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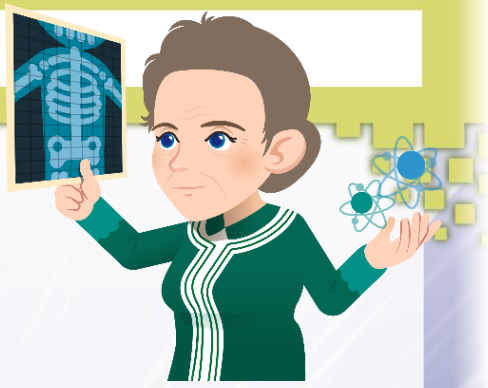

The Biography of Marie Curie

1. Marie Curie was one of the most famous scientists in the world. She was the first person to win the Nobel Prize twice. She is remembered for her discovery of **radioactive elements** polonium and radium. Her findings paved the way for effective cancer treatment.

Early life and education

2. Marie was born in Poland in 1867. Her parents were teachers. She had three sisters and a brother. Her mother died of **tuberculosis** when she was 11. Marie was clever and hard-working. She had excellent performance in school. She finished high school at the age of 15.

3. Marie was determined to further her studies. However, her family did not have much money. She worked as a private tutor to help with family **finances**. She made an agreement with her sister, Bronya, that she would send some of her wages to support Bronya's study of medicine in Paris in return for similar help later.

4. In 1891, Marie left Poland for France. She studied mathematics and physics at the University of Paris. In 1893, she was awarded a **degree** in physics and began to work in a laboratory. The next year, she gained her mathematics degree.

At the age of 27, Marie met Pierre Curie, a senior worker at a laboratory, at the home of a Polish physicist. Soon they fell in love because they had much in common, including a great **passion** for scientific **research**. They got married in 1895. Their two daughters, Irene and Eve, were born in 1897 and 1904 respectively.

Career path and achievements

5. Marie continued her scientific research after marriage. Marie was inspired by Henri Becquerel's findings about an element, uranium, and she decided to study **radiation**. Pierre quit his own research to join his wife's study. In 1898, Marie and Pierre discovered two new elements which were more radioactive than uranium. The first one, polonium, was named after

Marie's birth country. The second one, radium, was even more radioactive than polonium. The couple also discovered that radium could be used to treat cancer.

6. In 1903, Marie gained her Doctor of Science degree. In the same year, the Curies shared a Nobel prize in physics with Henri Becquerel for their discovery of polonium and radium. Marie became the first woman to win a Nobel Prize. Unfortunately, with little knowledge of the health risks of **exposure** to radiation, both Marie and Pierre conducted their scientific research without appropriate protection. As a result, they constantly suffered from radiation sickness.

7. In 1906, Pierre had a road accident. He was run over by a carriage and killed. Marie was heart-broken. Later, she took her late husband's place as **Professor** of General Physics at the University of Paris. She was the first female professor at the university. In 1911, she won another Nobel Prize in chemistry for successfully obtaining radium as a pure metal as well as the study of the **nature** of the element and its compounds. She was the first person to win the Nobel Prize in two different scientific fields. Marie also won a lot of honours and awards for her outstanding achievements.

8. At the end of World War I, Marie was appointed Director of Curie Laboratory at the Radium Institute of the University of Paris in 1919 where she continued to conduct her scientific research. In 1934, Marie died of aplastic anaemia, a blood disease.

Other information

Apart from conducting scientific research, Marie was devoted to **humanitarian** work. In 1914, World War I started. Marie saw the need to set up radiology centres near the front lines as she realised that X-rays could save soldiers' lives by allowing doctors to locate bullets and broken bones. She sought donations from **manufacturers** and wealthy people to transform ordinary vehicles into radiology vehicles. Also, she served as the director of the Red Cross Radiology Service to supervise the installation of the mobile X-ray units, provide training to helpers and so on. She made a great contribution to saving soldiers' lives.

Glossary

1. radioactive: (adjective) giving off powerful and dangerous rays by the breaking apart of atoms
2. elements: (noun) substances that cannot be separated into simpler substances by chemical means
3. tuberculosis: (noun) a serious infectious disease that usually affects the lungs
4. finances: (noun) the money available to a person, a group or an organisation
5. a degree: (noun): the qualification given to a student who has successfully completed his/her studies at a college or university
6. a passion: (noun) a strong liking for something
7. research: (noun) a careful study of a subject in order to find out new facts or information about it
8. radiation: (noun) powerful and very dangerous rays that are given off by radioactive substances
9. exposure: (noun) a situation that makes someone likely to be harmed because the person contacts something harmful where there is no protection
10. a professor: (noun) a teacher with a high rank in a university or college
11. nature: (noun) the qualities of something
12. humanitarian: (adjective) connected with helping people who are suffering
13. manufacturers: (noun) persons or companies that produce goods in large numbers

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A. Read the biography of Marie Curie. Complete the timeline by choosing the correct event from the table below. The first one has been done as an example.

1867	born in Poland; had three sisters and one brother; her parents were teachers
1882	finished high school
1891	went to France and studied at the University of Paris
1893	**(a)**
1894	**(b)**
1895	**(c)**
	(d)
1903	gained her Doctor of Science degree
	(e)
1906	**(f)**
1911	won a Nobel Prize in chemistry for successfully obtaining radium as a pure metal
1914	**(g)**
	became the director of the Red Cross Radiology Service
1919	**(h)**
1934	died of aplastic anaemia

the start of World War I	got married to Pierre	got a degree in mathematics; met Pierre Curie
( )	( )	( )

got a degree in physics; began to work in a laboratory	Pierre died in a road accident; Marie became Professor of General Physics at the University of Paris	was appointed Director of Curie Laboratory at the Radium Institute of the University of Paris
e.g. (a)	( )	( )

was inspired by Henri Becquerel's findings and studied radiation	the Curies sharing a Nobel Prize in physics with Henri for their discovery of polonium and radium
( )	( )

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B. Fill in each blank with a word from the reading text. You can find the word in the given paragraph.

1. We must follow the safety measures strictly when conducting experiments with _____ elements. (para 1)

2. _____ is spread through the air. Its symptoms include low-grade fever, night sweats, fatigue, weight loss and a persistent cough. To prevent the disease, we should maintain good personal and environmental hygiene. (para 2)

3. My brother is _____ to be a professional cyclist and practises hard every day. (para 3)

4. A _____ is a room or a building with scientific equipment for conducting experiments. (para 4)

5. John was _____ by the creative work of the poet. He started to write his own poems to express his feelings on a variety of topics. (para 5)

6. _____, the picnic was cancelled because of the heavy rain. (para 6)

7. Mary is a competent speaker. She always has an _____ performance in debating competitions. (para 7)

8. The charity often provides _____ aid to people who are suffering. (“Other information”)

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C. Answer the following questions by circling the best option.

1. Marie is known for her discovery of ___.
a uranium
b tuberculosis
c radioactive elements
d effective treatment of illness

2. When did Marie's mother die?
a 1867
b 1878
c 1883
d 1891

3. Marie's sister, Bronya, agreed to ___ later.
a stay in Poland
b support Marie's study
c work as a private tutor
d help with family finances

4. Marie and Pierre ___.
a got married in 1895
b first met at the home of a Polish physicist
c had a great passion for scientific research
d all of the above

5. Arrange uranium, polonium and radium in the order of their radioactivity, e.g. the most radioactive one on the left.
a uranium > polonium > radium
b polonium > radium > uranium
c radium > uranium > polonium
d radium > polonium > uranium

6. Which of the following element(s) could be used to treat cancer?
a uranium
b polonium
c radium
d all of the above

7. Why did Marie and Curie suffer from radiation sickness? It was because they ___.

a paid much attention to the experiments
b discovered that radium could be used to treat cancer
c did not know that polonium and radium were radioactive
d did not have appropriate protection when conducting experiments

8. In paragraph 7, “the element” refers to ___.

a radium
b polonium
c a pure metal
d compounds

9. In paragraph 7, “two different scientific fields” refer to ___.

a physics and chemistry
b chemistry and biology
c physics and biology
d none of the above

10. Why could mobile X-ray units help save soldiers’ lives? Mobile X-ray units helped battlefield doctors ___.

a provide timely diagnosis
b give accurate treatment
c locate bullets and broken bones
d all of the above

D. Answer the following question.

What made Marie Curie a great scientist?

_____

_____

_____

A. Read the biography of Marie Curie. Complete the timeline by choosing the correct event from the table below. The first one has been done as an example.

1867	born in Poland; had three sisters and one brother; her parents were teachers
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1911	won a Nobel Prize in chemistry for successfully obtaining radium as a pure metal
1914	**(g)**
	became the director of the Red Cross Radiology Service
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1934	died of aplastic anaemia

the start of World War I	got married to Pierre	got a degree in mathematics; met Pierre Curie
(g)	(c)	(b)

got a degree in physics; began to work in a laboratory	Pierre died in a road accident; Marie became Professor of General Physics at the University of Paris	was appointed Director of Curie Laboratory at the Radium Institute of the University of Paris
e.g. (a)	(f)	(h)

was inspired by Henri Becquerel's findings and studied radiation	the Curies sharing a Nobel Prize in physics with Henri for their discovery of polonium and radium
(d)	(e)

B. Fill in each blank with a word from the reading text. You can find the word in the given paragraph.

1. We must follow the safety measures strictly when conducting experiments with radioactive elements. (para 1)

2. Tuberculosis is spread through the air. Its symptoms include low-grade fever, night sweats, fatigue, weight loss and a persistent cough. To prevent the disease, we should maintain good personal and environmental hygiene. (para 2)

3. My brother is determined to be a professional cyclist and practises hard every day. (para 3)

4. A laboratory is a room or a building with scientific equipment for conducting experiments. (para 4)

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6. Unfortunately, the picnic was cancelled because of the heavy rain. (para 6)

7. Mary is a competent speaker. She always has an outstanding performance in debating competitions. (para 7)

8. The charity often provides humanitarian aid to people who are suffering. ("Other information")

C. Anwer the following questions by circling the best option.

1. Marie is known for her discovery of ___.

c radioactive elements

(Prompt: You can find clues in paragraph 1.)

2. When did Marie's mother die?

b 1878

(Prompt: You can find clues in paragraph 2.)

3. Marie's sister, Bronya, agreed to ___ later.

b support Marie's study

(Prompt: You can find clues in paragraph 3.)

4. Marie and Pierre ___.

a got married in 1895

b first met at the home of a Polish physicist

c had a great passion for scientific research

d all of the above

(Prompt: You can find clues in paragraph 4.)

5. Arrange uranium, polonium and radium in the order of their radioactivity, e.g. the most radioactive one on the left.

d radium > polonium > uranium

(Prompt: You can find clues in paragraph 5.)

6. Which of the following element(s) could be used to treat cancer?

c radium

(Prompt: You can find clues in paragraph 5.)

7. Why did Marie and Curie suffer from radiation sickness? It was because they ___.

d did not have appropriate protection when conducting experiments

(Prompt: You can find clues in paragraph 6.)

8. In paragraph 7, "the element" refers to ___.

a radium

(Prompt: You can find clues in the sentence "In 1911, she won…and its compounds." in paragraph 7.)

9. In paragraph 7, “two different scientific fields” refer to ___.

a physics and chemistry

(Prompt: You can find clues in paragraphs 6 and 7.)

10. Why could mobile X-ray units help save soldiers’ lives? Mobile X-ray units helped battlefield doctors ___.

a provide timely diagnosis

b give accurate treatment

c locate bullets and broken bones

d all of the above

(Prompt: You can find clues in the text box about “Other information”.)

D. Answer the following question.

What made Marie Curie a great scientist?

Marie was intelligent, determined and hard-working. She showed enthusiasm for conducting scientific research and devoted all her time and energy to it. Marie also had a strong commitment to humanitarian work. Although she suffered from constant radiation sickness, she went to the front lines to help the doctors there. She will be remembered by the future generations.

(Accept any reasonable answers.)