussion questions

- Marie had to break the law in order to learn about science because it was illegal for her to go to college in her home country. What would you do if it were illegal for you to learn?
- Marie loves doing experiments! Can you remember the steps of the scientific method?
- Marie named the element Polonium in honor of her home country, Poland. What would you name an element if you discovered one?



Marie Curie in her lab

Suggested activities

- An element is a substance containing only one kind of atom, and the entire universe is made of elements. Go on a scavenger hunt around your classroom or your house and find items or substances that contain the following elements (hint: the kitchen is a great place to start!)



- Sodium
- Iron
- Nickel
- Tin
- Silicon
- Calcium
- What other elements can you identify around your house?

The periodic table of elements looked very different in Marie's time

Suggested discussion questions

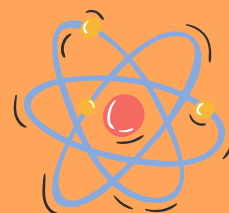
- Marie's husband Pierre made sure their colleagues gave her equal credit, even though he could have easily benefitted from their assumptions and taken all the credit himself. Why is it important for people with privileges to speak up and advocate for equality?
- Marie struggled her entire life against barriers because she was a woman. Have you ever made an assumption about someone's scientific abilities based on their gender, age, nationality, or color of their skin?



Marie and her husband Pierre--a great team!

Suggested activities

- See how a chemical reaction can affect an element! Pennies contain copper. Place some pennies on a layer of absorbant paper towels inside a bowl. Douse the pennies with white vinegar (which is a type of acid). Sprinkle salt over the pennies and observe them for a few days!



- Marie speaks a total of five languages: Polish, Russian, German, French, and English. Using an online dictionary or other resource for each of those languages, can you look up the following words:

- Science
- Mathematics
- Chemistry
- Experiment



(These are just the languages familiar to Marie Curie, influenced by the fact that she lived in Europe. What other worldwide languages would you like to know about? Look them up too! Try to pick at least one language each spoken in Asia, Africa, and South America)

Suggested reading

Marie Curie: A Graphic History of the World's Most Famous Female Scientist

BY AGNIEZKA
BIZKUP AND
SONIA LEONG

The Story of Marie Curie: A Biography Book for New Readers

BY SUSAN B.
KATZ

The Disappearing Spoon: Young Readers Edition

BY SAM KEAN

Ada Twist, Scientist

BY ANDREA
BEATY



Modern day Marie Curies!

Chemists are still learning about atoms and subatomic particles, adding to our understanding of the universe big and small.

It's hard to know what Marie Curie would be up to if she were around today, but many, many people are expanding on her work on chemistry and radioactivity.

Chemists like Becky, pictured here, explore the world of atoms and elements every day. Becky researches ways to make chemical reactions more efficient, and teaches young people about chemistry. Becky says she loves chemistry because "*at the smallest level of the atom, you can explain and predict big things that you can see with your eyes. Studying the smallest particles helps us understand why big things happen!*"

HISTORY SCIENCE THEATRE
**HISTORY
SCIENCE
THEATRE**
ON DEMAND

History
Science
Theatre ON
DEMAND is a
production of
Matheatre.

Find our
complete
library of on-
demand
storytelling
videos and
more!



WWW.MATHEATRE.COM

[INSTAGRAM: MATHEATRE_STEAM](https://www.instagram.com/matheatre_steam)

[PATREON.COM/MATHEATRE](https://www.patreon.com/matheatre)