History of Electricity Reading Comprehension Sheets

In modern life, we use electricity on a daily basis and do not think anything of it. We take it for granted. However, for most of human history electricity was not known about so how and why did that change? Read on!

We Ancient Greeks knew that rubbing amber would make light objects attract to it. We thought it became magnetic.

What they were actually observing was static electricity!

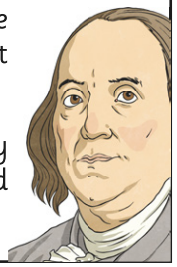
While we did not know that electric currents existed, we were aware of shocks from a fish. We called it 'Thunderer of the Nile'.

Ancient Egyptians thought that electric fish were 'protectors' of other fish. Electric fish were written about by the Ancient Greeks, Romans and Arab Scholars.

Benjamin Franklin was the first person to study electricity in depth. One of his most important findings was proving that lightning was electrical (it had been thought of as different up until then). He flew a kite during a storm, to which he had attached a key. When the kite was indeed hit by lightning, he felt electric sparks from the key.

He was very fortunate not to be electrocuted! This is not an experiment that needs to be repeated!!

He was also the first to store electricity and knew it consisted of positive and negative charges.



Alessandro Volta invented the first battery – which was known as the 'voltaic pile' as it was made of layers of zinc and copper which was either combined with sulphuric acid or saltwater brine to create an electric current.

Volta's name was also the basis for the following words:

Voltage: This is the electric force that causes free electrons to move from one atom to another.

Volt: Is the unit of measurement for Voltage (written as V).

It was not until hundreds of years later in the 1600's that **William Gilbert** studied and distinguished between magnetism of metals and static electricity. He used the Greek word for amber – 'elektron' – and invented a new Latin word – electricus.

The voltaic pile was hugely important as it allowed an electric current to be released steadily and efficiently. Therefore it was now possible to use an electric current as a form of power for other objects.

Michael Faraday used Volta's discoveries and was able to make an electric current move by using a magnet inside a wired coil. He was able to build an electric motor and generator!

Thomas Edison invented the modern lightbulb. While lightbulbs were not a new idea, he did improve on the previous designs which were not useful as they did not stay lit for very long.

Lewis Latimer worked for Edison and invented a filament (the metal part that you can see in lightbulbs, through which the electric current passes) which enabled Edison's lightbulb to stay lit for a long time.

From these electrical inventions, many others followed and changed the way we live our everyday lives!

History of Electricity Reading Comprehension Questions

I can explain the importance of the major discoveries in electricity.

Read each question carefully and answer questions in **sentences**.

1. What does the word 'electricus' mean?

2. What key discoveries did the following scientists make? (Pick only **one**)

William Gilbert

Alessandro Volta

Michael Faraday

Thomas Edison

Lewis Latimer

3. What did Franklin's kite experiment prove?

4. Did Thomas Edison invent the lightbulb?

5. What modern electrical appliances use a motor? (Give **two** examples)

6. The voltaic pile ensured a steady electric current. Why did this lead to the wider use of electricity?

7. "The Ancient Greeks and Ancient Egyptians believed the same things about electricity"
   Is this statement correct? Explain why with examples to support your answer.

History of Electricity Reading Comprehension Answers

YEAR 5 AND 6 READING OBJECTIVES COVERED IN GREEN.
Continue to read and discuss an increasingly wide range of fiction, poetry, plays, non-fiction and reference books or textbooks

1. What does the word 'electricus' mean? (retrieve, record and present information from non-fiction)
   Electricus was the name given to static electricity by Gilbert. (It comes from the Greek word for amber – elektron)

2. What key discoveries did the following scientists make? (Pick only **one**) (retrieve, record and present information from non-fiction)

   William Gilbert **distinguished between magnetism and static electricity.**

   Alessandro Volta **created the first battery using the voltaic pile.**

   Michael Faraday **invented the first electrical motor.**

   Thomas Edison **redesigned the lightbulb.**

   Lewis Latimer **invented a filament that would stay lit for longer.**

3. What did Franklin's kite experiment prove? (retrieve, record and present information from non-fiction)
   It proved that lightning was a natural form of electricity. (references to electric current are also acceptable).

4. Did Thomas Edison invent the lightbulb? (retrieve, record and present information from non-fiction)
   No, the lightbulb had already been invented. Edison improved it by redesigning it.

5. What modern electrical appliances use a motor? (Give two examples) (retrieve, record and present information from non-fiction)
   Any electrical appliances with a motor for example, car, drill, food processor, etc.

6. The voltaic pile ensured a steady electric current. Why did this lead to the wider use of electricity? (provide reasoned justifications for their views)
   Children should refer to the fact that a **steady electric current could be used to power appliances. An unsteady current would mean the appliance would go on and off.**

7. "The Ancient Greeks and Ancient Egyptians believed the same things about electricity" Is this statement true or false? Explain why with examples to support your answer. (provide reasoned justifications for their views)

   Children should state that:
   - **It's correct because both knew about electric fish and the shocks they could give.**
   - **It's incorrect because the Ancient Greeks knew about static electricity although they believed it was magnetism.**

History of Electricity Reading Comprehension Sheets

In modern life, we use electricity on a daily basis and do not think anything of it. We take it for granted. However, for most of human history electricity was not known about so how and why did that change? Read on!

While we did not know that electric currents existed, we were aware of shocks from a fish. We called it 'Thunderer of the Nile'.

Ancient Egyptians thought that electric fish were 'protectors' of other fish. Electric fish were written about by the Ancient Greeks, Romans and Arab Scholars.

We Ancient Greeks knew that rubbing amber would make light objects attract to it. We thought it became magnetic.

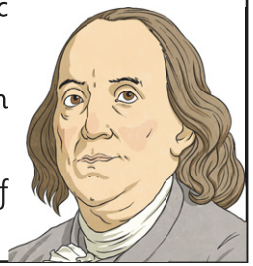
What they were actually observing was static electricity!

It was not until hundreds of years later in the 1600's that **William Gilbert** studied and distinguished between magnetism of metals and static electricity. He used the Greek word for amber - 'elektron' - and invented a new Latin word - electricus.

Benjamin Franklin was the first person to study electricity in depth. One of his most important findings was proving that lightning was electrical (it had been thought of as different up until then). He flew a kite during a storm, to which he had attached a key. When the kite was indeed hit by lightning, he felt electric sparks from the key.

He was very fortunate not to be electrocuted! This is not an experiment that needs to be repeated!!

He was also the first to store electricity and knew it consisted of positive and negative charges.



Alessandro Volta invented the first battery – which was known as the 'voltaic pile' as it was made of layers of zinc and copper which was either combined with sulphuric acid or saltwater brine to create an electric current.

Volta's name was also the basis for the following words:

Voltage: This is the electric force that causes free electrons to move from one atom to another.

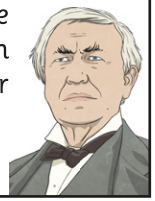
Volt: Is the unit of measurement for Voltage (written as V).

History of Electricity Reading Comprehension Sheets

The voltaic pile was hugely important as it allowed an electric current to be released steadily and efficiently. Therefore it was now possible to use an electric current as a form of power for other objects.

Michael Faraday used Volta's discoveries and was able to make an electric current move by using a magnet inside a wired coil. He was able to build an electric motor and generator!

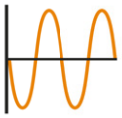
Thomas Edison invented the modern lightbulb. While lightbulbs were not a new idea, he did improve on the previous designs which were not useful as they did not stay lit for very long.



Lewis Latimer worked for Edison and invented a filament (the metal part that you can see in lightbulbs, through which the electric current passes) which enabled Edison's lightbulb to stay lit for a long time.

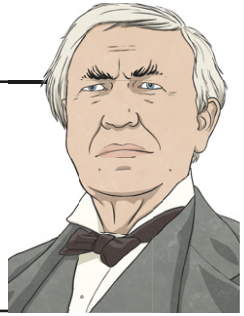
War of the Currents
AC vs DC

There are two types of electric currents that can be generated – direct current and alternating current.



Alternating Current (AC)
The electric charge changes direction periodically.

Direct Current (DC)
The electric charge flows in one direction.



While there wasn't a real war about it, there was a time when it wasn't clear whether AC or DC would be used to power homes and other buildings.

The voltage of AC can be increased and decreased using a transformer. This means high voltage electricity can be transferred along power lines at a high voltage but it can be reduced to safe levels of voltage by the time it reaches buildings. DC cannot be increased or decreased in this way so is a less efficient way of transferring an electric current and also needs to be closer to the buildings it served.

There were many concerns about the use of AC due to the high voltages of electric current and whether it was safe. Edison decided that it was too dangerous and wanted DC to be used. His own company was involved in setting up DC systems in many American cities. Tesla created a more complex AC system which was called the polyphase system. It was Tesla's invention of transformers that eventually led to the victory of the AC current, as it allowed electricity to be transferred more efficiently, cheaply and safely. Even today, mains electricity in the UK comes from an AC current generated by power stations.

History of Electricity Reading Comprehension Questions

I can explain the importance of the major discoveries in electricity.

Read each question carefully and answer questions in **sentences**.

1. What does the word 'electricus' mean?

_____

2. What key discoveries did the following scientists make? (Pick only **one**)

William Gilbert _____

Alessandro Volta _____

Michael Faraday _____

Thomas Edison _____

Lewis Latimer _____

3. Did Thomas Edison invent the lightbulb?

_____

_____

4. What modern electrical appliances use a motor? (Give **two** examples)

_____

_____

5. The voltaic pile ensured a steady electric current. Why did this lead to the wider use of electricity?

_____

_____

6. "The Ancient Greeks and Ancient Egyptians believed the same things about electricity"
Is this statement correct? Explain why with examples to support your answer.

7. How are the AC and DC currents different? Include **two** examples.

History of Electricity Reading Comprehension Answers

YEAR 5 AND 6 READING OBJECTIVES COVERED IN GREEN.
Continue to read and discuss an increasingly wide range of fiction, poetry, plays, non-fiction and reference books or textbooks

1. What does the word 'electricus' mean? (retrieve, record and present information from non-fiction)
   Electricus was the name given to static electricity by Gilbert. (It comes from the Greek word for amber – elektron)

2. What key discoveries did the following scientists make? (Pick only **one**) (retrieve, record and present information from non-fiction)

   William Gilbert **distinguished between magnetism and static electricity.**

   Alessandro Volta **created the first battery using the voltaic pile.**

   Michael Faraday **invented the first electrical motor.**

   Thomas Edison **redesigned the lightbulb.**

   Lewis Latimer **invented a filament that would stay lit for longer.**

3. Did Thomas Edison invent the lightbulb? (retrieve, record and present information from non-fiction)
   No, the lightbulb had already been invented. Edison improved it by redesigning it.

4. What modern electrical appliances use a motor? (Give two examples) (retrieve, record and present information from non-fiction)
   Any electrical appliances with a motor for example, car, drill, food processor, etc.

5. The voltaic pile ensured a steady electric current. Why did this lead to the wider use of electricity? (provide reasoned justifications for their views)
   Children should refer to the fact that a **steady electric current could be used to power appliances. An unsteady current would mean the appliance would go on and off.**

6. "The Ancient Greeks and Ancient Egyptians believed the same things about electricity" Is this statement true or false? Explain why with examples to support your answer. (provide reasoned justifications for their views)

   Children should state that:
   - **It's correct because both knew about electric fish and the shocks they could give.**
   - **It's incorrect because the Ancient Greeks knew about static electricity although they believed it was magnetism.**

7. How are the AC and DC currents different? (retrieve, record and present information from non-fiction)
   At least two of the following should be part of the answer.

   AC current can be increased and decreased, the DC current can't.
   AC current can travel long distances while the DC current needs to be closer to the building it supplies.
   AC current requires transformers which the DC current does not as it is steady.
   AC currents are higher in voltage than DC currents.

History of Electricity Reading Comprehension Sheets

In modern life, we use electricity on a daily basis and do not think anything of it. We take it for granted. However, for most of human history electricity was not known about so how and why did that change? Read on!

While we did not know that electric currents existed, we were aware of shocks from a fish. We called it 'Thunderer of the Nile'.

Ancient Egyptians thought that electric fish were 'protectors' of other fish. Electric fish were written about by the Ancient Greeks, Romans and Arab Scholars.

We Ancient Greeks knew that rubbing amber would make light objects attract to it. We thought it became magnetic.

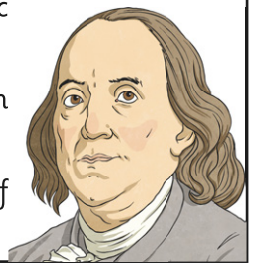
What they were actually observing was static electricity!

It was not until hundreds of years later in the 1600's that **William Gilbert** studied and distinguished between magnetism of metals and static electricity. He used the Greek word for amber - 'elektron' - and invented a new Latin word - electricus.

Benjamin Franklin was the first person to study electricity in depth. One of his most important findings was proving that lightning was electrical (it had been thought of as different up until then). He flew a kite during a storm, to which he had attached a key. When the kite was indeed hit by lightning, he felt electric sparks from the key.

He was very fortunate not to be electrocuted! This is not an experiment that needs to be repeated!!

He was also the first to store electricity and knew it consisted of positive and negative charges.



Alessandro Volta invented the first battery – which was known as the 'voltaic pile' as it was made of layers of zinc and copper which was either combined with sulphuric acid or saltwater brine to create an electric current.

Volta's name was also the basis for the following words:

Voltage: This is the electric force that causes free electrons to move from one atom to another.

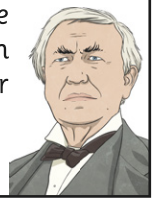
Volt: Is the unit of measurement for Voltage (written as V).

History of Electricity Reading Comprehension Sheets

The voltaic pile was hugely important as it allowed an electric current to be released steadily and efficiently. Therefore it was now possible to use an electric current as a form of power for other objects.

Michael Faraday used Volta's discoveries and was able to make an electric current move by using a magnet inside a wired coil. He was able to build an electric motor and generator!

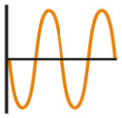
Thomas Edison invented the modern lightbulb. While lightbulbs were not a new idea, he did improve on the previous designs which were not useful as they did not stay lit for very long.



Lewis Latimer worked for Edison and invented a filament (the metal part that you can see in lightbulbs, through which the electric current passes) which enabled Edison's lightbulb to stay lit for a long time.

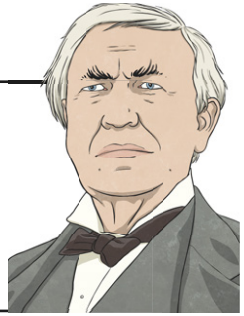
War of the Currents
AC vs DC

There are two types of electric currents that can be generated – direct current and alternating current.



Alternating Current (AC)
The electric charge changes direction periodically.

Direct Current (DC)
The electric charge flows in one direction.



While there wasn't a real war about it, there was a time when it wasn't clear whether AC or DC would be used to power homes and other buildings.

The voltage of AC can be increased and decreased using a transformer. This means high voltage electricity can be transferred along power lines at a high voltage but it can be reduced to safe levels of voltage by the time it reaches buildings. DC cannot be increased or decreased in this way so is a less efficient way of transferring an electric current and also needs to be closer to the buildings it served.

There were many concerns about the use of AC due to the high voltages of electric current and whether it was safe. Edison decided that it was too dangerous and wanted DC to be used. His own company was involved in setting up DC systems in many American cities. Tesla created a more complex AC system which was called the polyphase system. It was Tesla's invention of transformers that eventually led to the victory of the AC current, as it allowed electricity to be transferred more efficiently, cheaply and safely. Even today, mains electricity in the UK comes from an AC current generated by power stations.

History of Electricity Reading Comprehension Questions

I can explain the importance of the major discoveries in electricity.

Read each question carefully and answer questions in **sentences**.

1. What does the word 'electricus' mean?

_____

2. What key discoveries did the following scientists make? (Pick only **one**)

William Gilbert _____

Alessandro Volta _____

Michael Faraday _____

Thomas Edison _____

Lewis Latimer _____

3. Did Thomas Edison invent the lightbulb?

_____

_____

4. What modern electrical appliances use a motor? (Give **two** examples)

_____

_____

5. The voltaic pile ensured a steady electric current. Why did this lead to the wider use of electricity?

_____

_____

6. How are the AC and DC currents different? Include **two** examples.

7. Who won the war of the currents and why?

History of Electricity Reading Comprehension Answers

YEAR 5 AND 6 READING OBJECTIVES COVERED IN GREEN.
Continue to read and discuss an increasingly wide range of fiction, poetry, plays, non-fiction and reference books or textbooks

1. What does the word 'electricus' mean? (retrieve, record and present information from non-fiction)
   Electricus was the name given to static electricity by Gilbert. (It comes from the Greek word for amber – elektron)

2. What key discoveries did the following scientists make? (Pick only **one**) (retrieve, record and present information from non-fiction)

   William Gilbert **distinguished between magnetism and static electricity.**

   Alessandro Volta **created the first battery using the voltaic pile.**

   Michael Faraday **invented the first electrical motor.**

   Thomas Edison **redesigned the lightbulb.**

   Lewis Latimer **invented a filament that would stay lit for longer.**

3. Did Thomas Edison invent the lightbulb? (retrieve, record and present information from non-fiction)
   No, the lightbulb had already been invented. Edison improved it by redesigning it.

4. What modern electrical appliances use a motor? (Give two examples) (retrieve, record and present information from non-fiction)
   Any electrical appliances with a motor for example, car, drill, food processor, etc.

5. The voltaic pile ensured a steady electric current. Why did this lead to the wider use of electricity? (provide reasoned justifications for their views)
   Children should refer to the fact that a **steady electric current could be used to power appliances. An unsteady current would mean the appliance would go on and off.**

6. How are the AC and DC currents different? (retrieve, record and present information from non-fiction)
   At least two of the following should be part of the answer.

   AC current can be increased and decreased, the DC current can't.
   AC current can travel long distances while the DC current needs to be closer to the building it supplies.
   AC current requires transformers which the DC current does not as it is steady.
   AC currents are higher in voltage than DC currents.

7. Who won the war of the currents and why? (provide reasoned justifications for their views)

   Children should state that:
   - **It was the AC current that won.**
   - **Transformers allowed an AC current to be transferred safely, cheaply and efficiently.**
   - **The AC current supplies the mains electricity we use in our homes.**