

James Clerk Maxwell

Read the text carefully and answer the questions in sentences:

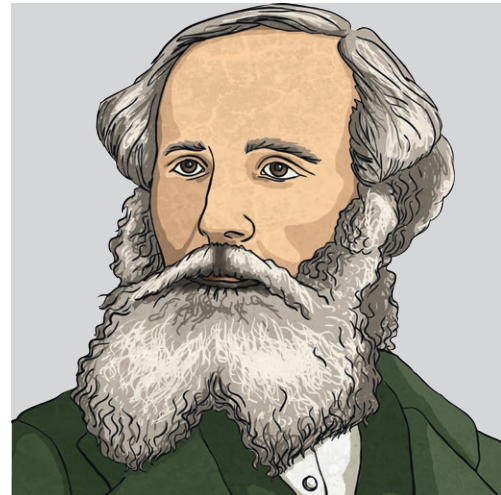
James Clerk Maxwell was born in Edinburgh on 13th June, 1831. At age 10, James left his family home in Dumfries and Galloway and went to school in Edinburgh. At school, James showed great ability in maths. He wrote his first scientific paper when he was 14 years old.

James Clerk Maxwell went on to study at Edinburgh University and then Cambridge University. His work at university included research into electromagnetic radiation. His ideas linked electricity, magnetism and light for the first time. He also predicted the existence of radio waves.

In 1856, when he was just 25, Maxwell became a professor of Physics at Marischal College, Aberdeen. Around this time, he also began research into what the rings of the planet Saturn were made of. In the 1980s, his ideas were proved correct when the Voyager spacecraft sent information on Saturn and its rings back to Earth.

From 1860 to 1865, James was Professor of Natural Philosophy at King's College, London, where he demonstrated colour photography for the first time by showing a photograph of a tartan ribbon.

At the age of 48, James Clerk Maxwell died following an illness on 15th November, 1879. He was buried in Dumfries and Galloway. The discoveries that James made influenced modern science and led to the development of technology we use today, including television, radio, mobile phones and radar. The great scientist Albert Einstein was inspired by Maxwell's work and said that Maxwell had changed the world forever. A statue of James Clerk Maxwell was unveiled in Edinburgh on 25th November, 2008.



James Clerk Maxwell

Born in Edinburgh on
13th June, 1831.

Questions

1. What subject did Maxwell show great ability in at school?

James showed _____

2. What did Maxwell's work at Edinburgh and Cambridge Universities include?

Maxwell's work at Edinburgh and Cambridge Universities included _____

3. When and how were Maxwell's ideas about Saturn's rings proved to be correct?

James Clerk Maxwell's ideas about Saturn's rings were proved to be correct _____

4. What did Maxwell show a photograph of at King's College?

James Clerk Maxwell _____

5. Albert Einstein said that Maxwell's work had changed the world. What do you think he meant by this?

Einstein meant that _____

Answers

1. What was Maxwell's first scientific paper about?
James Clerk Maxwell's first scientific paper was based on the mathematical equations he had developed for drawing oval shapes using pins and string.
2. What new ideas did Maxwell develop and research at Edinburgh and Cambridge University?
James developed ideas that linked electricity, magnetism and light for the first time and he predicted the existence of radio waves.
3. What research did Maxwell do as Professor of Physics at Marischal College, and how does it link to the 1980s?
Through his research, he predicted what the rings of Saturn were made of. These ideas were proved correct almost 130 years later from observations made by the Voyager spacecraft.
4. What did James demonstrate for the first time at Kings College, London?
He demonstrated colour photography for the first time; showing a photograph of a tartan ribbon.
5. Why were Maxwell's discoveries important?
The discoveries that Maxwell made were important because they science and led to the development of technology we use today, including television, radio, mobile phones and radar.
6. Why do you think Albert Einstein's comment about Maxwell is significant?
Perhaps it is significant because Einstein was himself a very important scientist. His opinion that James Clerk Maxwell changed the world would indicate how important Maxwell's science work was. (Open answer.)
7. Why do you think a statue of Maxwell was unveiled in Edinburgh on 25th November, 2008?
Maxwell is an important figure in the history of the city and his discoveries are still relevant today. (Open answer.)
8. Choose two important discoveries or theories of Maxwell's and explain why you think they are significant.
**His theory on the rings of Saturn – proved true 130 years later.
His research into electromagnetic radiation - linked electricity, magnetism and light for the first time.
(Open answer.)**

James Clerk Maxwell

Read the text carefully and answer the questions in sentences:

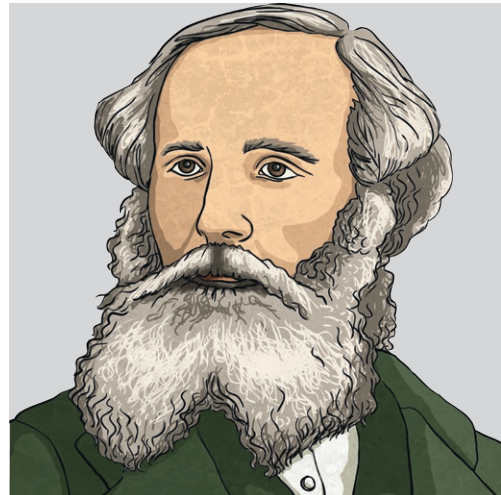
James Clerk Maxwell was born in Edinburgh on 13th June, 1831. His family home was in Dumfries and Galloway, James left home and went to school at the Edinburgh Academy when he was 10 years old. At school, James showed great ability in maths. He wrote his first scientific paper when he was 14 years old. It was based on the mathematical equations he had developed for drawing oval shapes using pins and string.

Maxwell went on to study at Edinburgh University and then Cambridge University. His work at university included research into electromagnetic radiation. His ideas linked electricity, magnetism and light for the first time and he predicted the existence of radio waves.

In 1856, when he was just 25, Maxwell became a professor of Physics at Marischal College, Aberdeen. Around this time, he also began research into what the rings of the planet Saturn were made of. In the 1980s, these theories were confirmed when the Voyager spacecraft sent information on Saturn and its rings back to Earth.

On 2nd June, 1858, James married Katherine Mary Dewar in Aberdeen. From 1860 to 1865, James was Professor of Natural Philosophy at King's College, London, where he demonstrated colour photography for the first time by showing a photograph of a tartan ribbon.

At the age of 48, James Clerk Maxwell died following an illness on 15th November, 1879. He was buried in Dumfries and Galloway. The discoveries that James Clerk Maxwell made influenced modern science and led to the development of technology we use today, including television, radio, mobile phones and radar. The great scientist Albert Einstein was inspired by Maxwell's work and said that Maxwell had changed the world forever. A statue of James Clerk Maxwell was unveiled in Edinburgh on 25th November, 2008.



James Clerk Maxwell

Born in Edinburgh on
13th June, 1831.

Questions

1. What was Maxwell's first scientific paper about?

2. What new ideas did Maxwell develop and research at Edinburgh and Cambridge University?

3. What research did Maxwell do as Professor of Physics at Marischal College, and how does it link to the 1980s?

4. What did James demonstrate for the first time at Kings College, London?

5. Why were Maxwell's discoveries important?

6. Why do you think Albert Einstein's comment about Maxwell is significant?

7. Why do you think a statue of Maxwell was unveiled in Edinburgh on 25th November, 2008?

8. Choose two important discoveries or theories of Maxwell's and explain why you think they are significant.

Answers

1. What was Maxwell's first scientific paper about?
James Clerk Maxwell's first scientific paper was based on the mathematical equations he had developed for drawing oval shapes using pins and string.
2. What new ideas did Maxwell develop and research at Edinburgh and Cambridge University?
James developed ideas that linked electricity, magnetism and light for the first time and he predicted the existence of radio waves.
3. What research did Maxwell do as Professor of Physics at Marischal College, and how does it link to the 1980s?
Through his research, he predicted what the rings of Saturn were made of. These ideas were proved correct almost 130 years later from observations made by the Voyager spacecraft.
4. What did James demonstrate for the first time at Kings College, London?
He demonstrated colour photography for the first time; showing a photograph of a tartan ribbon.
5. Why were Maxwell's discoveries important?
The discoveries that Maxwell made were important because they science and led to the development of technology we use today, including television, radio, mobile phones and radar.
6. Why do you think Albert Einstein's comment about Maxwell is significant?
Perhaps it is significant because Einstein was himself a very important scientist. His opinion that James Clerk Maxwell changed the world would indicate how important Maxwell's science work was. (Open answer.)
7. Why do you think a statue of Maxwell was unveiled in Edinburgh on 25th November, 2008?
Maxwell is an important figure in the history of the city and his discoveries are still relevant today. (Open answer.)
8. Choose two important discoveries or theories of Maxwell's and explain why you think they are significant.
**His theory on the rings of Saturn – proved true 130 years later.
His research into electromagnetic radiation - linked electricity, magnetism and light for the first time.
(Open answer.)**

James Clerk Maxwell

Read the text carefully and answer the questions in sentences:

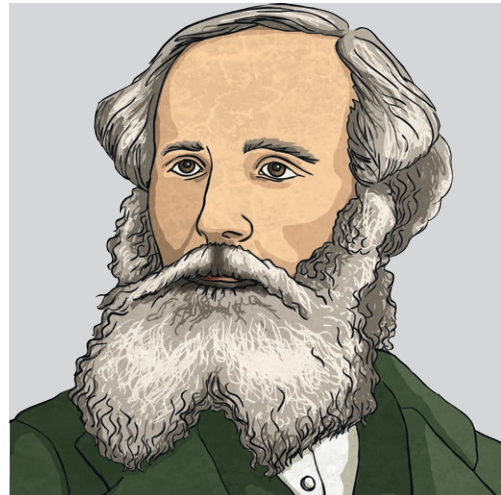
James Clerk Maxwell was born in Edinburgh on 13th June, 1831. His family home was in Dumfries and Galloway, James left home and went to school at the Edinburgh Academy when he was 10 years old. At school, James showed great ability in maths. He wrote his first scientific paper when he was 14 years old. It was based on the mathematical equations he had developed for drawing oval shapes using pins and string. The equations described the length of the string being used and the position of the pins.

Maxwell went on to study at Edinburgh University and then Cambridge University. His work at university included research into electromagnetic radiation. He developed theories that linked electricity, magnetism and light for the first time and he predicted the existence of radio waves.

In 1856, when he was just 25, Maxwell became a professor of Physics at Marischal College, Aberdeen. Around this time, he also began research into what the rings of the planet Saturn were made of. In the 1980s, these theories were confirmed when the Voyager spacecraft sent information on Saturn and its rings back to Earth.

On 2nd June, 1858, James married Katherine Mary Dewar in Aberdeen. From 1860 to 1865, James was Professor of Natural Philosophy at King's College, London. During this time, amongst other developments, he demonstrated colour photography for the first time by showing a photograph of a tartan ribbon.

At the age of 48, James Clerk Maxwell died following an illness on 15th November, 1879. He was buried in Dumfries and Galloway. The discoveries that James Clerk Maxwell made influenced modern science and led to the development of many of today's technologies including television, radio, mobile phones and radar. The scientist and physicist Albert Einstein was inspired by Maxwell's work and said that Maxwell had changed the world forever. A statue of James Clerk Maxwell was unveiled in Edinburgh on 25th November 2008.



James Clerk Maxwell

Born in Edinburgh on
13th June, 1831.

Questions

1. Around what year did James Clerk Maxwell leave home to go to school in Edinburgh?

2. What were the mathematical equations in Maxwell's first scientific paper about and how had he worked them out?

3. What did Maxwell's work at university link for the first time?

4. The text describes two of Maxwell's predictions, based on research, that were later proved to be accurate. What were these predictions?

5. In 1856, when he was just 25, Maxwell became a Professor of Physics at Marischal College, Aberdeen.' What does the use of the word 'just' in this sentence tell us?

6. In the 1850s, how do you think Maxwell's theories about Saturn's rings were received by the public?

7. What do you think of Maxwell and his theories about planet Saturn now that there is actual evidence from the Voyager spacecraft?

8. Do you think Maxwell's development of colour photography was important? Explain your answer.

9. At the age of 48, James Clerk Maxwell died following an illness on 15th November, 1879. What do you think of the achievements and developments made by James Clerk Maxwell in the 48 years of his life?

10. Can you create a timeline that charts the significant developments and achievements of James Clerk Maxwell's life? Mark each event on the timeline with a year and a short caption. The first one has been done for you:

1831 James Clerk Maxwell born Edinburgh, 13th June.

Answers

1. Around what year did James Clerk Maxwell leave home to go to school in Edinburgh?
James Clerk Maxwell left home to go to school in Edinburgh at age ten; around 1841.
2. What were the mathematical equations in Maxwell's first scientific paper about and how had he worked them out?
They were based on drawing oval shapes using pins and string. He had used lengths of string and pins in different positions to work them out.
3. What did Maxwell's work at university link for the first time?
His work linked electricity, magnetism and light for the first time.
4. The text describes two of Maxwell's predictions, based on research, that were later proved to be accurate. What were these predictions?
These predictions were the existence of radio waves and what the rings of the planet Saturn were made of.
5. In 1856, when he was just 25, Maxwell became a Professor of Physics at Marischal College, Aberdeen.' What does the use of the word 'just' in this sentence tell us?
It tells us that he was very young to be a Professor of Physics and that it was therefore quite an achievement.
6. In the 1850s, how do you think Maxwell's theories about Saturn's rings were received by the public?
Perhaps they were thought of as far-fetched because there was no actual experience of space exploration and evidence from space OR perhaps they were thought of as reasonable and possible because of Maxwell's reputation as a brilliant scientist. (Open answer.)
7. What do you think of Maxwell and his theories about planet Saturn now that there is actual evidence from the Voyager spacecraft?
(Open answer.)
8. Do you think Maxwell's development of colour photography was important? Explain your answer.
Open answer.)
9. At the age of 48, James Clerk Maxwell died following an illness on 15th November, 1879.' What do you think of the achievements and developments made by James Clerk Maxwell in the 48 years of his life?
(Open answer.)

Can you create a timeline that charts the significant developments and achievements of James Clerk Maxwell's life? Mark each event on the timeline with a year and a short caption. The first one has been done for you:

1831 - James Clerk Maxwell born Edinburgh, 13th June.

1831 - James Clerk Maxwell born Edinburgh, 13th June.

1841 - left home at age ten to go to school in Edinburgh.

1845 - James Clerk Maxwell's first scientific paper based on the mathematical equations for drawing oval shapes using pins and string.

1856 - aged 25, Maxwell became a Professor of Physics at Marischal College, Aberdeen. Began research into the rings of the planet Saturn.

1858 - 2nd June, James married Katherine Mary Dewar in Aberdeen

1860 - 1865 - James was Professor of Natural Philosophy at Kings College, London. He demonstrated colour photography for the first time.

1879 - 15th November - James Clerk Maxwell died at the age of 48.

1980s - James Clerk Maxwell's theories on Saturn's rings were confirmed when the Voyager spacecraft sent direct observations back to Earth.

2008 - 25th November - A statue of James Clerk Maxwell was unveiled in Edinburgh. (Open answer – students may not include an exhaustive list.)