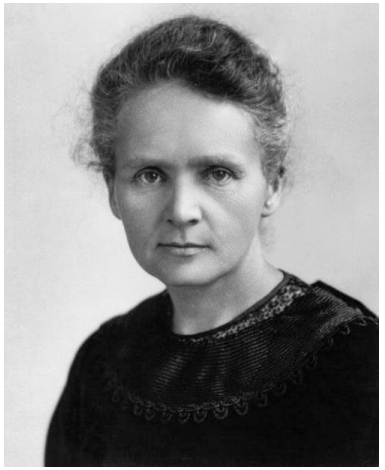
MARIE CURIE



Marie Curie was a Polish-born physicist and chemist, renowned for her groundbreaking research on radioactivity. Born in Warsaw in 1867, she faced significant challenges as a woman in science but excelled in her studies and moved to Paris, becoming the first woman to earn a degree from the University of Paris. Curie made history as the first person to win two Nobel Prizes, one in Physics and another in Chemistry, for her discoveries of polonium and radium. Her contributions advanced scientific understanding and paved the way for radiation use in medicine. She was also a passionate advocate for women in science, inspiring future generations of female scientists.

"Nothing in life is to be feared; it is only to be understood.

The Mother of Radioactivity

Marie Curie was especially noted for her groundbreaking work on radioactivity, which included the discovery of the elements polonium and radium. Her extensive research, comprising over 200 scientific publications and the co-authorship of several influential books, has solidified her legacy as a pioneer in nuclear physics and chemistry. Curie developed the theory of radioactivity, a term she coined herself, and her work laid the foundation for the field of nuclear science. Her notable contributions include advancements in understanding the properties of radioactive isotopes and the development of techniques for isolating radioactive elements. Curie's research not only transformed scientific understanding of atomic structure but also had significant implications for medical applications, particularly in radiation therapy for cancer treatment.

More information

Noble Prize Radiology Radium Polonium

Experiment: Investigate the Properties of Radioactive Decay with a Simple Coin Toss

Did you know that radioactive decay is a random process that can be modeled using simple experiments? While we cannot conduct real experiments with radioactive materials at home due to safety concerns, we can simulate the concept of decay using a coin toss. This experiment illustrates the principles of half-life and randomness associated with radioactivity, similar to the work done by Marie Curie in her studies of radioactive elements.
In this experiment, we will simulate radioactive decay using a coin to represent a collection of radioactive atoms.

What you need

1. Initial Setup: Start with all 20 coins, representing 20 "radioactive atoms."
2. Decide on a "decay" condition: for this experiment, we'll say that heads (H) represents decay.
3. Conducting the Experiment: Toss all 20 coins at once and record the outcomes, noting how many land on heads (H) and how many land on tails (T).
4. Remove all coins that land on heads (H) from the game, as they represent the decayed atoms.
5. Count the number of remaining coins (T) and write down the total number.
6. Repeat: Toss the remaining coins again and repeat the process: remove any that land on heads (H) and record the new total. Continue this process until all coins have "decayed" or you reach a predetermined number of rounds (e.g., 5 rounds).
7. Data Analysis: After the experiment, create a simple chart or table showing the number of remaining coins after each round. Calculate the "half-life" by determining how many rounds it took for half of the initial coins to "decay" (from 20 to 10).
8. Discuss how this simulation represents the random nature of radioactive decay and how it relates to Curie's research. Reflect on the concept of half-life and how it is used to understand the behavior of radioactive substances.

Discussion

1. How many rounds did it take for half of the coins to "decay"?
2. Did the results vary each time you repeated the experiment? Why do you think that is?

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