

A New World!

Scientists discover an earthlike planet.



Credit ESO

An artist's drawing of the earthlike planet Gliese 581c.

Would you like to have a birthday party every 13 days? Then Gliese 581c is the place for you!

Astronomers recently found the planet Gliese 581c. It orbits the star Gliese 581 once every 13 days. Earth orbits its star, the sun, every 365 days.

Gliese 581c is an exoplanet—a planet that exists beyond our solar system. It is the most earthlike exoplanet discovered so far.

Astronomers say there could be liquid water on Gliese 581c. And where there's water, there could be life. "Liquid water is critical to life as we know it," says Xavier Delfosse, one of the scientists who discovered the planet. "This planet will most probably be a very important target of the future of space missions... On the treasure map of the universe, one would be tempted to mark this planet with an X," says Delfosse.

Planet Files

Earth

- is 8,000 miles across.
- is made of rock, ice, and liquid water.
- is one of eight planets in its solar system.

Gliese 581c

- is estimated to be 12,000 miles across.
- is probably made of rock and might have ice and liquid water.
- is one of three planets in its solar system.

Name: _____

Date: _____

1. What is Gliese 581?

- A the star that Gliese 581c orbits
- B a moon that orbits Gliese 581c
- C another planet in Gliese 581c's solar system
- D an asteroid that will hit Gliese 581c

2. What is the purpose of the lists at the end of the passage?

- A to introduce the reader to Gliese 581c
- B to suggest that Gliese 581c is more important than Jupiter and Saturn
- C to compare and contrast features of Earth with Gliese 581c
- D to explain why scientists are so excited about the discovery of Gliese 581c

3. Which conclusion about Gliese 581c could be supported by the passage?

- A Astronauts will never go to Gliese 581c on future space missions.
- B Scientists will want to confirm whether water exists on Gliese 581c.
- C People will want to search for treasure on Gliese 581c.
- D Aliens will want to make contact with Earth from Gliese 581c.

4. Read the following sentences and answer the question: "It orbits the star Gliese 581 once every 13 days. Earth orbits its star, the sun, every 365 days."

In these sentences, what does the word **orbit** mean?

- A exits
- B runs
- C walks
- D circles

5. The primary purpose of this passage is to describe

- A a new star that Earth will orbit
- B a new planet with similarities to Earth
- C a new comet that may collide with Earth
- D a new alien species that will visit Earth

6. Why would you have a birthday every 13 days on Gliese 581c?

7. Why is the planet Gliese 581c such an exciting discovery?

8. The question below is an incomplete sentence. Choose the word that best completes the sentence.

Astronomers are excited about Gliese 581c _____ there could be liquid water there, which means there could be life.

- A although
- B so
- C but
- D because

9. Answer the questions based on the sentence below.

NASA will likely target Gliese 581c in the future to see whether the planet has water and life.

What? NASA

(will) What? _____

When? _____

Why? _____

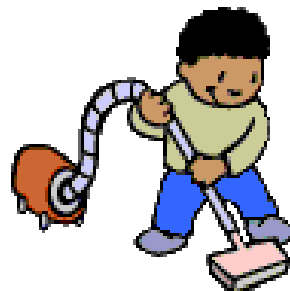
10. Read the vocabulary word and definition below, and complete questions 10a, 10b, and 11.

Vocabulary Word: tempted (tempt · ed): to be interested in something.

10a. Read the five sentences below and underline the word **tempted** in each sentence.

1. The kids were tempted to eat all their favorite Halloween candy in one day.
2. Since the weather was so beautiful, the manager was tempted to give his workers a day off so that they could spend it outside.
3. The smell of the banana bread was so delicious that it tempted everyone to come into the kitchen to eat.
4. Though they were tempted to play basketball, the students studied for their test instead.
5. The department store windows were so beautiful that they tempted people to enter the store.

10b. What is something you might be tempted to do while doing homework?



11. Would you be more tempted to eat a carrot or an ice cream cone? Why?

Teacher Guide & Answers

Passage Reading Level: Lexile 840

Passage Text Structure: Compare/Contrast – the writer presents similarities and differences between two or more objects, places, events, or ideas

Passage Summary: “A New World!” describes the recently discovered planet Gliese 581c, pointing out similarities and differences between that planet and Earth. Because it may have liquid water, Gliese 581c could be the most similar planet to Earth discovered.

1. What is Gliese 581?

- A the star that Gliese 581c orbits
- B a moon that orbits Gliese 581c
- C another planet in Gliese 581c’s solar system
- D an asteroid that will hit Gliese 581c

2. What is the purpose of the lists at the end of the passage?

- A to introduce the reader to Gliese 581c
- B to suggest that Gliese 581c is more important than Jupiter and Saturn
- C **to compare and contrast features of Earth with Gliese 581c**
- D to explain why scientists are so excited about the discovery of Gliese 581c

3. Which conclusion about Gliese 581c could be supported by the passage?

- A Astronauts will never go to Gliese 581c on future space missions.
- B **Scientists will want to confirm whether water exists on Gliese 581c.**
- C People will want to search for treasure on Gliese 581c.
- D Aliens will want to make contact with Earth from Gliese 581c.

4. Read the following sentences and answer the question: “It orbits the star Gliese 581 once every 13 days. Earth orbits its star, the sun, every 365 days.”

In these sentences, what does the word **orbit** mean?

- A exits
- B runs
- C walks
- D **circles**

5. The primary purpose of this passage is to describe

- A a new star that Earth will orbit
- B **a new planet with similarities to Earth**
- C a new comet that may collide with Earth
- D a new alien species that will visit Earth

6. Why would you have a birthday every 13 days on Gliese 581c?

Suggested answer: Gliese 581c orbits its star every 13 days, so one year on that planet would be that long. [paragraphs 1, 2]

7. Why is the planet Gliese 581c such an exciting discovery?

Suggested answer: It is the most earthlike exoplanet discovered so far. There could be liquid water on the planet, which means there could be life there. [paragraphs 3, 4]

8. The question below is an incomplete sentence. Choose the word that best completes the sentence.

Astronomers are excited about Gliese 581c _____ there could be liquid water there, which means there could be life.

- A although
- B so
- C but
- D **because**

9. Answer the following questions based on the sentence below.

NASA will likely target Gliese 581c in the future to see whether the planet has water and life.

What? NASA

(will) What? **likely target Gliese 581c**

When? **in the future**

Why? **to see whether the planet has water and life**

10. ReadWorks recommends that you teach this vocabulary word to the whole class out loud using the four steps listed below.

Vocabulary Word: tempted

Step 1: Introduce the word

- a. Teacher writes the word on the board and divides it into syllables: (tempt · ed)
- b. Teacher says: "This word is tempted. What is the word?" [All students reply together out loud: "tempted."]

Step 2: Provide a child-friendly definition

- a. Teacher says: "The word tempted means to be interested in something. For example, most people would be tempted to do something fun."
- b. Teacher says: "In the passage, a scientist says that on a treasure map of the universe, one would be tempted to mark the planet with an X."
- c. Teacher says: "What is the word?" [All students reply together out loud: "tempted."]

Step 3: Practice the word

Teacher provides examples and additional opportunities to repeat the word. Read the first sentence out loud to your students. Begin reading it again and when you come to the vocabulary word, prompt students to say the vocabulary word out loud. Then, finish reading the sentence out loud to your students.

- 10a.**
1. The kids were tempted to eat all their favorite Halloween candy in one day.
 2. Since the weather was so beautiful, the manager was tempted to give his workers a day off so that they could spend it outside.
 3. The smell of the banana bread was so delicious that it tempted everyone to come into the kitchen to eat.
 4. Though they were tempted to play basketball, the students studied for their test instead.
 5. The department store windows were so beautiful that they tempted people to enter the store.

Step 4: Check for student understanding

This step can be completed as a whole class activity or as an independent practice.

- 10b.** What is something you might be tempted to do while doing homework?



- 11.** Would you be more tempted to eat a carrot or an ice cream cone? Why?

Suggested answer: I would be more tempted to eat an ice cream cone because even though carrots are better for my health, ice cream is tastier and harder to resist.

Suggested Additional Vocabulary: orbits