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## **Nobel prize for mice researchers**

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**9<sup>th</sup> October, 2007**

## THE ARTICLE

### **Nobel prize for mice researchers**

Three scientists have won the Nobel Prize for Medicine for their work in creating special mice that will help fight human diseases. The medicine prize is the first Nobel award to be given this year. American researchers Mario Capecchi and Oliver Smithies and Briton Martin Evans were awarded the honour for their discovery that many scientists say will change medicine and the world forever. The trio discovered how to breed mice that had cells in their bodies exactly like those found in human diseases. This means researchers in the future will be able to understand many human illnesses and perhaps find cures for them. The rodents have the nickname "knockout mice" because of their potential to target the specific genes that cause diseases in humans.

The Nobel committee called the researchers' work a "ground-breaking discovery". Members said it "led to the creation of an immensely powerful technology". The genetically-engineered mice provide scientists with a perfect laboratory model that will unlock the secrets of the very basics of diseases ranging from Alzheimer's to cancer, the committee said. It added that there was a very exciting time ahead in testing new drugs, and of wiping out the threat from many diseases. A Nobel spokesperson commented on the importance of the new discovery, saying: "Its impact on the understanding of gene function and its benefits to mankind will continue to increase over many years to come." The three winners will share their \$1.7 million prize.

## WARM-UPS

**1. MICE:** Walk around the class and talk to other students about mice. Change partners often. After you finish, sit with your original partner(s) and share what you found out.

**2. CHAT:** In pairs / groups, decide which of these topics or words from the article are most interesting and which are most boring.

*scientists / Nobel Prizes / mice / diseases / cells / honours / cures / nicknames / discoveries / genes / technology / unlocking secrets / new drugs / prizes*

Have a chat about the topics you liked. Change topics and partners frequently.

**3. NOBEL PRIZES:** Discuss these 'headlines' with your partner(s). What is the story behind them? Do you think it's possible for them to come true? Share what you talked about with different partners.

- George W. Bush wins the Nobel Peace Prize
- Harry Potter author scoops Nobel Prize for Literature
- Marion Jones wins the very first Nobel Sports Prize
- Robert Mugabe awarded Nobel Prize for Economics
- Bill Gates shocked at his Nobel Prize for Physics
- Thirteen-year-old bags Nobel Prize for Mathematics

**4. NEW DRUGS:** Talk to your partner(s) about these (imaginary) new drugs and treatments. What do you think they do? Would you take them? How much would you pay for them? Talk to new partners about which things were most popular.

- The English Language pill
- The "live to be 150, look 30" cream
- Happiness drops
- Lifelong suntan treatment
- Choose your eye-colour tonic
- Bye-bye bad breath syrup
- The "No-need-to-sleep" spray
- Confidence boosters
- Telepathy tablets
- Other \_\_\_\_\_

**5. SCIENTIST:** Spend one minute writing down all of the different words you associate with the word "scientist". Share your words with your partner(s) and talk about them. Together, put the words into different categories.

**6. QUICK DEBATE:** Students A think new technologies to increase our lifespans is great. Students B believe scientists are adding to the problem of overpopulation. Debate this with your partners. Change partners often.

## BEFORE READING / LISTENING

**1. TRUE / FALSE:** Look at the article's headline and guess whether these sentences are true (T) or false (F):

- a. Scientists have won the Nobel Peace Prize for creating calm mice. T / F
- b. The Nobel Medicine Prize is the last Nobel prize given every year. T / F
- c. The scientists duplicated cells from human diseases in lab mice. T / F
- d. The lab mice have been dubbed the "knockout mice". T / F
- e. The Nobel committee said the discovery broke new ground. T / F
- f. The new discovery means secrets of our bodies will be unlocked. T / F
- g. The importance of the scientists' work will increase for many years. T / F
- h. The prize winners will each receive \$1.7 million in prize money. T / F

**2. SYNONYM MATCH:** Match the following synonyms from the article:

- |                    |                   |
|--------------------|-------------------|
| 1. won             | a. extremely      |
| 2. fight           | b. cutting-edge   |
| 3. discovery       | c. threesome      |
| 4. trio            | d. the human race |
| 5. potential       | e. eradicating    |
| 6. ground-breaking | f. possibility    |
| 7. immensely       | g. combat         |
| 8. wiping out      | h. effect         |
| 9. impact          | i. picked up      |
| 10. mankind        | j. finding        |

**3. PHRASE MATCH:** Match the following phrases from the article (sometimes more than one combination is possible):

- |   |                                |
|---|--------------------------------|
| 1. creating special mice that will help     | a. breaking discovery          |
| 2. awarded the honour                       | b. basics of diseases          |
| 3. cells in their bodies exactly like those | c. diseases in humans          |
| 4. understand many human illnesses and      | d. powerful technology         |
| 5. target the specific genes that cause     | e. perhaps find cures for them |
| 6. a ground-                                | f. continue to increase        |
| 7. it led to the creation of an immensely   | g. fight human diseases        |
| 8. unlock the secrets of the very           | h. for their discovery         |
| 9. wiping out the threat                    | i. found in human diseases     |
| 10. its benefits to mankind will            | j. from many diseases          |

## WHILE READING / LISTENING

**GAP FILL:** Put the words into the gaps in the text.

### Nobel prize for mice researchers

Three scientists have won the Nobel Prize for Medicine for their \_\_\_\_\_ in creating special mice that will help fight human diseases. The medicine prize is the first Nobel \_\_\_\_\_ to be given this year. American researchers Mario Capecchi and Oliver Smithies and Briton Martin Evans were \_\_\_\_\_ the honour for their discovery that many scientists say will change medicine and the world forever. The \_\_\_\_\_ discovered how to \_\_\_\_\_ mice that had cells in their bodies \_\_\_\_\_ like those found in human diseases. This means researchers in the future will be able to understand many human illnesses and perhaps find \_\_\_\_\_ for them. The rodents have the nickname "knockout mice" because of their potential to \_\_\_\_\_ the specific genes that cause diseases in humans.

*exactly*

*award*

*trio*

*breed*

*work*

*target*

*awarded*

*cures*

The Nobel committee called the researchers' work a "\_\_\_\_\_ -breaking discovery". Members said it "led to the creation of an \_\_\_\_\_ powerful technology". The genetically-engineered mice provide scientists with a perfect laboratory model that will \_\_\_\_\_ the secrets of the very basics of diseases \_\_\_\_\_ from Alzheimer's to cancer, the committee said. It added that there was a very exciting time ahead in testing new drugs, and of \_\_\_\_\_ out the threat from many diseases. A Nobel spokesperson commented on the importance of the new discovery, saying: "Its \_\_\_\_\_ on the understanding of gene function and its \_\_\_\_\_ to mankind will continue to increase over many years to \_\_\_\_\_." The three winners will share their \$1.7 million prize.

*ranging*

*immensely*

*benefits*

*impact*

*unlock*

*ground*

*come*

*wiping*

## LISTENING

Listen and fill in the spaces.

### Nobel prize for mice researchers

Three scientists have won the Nobel Prize for Medicine \_\_\_\_\_ creating special mice \_\_\_\_\_ human diseases. The medicine prize is the first Nobel award to be given this year. American researchers Mario Capecchi and Oliver Smithies and Briton Martin Evans were awarded the honour \_\_\_\_\_ many scientists say will change medicine and the world forever. The trio discovered how to \_\_\_\_\_ their bodies exactly like those found in human diseases. This means researchers in the future will be able to understand many human illnesses and \_\_\_\_\_ them. The rodents have the nickname "knockout mice" because of their potential to target the specific genes \_\_\_\_\_ humans.

The Nobel committee called the researchers' work a "ground-breaking discovery". Members \_\_\_\_\_ creation of an immensely powerful technology". The genetically-engineered \_\_\_\_\_ with a perfect laboratory model that will \_\_\_\_\_ very basics of diseases ranging from Alzheimer's to cancer, the committee said. It added that there was a very exciting \_\_\_\_\_ new drugs, and of wiping out the threat from many diseases. A Nobel spokesperson commented on the importance of the new discovery, saying: "Its impact on the understanding of gene function \_\_\_\_\_ mankind will continue to increase \_\_\_\_\_ come." The three winners will share their \$1.7 million prize.

## AFTER READING / LISTENING

**1. WORD SEARCH:** Look in your dictionaries / computer to find collocates, other meanings, information, synonyms ... for the words **'break'** and **'ground'**.

<b>break</b>	<b>ground</b>
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- Share your findings with your partners.
- Make questions using the words you found.
- Ask your partner / group your questions.

**2. ARTICLE QUESTIONS:** Look back at the article and write down some questions you would like to ask the class about the text.

- Share your questions with other classmates / groups.
- Ask your partner / group your questions.

**3. GAP FILL:** In pairs / groups, compare your answers to this exercise. Check your answers. Talk about the words from the activity. Were they new, interesting, worth learning...?

**4. VOCABULARY:** Circle any words you do not understand. In groups, pool unknown words and use dictionaries to find their meanings.

**5. TEST EACH OTHER:** Look at the words below. With your partner, try to recall exactly how these were used in the text:

<ul style="list-style-type: none"><li>• special</li><li>• first</li><li>• discovery</li><li>• trio</li><li>• exactly</li><li>• potential</li></ul>	<ul style="list-style-type: none"><li>• ground-breaking</li><li>• immensely</li><li>• unlock</li><li>• wiping</li><li>• impact</li><li>• benefits</li></ul>
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## STUDENT MICE SURVEY

Write five GOOD questions about mice in the table. Do this in pairs. Each student must write the questions on his / her own paper.

When you have finished, interview other students. Write down their answers.

	STUDENT 1	STUDENT 2	STUDENT 3
Q.1.			
Q.2.			
Q.3.			
Q.4.			
Q.5.			

- Now return to your original partner and share and talk about what you found out. Change partners often.
- Make mini-presentations to other groups on your findings.



## **DISCUSSION**

### STUDENT A's QUESTIONS (Do not show these to student B)

- a) What did you think when you read the headline?
- b) What do you think of research on animals?
- c) Are you excited about the thought that scientists will find many new cures for human diseases?
- d) What do you think it's like to win a Nobel prize?
- e) Do you think this new discovery will change the world forever?
- f) Have you ever won a prize or given a special honour?
- g) Do you understand what the name "knockout mouse" means?
- h) Do you think the scientists are playing God?
- i) What do you know about the other Nobel prizes?



### STUDENT B's QUESTIONS (Do not show these to student A)

- a) Did you like reading this article?
- b) Do you think this is a truly "ground-breaking" discovery?
- c) What do you think is the most ground-breaking discovery of all time?
- d) When do you think scientists will discover cures for all human diseases?
- e) Which diseases would you like scientists to wipe out first, and why?
- f) Which other areas of medicine would you like scientists to research?
- g) Do you think the prize money is enough?
- h) What questions would you like to ask the winners?
- i) Did you like this discussion?

## LANGUAGE

**CORRECT WORD:** Put the correct words from a–d below in the article.

### Nobel prize for mice researchers

Three scientists have won the Nobel Prize for Medicine for their (1) \_\_\_\_\_ in creating special mice that will help (2) \_\_\_\_\_ human diseases. The medicine prize is the first Nobel award to be given this year. American researchers Mario Capecchi and Oliver Smithies and (3) \_\_\_\_\_ Martin Evans were awarded the honour for their discovery that many scientists say will change medicine and the world forever. The trio discovered how to breed mice that had cells in their bodies (4) \_\_\_\_\_ like those found in human diseases. This means researchers (5) \_\_\_\_\_ the future will be able to understand many human illnesses and perhaps find cures for them. The rodents have the nickname "knockout mice" because of their potential to target the specific genes that cause diseases (6) \_\_\_\_\_ humans.

The Nobel committee called the researchers' work a "(7) \_\_\_\_\_ -breaking discovery". Members said it "led to the creation of an immensely powerful technology". The genetically-engineered mice provide scientists (8) \_\_\_\_\_ a perfect laboratory model that will unlock the secrets of the very basics of diseases (9) \_\_\_\_\_ from Alzheimer's to cancer, the committee said. It added that there was a very exciting time (10) \_\_\_\_\_ in testing new drugs, and of wiping out the threat from many diseases. A Nobel spokesperson commented on the importance of the new discovery, saying: "Its impact on the understanding of gene function and its benefits (11) \_\_\_\_\_ mankind will continue to increase over many years to (12) \_\_\_\_\_." The three winners will share their \$1.7 million prize.

- |     |             |              |              |             |
|-----|-------------|--------------|--------------|-------------|
| 1.  | (a) worked  | (b) worker   | (c) work     | (d) working |
| 2.  | (a) fight   | (b) fighting | (c) fights   | (d) fighter |
| 3.  | (a) GB      | (b) Britain  | (c) British  | (d) Briton  |
| 4.  | (a) exact   | (b) exactly  | (c) examined | (d) examine |
| 5.  | (a) with    | (b) from     | (c) in       | (d) living  |
| 6.  | (a) by      | (b) for      | (c) with     | (d) in      |
| 7.  | (a) ground  | (b) earth    | (c) floor    | (d) ceiling |
| 8.  | (a) on      | (b) with     | (c) out      | (d) off     |
| 9.  | (a) ranged  | (b) ranges   | (c) range    | (d) ranging |
| 10. | (a) abreast | (b) heading  | (c) ahead    | (d) around  |
| 11. | (a) with    | (b) to       | (c) by       | (d) on      |
| 12. | (a) come    | (b) go       | (c) arrive   | (d) here    |



## **HOMEWORK**

**1. VOCABULARY EXTENSION:** Choose several of the words from the text. Use a dictionary or Google's search field (or another search engine) to build up more associations / collocations of each word.

**2. INTERNET:** Search the Internet and find more information about the different Nobel prizes. Talk about what you discover with your partner(s) in the next lesson.

**3. ANIMAL TESTING:** Make a poster about testing on animals. Write about the arguments for and against. Show your poster to your classmates in the next lesson. Did you all include similar things?

**4. MAGAZINE ARTICLE:** Write a magazine article about the possibility of all human diseases being wiped out. Include imaginary interviews with a doctor, a population expert and someone with a deadly disease.

Read what you wrote to your classmates in the next lesson. Write down new words and expressions.

**5. LETTER:** Write a letter to the trio. Ask them three questions about their research and prize. Give them three pieces of advice on how to spend their prize money. Read your letter to your partner(s) in your next lesson. Your partner(s) will answer your questions.

## ANSWERS

### TRUE / FALSE:

a. F      b. F      c. T      d. T      e. T      f. T      g. T      h. F

### SYNONYM MATCH:

- |                    |                   |
|--------------------|-------------------|
| 1. won             | a. picked up      |
| 2. fight           | b. combat         |
| 3. discovery       | c. finding        |
| 4. trio            | d. threesome      |
| 5. potential       | e. possibility    |
| 6. ground-breaking | f. cutting-edge   |
| 7. immensely       | g. extremely      |
| 8. wiping out      | h. eradicating    |
| 9. impact          | i. effect         |
| 10. mankind        | j. the human race |

### PHRASE MATCH:

- |   |                                |
|---|--------------------------------|
| 1. creating special mice that will help     | a. fight human diseases        |
| 2. awarded the honour                       | b. for their discovery         |
| 3. cells in their bodies exactly like those | c. found in human diseases     |
| 4. understand many human illnesses and      | d. perhaps find cures for them |
| 5. target the specific genes that cause     | e. diseases in humans          |
| 6. a ground-                                | f. breaking discovery          |
| 7. it led to the creation of an immensely   | g. powerful technology         |
| 8. unlock the secrets of the very           | h. basics of diseases          |
| 9. wiping out the threat                    | i. from many diseases          |
| 10. its benefits to mankind will            | j. continue to increase        |

### GAP FILL:

#### Nobel prize for mice researchers

Three scientists have won the Nobel Prize for Medicine for their **work** in creating special mice that will help fight human diseases. The medicine prize is the first Nobel **award** to be given this year. American researchers Mario Capecchi and Oliver Smithies and Briton Martin Evans were **awarded** the honour for their discovery that many scientists say will change medicine and the world forever. The **trio** discovered how to **breed** mice that had cells in their bodies **exactly** like those found in human diseases. This means researchers in the future will be able to understand many human illnesses and perhaps find **cures** for them. The rodents have the nickname "knockout mice" because of their potential to **target** the specific genes that cause diseases in humans.

The Nobel committee called the researchers' work a "**ground-breaking** discovery". Members said it "led to the creation of an **immensely** powerful technology". The genetically-engineered mice provide scientists with a perfect laboratory model that will **unlock** the secrets of the very basics of diseases **ranging** from Alzheimer's to cancer, the committee said. It added that there was a very exciting time ahead in testing new drugs, and of **wiping** out the threat from many diseases. A Nobel spokesperson commented on the importance of the new discovery, saying: "Its **impact** on the understanding of gene function and its **benefits** to mankind will continue to increase over many years to **come**." The three winners will share their \$1.7 million prize.

### LANGUAGE WORK

1 - c    2 - a    3 - d    4 - b    5 - c    6 - d    7 - a    8 - b    9 - d    10 - c    11 - b    12 - a