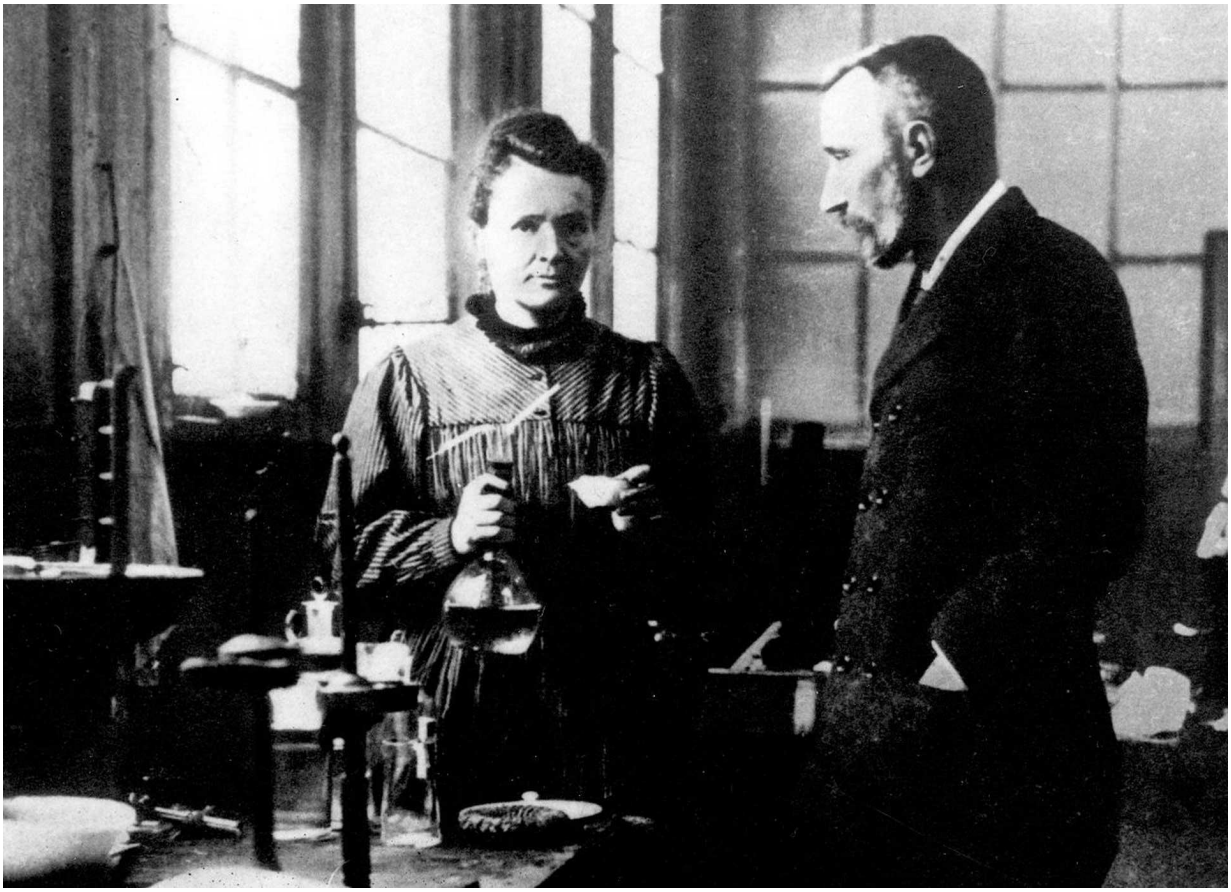
Image Analysis: Notice & Wonder

Directions: Look at the image and write down 3 things you **notice** (key details, main ideas, or themes) and then write down 3 things you **wonder** (questions you have because of the image or things you are curious about when you look at the image).

What do you notice?	



What do you notice?	

Read & Take Notes

Directions: Read the passage below. Take notes in the space provided.

Marie Curie, born Maria Skłodowska in Warsaw, Poland, was a brilliant scientist who made groundbreaking discoveries in the field of radioactivity. She was the first woman to win a Nobel Prize, the first person to win a Nobel Prize twice, and the only person to win a Nobel Prize in two different scientific fields. Her husband, Pierre Curie, was a physicist who shared the 1903 Nobel Prize in Physics with her and Henri Becquerel for their work on radioactivity. Together, they became the first married couple to win the Nobel Prize, starting a legacy of five Nobel Prizes within their family.

Marie's journey to scientific success began in Warsaw, where she studied at a clandestine university and started her scientific training. At the age of 24, she followed her sister to Paris to pursue higher education. In 1895, she married Pierre Curie, and they began their research together. They coined the term "radioactivity" to describe the phenomenon of certain elements emitting invisible rays.

Tragically, Pierre Curie died in a street accident in 1906. Despite this loss, Marie continued her research and won the 1911 Nobel Prize in Chemistry for discovering the elements polonium and radium. She developed techniques to isolate radioactive isotopes, which led to the world's first studies on using radioactive isotopes to treat cancer.

Pierre Curie, born in Paris in 1859, was a French physicist known for his work in crystallography, magnetism, piezoelectricity, and radioactivity. He was educated by his father and showed a strong aptitude for mathematics and geometry from a young age. At 18, he earned his license in physical sciences from the Sorbonne, also known as the University of Paris.

Marie and Pierre met in 1894, and their shared passion for science quickly blossomed into a romantic relationship. Pierre was drawn to Marie's intelligence and dedication to research, and he saw in her a kindred spirit. Marie was attracted to Pierre's gentle nature and his unwavering commitment to scientific discovery. They married a year later, and their partnership became a powerful force in the world of science.

Their research on radioactivity was inspired by two recent discoveries: Wilhelm Roentgen's discovery of X-rays and Henri Becquerel's observation that uranium salts emitted rays that could fog photographic film. Marie was particularly

Take Notes Here

Read & Take Notes

Directions: Read the passage below. Take notes in the space provided.

interested in Becquerel's discovery, and she decided to focus her research on uranium rays. She used a technique developed by Pierre and his brother, Jacques, to measure the faint electrical currents produced by uranium rays.

Marie's work on radioactivity led to her discovery of polonium and radium, two new radioactive elements. She and Pierre painstakingly isolated these elements from tons of uranium ore, proving that they were not simply impurities but entirely new substances. Their discoveries revolutionized the understanding of matter and energy, and they paved the way for the development of nuclear medicine and other applications of radioactivity.

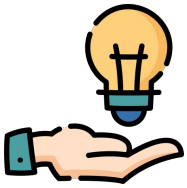
Take Notes Here

Key Vocabulary

Directions: For each term, use the word in a sentence that shows you understand its definition. Then create an image to represent the term. Be ready to explain the image.

Vocabulary Term	Use It In A Sentence:	An Image to Represent It:
clandestine *adjective* Secret or hidden, often for illegal or illicit purposes.		
isotopes *noun* Atoms of the same element that have the same number of protons but different numbers of neutrons.		
aptitude *noun* A natural ability or talent for something.		
phenomenon *noun* Something that is observed to exist or happen, especially something unusual or interesting.		
revolutionized *verb (past participle)* To completely change or transform something, often in a positive way, making it much better or more efficient.		

3-2-1 Learning Reflection



Directions: Fill in the boxes below to reflect on your learning. Write down **three** new things you learned, **two** connections you made to what you already know, and **one** thing you want to learn more about.

3 THINGS I LEARNED

2 CONNECTIONS I MADE

1 THING I WANT TO LEARN MORE ABOUT

Answer and Explain

Directions: For each question, answer the question and then explain why you picked the answer you did using specific evidence from the text.

Question: 1. What did Marie Curie and Pierre Curie discover together that revolutionized the understanding of matter and energy?

Pick the Answer

A) The existence of atoms

B) The principles of gravity

C) The phenomenon of radioactivity

D) The theory of relativity

Explain: Why did you pick that answer?

Question: 2. What inspired Marie Curie to focus her research on uranium rays?

Pick the Answer

A) Her husband's work on crystallography

B) Henri Becquerel's discovery of uranium salts emitting rays

C) Wilhelm Roentgen's discovery of X-rays

D) Her own previous research on magnetism

Explain: Why did you pick that answer?

Question: 3. What did Marie Curie and Pierre Curie call the phenomenon of certain elements emitting invisible rays?

Pick the Answer

A) Radioactive decay

B) Nuclear fission

C) Radioactivity

D) Electromagnetism

Explain: Why did you pick that answer?

Short Answer Questions

Directions: Answer each question in complete sentences. Use specific evidence from the text in each response.

Question

1. What was the name of the clandestine university where Marie Curie studied in Warsaw?

Question

2. What did Marie Curie develop that led to the world's first studies on using radioactive isotopes to treat cancer?

Question

3. What two recent discoveries inspired Marie and Pierre Curie's research on radioactivity?

Reflect and Discuss

Directions: Respond to the following question using the reading and your own knowledge and experiences. Be as thorough as possible.

1. Marie and Pierre Curie's story is a testament to the power of shared passion and intellectual connection. Think about a time when you felt a strong connection with someone, whether it was a friend, family member, or mentor. What made that connection special? How did it impact your life?

Write Your Response Here. Be sure to use what you learned in the reading and your own knowledge and experiences to answer the question thoroughly.

Directions: When instructed, you will share your responses with your group. Take notes on their responses in the boxes below. Be sure to write their names at the top of each box.

Student #1: _____

Student #2: _____

Student #3: _____

Student #4: _____

Reflect and Discuss

Directions: Respond to the following question using the reading and your own knowledge and experiences. Be as thorough as possible.

2. Marie Curie's groundbreaking research on radioactivity had a profound impact on the world, leading to advancements in medicine and other fields. Think about a time when you learned something new that changed your perspective or inspired you to take action. Write about it.

Write Your Response Here. Be sure to use what you learned in the reading and your own knowledge and experiences to answer the question thoroughly.

Directions: When instructed, you will share your responses with your group. Take notes on their responses in the boxes below. Be sure to write their names at the top of each box.

Student #1: _____

Student #2: _____

Student #3: _____

Student #4: _____

Reflect and Discuss

Directions: Respond to the following question using the reading and your own knowledge and experiences. Be as thorough as possible.

3. Marie Curie's dedication to her research and her unwavering pursuit of knowledge are inspiring. Think about a time when you were passionate about something and worked hard to achieve your goals. What motivated you? What challenges did you face? What did you learn from the experience?

Write Your Response Here. Be sure to use what you learned in the reading and your own knowledge and experiences to answer the question thoroughly.

Directions: When instructed, you will share your responses with your group. Take notes on their responses in the boxes below. Be sure to write their names at the top of each box.

Student #1: _____

Student #2: _____

Student #3: _____

Student #4: _____

Vocabulary Flashcards

Print, cut, and fold to use as flashcards.

clandestine	*Secret or hidden, often for illegal or illicit purposes.*
isotopes	*Atoms of the same element that have the same number of protons but different numbers of neutrons.*
aptitude	*A natural ability or talent for something.*
phenomenon	*Something that is observed to exist or happen, especially something unusual or interesting.*
revolutionized	*To completely change or transform something, often in a positive way, making it much better or more efficient.*