

# www.**Breaking News English**.com

Ready-to-use ESL/EFL Lessons by Sean Banville

**"1,000 IDEAS & ACTIVITIES FOR LANGUAGE TEACHERS"**  
**The Breaking News English.com Resource Book**  
<http://www.breakingnewsenglish.com/book.html>

## **Jeans that clean the air**

**22nd October, 2012**

<http://www.breakingnewsenglish.com/1210/121022-jeans.html>

### **Contents**

The Article	2
Warm-ups	3
Before Reading / Listening	4
While Reading / Listening	5
Listening Gap Fill	6
After Reading / Listening	7
Student Survey	8
Discussion	9
Language Work	10
Writing	11
Homework	12
Answers	13

### **Follow Sean Banville on**

**Twitter**



[twitter.com/SeanBanville](https://twitter.com/SeanBanville)

**Facebook**



[www.facebook.com/pages/BreakingNewsEnglish/155625444452176](https://www.facebook.com/pages/BreakingNewsEnglish/155625444452176)

**Google +**



[plus.google.com/110990608764591804698/posts](https://plus.google.com/110990608764591804698/posts)

# THE ARTICLE

From <http://www.BreakingNewsEnglish.com/1210/121022-jeans.html>

An innovative blend of fashion and science has resulted in the design of a new technology in jeans that cleans the air. Helen Storey, professor of fashion and science at The London College of Fashion, teamed up with Dr Tony Ryan, pro-vice-chancellor for the Faculty of Science at the University of Sheffield, to create what could be a ground-breaking solution to our environmental problems. They discovered that when denim is coated with tiny particles of the chemical titanium dioxide, it reacts with air and light to absorb and break down harmful emissions in the environment. The emissions become harmless and are washed away when the jeans are cleaned. This means we can help clean the air simply by going for a walk.

Ms Story and Dr Ryan have created a company to showcase their invention, called Catalytic Clothing. Their website says: "Catalytic Clothing seeks to explore how clothing and textiles can be used as a catalytic surface to purify air, employing existing technology in a new way." The technology is similar to how a catalytic converter in a car helps clean the fuel mix. Ryan makes bold claims about how effective the innovation could be. He maintains that if all of Sheffield's half a million residents wore the jeans to become walking air filters, the dangerous chemical nitrogen oxide in the city would disappear. The improvement in air quality could significantly reduce deaths and respiratory illnesses such as asthma.

# WARM-UPS

**1. JEANS:** Walk around the class and talk to other students about jeans. Change partners often. Share your findings with your first partner.

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

*innovative / design / professor / environmental problem / emissions / going for a walk / showcase / invention / purify / air filters / air quality / reduce deaths / jeans*

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

**3. JEANS THAT... :** How useful could jeans be? Complete this table with your partner(s). Change partners often and share what you wrote.

Jeans and...	A crazy, new, innovative use	How it will improve our life
computers		
fitness		
studying		
the Internet		
safety		
walking		

**4. POLLUTION:** Students A **strongly** believe we will find ways to make pollution a thing of the past; Students B **strongly** believe this is impossible. Change partners again and talk about your conversations.

**5. CLEAN:** What is most important to be clean? Rank these and share your rankings with your partner. Put the most important at the top. Change partners often.

- air
- car
- room
- water
- politicians
- clothes
- desk
- teeth

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

# BEFORE READING / LISTENING

From <http://www.BreakingNewsEnglish.com/1210/121022-jeans.html>

## 1. TRUE / FALSE:

Read the headline. Guess if a-h below are true (T) or false (F).

- |   |       |
|---|-------|
| a. A new technology could help jeans clean polluted air.                    | T / F |
| b. The new technique came from a fashion expert and a scientist.            | T / F |
| c. The new jeans could break the ground because of their strength.          | T / F |
| d. The jeans turn harmful emissions into harmless chemicals.                | T / F |
| e. The inventors placed a pair of their jeans in a showcase.                | T / F |
| f. The technology used has never been seen before.                          | T / F |
| g. An inventor said the jeans could help wipe out CO2 in his city.          | T / F |
| h. The jeans could improve the lives of people with breathing difficulties. | T / F |

## 2. SYNONYM MATCH:

Match the following synonyms from the article.

- |                                 |                  |
|---------------------------------|------------------|
| 1. innovative / ground-breaking | a. joined forces |
| 2. blend                        | b. clean         |
| 3. teamed up                    | c. separate      |
| 4. solution                     | d. look into     |
| 5. break down                   | e. pioneering    |
| 6. invention                    | f. argues        |
| 7. explore                      | g. answer        |
| 8. purify                       | h. considerably  |
| 9. maintains                    | i. mix           |
| 10. significantly               | j. creation      |

## 3. PHRASE MATCH:

(Sometimes more than one choice is possible.)

- |                                       |                           |
|---------------------------------------|---------------------------|
| 1. An innovative blend                | a. harmful emissions      |
| 2. a ground-breaking solution to our  | b. walking air filters    |
| 3. absorb and break down              | c. by going for a walk    |
| 4. washed away when                   | d. in a new way           |
| 5. help clean the air simply          | e. such as asthma         |
| 6. created a company to showcase      | f. environmental problems |
| 7. employing existing technology      | g. of fashion and science |
| 8. Ryan makes bold                    | h. their invention        |
| 9. residents wore the jeans to become | i. claims                 |
| 10. respiratory illnesses             | j. the jeans are cleaned  |

# WHILE READING / LISTENING

From <http://www.BreakingNewsEnglish.com/1210/121022-jeans.html>

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

An innovative (1) \_\_\_\_\_ of fashion and science has resulted in the design of a new technology in jeans that cleans the air. Helen Storey, professor of fashion and science at The London College of Fashion, (2) \_\_\_\_\_ up with Dr Tony Ryan, pro-vice-chancellor for the Faculty of Science at the University of Sheffield, to create what could be a ground-(3) \_\_\_\_\_ solution to our environmental problems. They discovered that when denim is (4) \_\_\_\_\_ with tiny particles of the chemical titanium dioxide, it (5) \_\_\_\_\_ with air and light to absorb and break (6) \_\_\_\_\_ harmful emissions in the environment. The emissions become (7) \_\_\_\_\_ and are washed away when the jeans are cleaned. This means we can help clean the air (8) \_\_\_\_\_ by going for a walk.

*reacts*  
*teamed*  
*simply*  
*breaking*  
*down*  
*blend*  
*harmless*  
*coated*

Ms Story and Dr Ryan have created a company to (9) \_\_\_\_\_ their invention, called Catalytic Clothing. Their website says: "Catalytic Clothing seeks to (10) \_\_\_\_\_ how clothing and textiles can be used as a catalytic surface to (11) \_\_\_\_\_ air, employing existing technology in a new way." The technology is similar to how a catalytic converter in a car helps clean the (12) \_\_\_\_\_ mix. Ryan makes bold claims about how effective the innovation could be. He (13) \_\_\_\_\_ that if all of Sheffield's half a million residents wore the jeans to become (14) \_\_\_\_\_ air filters, the dangerous chemical nitrogen oxide in the city would disappear. The improvement in air (15) \_\_\_\_\_ could significantly reduce deaths and respiratory (16) \_\_\_\_\_ such as asthma.

*fuel*  
*quality*  
*explore*  
*illnesses*  
*showcase*  
*maintains*  
*purify*  
*walking*

## LISTENING – Listen and fill in the gaps

From <http://www.BreakingNewsEnglish.com/1210/121022-jeans.html>

An innovative blend of fashion and science has (1) \_\_\_\_\_ a new technology in jeans that cleans the air. Helen Storey, professor of fashion and science at The London College of Fashion, (2) \_\_\_\_\_ Tony Ryan, pro-vice-chancellor for the Faculty of Science at the University of Sheffield, to create what could (3) \_\_\_\_\_ solution to our environmental problems. They discovered that when denim is coated with (4) \_\_\_\_\_ chemical titanium dioxide, it reacts with air and light to (5) \_\_\_\_\_ harmful emissions in the environment. The emissions become harmless and are washed away when the jeans are cleaned. This means we can help (6) \_\_\_\_\_ going for a walk.

Ms Story and Dr Ryan have created a company (7) \_\_\_\_\_, called Catalytic Clothing. Their website says: "Catalytic Clothing seeks to explore how (8) \_\_\_\_\_ be used as a catalytic surface to purify air, employing (9) \_\_\_\_\_ new way." The technology is similar to how a catalytic converter in a car helps clean the fuel mix. Ryan (10) \_\_\_\_\_ how effective the innovation could be. He maintains that if all of Sheffield's half a million residents wore the jeans to become (11) \_\_\_\_\_, the dangerous chemical nitrogen oxide in the city would disappear. The improvement in air quality could (12) \_\_\_\_\_ and respiratory illnesses such as asthma.

# AFTER READING / LISTENING

From <http://www.BreakingNewsEnglish.com/1210/121022-jeans.html>

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

<b>fashion</b>	<b>science</b>
----------------	----------------

- 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:

<ul style="list-style-type: none"><li>• blend</li><li>• teamed</li><li>• ground</li><li>• coated</li><li>• harmless</li><li>• walk</li></ul>	<ul style="list-style-type: none"><li>• showcase</li><li>• explore</li><li>• way</li><li>• fuel</li><li>• walking</li><li>• quality</li></ul>
--	---

# JEANS SURVEY

From <http://www.BreakingNewsEnglish.com/1210/121022-jeans.html>

Write five GOOD questions about jeans 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.



## **CLEAN AIR / JEANS DISCUSSION**

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

- a) What did you think when you read the headline?
- b) What springs to mind when you hear the word 'jeans'?
- c) How important are jeans to you?
- d) Would life be different without jeans?
- e) What do you think of jeans that clean the air?
- f) Do you think people will wear these jeans and that they will clean the air?
- g) What other things could we coat with the chemical?
- h) Could the jeans also improve people's health by encouraging walking?
- i) How much would you pay for the jeans?
- j) What would be a good name for the jeans?

*Jeans that clean the air – 22nd October, 2012*  
More free lessons at [www.BreakingNewsEnglish.com](http://www.BreakingNewsEnglish.com)

---

## **CLEAN AIR / JEANS DISCUSSION**

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

- a) Did you like reading this article?
- b) How clean is the air where you live?
- c) How useful are jeans?
- d) What do you think of the company name Catalytic Clothing?
- e) Should governments provide all citizens with a free pair of the jeans?
- f) Are Dr Ryan's claims really so bold or are they realistic and doable?
- g) How different would a city be if it was free from pollution?
- h) What can you do to help keep the air clean?
- i) Should health authorities and clothing companies invest in this technology?
- j) What questions would you like to ask Ms Story and Dr Ryan?

# LANGUAGE – MULTIPLE CHOICE

From <http://www.BreakingNewsEnglish.com/1210/121022-jeans.html>

An innovative (1) \_\_\_\_\_ of fashion and science has resulted in the design of a new technology in jeans that cleans the air. Helen Storey, professor of fashion and science at The London College of Fashion, teamed (2) \_\_\_\_\_ with Dr Tony Ryan, pro-vice-chancellor for the Faculty of Science at the University of Sheffield, to create what could be a (3) \_\_\_\_\_-breaking solution to our environmental problems. They discovered that when denim is (4) \_\_\_\_\_ with tiny particles of the chemical titanium dioxide, it reacts with air and light to (5) \_\_\_\_\_ and break down harmful emissions in the environment. The emissions become harmless and are washed away when the jeans are cleaned. This means we can help clean the air (6) \_\_\_\_\_ by going for a walk.

Ms Story and Dr Ryan have created a company to (7) \_\_\_\_\_ their invention, called Catalytic Clothing. Their website says: "Catalytic Clothing seeks to explore how clothing and textiles can be used as a catalytic surface to (8) \_\_\_\_\_ air, employing existing technology in a new way." The technology is similar to how a catalytic converter in a car helps clean the fuel (9) \_\_\_\_\_. Ryan makes bold claims about how effective the innovation could be. He maintains that if all of Sheffield's half a million residents wore the jeans to become (10) \_\_\_\_\_ air filters, the dangerous chemical nitrogen (11) \_\_\_\_\_ in the city would disappear. The improvement in air quality could (12) \_\_\_\_\_ reduce deaths and respiratory illnesses such as asthma.

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

- |     |                  |                 |                    |                   |
|-----|------------------|-----------------|--------------------|-------------------|
| 1.  | (a) blend        | (b) bland       | (c) blind          | (d) blond         |
| 2.  | (a) on           | (b) in          | (c) up             | (d) as            |
| 3.  | (a) earth        | (b) pavement    | (c) ground         | (d) mud           |
| 4.  | (a) blanketed    | (b) jacketed    | (c) vested         | (d) coated        |
| 5.  | (a) inherit      | (b) adopt       | (c) absorb         | (d) digest        |
| 6.  | (a) amply        | (b) simply      | (c) amplify        | (d) sampling      |
| 7.  | (a) suitcase     | (b) showcase    | (c) in case        | (d) case          |
| 8.  | (a) purifies     | (b) purify      | (c) purification   | (d) purified      |
| 9.  | (a) stir         | (b) whisk       | (c) mix            | (d) beat          |
| 10. | (a) walkathon    | (b) walked      | (c) walkie-talkies | (d) walking       |
| 11. | (a) oxidization  | (b) oxidizer    | (c) oxidize        | (d) oxide         |
| 12. | (a) significance | (b) significant | (c) signify        | (d) significantly |

Jeans that clean the air – 22nd October, 2012



# 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 Catalytic Clothing (Go to [www.catalyticclothing.com](http://www.catalyticclothing.com)). Share what you discover with your partner(s) in the next lesson.

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

**4. CLEAN AIR:** Write a magazine article about air quality and how the jeans could make a difference. Include imaginary interviews with Ms Story and Dr Ryan.

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. LETTER:** Write a letter to Ms Story and Dr Ryan. Ask them three questions about their jeans. Give them three of your opinions on them. Read your letter to your partner(s) in your next lesson. Your partner(s) will answer your questions.

# ANSWERS

## TRUE / FALSE:

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

## SYNONYM MATCH:

- |                                 |                  |
|---------------------------------|------------------|
| 1. innovative / ground-breaking | a. pioneering    |
| 2. blend                        | b. mix           |
| 3. teamed up                    | c. joined forces |
| 4. solution                     | d. answer        |
| 5. break down                   | e. separate      |
| 6. invention                    | f. creation      |
| 7. explore                      | g. look into     |
| 8. purify                       | h. clean         |
| 9. maintains                    | i. argues        |
| 10. significantly               | j. considerably  |

## PHRASE MATCH:

- |                                       |                           |
|---------------------------------------|---------------------------|
| 1. An innovative blend                | a. of fashion and science |
| 2. a ground-breaking solution to our  | b. environmental problems |
| 3. absorb and break down              | c. harmful emissions      |
| 4. washed away when                   | d. the jeans are cleaned  |
| 5. help clean the air simply          | e. by going for a walk    |
| 6. created a company to showcase      | f. their invention        |
| 7. employing existing technology      | g. in a new way           |
| 8. Ryan makes bold                    | h. claims                 |
| 9. residents wore the jeans to become | i. walking air filters    |
| 10. respiratory illnesses             | j. such as asthma         |

## GAP FILL:

### Jeans that clean the air

An innovative (1) **blend** of fashion and science has resulted in the design of a new technology in jeans that cleans the air. Helen Storey, professor of fashion and science at The London College of Fashion, (2) **teamed** up with Dr Tony Ryan, pro-vice-chancellor for the Faculty of Science at the University of Sheffield, to create what could be a ground-(3) **breaking** solution to our environmental problems. They discovered that when denim is (4) **coated** with tiny particles of the chemical titanium dioxide, it (5) **reacts** with air and light to absorb and break (6) **down** harmful emissions in the environment. The emissions become (7) **harmless** and are washed away when the jeans are cleaned. This means we can help clean the air (8) **simply** by going for a walk.

Ms Story and Dr Ryan have created a company to (9) **showcase** their invention, called Catalytic Clothing. Their website says: "Catalytic Clothing seeks to (10) **explore** how clothing and textiles can be used as a catalytic surface to (11) **purify** air, employing existing technology in a new way." The technology is similar to how a catalytic converter in a car helps clean the (12) **fuel** mix. Ryan makes bold claims about how effective the innovation could be. He (13) **maintains** that if all of Sheffield's half a million residents wore the jeans to become (14) **walking** air filters, the dangerous chemical nitrogen oxide in the city would disappear. The improvement in air (15) **quality** could significantly reduce deaths and respiratory (16) **illnesses** such as asthma.

## LANGUAGE WORK

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