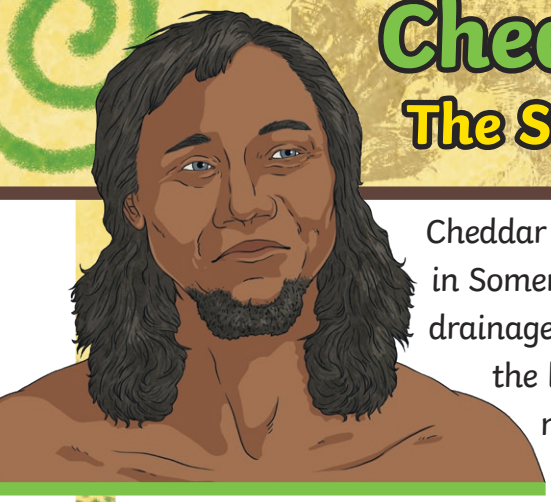
Cheddar Man

The Story of a 10,000-Year-Old Skeleton

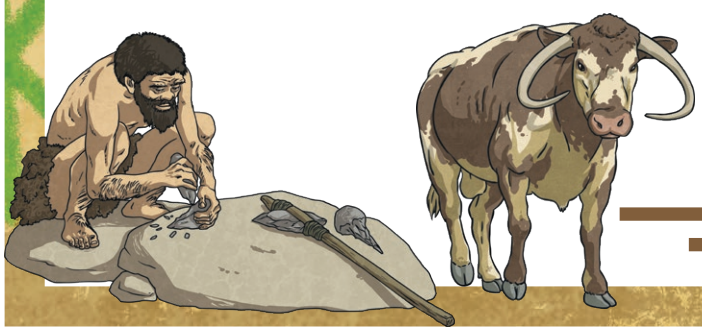


Cheddar Gorge is a limestone **gorge** that is near the village of Cheddar in Somerset, England. In 1903, plans were made to improve the drainage of Gough's Cave, which is a 115m deep cave that contains the largest underground river system in the UK. However, workers made a remarkable discovery as they began to create the new drainage channels: they unearthed a human skeleton.

What Do We Know about Cheddar Man?

Scientists and historians have dated the remains to the Mesolitic period, which was the Middle Stone Age. This would mean that the human was alive in approximately 7100 BC and it would make the discovered remains Britain's oldest complete skeleton. The person would have been around 166cm tall and a hunter-gatherer.

Samples of DNA were taken from the bones. DNA is short for deoxyribonucleic acid. DNA is in every cell of a living being and it carries all of the information about how the living thing will look and what it can do. By looking at a person's DNA, a scientist is able to accurately work out what that person might have looked like and any medical conditions that they may have had.

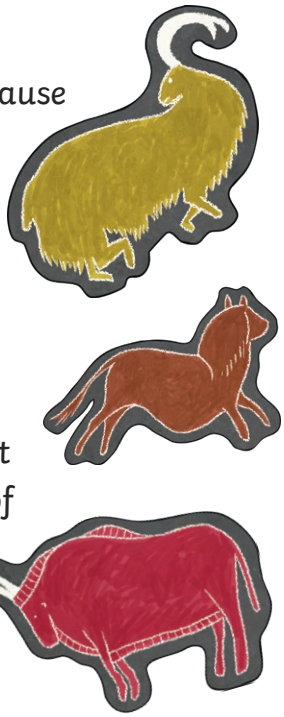


The DNA extracted from the bones showed that they belonged to a human male, who they gave the nickname Cheddar Man. Scientists were able to work out that Cheddar Man was a typical member of the western European population at the time.

His DNA revealed that he had:

- light-coloured eyes that were most likely green or blue;
- curly or wavy hair that was dark brown or black;
- dark skin;
- **lactose intolerance**.

Why Were These Discoveries So Important?



The discovery of Cheddar Man's remains was hugely important because it changed our understanding of prehistoric Britain. Until fairly recently, it was assumed that humans quickly adapted to having paler skin after entering Europe around 45,000 years ago but Cheddar Man's DNA proves that this was not always the case.

Cheddar Man's eye colour was also an important discovery. This is because it is uncommon to see humans with light eyes and dark skin today. From this, scientists were able to work out that the trait of having pale-coloured eyes entered Europe long before the traits of having pale skin or pale hair, even though these traits are often seen together in people today. This is an important reminder that we cannot assume what people looked like in the past based on what we may see around us now.

Could You Be Related to Cheddar Man?

In the 1990s, there was a study of the DNA belonging to 20 modern-day residents of the village of Cheddar. The study revealed that one of them is a direct descendant of Cheddar Man!

Glossary

gorge: A narrow valley between hills or mountains that has steep, rocky walls.

lactose intolerance: Being unable to digest lactose, which is a sugar within dairy products.

Questions

1. Which of these statements are thought to be true about Cheddar Man based on his DNA? Tick **two**.

   - ○ Cheddar Man had light-coloured hair.
   - ○ Cheddar Man had dark skin.
   - ○ Cheddar Man had green or blue eyes.
   - ○ Cheddar Man was intolerant to wheat.

2. When was the skeleton of Cheddar Man unearthed? Tick one.

   - ○ 7100 BC
   - ○ AD 115
   - ○ AD 1903
   - ○ AD 1990

3. Fill in the missing words.

   Scientists and historians have dated the remains to the _____ period, which was in the Middle _____ Age.

4. In which year is it thought that Cheddar Man would have been alive?

   _____

5. Look at the first paragraph of the text. Find and copy one word which means the same as 'extraordinary'.

   _____

6. Explain why the discovery of Cheddar Man's eye colour was so significant to our understanding of human history.

   _____

   _____

   _____

7. Propose why you think that Cheddar Man remained undiscovered until 1903.

8. Summarise what you have learnt about DNA in this text using 25 words or fewer.

Answers

1. Which of these statements are thought to be true about Cheddar Man based on his DNA? Tick **two**.
   - ✓ **Cheddar Man had dark skin.**
   - ✓ **Cheddar Man had green or blue eyes.**

2. When was the skeleton of Cheddar Man unearthed? Tick one.
   - ✓ **AD 1903**

3. Fill in the missing words.

   Scientists and historians have dated the remains to the **Mesolithic** period, which was in the Middle **Stone** Age.

4. In which year is it thought that Cheddar Man would have been alive?
   It is thought that Cheddar Man would have been alive in approximately 7100 BC.

5. Look at the first paragraph of the text. Find and copy one word which means the same as 'extraordinary'.
   remarkable

6. Explain why the discovery of Cheddar Man's eye colour was so significant to our understanding of human history.
   Pupils' own responses, such as: The discovery of Cheddar Man's eye colour was important because it proved that the trait of having pale-coloured eyes entered Europe long before the traits of having pale skin or pale hair, even though these traits are often seen together in people today. This has changed how we understand human history.

7. Propose why you think that Cheddar Man remained undiscovered until 1903.
   Pupils' own responses, such as: I think that Cheddar Man remained undiscovered until 1903 because no one had done any construction work in Gough's Cave before then so they would have idea that his remains were there.

8. Summarise what you have learnt about DNA in this text using 25 words or fewer.
   Pupils' own responses, such as: DNA is short for deoxyribonucleic acid and it is in the cells of most living things. It carries information about what someone will look like.

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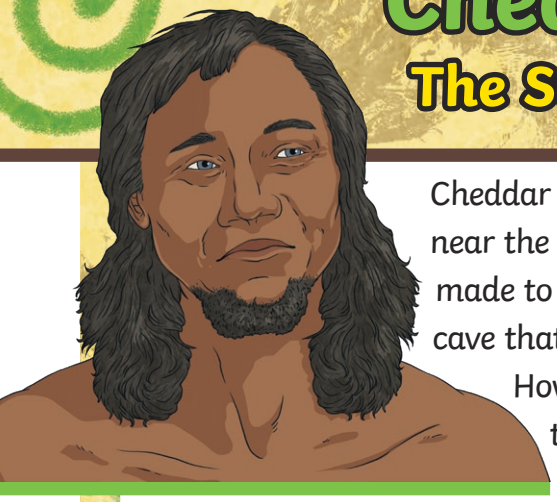

Cheddar Gorge is a limestone **gorge** that is located in the Mendip Hills near the village of Cheddar in Somerset, England. In 1903, plans were made to improve the drainage of Gough's Cave, which is a 115m deep cave that contains the largest underground river system in the UK. However, as workers began to create the new drainage channels, they made a remarkable discovery: nestled between the stone and rubble, they unearthed a human skeleton.

Scientific Examination

Scientists and historians have dated the remains to the Mesolithic period (the Middle Stone Age). This would mean that the human was alive in approximately 7100 BC and it would make the discovered remains Britain's oldest complete skeleton. The person would have been approximately 166cm tall and a hunter-gatherer.

To find out more, samples of DNA were taken from the bones. DNA is short for deoxyribonucleic acid; this acid is in every cell of a living being and it carries all of the information about how the living thing will look and function. By examining the DNA found in a person, a scientist is able to accurately work out what that person might have looked like and any medical conditions that they may have had.

The DNA extracted from the bones showed that they belonged to a human male, who they gave the nickname Cheddar Man. Scientists were able to work out that Cheddar Man was a typical member of the western European population at the time. His DNA revealed that he had light-coloured eyes (most likely green or blue), curly or wavy hair that was dark brown or black and dark skin. Scientists were also able to conclude that, like much of the European population at the time, Cheddar Man was likely **lactose-intolerant**. These discoveries were very similar to a number of other Mesolithic human remains discovered in Europe.

Impact of the Discovery

The discovery of Cheddar Man's remains was hugely important in shaping our understanding of prehistoric Britain. Until fairly recently, it was assumed that humans quickly adapted to having paler skin after entering Europe around 45,000 years ago. The reason for this assumption was because paler skin is better suited to absorbing ultraviolet light from the Sun; this helps humans to avoid becoming **deficient** in vitamin D when they live in climates with less sunlight (like the UK). Cheddar Man's DNA proves that this was not always the case.

A further important discovery was Cheddar Man's eye colour. This is because it is uncommon to see humans with light eyes and dark skin today. From this, scientists were able to work out that the trait of having pale-coloured eyes (green or blue) entered Europe long before the traits of having pale skin or pale (blonde) hair, even though these traits are often seen together in people today. This is an important reminder that we cannot make assumptions about what people looked like in the past based on the commonly associated traits that we may see around us now.

Could You Be Related to Cheddar Man?

In the 1990s, a study of the DNA belonging to 20 modern-day residents of the village of Cheddar revealed that one of them shared genetic information with Cheddar Man. This man (ironically, a history teacher) has been proven to be a direct descendant of Cheddar Man!

Glossary

deficient: Not having enough of something.

gorge: A narrow valley between hills or mountains that has steep, rocky walls.

lactose-intolerant: Unable to digest lactose, which is a sugar within dairy products.

Questions

1. Which of these statements best defines a gorge? Tick one.

   - ◯ It is a village in Somerset, England.
   - ◯ It is a drainage channel within a cave.
   - ◯ It is a 115m deep cave.
   - ◯ It is a narrow valley between hills.

2. Approximately how tall was Cheddar Man thought to be? Tick one.

   - ◯ 115cm
   - ◯ 156cm
   - ◯ 160cm
   - ◯ 166cm

3. **...this helps humans to avoid becoming deficient in vitamin D...**
   How else could the author have written this phrase?

   _____

4. Look at the section called **Could You Be Related to Cheddar Man?**
   Find and copy one word that means 'funny because it is unexpected'.

   _____

5. Which genetic trait entered Europe first: the trait of having pale-coloured eyes or the trait of having pale-coloured hair?

   _____

6. Which section of the text did you find most interesting? Give a reason for your answer.

   _____

   _____

   _____

7. Predict what could happen the next time that construction work is undertaken in Cheddar Gorge.

   _____

   _____

   _____

8. Comment on how Cheddar Man's discovery has changed what we know about prehistoric Britons.

9. Summarise what you have learnt about Cheddar Man using 25 words or fewer.

Answers

1. Which of these statements best defines a gorge? Tick one.
   ✓ **It is a narrow valley between hills.**

2. Approximately how tall was Cheddar Man thought to be? Tick one.
   ✓ **166cm**

3. **...this helps humans to avoid becoming deficient in vitamin D...**
   How else could the author have written this phrase?
   Accept any suitable phrase which maintains the same meaning, such as: this stops humans from having too little vitamin D; this helps humans to make sure they have enough vitamin D; this stops people from lacking in vitamin D.

4. Look at the section called **Could You Be Related to Cheddar Man?**
   Find and copy one word that means 'funny because it is unexpected'.
   ironically

5. Which genetic trait entered Europe first: the trait of having pale-coloured eyes or the trait of having pale-coloured hair?
   The trait of having pale-coloured eyes entered Europe long before the traits of having pale-coloured hair.

6. Which section of the text did you find most interesting? Give a reason for your answer.
   Pupils' own responses, such as: I found the section 'Impact of the Discovery' the most interesting because I did not realise how important Cheddar Man was in our current understanding of prehistoric Britain.

7. Predict what could happen the next time that construction work is undertaken in Cheddar Gorge.
   Pupils' own responses, such as: I predict that teams of archaeologists will be on standby next time that construction work happens at Cheddar Gorge just in case any other ancient human remains are discovered.

8. Comment on how Cheddar Man's discovery has changed what we know about prehistoric Britons.
   Pupils' own responses, such as: Cheddar Man's discovery changed what we know about prehistoric Britons because it proved that humans had not adapted to having paler skin as we had thought they had and it helped to uncover the order that paler features, such as eyes and hair, arrived in Britain.

9. Summarise what you have learnt about Cheddar Man using 25 words or fewer.
Pupils' own responses, such as: Cheddar Man was a Mesolithic hunter-gatherer who lived around 7100 BC. He had dark skin, dark hair, light eyes and was lactose-intolerant.

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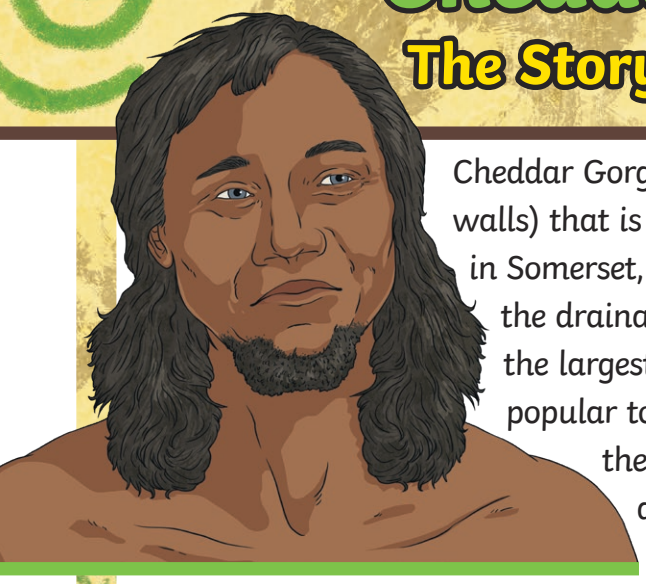


Cheddar Gorge is a limestone gorge (a narrow valley with steep, rocky walls) that is situated in the Mendip Hills near the village of Cheddar in Somerset, England. In 1903, plans were underway to improve the drainage of Gough's Cave - a 115m deep cave that is home to the largest underground river system in the UK and serves as a popular tourist attraction in the area. However, as workers began the excavation for the new drainage channels, they made an astonishing discovery: nestled between the stone and debris, they unearthed a human skeleton.

Scientific Analysis

Scientists and historians have conducted an in-depth examination of the skeletal remains that were discovered. They have dated the remains to the Mesolitic period - the Middle Stone Age - which would mean that this human was alive in approximately 7100 BC and renders the discovered remains as Britain's oldest complete skeleton. The person would have been approximately 166cm tall and a hunter-gatherer.

To find out more, samples of DNA were extracted from the discovered bones. DNA is short for deoxyribonucleic acid; this acid is in every cell of a living being and it carries all of the information about how the living thing will look and function. By analysing the DNA found in a person, a scientist is able to accurately determine what that person might have looked like and any medical conditions they might have had.

Analysis of the DNA extracted from the bones showed that they belonged to a human male, who they gave the nickname Cheddar Man (given the location that his remains were discovered in). Scientists were able to deduce that Cheddar Man was a typical member of the western European population at the time. Genetic markers in his DNA showed that he had light-coloured eyes (most likely green or blue), curly or wavy hair that was dark brown or black and dark skin. Scientists were also able to conclude that, like much of the European population at the time, Cheddar Man was likely lactose-intolerant (unable to digest the sugar found in dairy products). These discoveries were consistent with a number of other Mesolithic human remains discovered in Europe.

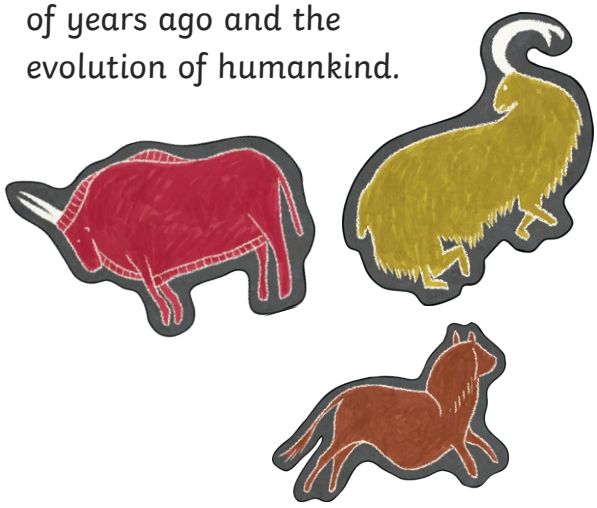
Significance of the Discovery

The discovery of Cheddar Man's remains was hugely significant in shaping our understanding of prehistoric Britain. Until fairly recently, it was assumed that humans quickly adapted to having paler skin after entering Europe around 45,000 years ago. The reason for this assumption was because paler skin is better suited to absorbing ultraviolet light from the Sun and this helps humans to avoid becoming deficient in vitamin D when they live in climates with less sunlight (like the UK). The analysis of Cheddar Man's DNA proves that this was not always the case.

A further significant discovery was Cheddar Man's eye colour; this is because it is uncommon to see humans with light eyes and dark skin today. From this, scientists were able to conclude that the trait of having pale-coloured eyes (green or blue) entered Europe long before the traits of having pale skin or pale (blonde) hair - despite these traits often being seen together in people today. This is an important reminder that we cannot make assumptions about what people looked like in the past based on the commonly associated traits that we may see around us now.

Could You Be Related to Cheddar Man?

In modern-day Britain, approximately 10% of people share their genetic ancestry with the European population that Cheddar Man belonged to (the group often referred to as the western European Mesolitic hunter-gatherers). In the 1990s, a study of the DNA belonging to 20 modern-day residents of the village of Cheddar revealed that one of them shared genetic information with Cheddar Man. This man - ironically, a history teacher - has been proven to be a direct descendant of Cheddar Man! While most people who share their genetic ancestry with Cheddar Man are not likely to be related to him specifically, this fascinating discovery certainly gives us new insight into those who lived in Britain thousands of years ago and the evolution of humankind.



Questions

1. What is DNA? Tick all that apply.

   - ◯ a type of acid
   - ◯ something that only humans have
   - ◯ something that is in every cell of a living being
   - ◯ something that hunter-gatherers did not have

2. How many of the 20 tested modern-day residents of Cheddar shared genetic information with Cheddar Man? Tick one.

   - ◯ one
   - ◯ two
   - ◯ ten
   - ◯ all of them

3. **...they made an astonishing discovery...**
   Give one synonym for the word 'astonishing' that could have been used in this phrase instead.

   _____

4. Look at the first paragraph of the text.
   Find and copy one word which means 'located'.

   _____

5. Approximately what percentage of modern-day Britons share their genetic ancestry with the European population that Cheddar Man belonged to?

   _____

6. **One of these men - ironically, a history teacher - has been proven to be a direct descendant of Cheddar Man!**
   Explain why this is ironic.

   _____

   _____

   _____

7. Summarise how it came to be that Cheddar Man's remains were discovered.

8. Using information from the text, discuss how DNA has solved ancient mysteries.

9. 'Cheddar Man was unique and unlike any other person who lived during the Mesolithic era.'
   Use evidence from the text to disprove this statement.

10. Explain the biological reason that some humans entering Europe 45,000 years ago adapted to having paler skin.

Answers

1. What is DNA? Tick all that apply.

   ☑ **a type of acid**
   ☑ **something that is in every cell of a living being**

2. How many of the 20 tested modern-day residents of Cheddar shared genetic information with Cheddar Man? Tick one.

   ☑ **one**

3. **...they made an astonishing discovery...**
   Give one synonym for the word 'astonishing' that could have been used in this phrase instead.
   Accept any suitable synonym, such as: unbelievable; remarkable; shocking.

4. Look at the first paragraph of the text.
   Find and copy one word which means 'located'.
   situated

5. Approximately what percentage of modern-day Britons share their genetic ancestry with the European population that Cheddar Man belonged to?
   In modern-day Britain, approximately 10% of people share their genetic ancestry with the European population that Cheddar Man belonged to.

6. **One of these men - ironically, a history teacher - has been proven to be a direct descendant of Cheddar Man!**
   Explain why this is ironic.
   Pupils' own responses, such as: This is ironic because it is funny that Cheddar Man was alive in the Middle Stone Age and his modern-day descendent is a history teacher who might teach people about the Stone Age.

7. Summarise how it came to be that Cheddar Man's remains were discovered.
   Pupils' own responses, such as: Cheddar Man's remains were discovered when construction work began to improve the drainage of Gough's Cave, where he was buried.

8. Using information from the text, discuss how DNA has solved ancient mysteries.
   Pupils' own responses, such as: DNA can tell us things about a living being that we did not already know. In the case of Cheddar Man, it could tell us his skin tone, hair colour and eye colour. These discoveries changed our understanding of history and solved ancient mysteries that we would have had no other way of solving.

9. 'Cheddar Man was unique and unlike any other person who lived during the Mesolithic era.'
   Use evidence from the text to disprove this statement.
   Pupils' own responses, such as: I know that this statement is not true because the text says that 'much of the European population at the time, Cheddar Man was likely lactose-intolerant' and it also says that 'Cheddar Man was a typical member of the western European population at the time'. Both of these things show that he was not unique within the Mesolithic era.

10. Explain the biological reason that some humans entering Europe 45,000 years ago adapted to having paler skin.
    Pupils' own responses, such as: After entering Europe around 45,000 years ago, many humans adapted to having paler skin because paler skin is better suited to absorbing ultraviolet light from the Sun. This helps humans to avoid becoming deficient in vitamin D when they live in climates with less sunlight (like the UK, which is on the continent of Europe).