

Scientists attach a camera to a beetle

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Image: Mark Stone - University of Washington

Scientists have developed a tiny camera that can be put on the back of a beetle. The camera can record where the bug goes. This will give the scientists a bug's-eye view of the world. The researchers want to use the camera to explore places never seen before. Researcher Vikram Iyer explained why the camera could be useful. He said: "Insects can traverse rocky environments, which is really challenging for robots to do at this scale. So this system can also help us out by letting us see or collect samples from hard-to-navigate spaces." Mr Iyer is excited to see what the cameras record. He said: "This is the first time that we've had a first-person view from the back of a beetle while it's walking around."

The scientists are from the University of Washington in the USA. They wanted to develop a camera light enough for bugs to wear. It weighs just 250 grams*. Their wireless camera records images at up to five frames per second. A researcher said: "We have created a low-power, low-weight, wireless camera system that can capture a first-person view of what's happening from an actual live insect." He said one of the biggest challenges when making the camera was the battery. It had to be very small and very light, with enough power to last a few hours. The researchers stressed that no beetles were hurt in their tests and that all the insects "lived for at least a year" after the experiments finished.

* Error: The camera weighs 250 milligrams, not 250 grams.

Sources: bgr.com / bbc.com / cnn.com

Writing

Having a bug's-eye view of the world is important for us. Discuss.

Chat

Talk about these words from the article.

tiny / beetle / bug / scientist / camera / environment / robot / system / first time / light / wireless / capture / insect / challenge / battery / power / hurt / test / stress

True / False

- a) The article said the new camera will give a bug's eye view of the world. T / F
- b) The camera will help scientists see places never seen before. T / F
- c) The article says tiny robots can get to the same places that beetles can. T / F
- d) This is the second time we have had a first-person view from a beetle. T / F
- e) The new camera weighs just 25 grams. T / F
- f) The new camera can record up to five frames a second. T / F
- g) The easiest thing about making the camera was designing the battery. T / F
- h) No beetles were harmed during the camera tests. T / F

Synonym Match

(The words in **bold** are from the news article.)

- | | |
|------------------------|-------------------|
| 1. developed | a. cross |
| 2. explore | b. catch |
| 3. traverse | c. perspective |
| 4. challenging | d. put on |
| 5. view | e. tests |
| 6. wear | f. travel through |
| 7. images | g. real |
| 8. capture | h. invented |
| 9. actual | i. pictures |
| 10. experiments | j. testing |

Discussion – Student A

- a) What do you think about what you read?
- b) Would you like to wear a tiny camera?
- c) Would you like to work as a beetle researcher?
- d) How might this technology help beetles?
- e) How might this technology help humans?
- f) Is it ethical to do use beetles in experiments?
- g) What would people see every day if you wore a camera?
- h) What questions would you like to ask the researchers?

Phrase Match

- | | |
|--|-----------------------------|
| 1. put on the back | a. frames per second |
| 2. The camera can record | b. seen before |
| 3. explore places never | c. were hurt in their tests |
| 4. Insects can traverse rocky | d. a first-person view |
| 5. This is the first time that we've had | e. where the bug goes |
| 6. a camera light enough | f. making the camera |
| 7. records images at up to five | g. wireless camera system |
| 8. a low-power, low-weight, | h. of a beetle |
| 9. one of the biggest challenges when | i. for bugs to wear |
| 10. The researchers stressed that no beetles | j. environments |

Discussion – Student B

- What do you think of beetles?
- How useful are beetles?
- What beetles do you like and dislike?
- What do you think the camera will record?
- What is a bug's eye view of the world?
- What places would you like to see that you've never seen before?
- What other insects could cameras be put on?
- Would you like to see a camera travel inside your body?

Spelling

- Scientists have eepldoev a tiny camera
- a s'gbu-yee view of the world
- use the camera to opelxre places
- this eytsms can also help us
- collect lempssa
- hard-to-eaviantg spaces
- records iegasm at up to five frames per second
- reaucpt a first-person view
- from an alutac live insect
- one of the biggest ncaeshlelg
- uhogne power to last a few hours
- after the eexrmepisnt finished

Answers – Synonym Match

1. h	2. f	3. a	4. j	5. c
6. d	7. i	8. b	9. g	10. e

Role Play

Role A – Beetles

You think beetles are the best insects. Tell the others three reasons why. Tell them what is wrong with their insects. Also, tell the others which is the worst of these (and why): ants, worms or spiders.

Role B – Ants

You think ants are the best insects. Tell the others three reasons why. Tell them what is wrong with their insects. Also, tell the others which is the worst of these (and why): beetles, worms or spiders.

Role C – Worms

You think worms are the best insects. Tell the others three reasons why. Tell them what is wrong with their insects. Also, tell the others which is the worst of these (and why): ants, beetles or spiders.

Role D – Spiders

You think spiders are the best insects. Tell the others three reasons why. Tell them what is wrong with their insects. Also, tell the others which is the worst of these (and why): ants, worms or beetles.

Speaking – Bugs

Rank these with your partner. Put the best bugs at the top. Change partners often and share your rankings.

- | | |
|---------------|---------------|
| • worms | • beetles |
| • ladybirds | • ants |
| • spiders | • bees |
| • cockroaches | • butterflies |

Answers – True False

a	T	b	T	c	F	d	F	e	F	f	T	g	F	h	T
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Answers to Phrase Match and Spelling are in the text.