

SCIENCE NEWS AND ANIMAL NEWS

MEET THE ALIENS

Alien civilisations are likely to exist, but hopefully they won't be as scary as this lot



SINCE scientists discovered planets similar to Earth beyond our solar system, they have wondered whether there may be life forms like ours living on them.

The answer is still definitely “maybe”, but astrophysicists at Nottingham University have now worked out that we could have as many as 36 intelligent intergalactic neighbours.

Professor Christopher Conselice led the study. He said: “I think it is extremely important and exciting because for the first time we really have an estimate for this number of active intelligent, communicating civilisations that we potentially could contact.”

The theory is that, as so many millions of galaxies and planets exist, the chances are high that some kind of intelligent life must have developed on other worlds, in the same way that it has on Earth.

In 1961, an astronomer called Frank Drake tried to work out how many alien civilisations there could be. What became known as the Drake equation set out seven factors that you would need to estimate the number. But some of the factors were very hard to measure.

Now, Professor Conselice and his team have altered the equation to make their predictions more accurate. They have assumed that the

conditions for life would be similar to those on our own planet and that life would develop in a scientific way and not randomly. It depends on factors such as star formations and chemical reactions, which we know were vital in the development of life on Earth. This makes it easier to calculate how many other planets are capable of supporting life.

Professor Conselice reckons that, although it is only a theory at present, other life forms would look very similar to us. He said: “We wouldn't be super shocked by seeing them.”

Contacting them is going to take some time, however, as the nearest likely location of an intelligent life form is 17,000 light years away! It would take 6,120 years for a two-way communication between humans on Earth and aliens on that planet.

We will not actually know if Professor Conselice's study is correct until we find other forms of life, or they find us. In the meantime, the search for alien life goes on. And there are definitely enough books, films and TV series to keep our appetite for aliens alive!



A Star Trek fan dressed as a Klingon alien. Scientists think real-life aliens may look similar to us



The Allen Telescope Array in California, USA scans the skies for radio transmissions from other intelligent life forms

TURTLE BOOST

DRONES in Australia have discovered that the world's largest colony of green turtles is twice as big as previously thought.

Footage of the turtles off the coast of Raine Island was shot by drones launched by the Great Barrier Reef Foundation's Raine Island Recovery Project. It showed around 64,000 green turtles waiting offshore, ready to go on land and make their nests. This is double the number of turtles scientists expected to spot.

Researchers found that using a drone was a much faster and more accurate way of counting the turtles. Previous methods included painting a white stripe on the shells of turtles who were on the beach and then counting them from a small boat. This was not a very easy or accurate way to count turtles, as the paint washed off after a few days anyway!

The use of the drone and the more accurate footage helps scientists know what work needs to be done to make sure all of the turtles have space to nest.

Anna Marsden, Managing Director of the Great Barrier Reef Foundation said: “We're taking action to improve and rebuild the island's nesting beaches, and building fences to prevent turtle deaths, all working to strengthen the island's resilience and ensure the survival of our northern green turtles and many other species.”

Green turtles are one of the largest species of sea turtle and can be found in tropical and subtropical seas all around the world.



Thousands of green turtles off the coast of Raine Island, Australia, waiting to go on land to nest

GLOSSARY

astrophysicists – Experts who analyse the physics of astronomy. They may perform research on the planets, stars and other galaxies. They also study how the universe started

drones – Unmanned aircrafts/flying robots that can be remotely controlled

The Great Barrier Reef Foundation – An Australian non-profit organisation established

in 1999 to help protect and preserve the Great Barrier Reef and all its living diversity

Raine Island Recovery Project – A project run by the Great Barrier Reef Foundation and partners to restore the world's largest green turtle rookery (colony of breeding animals). Raine Island is located on the northern tip of the Great Barrier Reef

intergalactic – Between galaxies



Science News and Animal News

Questions on 'Meet the aliens'

Part A: Finding the facts

A1. Use the words in the box to fill the gaps in the sentences.

Since discovered similar to beyond our system, they have wondered whether there may be like ours living on them. at University have now worked out that we could have as many as intelligent neighbours.

solar

Astrophysicists

intergalactic

life forms

36

scientists

Earth

Nottingham

planets

A2. Who led the study?

A3. Who is Frank Drake?

Part B: Deduce and infer information

B1. What makes scientists think that there is a high chance that other life forms like ours exist?

B2. Why did Professor Christopher Conselice and his team alter Drake's equation?

B3. What makes it difficult to know if Professor Conselice's theory is correct?

Part C: Analyse the writing and presentation

C1. Why do you think that the picture of the Allen Telescope Array in California is included alongside the representations of fictional aliens?

Part D: Writing task

Professor Conselice reckons that other life forms would look very similar to us. What do you think? Write a description to show what you believe an alien life form might look like.

Questions on 'Turtle boost'

Part A: Finding the facts

A1. What have drones in Australia discovered?

A2. Describe green turtles.

Part B: Deduce and infer information

B1. Why did researchers start using a drone to count the turtles?

B2. Why is the information from the drone's footage important?

Part C: Analyse the writing and presentation

C1. Anna Marsden refers to wanting to strengthen the island's "resilience". What do you understand the term "resilience"

GLOSSARY

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Science News and Animal News

Questions on 'Meet the aliens'

Part A: Finding the facts

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Since **discovered** **similar to** **beyond our** **system**, they have **wondered whether there may be** **like ours living on them**. **at** **University** have **now worked out that we could have as many as** **intelligent** **neighbours**.

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Professor Conselice reckons that other life forms would look very similar to us. What do you think? Write a description to show what you believe an alien life form might look like.

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Questions on 'Turtle boost'

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Part C: Analyse the writing and presentation

C1. Anna Marsden refers to wanting to strengthen the island’s “resilience”. What do you understand the term “resilience” to mean?

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Teacher Answers

AIM OF THE NEWS COMPREHENSIONS: News reports are unique non-fiction texts. Being real, they naturally engage students, and with the range of topics that are covered, help to develop pupils' knowledge and understanding of the wider world outside the classroom. The reports are ideal for short, focused comprehension or discussion activities. Along with the opportunity to find fascinating facts and appreciate the opinions of those involved, there is plenty to be inferred and deduced to understand in more depth what is being reported. Like authors, journalists play with language, so news 'stories' are rich nuggets of text to investigate and provide the opportunity for literacy programmes.

TEACHER ANSWER GUIDE: The teacher answers are intended to provide a guide to the reading skill each question is practising. Suggestions are given for a starting point for responses that students would be expected to give at the start of KS3. Further suggestions then give fuller, more developed responses that students will work towards by the end of KS3, in preparation for the non-fiction elements of GCSE English language.

Questions on 'Meet the aliens'

Part A: Finding the facts

A1. Use the words in the box to fill the gaps in the sentences.

READING SKILL — Find and explain information

Possible answer

Expected response

Since scientists discovered planets similar to Earth beyond our solar system, they have wondered whether there may be life forms like ours living on them. Astrophysicists at Nottingham University have now worked out that we could have as many as 36 intelligent intergalactic neighbours.

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A2. Who led the study?

READING SKILL — Find and explain information

Possible answer

Starting point

- Professor Christopher Conselice led the study.

Development

- He said: "I think it is extremely important and exciting because for the first time we really have an estimate for this number of active intelligent, communicating civilisations that we potentially could contact."

A3. Who is Frank Drake?

READING SKILL — Find and explain information

Possible answer

Starting point

- Frank Drake is an astronomer.

Development

- In 1961 he tried to work out how many alien civilisations there could be. What became known as the Drake equation set out seven factors that you would need to estimate the number.

Part B: Deduce and infer information

B1. What makes scientists think that there is a high chance that other life forms like ours exist?

READING SKILL — Infer information and justify with evidence from the text

Possible answer

Starting point

- Scientists think that there is a high chance that other life forms like ours exist because so many millions of galaxies and planets exist.

Development

- Furthermore, some of the planets discovered beyond our solar system are similar to Earth. Therefore, scientists theorise that the chances are high that, in the same way that it has on Earth, some kind of intelligent life will have developed on other worlds.

B2. Why did Professor Christopher Conselice and his team alter Drake's equation?

READING SKILL — Infer information and justify with evidence from the text

Possible answer**Starting point**

- Professor Christopher Conselice and the team altered Drake's equation because some of the factors needed were very hard to predict.

Development

- Therefore, they altered the equation to make it easier to calculate how many planets are capable of supporting life. They assumed that the conditions for life would be similar to those on Earth and that life would develop in a scientific way and not randomly. Then they looked at the factors known to be vital in the development of life on Earth, such as star formations and chemical reactions. They did this to make their predictions more accurate.

B3. What makes it difficult to know if Professor Conselice's theory is correct?

READING SKILL — Infer information and justify with evidence from the text

Possible answer**Starting point**

- It is difficult to know if Professor Conselice's theory is correct because we will not actually know until contact is made with other forms of life!

Development

- As the nearest likely location of an intelligent life form is 17,000 light years away, it is likely to be a while before we'll be able to establish such contact with another life form, even if it is in existence. This is because it would take 6,120 years for a two-way communication between humans on Earth and aliens on that planet! Therefore, it is not going to be easy to check Professor Conselice's theory.

Part C: Analyse the writing and presentation**C1. Why do you think that the picture of the Allen Telescope Array in California is included alongside the representations of fictional aliens?**

READING SKILL — Identify benefits of text organisation and presentation

Possible answer**Starting point**

- It is likely that the picture of the Allen Telescope Array in California is included because this article is in Science News.

Development

- It is necessary for this picture to be included because the other pictures are of fictional representations of "aliens" and although the images add interest to the page they are not of scientific importance. The Allen Telescope Array scans the skies for radio transmissions from other intelligent life forms and thus shows that the search isn't just the subject of fiction. It shows that real scientific observations are being conducted and therefore this is a valid article for Science News.

Part D: Writing task

Professor Conselice reckons that other life forms would look very similar to us. What do you think? Write a description to show what you believe an alien life form might look like.

Possible answer

The figure turned to face me and two glowing, yellow beams of light swept across my face, analysing me. I realised that the light was emitting from two small orbs that were its eyes. The light enabled me to survey the being more closely in turn. It was encased in a flexible, iridescent material that was its skin, but looked like a type of metal. However, it seemed thinner and lighter than any metal found on Earth as the creature's stomach could be seen softly undulating beneath it. It looked as if it was breathing, but it didn't seem to have a mouth. The yellow orbs were the only feature to grace its face.

Surprisingly, its body was human in shape. It had a neck, two arms, a muscled trunk and two legs, but it looked taller than the average human. Suddenly, the creature lifted its arm and pointed at me. Its limb looked astonishingly human. That is, until the alien lifted its hand to face me and addressed me using the mouth nestled in its palm!

Questions on ‘Turtle boost’**Part A: Finding the facts****A1. What have drones in Australia discovered?**

READING SKILL — Find and explain information

*Possible answer**Starting point*

- Drones in Australia have discovered that the world’s largest colony of green turtles is twice as big as previously thought.

Development

- Footage of the turtles shot by drones showed around 64,000 green turtles waiting offshore, ready to go on land and make their nests. This is double the number of turtles that scientists expected to spot.

A2. Describe green turtles.

READING SKILL — Find and explain information

*Possible answer**Starting point*

- Green turtles are one of the largest species of sea turtle.

Development

- They can be found in tropical and subtropical seas all around the world.

Part B: Deduce and infer information**B1. Why did researchers start using a drone to count the turtles?**

READING SKILL — Infer information and justify with evidence from the text

*Possible answer**Starting point*

- Researchers started to use a drone to count the turtles because it was a faster and more accurate method of getting the information that they required.

Development

- Previous methods included painting a white stripe on the shells of the turtles who were on the beach and then counting them from a small boat. However, the paint washed off after a few days, so this method was not very precise.

B2. Why is the information from the drone’s footage important?

READING SKILL — Infer information and justify with evidence from the text

*Possible answer**Starting point*

- The information from the footage is important because it helps scientists to work out what needs to be done to ensure that there is enough space for the turtles to nest safely.

Development

- Anna Marsden is the Managing Director of the Great Barrier Reef Foundation. She said: “We’re taking action to improve and rebuild the island’s nesting beaches, and building fences to prevent turtle deaths...” The more accurate footage from the drone helps with the planning of this.

Part C: Analyse the writing and presentation**C1. Anna Marsden refers to wanting to strengthen the island’s “resilience”. What do you understand the term “resilience” to mean?**

READING SKILL — Understand vocabulary in context

*Possible answer**Starting point*

- “Resilience” is the ability to recover quickly from difficulties.

Development

- Raine Island has faced landscape changes and the nesting beaches have needed rebuilding. In mentioning the resilience of the island, Marsden means that she hopes that the improvements made through the project will enable the island to withstand future challenges and continue to provide a safe haven for northern green turtles and other species.