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#### Level 3 – 16th May, 2021

### Brain implant lets man write using thoughts

**FREE online quizzes, mp3 listening and more for this lesson here:** https://breakingnewsenglish.com/2105/210516-brain-implants.html

#### Contents

The Article	2	Discussion (Student-Created Qs)	15
Warm-Ups	3	Language Work (Cloze)	16
Vocabulary	4	Spelling	17
Before Reading / Listening	5	Put The Text Back Together	18
Gap Fill	6	Put The Words In The Right Order	19
Match The Sentences And Listen	7	Circle The Correct Word	20
Listening Gap Fill	8	Insert The Vowels (a, e, i, o, u)	21
Comprehension Questions	9	Punctuate The Text And Add Capitals	22
Multiple Choice - Quiz	10	Put A Slash ( / ) Where The Spaces Are	23
Role Play	11	Free Writing	24
After Reading / Listening	12	Academic Writing	25
Student Survey	13	Homework	26
Discussion (20 Questions)	14	Answers	27

#### Please try Levels 0, 1 and 2 (they are easier).



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### THE ARTICLE

From https://breakingnewsenglish.com/2105/210516-brain-implants.html

A man who cannot move his arms or hands has used his thoughts to write on a computer screen. The man has been paralyzed from the neck down for almost a decade. Scientists from Stanford University in the USA implanted two tiny sensors into the man's brain. The scientists gave this method two names - "brain-to-text" and "mindwriting". The man wants to remain anonymous, so scientists have called him T5. He became paralyzed after suffering a spinal cord injury ten years ago. The implants have allowed T5 to use his mind to write. He can write 90 characters (about 18 words) per minute. This is five words slower than the average person writing a text message on a smartphone.

The mindwriting system is very simple, but it involved a lot of advanced technology. Scientists asked T5 to imagine holding a pen and then writing a sentence on a paper. The sensors in T5's brain detected the activity in his brain as he imagined writing. A computer decoded this activity into text on a screen. The scientists used a special algorithm to do this. Professor Jaimie Henderson, a Stanford University researcher, hopes this research could help millions of paralyzed people, and those who have lost the ability to speak, to write again. He said: "The goal is to restore their ability to communicate by text." This technology may one day help anyone to write at the speed of thought.

Sources: https://edition.cnn.com/2021/05/13/americas/paralyzed-handwriting-scn-scli-intl/index.html https://www.the-scientist.com/news-opinion/brain-computer-interface-user-types-90-charactersper-minute-with-mind-68762 https://www.nature.com/articles/d41586-021-00776-8

#### WARM-UPS

**1. THE BRAIN:** Students walk around the class and talk to other students about the brain. Change partners often and share your findings.

**2. CHAT:** In pairs / groups, talk about these topics or words from the article. What will the article say about them? What can you say about these words and your life?

arms / screen / neck / tiny / names / mindwriting / paralyzed / implants / average / system / simple / advanced / technology / sentence / brain / millions / communicate

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

**3. BRAIN IMPLANTS:** Students A **strongly** believe brain implants will help us download whole languages in the future; Students B **strongly** believe this is impossible. Change partners again and talk about your conversations.

**4. IMPLANTS:** How could brain implants help us? What do you think? Complete this table with your partner(s). Change partners often and share what you wrote.

	How Implants Could Help	Your Thoughts?
Learning English		
Walking disabilities		
Music		
Mental Health		
Peacemaking		
Business		

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

**6. COMMUNICATION:** Rank these with your partner. Put the best ways to communicate at the top. Change partners often and share your rankings.

- Face-to-face speech
- Writing
- Body language

- Social media posts
- Letters
- Phone calls

• SMS

• Mind reading

3

#### **VOCABULARY MATCHING**

#### Paragraph 1

1.	paralyzed	a.	Anything about the spine (backbone).
2.	decade	b.	Very, very small.
3.	tiny	c.	A period of ten years.
4.	anonymous	d.	Normal; usual.
5.	spinal	e.	Of a part of the body that the person cannot move.
6.	injury	f.	Of a person not identified by name; of unknown name.
7.	average	g.	An instance of being harmed or damaged.
Pai	ragraph 2		
8.	involved	h.	A computer program that can calculate things or solve problems.
8. 9.	involved sensor	h. i.	
			things or solve problems. Share or exchange information, news, or
9.	sensor	i.	<ul><li>things or solve problems.</li><li>Share or exchange information, news, or ideas.</li><li>Bring something back to the way it was</li></ul>
9. 10.	sensor detect	i. j.	<ul><li>things or solve problems.</li><li>Share or exchange information, news, or ideas.</li><li>Bring something back to the way it was before.</li><li>A small machine or device that can measure</li></ul>
9. 10. 11.	sensor detect algorithm	i. j. k.	<ul><li>things or solve problems.</li><li>Share or exchange information, news, or ideas.</li><li>Bring something back to the way it was before.</li><li>A small machine or device that can measure and record something.</li></ul>

4

### **BEFORE READING / LISTENING**

From https://breakingnewsenglish.com/2105/210516-brain-implants.html

#### **1. TRUE / FALSE:** Read the headline. Guess if a-h below are true (T) or false (F).

- 1. The man in the article cannot move his body below his neck. **T / F**
- 2. Scientists from Yale University in the USA helped the paralyzed man. T / F
- 3. The scientists called their system "mindwriting" and "brain-to-text". T / F
- 4. The man can write about 18 words per minute using his mind. **T / F**
- 5. The man was able to hold a pen after scientists asked him to. **T / F**
- 6. A special algorithm was used to translate the man's thoughts into text. **T / F**
- 7. A scientist hopes the technology will help people who cannot speak. T / F
- 8. The technology might allow us to write at the speed of thought. **T / F**

#### 2. SYNONYM MATCH: (The words in **bold** are from the news article.)

- 1. decade
- 2. implanted
- 3. method
- 4. suffering
- 5. average
- 6. simple
- 7. detected
- 8. text
- 9. ability
- 10. help

- a. noticed
- b. procedure
- c. ordinary
- d. assist
- e. 10 years
- f. words
- g. experiencing
- h. capacity
- i. inserted
- j. straightforward

**3. PHRASE MATCH:** (Sometimes more than one choice is possible.)

- 1. A man who cannot
- 2. The man has been paralyzed from
- 3. The man wants to remain
- 4. paralyzed after suffering a
- 5. five words slower than the
- 6. it involved a lot of advanced
- 7. A computer decoded this activity into
- 8. scientists used a special
- 9. restore their ability to communicate
- 10. help anyone to write at the speed

- a. spinal cord injury
- b. average person
- c. by text
- d. text on a screen
- e. the neck down
- f. of thought
- g. move his arms or hands
- h. technology
- i. anonymous
- j. algorithm to do this

### **GAP FILL**

From https://breakingnewsenglish.com/2105/210516-brain-implants.html

A man who cannot move his arms or hands has used his	method
(1) to write on a computer screen. The man	injury
has been paralyzed from the (2) down for	thoughts
almost a decade. Scientists from Stanford University in the USA	-
implanted two (3) sensors into the man's	message
brain. The scientists gave this ${}_{(4)}$ two names -	tiny
"brain-to-text" and "mindwriting". The man wants to	characters
(5) anonymous, so scientists have called him	neck
T5. He became paralyzed after suffering a spinal cord	
(6) ten years ago. The implants have allowed	remain
T5 to use his mind to write. He can write 90	
(7) (about 18 words) per minute. This is five	
words slower than the average person writing a text	
(8) on a smartphone.	

The mindwriting system is very (9) \_\_\_\_\_, but it this involved a lot of advanced technology. Scientists asked T5 to millions (10) \_\_\_\_\_ holding a pen and then writing a sentence simple on a paper. The sensors in T5's brain (11) the speed activity in his brain as he imagined writing. A computer decoded (12) activity into text on a screen. The detected scientists used a special (13) to do this. goal Professor Jaimie Henderson, a Stanford University researcher, imagine hopes this research could help (14) \_\_\_\_\_ of algorithm paralyzed people, and those who have lost the ability to speak, to write again. He said: "The (15) \_\_\_\_\_\_ is to restore their ability to communicate by text." This technology may one day help anyone to write at the (16) \_\_\_\_\_ of thought.

6

#### **LISTENING** – Guess the answers. Listen to check.

From https://breakingnewsenglish.com/2105/210516-brain-implants.html

<ol> <li>A man who cannot move his arms or hands has used his</li> <li>a. thoughts too write</li> <li>b. thoughts to writhe</li> </ol>
c. thoughts too writhe
d. thoughts to write
2) The man has been paralyzed from
a. the neck dawn b. the neck down
c. the neck drown
d. the neck drone
3) and "mindwriting". The man wants to remain
a. anonymously, sew
b. anonymous, sow
c. anonymous, so
d. anonymously, saw
<ol><li>The implants have allowed T5 to use his</li></ol>
a. mound to write
b. remind to write c. minder to write
d. mind to write
5) about 18 words) per minute. This is five words slower than
a. the averaged person
b. the average person
c. the averages person
d. the averaging person
<ul> <li>6) The mindwriting system is very simple, but it involved a lot</li> <li>a. of advantage technology</li> </ul>
b. of advances technology
c. of advance technology
d. of advanced technology
7) The sensors in T5's brain detected the activity in his brain as
a. he imagine it writing
b. he imagines writing
<ul><li>c. he imagine writing</li><li>d. he imagined writing</li></ul>
8) researcher, hopes this research could help millions
a. of paralegal people
b. of paralysis people
c. of paralyze people
d. of paralyzed people
<ol><li>He said: "The goal is to restore their ability to</li></ol>
a. communicate by text
b. communicate by test
<ul><li>c. communicate by tux</li><li>d. communicate by texture</li></ul>
10) This technology may one day help anyone to write at the
a sped of thought

- a. sped of thought
- b. speed of thought
- c. speedy of thought
- d. spud of thought

#### LISTENING – Listen and fill in the gaps

From https://breakingnewsenglish.com/2105/210516-brain-implants.html

A man who cannot move (1) \_\_\_\_\_\_\_ hands has used his thoughts to write on a computer screen. The man has (2) \_\_\_\_\_\_\_ the neck down for almost a decade. Scientists from Stanford University in the USA implanted (3) \_\_\_\_\_\_ into the man's brain. The scientists gave this method two names - "brain-to-text" and "mindwriting". The man wants (4) \_\_\_\_\_\_, so scientists have called him T5. He became paralyzed after suffering a spinal cord injury ten years ago. The implants have allowed T5 to use his (5) \_\_\_\_\_\_\_. He can write 90 characters (about 18 words) per minute. This is five words slower than (6) \_\_\_\_\_\_\_ writing a text message on a smartphone.

The mindwriting system (7) \_\_\_\_\_\_, but it involved a lot of advanced technology. Scientists asked T5 to imagine holding a pen and then (8) \_\_\_\_\_\_\_ on a paper. The sensors in T5's brain detected the activity in his brain as he imagined writing. A computer decoded this activity into (9) \_\_\_\_\_\_\_ screen. The scientists used a special algorithm to do this. Professor Jaimie Henderson, a Stanford University researcher, (10) \_\_\_\_\_\_ could help millions of paralyzed people, and those who have lost the (11) \_\_\_\_\_\_, to write again. He said: "The goal is to restore their ability to communicate by text." This technology may one day help anyone to write at the (12) \_\_\_\_\_\_.

8

### **COMPREHENSION QUESTIONS**

From <a href="https://breakingnewsenglish.com/2105/210516-brain-implants.html">https://breakingnewsenglish.com/2105/210516-brain-implants.html</a>

- 1. For how long has the man been paralyzed?
- 2. How many sensors did scientists implant into the man's brain?
- 3. What did scientists call their method besides "brain-to-text"?
- 4. What did scientists nickname the man?
- 5. How many words per minute can the man write with his mind?
- 6. What does the article say the mindwriting system involves a lot of?
- 7. What detected activity in the man's brain?
- 8. What special thing did the scientists use to decode the man's thoughts?
- 9. Who else could the technology help besides paralyzed people?
- 10. How fast could we be able to write in the future?

# **MULTIPLE CHOICE - QUIZ**

From <u>https://breakingnewsenglish.com/2105/210516-brain-implants.html</u>

<ol> <li>For how long has the man been paralyzed?</li> <li>a) over 10 years</li> <li>b) almost a decade</li> <li>c) exactly a decade</li> <li>d) just fewer than 10 years</li> </ol>	<ul> <li>6) What does the article say the mindwriting system involves a lot of?</li> <li>a) hard work</li> <li>b) sentences</li> <li>c) advanced technology</li> <li>d) paragraphs</li> </ul>
<ul> <li>2) How many sensors did scientists implant into the man's brain?</li> <li>a) 5</li> <li>b) 4</li> <li>c) 3</li> <li>d) 2</li> </ul>	<ul> <li>7) What detected activity in the man's brain?</li> <li>a) a dictionary</li> <li>b) brain cells</li> <li>c) a scanner</li> <li>d) sensors</li> </ul>
<ul> <li>3) What did scientists call their method besides "brain-to-text"?</li> <li>a) mindwriting</li> <li>b) writingmind</li> <li>c) brainwriting</li> <li>d) writingbrain</li> <li>4) What did scientists nickname the</li> </ul>	<ul> <li>8) What special thing did the scientists use to decode the man's thoughts?</li> <li>a) an algorithm</li> <li>b) a smartphone</li> <li>c) a pen</li> <li>d) a dictionary</li> </ul>
man? a) S5 b) T4 c) T5 d) P4 5) How many words per minute can	<ul> <li>9) Who else could the technology help besides paralyzed people?</li> <li>a) people who cannot speak</li> <li>b) doctors</li> <li>c) scientists</li> <li>d) researchers</li> </ul>
<ul> <li>b) now many words per minute can the man write with his mind?</li> <li>a) about 90</li> <li>b) about 18</li> <li>c) about 5</li> <li>d) millions</li> </ul>	<ul> <li>10) How fast could we be able to write in the future?</li> <li>a) pretty fast</li> <li>b) the speed of thought</li> <li>c) as slow as a snail</li> <li>d) as fast as a cheetah</li> </ul>

### **ROLE PLAY**

From https://breakingnewsenglish.com/2105/210516-brain-implants.html

#### Role A – Body Language

You think body language is the best form of communication. Tell the others three reasons why. Tell them what is wrong with their forms. Also, tell the others which is the worst of these (and why): phone calls, writing letters or SMS texts.

#### **Role B – Phone Calls**

You think phone calls are the best form of communication. Tell the others three reasons why. Tell them what is wrong with their forms. Also, tell the others which is the worst of these (and why): body language, writing letters or SMS texts.

#### **Role C – Writing Letters**

You think writing letters is the best form of communication. Tell the others three reasons why. Tell them what is wrong with their forms. Also, tell the others which is the worst of these (and why): phone calls, body language or SMS texts.

#### **Role D – SMS Texts**

You think SMS texts are the best form of communication. Tell the others three reasons why. Tell them what is wrong with their forms. Also, tell the others which is the worst of these (and why): phone calls, writing letters or body language.

# **AFTER READING / LISTENING**

From https://breakingnewsenglish.com/2105/210516-brain-implants.html

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

brain	thought

- 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 how they were used in the text:

• arms	simple
• neck	• paper
• tiny	• text
• remain	millions
• ten	• goal
<ul> <li>slower</li> </ul>	• speed

### THE BRAIN SURVEY

From <u>https://breakingnewsenglish.com/2105/210516-brain-implants.html</u>

Write five GOOD questions about the brain 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.

### THE BRAIN DISCUSSION

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

- 1. What did you think when you read the headline?
- 2. What images are in your mind when you hear the word 'brain'?
- 3. What do you think of the brain?
- 4. What do you know about brain implants?
- 5. What do you think of putting sensors in the brain?
- 6. How will technology be able to help people who are paralyzed?
- 7. What do you think of brain-to-text technology?
- 8. What do you think of writing messages on smartphones?
- 9. Are there any dangers with brain implants?
- 10. What advice do you have for T5?

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#### THE BRAIN DISCUSSION

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

- 11. Did you like reading this article? Why/not?
- 12. What do you think of when you hear the word 'implant'?
- 13. What do you think about what you read?
- 14. What do you think of the idea of 'mindwriting'?
- 15. What advanced technology do you like?
- 16. What do you think of brain implants allowing us to learn languages?
- 17. Might brain implants mean governments could control us?
- 18. What would change if we could write at the speed of thought?
- 19. What do you think of never needing to use a pen again?
- 20. What questions would you like to ask the scientists?

### **DISCUSSION (Write your own questions)**

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

1.	
2.	
3.	
4.	
5.	
6.	
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\_\_\_\_\_

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### **DISCUSSION (Write your own questions)**

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

1.	 
2.	 
3.	
1	
4.	 
5.	
6.	

### LANGUAGE - CLOZE

From https://breakingnewsenglish.com/2105/210516-brain-implants.html

A man who cannot (1) \_\_\_\_\_ his arms or hands has used his thoughts to write on a computer screen. The man has been paralyzed from the neck (2) \_\_\_\_\_ for almost a decade. Scientists from Stanford University in the USA implanted two (3) \_\_\_\_\_ sensors into the man's brain. The scientists gave this method two names - "brain-to-text" and "mindwriting". The man wants to (4) \_\_\_\_\_ anonymous, so scientists have called him T5. He became paralyzed after (5) \_\_\_\_\_ a spinal cord injury ten years ago. The implants have allowed T5 to use his mind to write. He can write 90 characters (about 18 words) per minute. This is five words slower than the (6) \_\_\_\_\_ person writing a text message on a smartphone.

The mindwriting system is very simple, but it involved a lot of advanced technology. Scientists asked T5 to imagine (7) \_\_\_\_\_ a pen and then writing a sentence on a paper. The sensors in T5's brain detected the activity in his brain (8) \_\_\_\_\_ he imagined writing. A computer decoded this activity into text on a screen. The scientists used a special algorithm to do (9) \_\_\_\_\_. Professor Jaimie Henderson, a Stanford University researcher, hopes this research could help millions of paralyzed people, and those who have (10) \_\_\_\_\_ the ability to speak, to write again. He said: "The goal is to restore their ability to communicate (11) \_\_\_\_\_ text." This technology may one day help anyone to write at the (12) \_\_\_\_\_ of thought.

#### Put the correct words from the table below in the above article.

1.	(a)	move	(b)	movement	(c)	moves	(d)	moving
2.	(a)	previous	(b)	below	(c)	down	(d)	before
3.	(a)	tinny	(b)	tinted	(c)	tiny	(d)	tainted
4.	(a)	lively	(b)	still	(c)	exist	(d)	remain
5.	(a)	suffering	(b)	surfing	(c)	sufficing	(d)	sifting
6.	(a)	usually	(b)	average	(c)	mean	(d)	median
7.	(a)	penning	(b)	imagining	(c)	writing	(d)	holding
8.	(a)	was	(b)	as	(c)	'twas	(d)	has
9.	(a)	them	(b)	those	(c)	this	(d)	these
10.	(a)	strayed	(b)	failed	(c)	mislaid	(d)	lost
11.	(a)	on	(b)	as	(c)	of	(d)	by
12.	(a)	momentum	(b)	speed	(c)	fast	(d)	briskness

### SPELLING

From https://breakingnewsenglish.com/2105/210516-brain-implants.html

#### Paragraph 1

- 1. <u>aeplydrza</u> from the neck down
- 2. for almost a ecdead
- 3. The man wants to remain <u>onauoynsm</u>
- 4. after suffering a spinal cord <u>uirynj</u>
- 5. slower than the vareega person
- 6. writing a text <u>ssaemeg</u>

#### Paragraph 2

- 7. it <u>ivnlvdeo</u> a lot of advanced technology
- 8. writing a <u>cneetens</u> on a paper
- 9. sensors in T5's brain <u>tedcedet</u> the activity
- 10. The scientists used a special holrgitam
- 11. The goal is to seerrot their ability
- 12. cntuecmaimo by text

### PUT THE TEXT BACK TOGETHER

From https://breakingnewsenglish.com/2105/210516-brain-implants.html

#### Number these lines in the correct order.

- ( ) method two names "brain-to-text" and "mindwriting". The man wants to remain anonymous, so scientists have
- ( ) called him T5. He became paralyzed after suffering a spinal cord injury ten years ago. The implants have allowed T5 to
- ( ) Stanford University in the USA implanted two tiny sensors into the man's brain. The scientists gave this
- ( ) of paralyzed people, and those who have lost the ability to speak, to write
- ( ) screen. The man has been paralyzed from the neck down for almost a decade. Scientists from
- (**1**) A man who cannot move his arms or hands has used his thoughts to write on a computer
- ( ) use his mind to write. He can write 90 characters (about 18 words) per minute. This is five
- ( ) again. He said: "The goal is to restore their ability to communicate by text." This technology may one
- ( ) day help anyone to write at the speed of thought.
- ( ) words slower than the average person writing a text message on a smartphone.
- ( ) The mindwriting system is very simple, but it involved a lot of advanced technology. Scientists asked T5 to imagine
- ( ) algorithm to do this. Professor Jaimie Henderson, a Stanford University researcher, hopes this research could help millions
- ( ) holding a pen and then writing a sentence on a paper. The sensors in T5's brain detected the activity in
- ( ) his brain as he imagined writing. A computer decoded this activity into text on a screen. The scientists used a special

#### PUT THE WORDS IN THE RIGHT ORDER

From https://breakingnewsenglish.com/2105/210516-brain-implants.html

1. man his who cannot move arms . A

2. the two Implanted sensors tiny into man's brain .

3. the gave mindwriting . method scientists this The name

4. mind to use write . his T5 Allowed to

5. average slower words Five than the person .

6. advanced of It technology . involved a lot

7. detected brain T5's in sensors the The activity .

8. into A text . decoded activity this computer

9. help could research of millions people . paralyzed This

10. the of thought . write anyone speed at Help

### **CIRCLE THE CORRECT WORD (20 PAIRS)**

From https://breakingnewsenglish.com/2105/210516-brain-implants.html

A man who cannot move his arms or hands has used his *thinks / thoughts* to write on a computer screen. The man has been *paralysis / paralyzed* from the neck down for almost *a / the* decade. Scientists from Stanford University in the USA implanted two *tinny / tiny* sensors into the man's brain. The scientists gave *this / these* method two names - "brain-to-text" and "mindwriting". The man wants to *still / remain* anonymous, so scientists have called him T5. He became paralyzed after *suffer / suffering* a spinal cord *injured / injury* ten years ago. The implants have allowed T5 to use his mind to write. He can write 90 characters (about 18 words) *for / per* minute. This is five words slower than the average person writing a text message *in / on* a smartphone.

The mindwriting system is very *simple / sample*, but it involved a lot of advanced technology. Scientists asked T5 to imagine *hold / holding* a pen and then writing a sentence on a paper. The *sensors / senses* in T5's brain detected *the / a* activity in his brain as he imagined *written / writing*. A computer decoded this activity into text on a screen. The scientists used a special algorithm to *doing / do* this. Professor Jaimie Henderson, a Stanford University researcher, *heaps / hopes* this research could help millions of paralyzed people, and those who have lost the *able / ability* to speak, to write again. He said: "The *goal / score* is to restore their ability to communicate by text." This technology may one day help anyone to write at the *fast / speed* of thought.

# Talk about the connection between each pair of words in italics, and why the correct word is correct.

#### INSERT THE VOWELS (a, e, i, o, u)

From https://breakingnewsenglish.com/2105/210516-brain-implants.html

\_ m\_n wh\_ c\_nn\_t m\_v\_ h\_s \_rms \_r h\_nds h\_s \_s\_d h\_s th\_\_ghts t\_ wr\_t\_ \_n \_ c\_mp\_t\_r scr\_\_n. Th\_ m\_n h\_s b\_\_n p\_r\_lyz\_d fr\_m th\_ n\_ck d\_wn f\_r \_lm\_st \_ d\_c\_d\_. Sc\_\_nt\_sts fr\_m St\_nf\_rd \_n\_v\_rs\_ty \_n th\_ \_S\_ \_mpl\_nt\_d tw\_ t\_ny s\_ns\_rs \_nt\_ th\_ m\_n's br\_\_n. Th\_ sc\_\_nt\_sts g\_v\_ th\_s m\_th\_d tw\_ n\_m\_s - "br\_\_nt\_-t\_xt" \_nd "m\_ndwr\_t\_ng". Th\_ m\_n w\_nts t\_ r\_m\_\_n \_n\_nym\_\_s, s\_ sc\_\_nt\_sts h\_v\_ c\_ll\_d h\_m T5. H\_ b\_c\_m\_ p\_r\_lyz\_d \_ft\_r s\_ff\_r\_ng \_ sp\_n\_l c\_rd \_nj\_ry t\_n y\_\_rs \_g\_. Th\_ \_mpl\_nts h\_v\_ \_ll\_w\_d T5 t\_ \_s\_ h\_s m\_nd t\_ wr\_t\_. H\_ c\_n wr\_t\_ 90 ch\_r\_ct\_rs (\_b\_\_t 18 w\_rds) p\_r m\_n\_t\_. Th\_s \_s f\_v\_ w\_rds sl\_w\_r th\_n th\_ \_v\_rg\_ p\_rs\_n wr\_t\_ng \_ t\_xt m\_ss\_g\_ \_n \_

Th\_ m\_ndwr\_t\_ng syst\_m \_s v\_ry s\_mpl\_, b\_t \_t \_nv\_lv\_d \_ l\_t \_f \_dv\_nc\_d t\_chn\_l\_gy. Sc\_\_nt\_sts \_sk\_d T5 t\_ \_m\_g\_n\_ h\_ld\_ng \_ p\_n \_nd th\_n wr\_t\_ng \_ s\_nt\_nc\_ \_n \_ p\_p\_r. Th\_ s\_ns\_rs \_n T5's br\_\_n d\_t\_ct\_d th\_ \_ct\_v\_ty \_n h\_s br\_\_n \_s h\_ \_m\_g\_n\_d wr\_t\_ng. \_ c\_mp\_t\_r d\_c\_d\_d th\_s \_ct\_v\_ty \_nt\_ t\_xt \_n \_ scr\_\_n. Th\_ sc\_\_nt\_sts \_s\_d \_ sp\_c\_\_l \_lg\_r\_thm t\_ d\_ th\_s. Pr\_f\_ss\_r J\_\_m\_ H\_nd\_rs\_n, \_ St\_nf\_rd \_n\_v\_rs\_ty r\_s\_\_rch\_r, h\_p\_s th\_s r\_s\_\_rch c\_\_ld h\_lp m\_ll\_\_ns \_f p\_r\_lyz\_d p\_\_pl\_, \_nd th\_s\_ wh\_ h\_v\_ l\_st th\_ \_b\_l\_ty t\_ sp\_\_k, t\_ wr\_t\_ \_g\_\_n. H\_ s\_\_d: "Th\_ g\_\_l \_s t\_ r\_st\_r\_ th\_\_r \_b\_l\_ty t\_ c\_mm\_n\_c\_t\_ by t\_xt." Th\_s t\_chn\_l\_gy m\_y \_n\_ d\_y h\_lp \_ny\_n\_ t\_ wr\_t\_ \_t th\_ sp\_\_d \_f th\_\_ght.

#### PUNCTUATE THE TEXT AND ADD CAPITALS

From https://breakingnewsenglish.com/2105/210516-brain-implants.html

a man who cannot move his arms or hands has used his thoughts to write on a computer screen the man has been paralyzed from the neck down for almost a decade scientists from stanford university in the usa implanted two tiny sensors into the mans brain the scientists gave this method two names braintotext and mindwriting the man wants to remain anonymous so scientists have called him t5 he became paralyzed after suffering a spinal cord injury ten years ago the implants have allowed t5 to use his mind to write he can write 90 characters about 18 words per minute this is five words slower than the average person writing a text message on a smartphone

the mindwriting system is very simple but it involved a lot of advanced technology scientists asked t5 to imagine holding a pen and then writing a sentence on a paper the sensors in t5s brain detected the activity in his brain as he imagined writing a computer decoded this activity into text on a screen the scientists used a special algorithm to do this professor jaimie henderson a stanford university researcher hopes this research could help millions of paralyzed people and those who have lost the ability to speak to write again he said the goal is to restore their ability to communicate by text this technology may one day help anyone to write at the speed of thought

# PUT A SLASH ( / ) WHERE THE SPACES ARE

From https://breakingnewsenglish.com/2105/210516-brain-implants.html

Amanwhocannotmovehisarmsorhandshasusedhisthoughtstowriteo nacomputerscreen. The manhas been paralyzed from the neckdown for almostadecade.ScientistsfromStanfordUniversityintheUSAimplante dtwotinysensorsintotheman'sbrain.Thescientistsgavethismethodtw onames-"brain-to-text"and"mindwriting".Themanwantstoremaina nonymous, soscientists have called him T5. Hebecame paralyzed afters ufferingaspinalcordinjurytenyearsago.TheimplantshaveallowedT5t ousehismindtowrite.Hecanwrite90characters(about18words)permi nute. This is five words slower than the average person writing at extmes sageonasmartphone. The mindwriting system is very simple, but it invol vedalotofadvancedtechnology.ScientistsaskedT5toimagineholding apenandthenwritingasentenceonapaper.ThesensorsinT5'sbraindet ectedtheactivityinhisbrainasheimaginedwriting.Acomputerdecoded thisactivity into text on a screen. The scient is the subscreen all or it has a science of the s odothis.ProfessorJaimieHenderson,aStanfordUniversityresearcher, hopesthisresearchcouldhelpmillionsofparalyzedpeople, and thosewh ohavelosttheabilitytospeak,towriteagain.Hesaid:"Thegoalistorestor etheirabilitytocommunicatebytext."Thistechnologymayonedayhelp anyonetowriteatthespeedofthought.

### FREE WRITING

From https://breakingnewsenglish.com/2105/210516-brain-implants.html

Write about **the brain** for 10 minutes. Comment on your partner's paper.

### ACADEMIC WRITING

From https://breakingnewsenglish.com/2105/210516-brain-implants.html

Brain implants could be a great way for us to download a language. Discuss.


#### 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 out more about this news story. Share what you discover with your partner(s) in the next lesson.

**3. THE BRAIN:** Make a poster about the brain. Show your work to your classmates in the next lesson. Did you all have similar things?

**4. IMPLANTS:** Write a magazine article all of us having brain implants in the future to boost our mental abilities. Include imaginary interviews with people who are for and against this.

Read what you wrote to your classmates in the next lesson. Write down any new words and expressions you hear from your partner(s).

**5. WHAT HAPPENED NEXT?** Write a newspaper article about the next stage in this news story. Read what you wrote to your classmates in the next lesson. Give each other feedback on your articles.

6. LETTER: Write a letter to an expert on the brain implants. Ask him/her three questions about them. Give him/her three of your ideas on how they could help us . Read your letter to your partner(s) in your next lesson. Your partner(s) will answer your questions.

#### ANSWERS

#### **VOCABULARY** (p.4)

1.	е	2.	с	3.	b	4.	f	5.	а	6.	g	7.	d
8.	m	9.	k	10.	n	11.	h	12.	j	13.	i	14.	I

#### TRUE / FALSE (p.5)

1	Т	2 F	3 T	4 T	5 F	6 T	7 T	8 T

#### SYNONYM MATCH (p.5)

1.	е	2.	i	3.	b	4.	g	5.	С
6.	j	7.	а	8.	f	9.	h	10.	d

#### COMPREHENSION QUESTIONS (p.9)

- 1. Almost a decade
- 2. Two
- 3. Mindwriting
- 4. T5
- 5. About 18
- 6. Advanced technology
- 7. Sensors
- 8. An algorithm
- 9. People who cannot speak
- 10. At the speed of thought

#### WORDS IN THE RIGHT ORDER (p.19)

- 1. A man who cannot move his arms.
- 2. Implanted two tiny sensors into the man's brain.
- 3. The scientists gave this method the name mindwriting.
- 4. Allowed T5 to use his mind to write.
- 5. Five words slower than the average person.
- 6. It involved a lot of advanced technology.
- 7. The sensors in T5's brain detected the activity.
- 8. A computer decoded this activity into text.
- 9. This research could help millions of paralyzed people.
- 10. Help anyone write at the speed of thought.

#### **MULTIPLE CHOICE - QUIZ (p.10)**

1. b 2. d 3. a 4. c 5. b 6. c 7. d 8. a 9. a 10. b

#### **ALL OTHER EXERCISES**

Please check for yourself by looking at the Article on page 2. (It's good for your English ;-)