Leo & Layla | Grades 3-5

Marie Curie | Lesson Plan

How did Marie Curie's success as a scientist prove that women do not have to choose between family and career?

Through investigating the life of prominent physicist and chemist Marie Curie, students will determine that every woman experiences unique life circumstances and sets distinctive goals. They will understand that women don't have to choose between a family and a career–they can have either or both.

Learning Objectives:

- Examine Marie Curie's life as a wife, mother, and scientist.
- Describe the award-winning accomplishments of Marie Curie in physics and chemistry.
- Explain that women do not have to choose between having a family or a career.

Key Vocabulary:

- **Ambitious:** Having a strong determination to succeed.
- **Theory of Relativity:** A scientific explanation of how space relates to time.
- **Physics:** The branch of science that studies matter, energy, and the fundamental forces of nature, focusing on how objects move, interact, and behave in the universe.
- **Chemistry:** The branch of science that studies the properties, composition, and behavior of substances and how they change and interact with each other.
- **Nobel Prize:** A special award given every year to people or groups who have made important contributions in different fields like peace, science, literature, and medicine. It is named after Alfred Nobel, who wanted to honor those who make the world better.

Educational Standards: CCRA.L.1, CCRA.L.2, CCRA.L.4, CCRA.W.4, CCRA.R.7, CCRA.SL.1, CCRA.SL.2 CCRA.SL.4, CCRA.W.2

Academic Subject Areas: Biography, Women of History, Science

What You'll Need

- Video: *Marie Curie: Distinguished Mother & Scientist* (Watch Here)
- Worksheet: *Marie Curie: Distinguished Mother & Scientist* (Click Here)
- Online photo of an X-ray of a human hand
- Optional for Extension Activity:
    - Black construction paper
    - White crayons or colored pencils
    - Cotton swabs
    - Scissors
    - Glue

Scan to watch episode:

Lesson Plan (45 minutes)

Warm-Up: (10 minutes)

1. Ask students if they have ever had an X-ray. Explain that X-rays use radiation to create images of organs and bones.
2. Facilitate a discussion about how X-rays help medical experts diagnose and treat patients.
3. Show the class the photo of the human hand X-ray.
4. Explain that the class will watch a video about the scientist who developed the theory of radioactivity, which led to the development of X-rays.
5. Discuss the Key Vocabulary above, highlighting the definition of the Nobel Prize. Explain that the Nobel Prize is a special award given every year to people or groups who have made important contributions in different fields like peace, science, literature, and medicine. It is named after Alfred Nobel, who wanted to honor those who make the world better.
6. Reveal that Marie Curie was the first woman to ever win a Nobel Prize and the first person to win *two* Nobel Prizes–each in a different scientific field of study. One prize was given for physics and one for chemistry. The first was awarded for developing the theory of radioactivity, which led to the creation of X-rays, and the second was for discovering two elements that are now on the periodic table–polonium and radium.
7. Display the worksheet and distribute individual copies to students.
8. Read over the worksheet as a class so that students know what to listen for during the video.

Watch and Complete: (15 minutes)

1. Watch the video.
2. Pause throughout the video to allow students to complete answers and notes on the worksheet. Assist as needed.

Wrap-Up: (20 minutes)

1. Allow students several minutes to complete the worksheet independently.
2. Invite volunteers to share their responses to #8 on the worksheet.
3. Collect the worksheet as a formative assessment or participation grade.
4. As a culminating activity, pose the following questions for classroom discussion.
    - Why do you think it's beneficial to study the life of Marie Curie?
    - What are some character traits that made Marie Curie a successful wife, mother, scientist, and friend?
    - How do you think being a wife and mother gave Marie Curie the focus and drive she needed to have a successful career, and vice versa?
5. Summarize the lesson by reviewing the concept that every person is different, with different life circumstances and different desires. Reiterate that some women will have a strong desire to build a family, some will have a strong desire to build a career, and some will be driven to build both.

6. Conclude by reviewing the value of learning about Marie Curie. Her life provides a worthy example of the successful balance of work and family. Encourage students to reflect on Marie Curie's advice: "Life is hard no matter what path a person chooses, but it is made easier by thinking carefully about what you would like to accomplish in life, and then by pursuing those goals with all your heart."

Extension Activity: (30 minutes)

1. Display the X-ray photo from the Warm-Up.
2. Let students know that they will be creating their own craft X-ray.
3. Instruct students to use a white crayon or colored pencil to trace one hand (including the wrist) on a sheet of black construction paper.
4. Direct students to cut the cotton swabs to size as needed and glue them inside their hand outlines to indicate the correct location of the bones in the hand.
5. If time allows, have students label the three types of bones in hands: phalanges in the fingers, metacarpals in the mid-hand, and carpals in the wrist.

Don't have time for the full lesson? Quick Activity (15-20 minutes)

Distribute the worksheet and allow students to complete it while they follow along with the video.