

# Stephen Hawking

## Who Was Stephen Hawking?

Stephen Hawking was an English scientist, teacher and author. He used a wheelchair to move around and a computer with a voice synthesiser to talk, after being diagnosed with a disease called ALS when he was at university. Stephen is best known for finding out a lot about the science of how the universe was made and predicting what might happen to it in the future.

## When Was Stephen Hawking Born?

Stephen was born on 8<sup>th</sup> January 1942 in Oxford, England. He was the eldest child of Frank Hawking and Isobel Walker. His parents loved learning and both went to the University of Oxford.

Stephen was born in the middle of the Second World War and London was a very dangerous place to be. Stephen's mother moved away from London to make sure that Stephen would be safe when he was born.



## What Was Stephen's Family Like?



Stephen had two sisters and one brother. People who knew Stephen's family thought that they were odd. They would each read a book while they ate meals and they didn't talk. They are said to have kept bees in their basement and made fireworks in their greenhouse!

## When Did Stephen Become Interested in Science?

Stephen became interested in science from an early age. He loved to lie on the grass in the garden and watch the stars with his mother. Stephen liked playing board games and making model planes and boats. Stephen also built a computer out of old clock and telephone parts when he was just 16 years old.

## What Did Stephen Discover about Space?

While at university, Stephen became very interested in black holes. At the time, people thought that black holes were places in space where gravity pulls so much that even light cannot get out. Yet Stephen noticed that one thing was able to get out of a black hole: radiation. Radiation is a wave of energy that can come out of or off something and Stephen found out that radiation can even come out of black holes.

What Stephen found out was so important that this type of radiation was named after him. It is called Hawking radiation. Stephen then used what he had learned to prove that the universe started with the Big Bang. Stephen's work and his great personality made millions of people become interested in science.

# Questions

1. On which date was Stephen born? Tick **one**.

- ☐ 9<sup>th</sup> February 1924
- ☐ 8<sup>th</sup> December 1936
- ☐ 8<sup>th</sup> January 1942
- ☐ 7<sup>th</sup> March 1945

2. Which university did Stephen's parents go to? Tick **one**.

- ☐ University of London
- ☐ University of Oxford
- ☐ University of Science
- ☐ University of Hawking

3. What did Stephen build when he was 16 years old? Tick **one**.

- ☐ a telephone
- ☐ a clock
- ☐ a telescope
- ☐ a computer

4. Number the events below to show the order in which they appear in the text.

- ☐ Stephen became very interested in black holes.
- ☒ 1 Stephen was the eldest child of Frank Hawking and Isobel Walker.
- ☐ Stephen built a computer out of old clock and telephone parts.
- ☐ Stephen's mother moved away from London.
- ☐ People who knew Stephen's family thought that they were odd.

5. Give one reason why people thought that Stephen's family were odd.

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6. Find and copy the missing words:

Stephen's \_\_\_\_\_ and his great \_\_\_\_\_ made millions of people  
become interested in \_\_\_\_\_.

7. Sum up what Stephen discovered in 25 words or fewer.

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# Answers

1. On which date was Stephen born? Tick **one**.
  - ☐ 9<sup>th</sup> February 1924
  - ☐ 8<sup>th</sup> December 1936
  - ☒ **8<sup>th</sup> January 1942**
  - ☐ 7<sup>th</sup> March 1945
2. Which university did Stephen's parents go to? Tick **one**.
  - ☐ University of London
  - ☒ **University of Oxford**
  - ☐ University of Science
  - ☐ University of Hawking
3. What did Stephen build when he was 16 years old? Tick **one**.
  - ☐ a telephone
  - ☐ a clock
  - ☐ a telescope
  - ☒ **a computer**
4. Number the events below to show the order in which they appear in the text.
  - 5** Stephen became very interested in black holes.
  - 1** Stephen was the eldest child of Frank Hawking and Isobel Walker.
  - 4** Stephen built a computer out of old clock and telephone parts.
  - 2** Stephen's mother moved away from London.
  - 3** People who knew Stephen's family thought that they were odd.
5. Give one reason why people thought that Stephen's family were odd.  
**Accept any one of the following: they would each read a book while they ate meals and didn't talk; they kept bees in their basement; they made fireworks in their greenhouse.**
6. Find and copy the missing words:  
Stephen's **work** and his great **personality** made millions of people become interested in **science**.
7. Sum up what Stephen discovered in 25 words or fewer.  
**Pupils' own responses, such as: Stephen discovered that radiation could come out of black holes and he used this to prove that the universe started with the Big Bang.**

# Stephen Hawking

Stephen Hawking was an English scientist, teacher and author. He used a wheelchair to move around and a computer with a voice synthesiser to talk, after being diagnosed with a **degenerative** disease called ALS when he was at university. He is best known for finding out how the universe was formed and predicting what might happen to it in the future.

## Early Life

Stephen William Hawking was born on 8<sup>th</sup> January 1942 in Oxford, England. He was born exactly 300 years after the death of Galileo – a fact that Stephen was very proud of. He was the eldest child of Frank Hawking, a medical **researcher**, and Isobel Walker, a Scottish **secretary**. His parents loved learning and both went to the University of Oxford.

Stephen was born in the middle of the Second World War. During this time, London was a very dangerous place. To make sure that Stephen would be safe when he was born, his mother moved away from London and went to Oxford. While they lived in Oxford, Hawking's two sisters (Philippa and Mary) were born and his brother (Edward) was adopted.

## Childhood

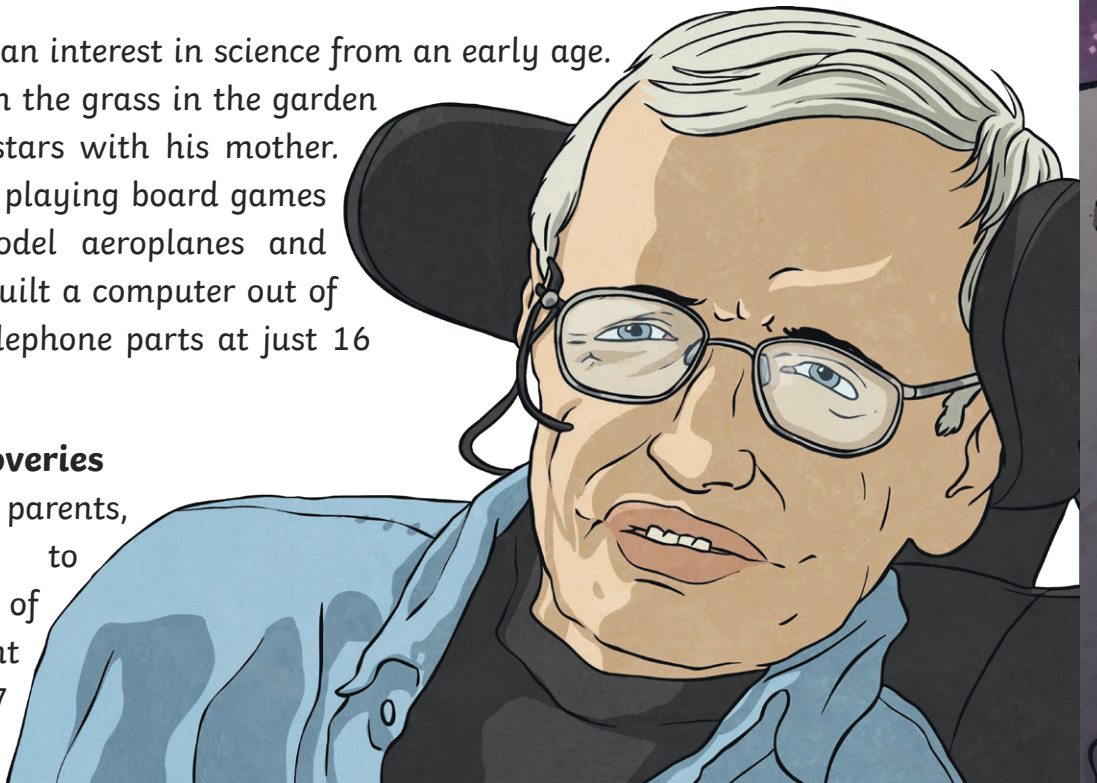
In 1950, the Hawking family moved to St Albans. People who knew the family thought that they were odd; instead of talking or watching television, the family would sit in silence and each read a book while they ate meals. They are said to have kept a beehive in their basement and made fireworks in their greenhouse!

Stephen showed an interest in science from an early age.

He loved to lie on the grass in the garden and watch the stars with his mother. Stephen enjoyed playing board games and making model aeroplanes and boats. Stephen built a computer out of old clock and telephone parts at just 16 years old.

## Scientific Discoveries

Just like his parents, Stephen went to the University of Oxford. He went there at just 17





## Stephen Hawking

years old because he had passed his exams a year early. He said that the work was 'ridiculously easy'.

Stephen then went to study at the University of Cambridge, where he became very interested in black holes. At the time, people thought that black holes were places in space where gravity pulls so much that even light cannot get out. However, Stephen noticed that one thing was able to get out of a black hole: a certain type of **radiation**. This type of radiation was named after him and it is now known as Hawking radiation. Using what he had learned, Stephen helped to prove the idea that the universe began with the Big Bang. Stephen's work and his great personality made millions of people become interested in science.

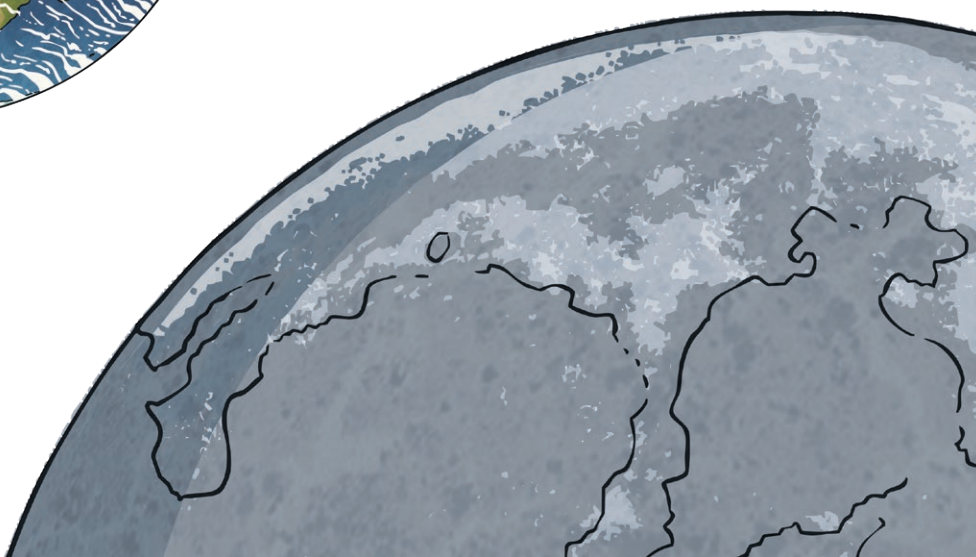
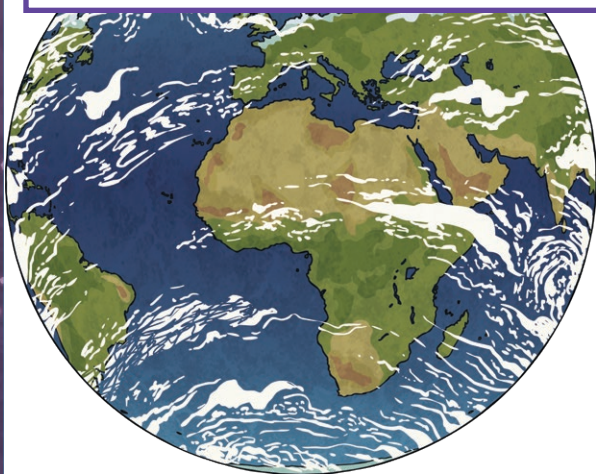
### Glossary

**degenerative** – Getting worse over time.

**radiation** – Waves of energy that come out of or off something.

**researcher** – A person who tries to find out more about something.

**secretary** – A person who writes letters, makes appointments and keeps records.



# Questions

1. What was the name of Stephen's mother? Tick **one**.

- ☐ Frank
- ☐ Isobel
- ☐ Philippa
- ☐ Mary

2. In which town was Stephen born? Tick **one**.

- ☐ St Albans
- ☐ London
- ☐ Oxford
- ☐ Cambridge

3. Which two of these did Stephen enjoy doing as a child? Tick **two**.

- ☐ watching the stars
- ☐ racing his bike
- ☐ playing board games
- ☐ baking with his mother

4. Fill in the missing words:

People thought that \_\_\_\_\_ were places in space where \_\_\_\_\_ pulls so much that even \_\_\_\_\_ cannot get out.

5. What had happened exactly 300 years before Stephen was born?

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6. What did Stephen discover could come out of a black hole?

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7. Why were Stephen's scientific discoveries important?

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8. Explain why Stephen's mother moved from London to Oxford.

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# Answers

1. What was the name of Stephen's mother? Tick **one**.
  - ☐ Frank
  - ☒ **Isobel**
  - ☐ Philippa
  - ☐ Mary
2. In which town was Stephen born? Tick **one**.
  - ☐ St Albans
  - ☐ London
  - ☒ **Oxford**
  - ☐ Cambridge
3. Which two of these did Stephen enjoy doing as a child? Tick **two**.
  - ☒ **watching the stars**
  - ☐ racing his bike
  - ☒ **playing board games**
  - ☐ baking with his mother
4. Fill in the missing words:  
People thought that **black holes** were places in space where **gravity** pulls so much that even **light** cannot get out.
5. What had happened exactly 300 years before Stephen was born?  
**Galileo died exactly 300 years before Stephen was born.**
6. What did Stephen discover could come out of a black hole?  
**Stephen discovered radiation could come out of a black hole.**
7. Why were Stephen's scientific discoveries important?  
**Pupils' own responses, such as: Stephen's scientific discoveries were important because people learned something about black holes they had never known before and it helped us to know how the universe began.**
8. Explain why Stephen's mother moved from London to Oxford.  
**Pupils' own responses, such as: Stephen's mother moved from London to Oxford because London was a very dangerous place in the Second World War. She wanted to make sure that Stephen would be safe when he was born.**

# Stephen Hawking

Stephen Hawking was an English scientist, **cosmologist**, teacher and author. He used a wheelchair to move around and a computer with a voice synthesiser to talk, after being diagnosed with a degenerative motor neurone disease called ALS when he was at university. He is best known for discovering how the universe was formed and predicting what might happen to it in the future.

## Early Life

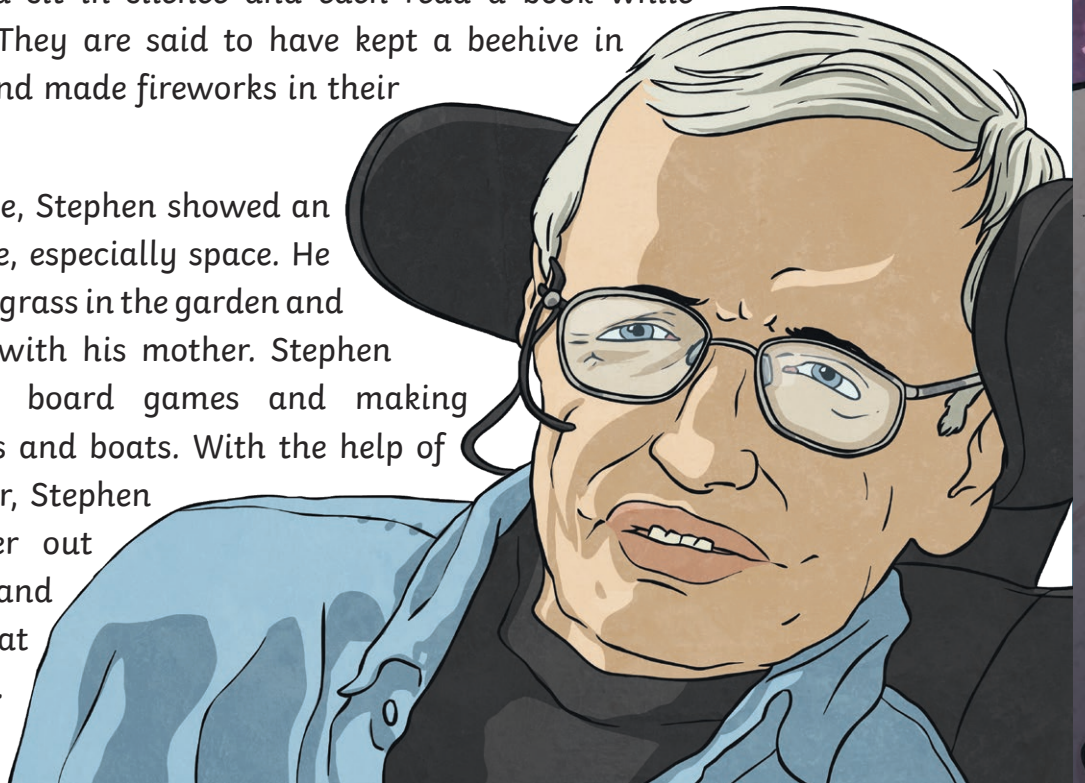
Stephen William Hawking was born on 8<sup>th</sup> January 1942 in Oxford, England. He was born exactly 300 years after the death of the famous **astronomer** Galileo – a fact that Stephen was very proud of. He was the eldest child of Frank Hawking, a medical researcher, and Isobel Walker, a Scottish secretary. His parents loved learning and both went to the University of Oxford. His father studied medicine, while his mother studied **philosophy** and **politics**.

Stephen was born during the Second World War. At this time, London was a very dangerous place. To make sure that Stephen would be safe when he was born, his mother moved from their home in Highgate, London to Oxford. During the time that they lived in Oxford, Hawking's parents had more children so he gained three siblings: two sisters named Philippa and Mary and an adopted brother named Edward.

## Childhood

In 1950, the Hawking family moved to St Albans in Hertfordshire. People who knew the family thought that they were rather odd; instead of talking or watching television, the family would sit in silence and each read a book while they ate meals. They are said to have kept a beehive in their basement and made fireworks in their greenhouse!

From an early age, Stephen showed an interest in science, especially space. He loved to lie on the grass in the garden and watch the stars with his mother. Stephen enjoyed playing board games and making model aeroplanes and boats. With the help of his maths teacher, Stephen built a computer out of old clock and telephone parts at just 16 years old.





### Scientific Discoveries

Just like his parents, Stephen went to the University of Oxford at just 17 years old, passing his exams a year early. He was said to find the work 'ridiculously easy' and he received the highest award possible for his degree in natural sciences.

Stephen then moved on to study at the University of Cambridge. While he was there, Stephen studied black holes. At the time, people thought that black holes were places in space where gravity pulls so much that even light cannot get out. Yet, Stephen discovered that one thing could escape from a black hole: **radiation**. This type of radiation, now known as Hawking radiation, was named after him and, using what he had learned, Stephen helped to prove the idea that the universe began with the Big Bang. Stephen's work, along with his incredible sense of humour, inspired millions of people to become interested in science.

### Glossary

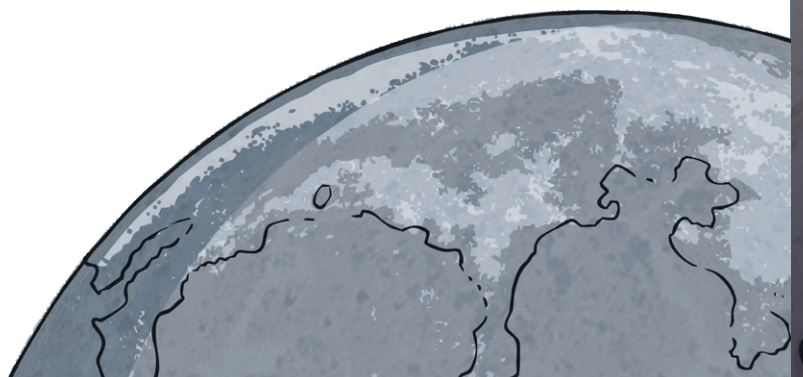
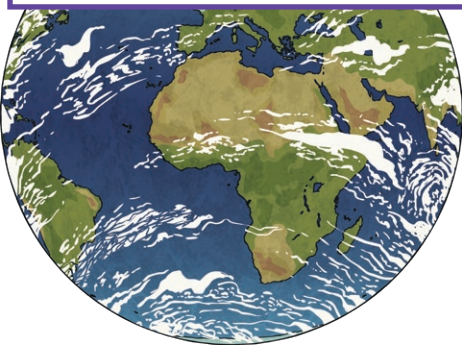
**astronomer** – Somebody who studies the position of the sun, moon, stars and planets.

**cosmologist** – Somebody who studies how the universe was made and what will happen to it.

**philosophy** – The study of how we exist and how we know things.

**politics** – The study of how countries are led and what governments do.

**radiation** – Waves of energy that come out of or off something.



# Questions

1. Which two subjects did Stephen's mother study at university? Tick **two**.

- ☐ astrology
- ☐ medicine
- ☐ politics
- ☐ philosophy

2. In which year did Stephen's family move to St Albans? Tick **one**.

- ☐ 1942
- ☐ 1947
- ☐ 1950
- ☐ 1955

3. Who helped Stephen to build a computer when he was 16 years old?

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4. Why did Stephen go to university a year earlier than normal?

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5. Find and copy a phrase which shows that Stephen was older than his brother and sisters.

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6. Sum up the importance of Stephen's scientific discoveries.

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7. Explain why you think people thought the Hawking family were unusual.

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8. Explain what was significant about the day Stephen was born.

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# Answers

1. Which two subjects did Stephen's mother study at university? Tick **two**.

- ☐ astrology
- ☐ medicine
- ☒ **politics**
- ☒ **philosophy**

2. In which year did Stephen's family move to St Albans? Tick **one**.

- ☐ 1942
- ☐ 1947
- ☒ **1950**
- ☐ 1955

3. Who helped Stephen to build a computer when he was 16 years old?

**Stephen's maths teacher helped him to build a computer.**

4. Why did Stephen go to university a year earlier than normal?

**Stephen went to university a year earlier than normal because he passed his exams a year early.**

5. Find and copy a phrase which shows that Stephen was older than his brother and sisters.

**eldest child**

6. Sum up the importance of Stephen's scientific discoveries.

**Pupils' own responses, such as: Stephen's scientific discoveries were important because people learned something about black holes they had never known before and it gave an answer as to how the universe was created.**

7. Explain why you think people thought the Hawking family were unusual.

**Pupils' own responses, such as: People thought that the Hawking family were unusual because the family would sit in silence and each read a book while they ate meals. They are also said to have kept a beehive in their basement and they made fireworks in their greenhouse.**

8. Explain what was significant about the day Stephen was born.

**Pupils' own responses, such as: The day Stephen was born was significant because it was exactly 300 years after the death of the famous astronomer Galileo.**