



2025 年 4 月第 1 週 高校生ニュース教材 単語テスト

音声を聴いて、次の単語（熟語）を書きとって下さい。また、その意味を日本語で書いて下さい。

	words/phrases	meaning
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

----- キ リ ト リ -----

(解答)

1. absorb 吸収する *名詞()吸収
2. algae [ældʒi:] 藻類
3. encapsulate カプセルに封じ込める
4. maximize 最大限にする *反対語()最小限にする
5. microorganism 微生物
6. assess 評価する *名詞()評価
7. observation 観察・観測 *動詞()観察・観測する
8. cultivate 養う・養成する
9. nurture 育成する
10. biofuel バイオ燃料
11. malnourished 栄養失調の、栄養不良の
12. initiative 構想・戦略

Japanese high schoolers win 1st prize in International Science Fair

1 This January, three female students from Iiyama High School in Nagano Prefecture who developed the "Midori Bioreactor (MBR)" won the first prize in the biochemistry category at the Taiwan International Science Fair.

2 The "Midori Bioreactor (MBR)" is also called a "CO2 Absorbing Ball." It is a transparent, ball-shaped device with a diameter of 4 to 5 mm that encapsulates euglena, a type of microalgae that performs photosynthesis. When exposed to light, these microorganisms absorb carbon dioxide and produce oxygen.

3 To utilize this technology more efficiently, the three students researched ways to maximize the carbon dioxide absorption rate by adjusting the angle of light and its distribution in the water. They aimed to maximize effectiveness while minimizing the environmental impact by devising optimal microorganism density and culture conditions.

4 This innovative technology has been recognized for its potential as a method to reduce carbon dioxide emissions, the main component of greenhouse gases.

biochemistry	生化学	bioreactor	生化学反応装置	transparent	透明の	diameter	直径
euglena	ミドリムシ(単複同形)	microalgae	微細藻類	photosynthesis	光合成	adjust	調整する
distribution	配分・分布	devise	考案する	optimal	最適な	density	密度
						culture condition	培養条件

★このニュースで覚えた語()

Q1 What achievement did the three students from Iiyama High School accomplish in January?

Q2 What is another name for the "Midori Bioreactor (MBR)"?

Q3 What is the shape and size of the CO2 Absorbing Ball?

Q4 What type of microorganism does the MBR encapsulate and what is its function?

Q5 How does euglena contribute to solving climate change?

Q6 What specific aspects did the students research to improve the efficiency of their technology?

Q7 How is this technology related to addressing climate change?



理系女子高校生が快挙 生徒3人の研究が世界大会1位に 二酸化炭素吸収する緑藻類入れた小さなボール開発 生徒「すごさを世界に広めたい」[NBS 長野放送ニュース]

<https://www.youtube.com/watch?v=5gmAE6v08IO>

What is the Taiwan International Science Fair?

1 The Taiwan International Science Fair (TISF) is an international science competition for high school students held every year in Taipei, Taiwan. It began in 2002, providing high school students from Taiwan and around the world with an opportunity to present their scientific research projects and compete in different fields. Participants compete in 13 fields, including biochemistry and physics. In addition to originality and practicality, participants' English presentation skills are also assessed.

2 This year's TISF kicked off on January 20th in Taipei City, bringing in a record numbers of participants to the largest event of its kind in the country. According to the organizer, it showcased 233 projects by 658 participants from Taiwan and 28 other countries and territories. The event lasted until January 25 and included workshops for both students and supervisors, science and culture tours, and project presentations.

supervisor 監督者

Q1 What is the Taiwan International Science Fair (TISF)?

Q2 What is the main purpose of the Taiwan International Science Fair?

Q3 What kind of skills are evaluated at the TISF?

Q4 What was significant about the number of participants at this year's TISF?

Q5 How many participants and projects were involved in this year's event?

Q6 What types of activities were included in the event?



International Science Fair

<https://twsf.ntsec.gov.tw/Article.aspx?a=276&lang=2>

High School Chemistry Grand Contest

[1] In October 2024, three students from Iiyama High School team had received the Zeon Challenge Award for their research on a “CO₂ Absorbing Ball” at the 19th High School Chemistry Grand Contest. A total of 302 students from over 90 teams that passed the initial document screening took part in 89 poster presentations and 10 oral presentations. By winning this award, they qualified to represent Japan at TISF.

[2] Kei Sakamoto, a judge from Zeon Corporation, praised the project and stated, “The idea of encapsulating live euglena into particles and the experimental methods used to achieve it are remarkable. Their keen observations and proactive approach to research were instrumental in their success.”

[3] The High School Chemistry Grand Contest, also known as the “Koshien of Chemistry,” started in 2004 by the Shibaura Institute of Technology. It provides a platform for high school and technical college students to nurture their creativity and passion for science.

[4] This Award recognizes innovative ideas and bold research. The contest aims to cultivate future leaders in science. The achievements of these young researchers demonstrate how science can solve pressing environmental issues.

document screening 書類選考 qualify to ~:~する資格を獲得する represent~:~を代表する
particle 粒子 proactive 先を見越した instrumental 役に立つ・有益な institute of technology 工科大学
bold 大胆な pressing 差し迫った ★このニュースで学んだ語()

Q1 What award did the three students from Iiyama High School receive at the 19th High School Chemistry Grand Contest in October 2024?

Q2 How many students and teams participated in the contest?

Q3 What was the selection process for the winners?"

Q4 What privilege is given to the winners?

Q5 What did Kei Sakamoto, the judge from Zeon Corporation, say about the students' project?

Q6 What is the High School Chemistry Grand Contest also known as, and who started it?

Q7 How does the contest help high school and technical college students?



高校化学グランドコンテスト 2024

<https://s-gracon.jp/2024/>

Euglena: Innovating Health, Sustainability, and Global Nutrition

① Euglena is a unique microorganism that exhibits characteristics of both animals and plants. It moves using flagella while also performing photosynthesis. It is rich in nutrients, particularly vitamins and minerals.

② In Japan, there is a company called *Euglena*. This biotech company engages in businesses such as developing healthcare products and biofuels using euglena. Founded in 2005, the company is known for three key achievements:

1) Nutritional supplements and cosmetics

... *Euglena* develops healthcare products rich in nutrients, including vitamins, minerals, amino acids, and dietary fiber.

2) Biofuels... *Euglena* has been researching and commercializing environmentally friendly biojet fuel. In March 2021, the company announced that renewable jet fuel made by *Euglena* was used in a government plane for the first time. However, *Euglena* admitted that the main raw material for the biojet fuel at this time was not algae, but waste cooking oil, and only a small amount of euglena was included. Although it has not yet been fully realized, biofuels are expected to become a sustainable energy source.

exhibit 示す	flagella: 鞭毛 (flagellum の複数形)	nutrient 栄養素	biotech = biotechnology
engage in ~: ~に携わる	amino acid アミノ酸	dietary fiber 食物繊維	

Q1 下線①について、ミドリムシのユニークさを詳しく説明しましょう。

Q2 What nutrients is euglena particularly rich in?

Q3 What type of company is *Euglena* in Japan?

Q4 When was the company *Euglena* founded?

Q5 ユーグレナ社は、どんな製品を作っていますか。

Q6 What type of fuel has *Euglena* been researching and commercializing?

Q7 When was *Euglena's* biojet fuel first used in a government plane?

Q8 What was the main raw material for *Euglena's* biojet fuel?

Q9 Why is biofuel considered an important innovation for sustainability?



ユーグレナ新たな挑戦 脱ミドリムシの狙い【Biz スクエア】 TBS News Dig Powered by JNN

https://www.youtube.com/watch?v=IJB_w498eTo&t=99s

3) Bangladesh Project

1 *Euglena* is committed to improving nutrition in Bangladesh. The company has distributed *Euglena* cookies, a type of nutritional supplement, to local children in Bangladesh to improve their health.

2 Mitsuru Izumo, the founder of *Euglena*, says, "I visited Bangladesh one summer when I was a university student. It was my very first-ever trip overseas. Seeing malnourished children in Bangladesh was a tremendous shock, and it inspired me to take action, ultimately leading to the founding of the company."

3 *Euglena* has launched a joint venture with the Grameen Group, founded by Dr. Muhammad Yunus, Bangladesh's first Nobel Peace Prize winner. The project aims to improve incomes and livelihoods in poverty-stricken rural areas of Bangladesh. This initiative has received international acclaim.

livelihood 暮らし・生活

poverty-stricken 貧しさに苦しんでいる

acclaim 絶賛

Q10 What is *Euglena*'s goal in Bangladesh?

Q11 What type of product has *Euglena* distributed to children in Bangladesh?

Q12 Why does *Euglena* distribute *Euglena* cookies?

Q13 When did Mitsuru Izumo, the founder of *Euglena*, visit Bangladesh for the first time?

Q14 Why was Izumo shocked when he visited Bangladesh?

Q15 How did Izumo's experience in Bangladesh influence his future actions?

Q16 What organization did *Euglena* collaborate with in Bangladesh?

Q17 What is the main goal of *Euglena*'s joint venture with the Grameen Group?



【Long ver.】 *Euglena* Genki Program 2023/ 「ユーグレナ GENKI プログラム」

<https://www.youtube.com/watch?v=S2JfpwmTJvM&t=58s>

★次の文を3回以上読んで、暗唱しましょう。

1. Three Japanese female students developed the "Midori Bioreactor (MBR)" and won the first prize in the biochemistry category at the Taiwan International Science Fair.
2. The "CO2 Absorbing Ball" is a transparent, ball-shaped device that encapsulates euglena, a type of microalgae that performs photosynthesis.
3. The company has distributed *Euglena* cookies, a type of nutritional supplement, to local children in Bangladesh to improve their health.

-
1. 三人の日本人女性学生が「ミドリバイオリアクター (MBR)」を開発し、台湾国際科学フェアの生化学部門で第一位を受賞しました。
 2. 「CO2 吸収ボール」は、光合成を行う微細藻類の一種であるユーグレナを封入した、透明で球状のデバイスです。
 3. その企業は、バングラデシュの地元の子どもたちの健康を改善するために、栄養補助食品の一種であるユーグレナクッキーを配布しています。

[Essay Writing]

1. Some people say that Japanese high school education should focus more on research activities rather than university exam preparation. Do you agree with this opinion?
2. Should more companies invest in biofuels like Euglena?