

1 Answer questions (1) ~ (5).

(1) Choose the phrase that best represents the purpose of the following passage.

Currently, humans produce way too much waste. We make products, consume them and then chuck\* them away, littering\* our planet in the process. But what if there was a different way to do things?

In the natural world, there isn't any rubbish\* or landfill\*. Energy is provided by the Sun, one species' waste is another's food and when things die, their nutrients return to the soil — in a circle of life. Unfortunately, humans do things in a more linear\* way...

When we want the latest phone or computer, we tend to bin\* the old one. When our dishwasher breaks, we buy a brand-new one. But this wasteful approach, known as the linear economy isn't working! We're running out of resources to make new things with, and we're producing too much toxic waste.

That's why we need to move to a circular economy, inspired by the natural world — where everything has value and nothing is wasted.

注) \*chuck: throw

\*littering: making a place dirty by leaving trash everywhere

\*rubbish: trash

\*landfill: burying waste in the ground

\*linear: in a straight line

\*bin: throw away

- a. To describe how to recycle phones, computers and dishwashers
- b. To explain where energy comes from in the natural world
- c. To highlight the advantages of a linear economy
- d. To introduce the benefits of a circular economy

(2) Choose the sentence which is the best summary of this paragraph.

China has become the first country to successfully land a spacecraft on the far side of the moon. The Chang'e-4 probe\* has also made the first lunar\* landing since 1972. It has the task of exploring the side of the moon that never faces earth.

The Chinese probe landed in a huge crater\* 2500 km in diameter and 13 km deep. The crater is one of the oldest parts of the moon and our solar system.

Scientists hope to learn more about the geology\* of the far side of the moon. The craft has two cameras on board which will send images back to earth. It will also attempt to send signals to distant regions of space, something that cannot happen on earth because of too much radio noise.

Chang'e-4 also has instruments on board to examine minerals as well as a container with seeds which will try to create a miniature biosphere\*.

注) \*Chang'e-4 probe: the name of a Chinese spacecraft

\*lunar: relating to the moon

\*crater: a large hole in the ground

\*geology: the study of rocks

\*biosphere: an environment in which life can exist

- a. A huge, new crater, that is said to be one of the oldest parts of our solar system, has been discovered on the moon.
- b. A pioneering spacecraft has landed on the far side of the moon, from where it will send photos and data back to earth.
- c. For the first time, signals have been sent directly from earth to distant regions of space.
- d. It has been found that the far side of the moon never faces earth and contains many interesting geological features.

(3) Choose the best sentence to fit the blank and conclude this paragraph.

著作権の関係で問題文は掲載できません。

注) \*vibrant: active and energetic

\*colonial period: time when some countries controlled other countries

\*oppression: being treated unfairly or cruelly

- a. As a result of these terrible events, English is used less and less in many former British colonies.
- b. It is through this history of colonization that English became used throughout the world.
- c. One of the greatest of these writers was William Shakespeare, who lived in the 16th and 17th centuries.
- d. These are the main advantages of using English to communicate when two speakers have different first languages.

(4) Choose the phrase that is most similar in meaning to the underlined words.

English speakers love to talk about the weather. It is a way of breaking the ice. People talk about the weather on the phone and in person. Friends and family talk about the weather before they discuss what's new. Co-workers talk about the weather before starting a hard day of work. Even strangers discuss the weather. Learn the proper vocabulary and expressions, you will find it easy to start a conversation anytime and anywhere with anyone you meet!

- a. making people feel uncomfortable
- b. making people more willing to talk
- c. making people work harder
- d. making people worry

(5) Choose the best sentence to fit the blank and conclude this paragraph.

著作権の関係で問題文は掲載できません。

注) \*Aztecs: アステカ族

- a. As a result, it has been available in Europe for around one hundred years.
- b. For this reason, its popularity has never increased outside of Mexico.
- c. That's why it became unpopular with the Aztecs and they stopped eating it.
- d. This helped it to become accepted and well-liked by people all over Europe.

[出典]

- (1) “ALL ABOUT THE CIRCULAR ECONOMY”, National Geographic Kids,  
<https://www.natgeokids.com/uk/discover/science/general-science/all-about-the-circular-economy/>, 一部改
- (2) “China Space Probe Lands on Dark Side of the Moon”, English-Online,  
<https://english-online.at/news-articles/technology/china-space-probe-lands-on-dark-side-of-moon.htm>
- (3) “English Language Day”, April 16, 2021, British Council,  
<https://learnenglish.britishcouncil.org/general-english/magazine-zone/english-language-day>
- (4) “Speaking about the Weather in English”, EnglishClub,  
<https://www.englishclub.com/speaking/weather.htm>, 一部略, Reproduced with permission of the Licensor through PLSclear.
- (5) “The Good and Bad Side to Chocolate”, April 23, 2017, News in Easy English,  
<https://newsineasyenglish.com/2017/04/23/the-good-and-bad-side-to-chocolate/>

2 Read the following article and answer questions (1) ~ (5).

- [1] On February 18, NASA’s Perseverance rover\* landed on Mars. Its mission: to seek evidence of past microbial life\*. Something may have thrived\* on the planet billions of years ago.
- [2] An easy landing was not guaranteed. The rover’s 300 million-mile journey to Mars’s orbit took nearly seven months. But its descent through the planet’s atmosphere took just seven minutes. The car-sized rover fell at 12,100 miles per hour, with air friction raising the temperature on its heat shield to 2,370°F. The friction also acted as a brake. Within minutes, the ship slowed down. The heat shield came off, a parachute opened, and Perseverance drifted to the ground. Cheers went up at Mission Control in Pasadena, California. “The team is beside itself\*,” said NASA engineer Rob Manning. “It’s so surreal\*.”
- [3] For the next two years or so, Perseverance will explore Mars’s Jezero Crater. The area is 28 miles wide. Some 3.5 billion years ago, it was a lake fed by water that flowed through channels in the crater’s rim. The planet’s atmosphere was thick, and it was warm, too. Those are conditions that can support life. Later, Mars lost most of its atmosphere and nearly all of its water, turning the planet into the frigid\* desert that it is today. But if there was ever any life on Mars, traces might remain. Fossils\* of it might be found in the dried-up lake.
- [4] The rover’s main job is to find those fossils. But it will look for larger signs of past life, too. Rocky, wavy mounds might be found along the crater’s edges. If they’re similar to the ones on Earth, they could have been made by colonies, or groups, of microbes\*.
- [5] NASA ground controllers on Earth will load the rover’s software and set up its scientific instruments. The rover’s tools include: a camera for seeking signs of past microbial life; an X-ray instrument for studying tiny particles; a rock-busting\* laser; and an instrument that will test whether it’s possible to make oxygen out of carbon dioxide. This technology could help future astronauts on Mars produce breathable air and rocket fuel.
- [6] The rover also carries a small helicopter called Ingenuity. Its job is to make test flights through the planet’s thin air. If it’s effective, bigger versions can be built. These could allow for exploration of hills and mountains during future missions. This is a big moment in the history of flight: If Ingenuity succeeds, it will be the first aircraft to fly on a planet other than Earth.

[7] The Perseverance rover is the ninth American spacecraft to set down on Mars. The only other nation to get there was the former Soviet Union, now mostly part of Russia. Will Perseverance discover signs or even proof of extraterrestrial\* life? The possibility is thrilling to imagine.

[8] As if the Mars rover landing weren't exciting enough, NASA added a twist: a secret message. The message was hidden in the pattern on the rover's parachute. The pattern translates into binary code, the language of computers.

[出典]

“Exploring Mars”, Jeffrey Kluger, March 19, 2021, TIME for Kids,  
<https://www.timeforkids.com/g56/exploring-mars-2/?rl=en-800>, 一部略

注) \*rover: small vehicle that can move over rough ground

\*microbial life: very small living things

\*thrived: grown well and in large numbers

\*beside itself: very excited

\*surreal: like a wonderful dream

\*frigid: very cold

\*fossils: old living things that have turned to stone

\*microbes: microbial life

\*rock-busting: able to break open a rock

\*extraterrestrial: from outer space

(1) Which paragraph explains what Mars was like in the past?

- a. Paragraph 1
- b. Paragraph 2
- c. Paragraph 3
- d. Paragraph 4

(2) In which paragraph does the author list the names and purposes of several of the rover's tools?

- a. Paragraph 4
- b. Paragraph 5
- c. Paragraph 7
- d. Paragraph 8

- (3) Which paragraph mentions past spacecraft that visited Mars?
- a. Paragraph 5
  - b. Paragraph 6
  - c. Paragraph 7
  - d. Paragraph 8
- (4) What is the rover's primary mission?
- a. To discover water that formed lakes on Mars billions of years ago
  - b. To find fossils that can prove that life existed on Mars
  - c. To test whether it's possible to make oxygen out of carbon dioxide
  - d. To thrive on a planet that is billions of years old
- (5) What is the main purpose of this article?
- a. To explain how a rover was sent to Mars
  - b. To explain how the Mars atmosphere changed over time
  - c. To explain the various instruments on the Mars rover
  - d. To explain why a rover was sent to Mars



3 次の英文の要旨を、句読点も含め 80 字以内の日本語でまとめ、解答欄に書きなさい。

According to recent research, coffee may even be good for you. “The overall evidence has been pretty convincing that coffee has been more healthful than harmful in terms of health outcomes,” says Frank Hu, chair of the Department of Nutrition\* at Harvard’s T.H. Chan School of Public Health. “For most people, moderate coffee consumption can be incorporated into a healthy diet.”

Hu confirmed what recent studies have found: Moderate coffee intake is linked to a lower likelihood of type 2 diabetes\*, heart disease, liver and endometrial cancers\*, Parkinson’s disease and depression. People who drink coffee may even reduce their risk of mortality\*, though it isn’t yet clear exactly what role the beverage plays in our lifespans. And a moderate amount of daily coffee is still pretty generous at two to five cups a day, according to Hu and a number of large mortality studies.

“Keeping within reasonable intakes, the benefits really do seem to outweigh\* any adverse effects,” says Marilyn Cornelis, a caffeine and coffee researcher at the Northwestern University’s Feinberg School of Medicine. Cornelis has studied coffee extensively, especially the role of genetics in coffee consumption.

Coffee is probably best known for that one natural stimulant\* — caffeine — that gives people energy and keeps them alert throughout the day. Caffeine binds on adenosine receptors\*, which normally make you feel sleepy, and reduces their depressive effects.

But it’s unlikely that caffeine is solely responsible for the health boosts the drink confers\*. “Coffee is a complex, plant-based beverage, which contains not just caffeine, but also hundreds of bioactive\* compounds,” Hu says. That makes it difficult to differentiate the effect of the drink’s individual components.

[出典]

“Is Coffee Good for You or Not?”, Sophie Putka, April 6, 2021, Discover magazine,  
<https://www.discovermagazine.com/health/is-coffee-good-for-you-or-not>

注) \*nutrition: 栄養

\*diabetes: 糖尿病

\*endometrial cancers: 子宮膜内癌

\*mortality: death

\*outweigh: exceed in value or importance

\*stimulant: a thing producing a temporary increase of an activity

\*adenosine receptors: アデノシン受容体

\*confers: gives

\*bioactive: 生理活性の

4 Read the passage, and explain the main point in your own words. Write your answer in English within 30 words.

For a long time, I thought it was my sole responsibility to provide feedback to students. Arrogantly\*, I believed that I was the only one who could do the job properly. (After all, I'm the one with the degree, right?)

Time is the greatest teacher. Having taught many wonderful students over the years, I've learned that student-to-student feedback is often received more positively than teacher-to-student feedback. With basic instruction and ongoing support, students can learn to be exceptional peer\* strategists, providing thoughtful insight into what works from an audience's perspective and offering constructive strategies for improvement.

A side benefit of empowering students to provide feedback to one another is the awareness they themselves gain as learners. Teaching is perhaps the ultimate expression of learning. Providing students with regular opportunities to give and receive peer feedback enriches their learning experiences in powerful ways.

[出典]

Starr Sackstein. *Peer Feedback in the Classroom: Empowering Students to Be the Experts*. ASCD, 2017, PP.3-4

注) \*arrogantly: believing oneself to be better than others

\*peer: member of the same group

英 語  $\frac{12}{12}$

- 5 Introduce your hometown in English within 50 words.
  
- 6 What are the qualities that make someone a good leader? Write your answer in English within 50 words.