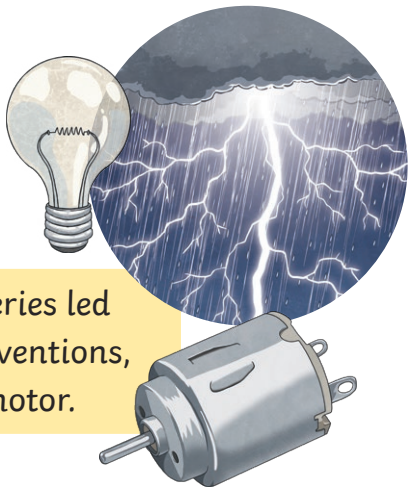
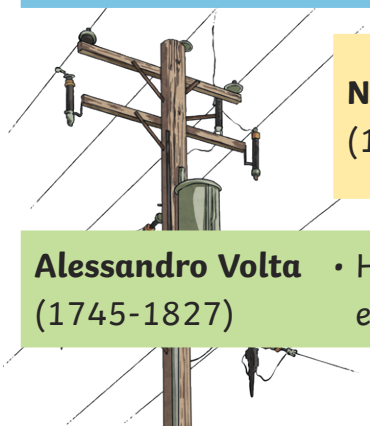
Electrical Inventors

In Summary: Electrical Pioneers

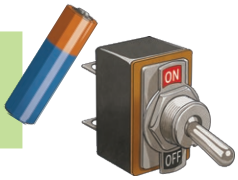


Thomas Edison (1847-1931)
- He invented the first electric lightbulb and also invented a machine that could record and replay sound.

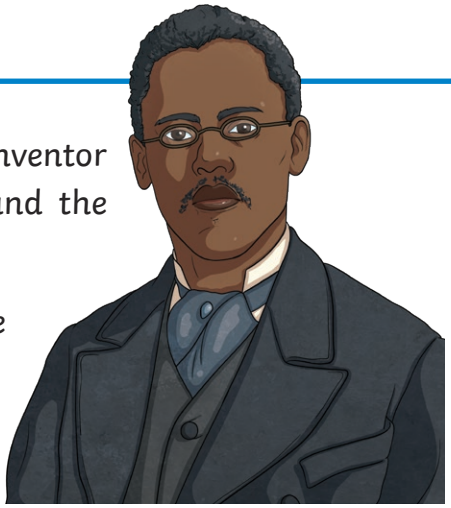


Nikola Tesla (1856-1943)
- His ideas and discoveries led the way for future inventions, such as the electric motor.

Alessandro Volta (1745-1827)
- He invented the electric battery.



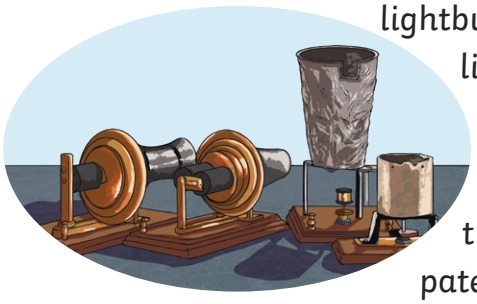
In Focus: Lewis Latimer (1848-1928)



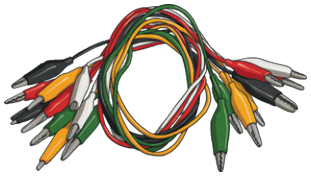
Lewis Howard Latimer was an African American inventor who helped to invent both the electric lightbulb and the telephone.

Lewis joined the navy as a teenager. After that, he taught himself mechanical drawing. He was promoted from an office clerk to a draughtsperson and went on to create many important technical designs.

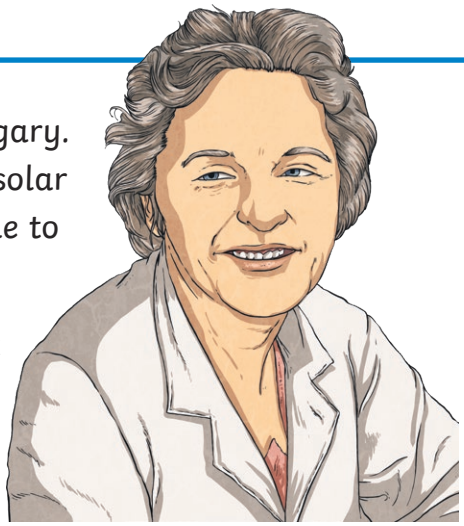
In 1884, Lewis began working for Thomas Edison, the man now known as the inventor of the lightbulb. Lewis helped Edison by creating diagrams of the lightbulb. Lewis's skills also helped to improve Edison's lightbulb. Lewis did all the legal work to ensure Edison got the credit for the design.



Before working for Edison, Lewis also drafted the drawings that Alexander Graham Bell used to patent the first telephone in 1876.



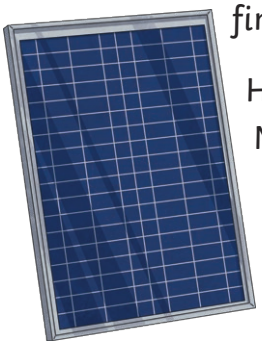
In Focus: Mária Telkes (1900-1995)



Mária Telkes was an American scientist born in Hungary. She is best known for her research into the use of solar energy. This meant inventing devices that were able to store and use energy from sunlight.

Mária grew up and went to university in Budapest before moving to the USA. She took up a job as a biophysicist, which involved lots of different scientific skills.

During the Second World War, Mária created a device that used solar power to remove salt from seawater, meaning it was drinkable. This saved the lives of many people stranded at sea. Mária is probably best known for the design of the first house with a heating system that ran on solar energy.



Her lifetime of research into solar energy and inventions led to Mária being known by some as 'The Sun Queen'. She won several awards for her research and there are many schools named after her today, especially in the USA where she worked for many years.

Electrical Inventors Questions

1. Which of these things was invented by Thomas Edison? Tick **one**.

   ◯ the electric battery
   ◯ the electric lightbulb
   ◯ the electric motor
   ◯ the telephone

2. According to the text, what did Lewis Latimer do as a teenager?

   _____

3. Draw lines to match the inventors to their inventions they were linked with.

Alessandro Volta	solar-powered house
Lewis Latimer	electric battery
Mária Telkes	telephone

4. In which country was Mária Telkes born?

   _____

5. According to the text, which of these statements about Mária Telkes are correct. Tick **two**.

   ◯ She researched the use of solar energy.
   ◯ She was an office clerk and draughtsperson.
   ◯ She went to university in Budapest.
   ◯ She was once stranded at sea.

6. Draw lines to match the years with the correct events.

Nikola Tesla was born.	1884
The first telephone invention was patented.	1856
Lewis Latimer began working for Thomas Edison.	1876

7. Why do you think Mária Telkes was known as 'The Sun Queen'?

   _____

   _____

Electrical Inventors **Answers**

1. Which of these things was invented by Thomas Edison? Tick **one**.

   ◯ the electric battery
   ☑ **the electric lightbulb**
   ◯ the electric motor
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2. According to the text, what did Lewis Latimer do as a teenager?
   He joined the navy.

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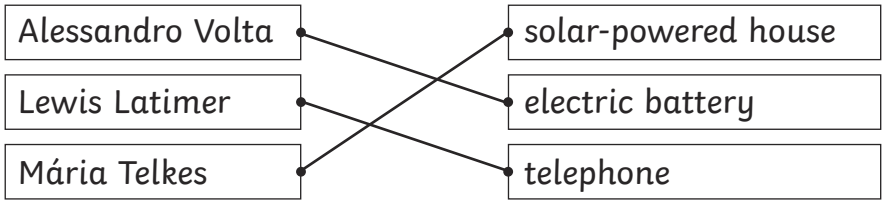

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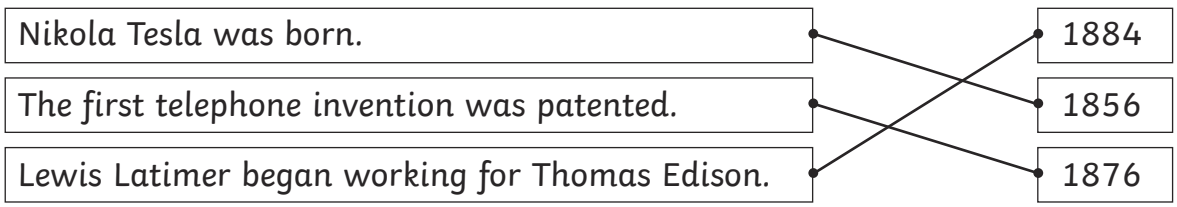
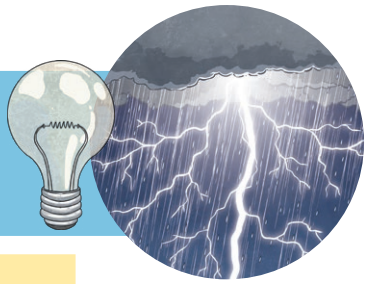


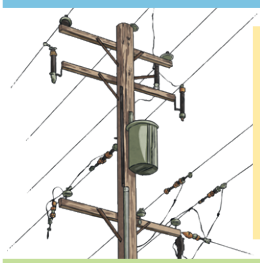
7. Why do you think Mária Telkes was known as 'The Sun Queen'?
   Her research and inventions were based on solar energy, which meant storing and using energy from sunlight.

Electrical Inventors

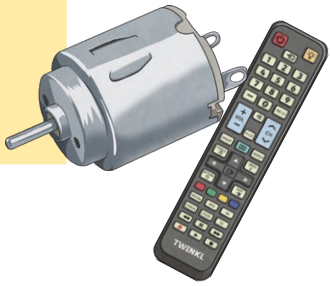
In Summary: Electrical Pioneers



Thomas Edison (1847-1931)
- A pioneer of the first electric lightbulb, he also invented the phonograph (a machine that could record and replay sound).

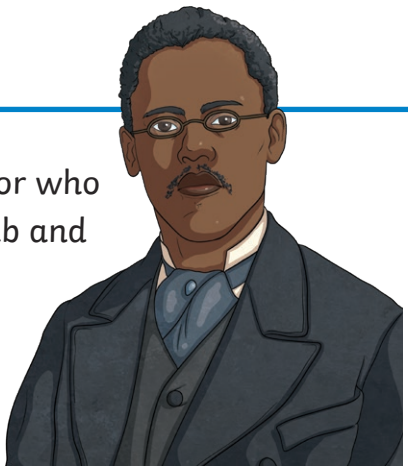


Nikola Tesla (1856-1943)
- His inventions paved the way for future technology, ranging from electric motors to remote controls.



Alessandro Volta (1745-1827)
- He is credited as the pioneer of the electric battery.

In Focus: Lewis Latimer (1848-1928)



Lewis Howard Latimer was an African American inventor who contributed to the invention of both the electric lightbulb and the telephone.

He joined the navy as a teenager and served in the American Civil War. After the war, he worked for a patent law firm and taught himself mechanical drawing. He was promoted from an office clerk to a draughtsperson and went on to create many important technical designs.

In 1884, Lewis began working for Thomas Edison, the man now known as the inventor of the lightbulb. Lewis helped Edison by creating detailed diagrams of the lightbulb. Lewis's technical skills were vital in producing the diagrams and also helped to improve Edison's lightbulb. Lewis did all the legal work to ensure Edison got the credit for the design.

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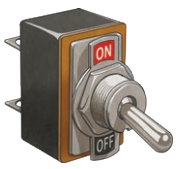
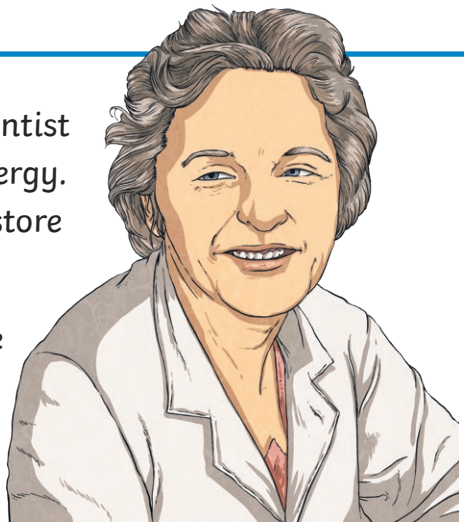


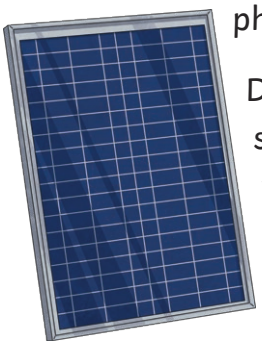
In Focus: Mária Telkes (1900-1995)



Mária Telkes was a Hungarian-born American scientist best known for her research into the use of solar energy. This meant inventing devices that were able to store and use energy from sunlight.

Mária was raised in Budapest and studied at the city's university before moving to the USA. Her studies earned her a degree and PhD before she took up a job as a biophysicist, combining a range of scientific skills.

In her position at the Cleveland Clinic Foundation, Mária worked with an American surgeon called George Washington Crile. Their work included the creation of a photoelectric device that recorded brainwaves.



During the Second World War, Mária created a device that used solar power to make seawater drinkable by removing the salt. This was one of her most important inventions and saved the lives of many people stranded at sea. She is probably best known for her creation of the first house designed with a heating system that ran completely on solar energy.

Her lifetime of research into solar energy and inventions led to Mária being known by some as 'The Sun Queen'. She won several awards for her research and there are many schools named after her today, especially in the USA where she worked for many years.

Electrical Inventors Questions

1. Which of these inventions were linked with Thomas Edison? Tick **two**.

   ◯ telephone
   ◯ lightbulb
   ◯ battery
   ◯ phonograph

2. Which of these statements best describes Lewis Latimer's career? Tick **one**.

   ◯ He worked for a patent law firm and then decided to join the navy.
   ◯ After becoming a mechanical engineer, he joined the navy.
   ◯ After serving in the navy, he earned promotions in a patent law firm.
   ◯ He worked as a draughtsperson and then as a biophysicist.

3. Give one example of how Lewis Latimer helped Thomas Edison with his invention of the lightbulb.

   _____

4. Who is mainly credited with the invention of the telephone?

   _____

5. Number these events from 1 to 4 to show the correct order that they occured in the life of Mária Telkes.

   ☐ She created a device to make seawater drinkable.
   ☐ She took up a job as a biophysicist in the USA.
   ☐ She was born and raised in Hungary.
   ☐ She studied at university in Budapest.

6. What was the purpose of the device that Mária Telkes created alongside an American surgeon?

   _____

   _____

7. Why do you think the device to make saltwater drinkable was described as 'one of her most important inventions'.

   _____

   _____

8. Which of these statements show the correct years of birth or death. Tick **three**.

   ◯ Nikola Tesla was born in 1856.
   ◯ Alessandro Volta was born in 1827.
   ◯ Lewis Latimer was born in 1848.
   ◯ Nikola Tesla died in 1943.
   ◯ Alessandro Volta died in 1745.
   ◯ Lewis Latimer died in 1884.

Electrical Inventors **Answers**

1. Which of these inventions were linked with Thomas Edison? Tick **two**.

   ◯ telephone
   ☑ **lightbulb**
   ◯ battery
   ☑ **phonograph**

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   ◯ After becoming a mechanical engineer, he joined the navy.
   ☑ **After serving in the navy, he earned promotions in a patent law firm.**
   ◯ He worked as a draughtsperson and then as a biophysicist.

3. Give one example of how Lewis Latimer helped Thomas Edison with his invention of the lightbulb.

   Accept any of the following:
   He created detailed diagrams of the lightbulb.
   He used his technical (mechanical drawing) skills.
   He did all the legal work.
   He helped to improve the design.

4. Who is mainly credited with the invention of the telephone?

   Alexander Graham Bell

5. Number these events from 1 to 4 to show the correct order that they occured in the life of Mária Telkes.

4	She created a device to make seawater drinkable.
3	She took up a job as a biophysicist in the USA.
1	She was born and raised in Hungary.
2	She studied at university in Budapest.

6. What was the purpose of the device that Mária Telkes created alongside an American surgeon?

   (It was a photoelectric device) to record brainwaves.

7. Why do you think the device to make saltwater drinkable was described as 'one of her most important inventions'.

   The device saved people's lives (if they were stranded at sea).

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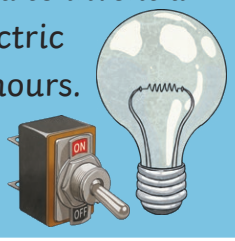
   ◯ Lewis Latimer died in 1884.

Electrical Inventors

In Summary: Electrical Pioneers

Thomas Edison
(1847-1931)

- A pioneer of the first electric lightbulb, he wanted to invent a light that did not need oil or gas to be lit. His electric lightbulb could stay lit using electricity for $13\frac{1}{2}$ hours.
- He also invented the phonograph (a machine that could record and replay sound).



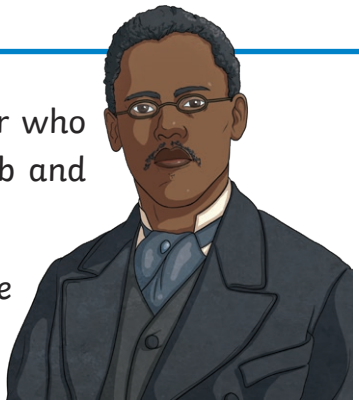
Nikola Tesla
(1856-1943)

- His inventions paved the way for future technology, ranging from electric motors to remote controls.
- He created the world's first hydroelectric power plant in New York. This created energy using a water-powered generator.

Alessandro Volta
(1745-1827)

- He is credited as the pioneer of the electric battery.
- A physicist, chemist and pioneer of electrical science, he studied gas chemistry and discovered methane.

In Focus: Lewis Latimer (1848-1928)



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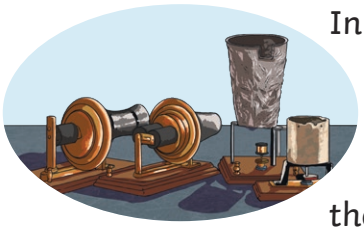

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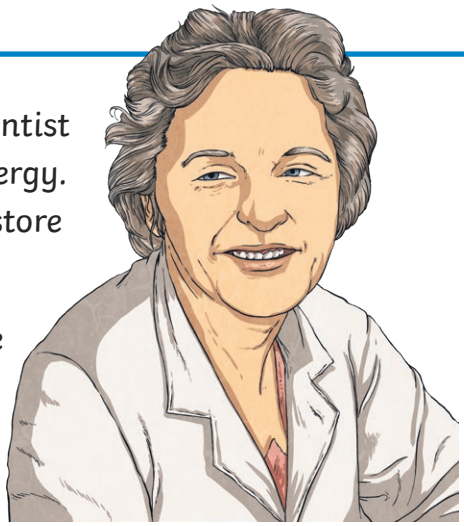

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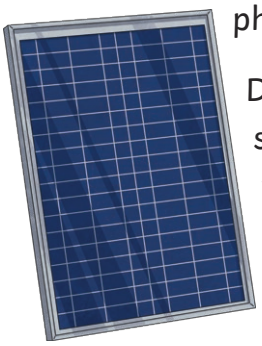

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Her lifetime of research into solar energy and inventions led to Mária being known by some as 'The Sun Queen'. She won several awards for her research and there are many schools named after her today, especially in the USA where she worked for many years.

Electrical Inventors Questions

1. Which electrical pioneer discovered methane gas? Tick **one**.

   ◯ Nikola Tesla
   ◯ Mária Telkes
   ◯ Alessandro Volta
   ◯ George Washington Crile

2. Which of these statements best describes Thomas Edison's achievements? Tick **one**.

   ◯ He helped to invent the lightbulb, the telephone and the battery.
   ◯ He wanted to use oil or gas to record and replay sound.
   ◯ He invented the electric lightbulb and the phonograph.
   ◯ He created the world's first hydroelectric power plant.

3. Which of the electrical inventors in the text fought in the American Civil War?

   _____

4. How did Lewis Latimer assist with Alexander Graham Bell's invention of the telephone?

   _____

5. In which city did Mária Telkes grow up?

   _____

6. Why do you think 'The Sun Queen' was a good choice of nickname for Mária Telkes?

   _____

   _____

7. Look at the line which begins 'She won several awards for her research'.
   What does the word 'several' mean?

   _____

8. Look at the line which includes 'there are many schools named after her today'.
   What does this tell you about the achievements of Mária Telkes?

   _____

   _____

Electrical Inventors **Answers**

1. Which electrical pioneer discovered methane gas? Tick **one**.

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   ◯ Mária Telkes
   ✓ **Alessandro Volta**
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   ◯ He wanted to use oil or gas to record and replay sound.
   ✓ **He invented the electric lightbulb and the phonograph.**
   ◯ He created the world's first hydroelectric power plant.

3. Which of the electrical inventors in the text fought in the American Civil War?
   Lewis Latimer

4. How did Lewis Latimer assist with Alexander Graham Bell's invention of the telephone?
   He drafted the drawings (used for the patent).

5. In which city did Mária Telkes grow up?
   Budapest

6. Why do you think 'The Sun Queen' was a good choice of nickname for Mária Telkes?
   Accept answers which refer to both the terms in 'Sun Queen', for example:
   Her research was to do with solar energy and this comes from the sun. She was the most well-known scientist for this research so she was the 'queen' of it.

7. Look at the line which begins 'She won several awards for her research'.
   What does the word 'several' mean?
   more than two (but not many)
   Do not accept seven or 7.

8. Look at the line which includes 'there are many schools named after her today'.
   What does this tell you about the achievements of Mária Telkes?
   Accept any of the following:
   She was very famous.
   She is well remembered.
   She is still well known today.
   Her achievements still inspire people today.
   She is seen as a great role model.