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**Level 6 – 17th December, 2019**

## Scientists create plastic that repels all bacteria

**FREE online quizzes, mp3 listening and more for this lesson here:**

<https://breakingnewsenglish.com/1912/191217-self-cleaning-plastic.html>

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**Please try Levels 4 and 5 (they are easier).**

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# THE ARTICLE

From <https://breakingnewsenglish.com/1912/191217-self-cleaning-plastic.html>

A revolutionary new plastic could help to prevent bacteria and superbugs causing disease and illness. Scientists have developed a new kind of transparent, plastic wonder-wrap. They say it will drastically cut incidences of microbe transfer in hospitals, restaurants, kitchens, bathrooms and other places where bugs lie in wait. The plastic was created by researchers from McMaster University in Canada. They say their material can repel all forms of bacteria, including superbugs like MRSA. The material is like a conventional transparent wrap used to cover food. It can be shrink-wrapped to protect places that attract bacteria, like worktops, door handles, taps, hospital equipment and food containers.

The researchers said the inspiration for their new material came from the lotus plant. They attempted to replicate the method in which the leaves of this plant repelled water. Drops of water either sit on the surface of the leaves or bounce off. Researcher Leyla Soleymani wanted to apply that process to the new plastic. She said: "We're structurally tuning that plastic. This material gives us something that can be applied to all kinds of things." Another researcher, Tohid Didar, said: "We can see this technology being used in all kinds of institutional and domestic settings. As the world confronts the crisis of anti-microbial resistance, we hope it will become an important part of the anti-bacterial toolbox."

Sources: <https://www.independent.co.uk/news/science/self-cleaning-plastic-bacteria-repellent-mrsa-nhs-a9245811.html>  
<https://news.sky.com/story/self-cleaning-surface-that-repels-superbugs-could-be-used-in-kitchens-and-hospitals-11885900>  
<https://edition.cnn.com/2019/12/13/health/superbug-repelling-surface-intl-scli-scn/index.html>

# WARM-UPS

**1. PLASTIC:** Students walk around the class and talk to other students about plastic. 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?

revolutionary / plastic / bacteria / superbugs / illness / restaurant / wrap / hospital / inspiration / lotus plant / water / bounce / technology / domestic / crisis / toolbox

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

**3. SUPERBUGS:** Students A **strongly** believe scientists will protect us against all superbugs; Students B **strongly** believe this is impossible. Change partners again and talk about your conversations.

**4. MATERIALS:** How useful are these materials? What would life be like without them? Complete this table with your partner(s). Change partners often and share what you wrote.

|          | How Useful? | What Would Life Be Like Without Them? |
|----------|-------------|---------------------------------------|
| Plastic  |             |                                       |
| Glass    |             |                                       |
| Rubber   |             |                                       |
| Cotton   |             |                                       |
| Wood     |             |                                       |
| Concrete |             |                                       |

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

**6. DIRTY:** Rank these with your partner. Put the dirtiest things at the top. Change partners often and share your rankings.

- door handles
- toilet seat
- computer keyboard
- chopping board
- taps
- fridge door
- shopping cart
- coins

# VOCABULARY MATCHING

## Paragraph 1

- |                  |  |
|------------------|--|
| 1. revolutionary | a. Drive or force away an attack or attacker.  |
| 2. transparent   | b. Become or make smaller in size or amount.   |
| 3. drastically   | c. Involving or causing a complete or dramatic change.   |
| 4. incidence     | d. Of a material or article that allows light to pass through so that objects behind can be seen; see-through. |
| 5. repel         | e. The happening, rate, or frequency of a disease, crime, or something else undesirable.                       |
| 6. conventional  | f. Based on or in accordance with what is generally done or believed.  |
| 7. shrink        | g. In a way that is likely to have a strong or far-reaching effect.  |

## Paragraph 2

- |                   |  |
|-------------------|--|
| 8. inspiration    | h. About governments, organizations, schools, etc.                   |
| 9. replicate      | i. Brought or put into operation or practical use.                   |
| 10. surface       | j. Move quickly up, back, or away from a surface after hitting it.   |
| 11. bounce        | k. The process of being mentally stimulated to do or feel something. |
| 12. applied       | l. The ability not to be affected by something, especially badly.    |
| 13. institutional | m. Make an exact copy of; reproduce.                                 |
| 14. resistance    | n. The outside part or uppermost layer of something.                 |

# BEFORE READING / LISTENING

From <https://breakingnewsenglish.com/1912/191217-self-cleaning-plastic.html>

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

- a. A new plastic called 'Revolution' could prevent the spread of bacteria. **T / F**
- b. The new plastic is a see-through wrap. **T / F**
- c. Scientists say the new plastic will considerably cut microbe transfer. **T / F**
- d. The plastic is shrink-wrapped to cover things. **T / F**
- e. The inspiration for the plastic came from the lotus plant. **T / F**
- f. A researcher said the plastic can be applied to all kinds of things. **T / F**
- g. Researchers say the plastic will only be used in hospitals. **T / F**
- h. The article says we should cover toolboxes with the new plastic. **T / F**

## 2. SYNONYM MATCH:

Match the following synonyms. The words in **bold** are from the news article.

- |                         |                 |
|-------------------------|-----------------|
| <b>1. revolutionary</b> | a. motivation   |
| <b>2. transparent</b>   | b. fight off    |
| <b>3. incidences</b>    | c. key          |
| <b>4. repel</b>         | d. cutting-edge |
| <b>5. equipment</b>     | e. copy         |
| <b>6. inspiration</b>   | f. apparatus    |
| <b>7. replicate</b>     | g. household    |
| <b>8. process</b>       | h. see-through  |
| <b>9. domestic</b>      | i. procedure    |
| <b>10. important</b>    | j. occurrences  |

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

- |  |                         |
|--|-------------------------|
| 1. a new kind of transparent, plastic      | a. the method           |
| 2. other places where bugs                 | b. bacterial toolbox    |
| 3. a conventional transparent wrap         | c. equipment            |
| 4. It can be shrink-                       | d. the crisis           |
| 5. hospital                                | e. wonder-wrap          |
| 6. inspiration for their new material came | f. used to cover food   |
| 7. They attempted to replicate             | g. of water             |
| 8. Drops                                   | h. from the lotus plant |
| 9. As the world confronts                  | i. wrapped              |
| 10. an important part of the anti-         | j. lie in wait          |

# GAP FILL

From <https://breakingnewsenglish.com/1912/191217-self-cleaning-plastic.html>

A revolutionary new plastic could help to (1) \_\_\_\_\_ bacteria and superbugs causing disease and illness. Scientists have developed a new kind of (2) \_\_\_\_\_, plastic wonder-wrap. They say it will drastically cut (3) \_\_\_\_\_ of microbe transfer in hospitals, restaurants, kitchens, bathrooms and other places where bugs (4) \_\_\_\_\_ in wait. The plastic was created by researchers from McMaster University in Canada. They say their material can (5) \_\_\_\_\_ all forms of bacteria, including superbugs like MRSA. The material is like a conventional transparent (6) \_\_\_\_\_ used to cover food. It can be (7) \_\_\_\_\_ -wrapped to protect places that attract bacteria, like worktops, door handles, (8) \_\_\_\_\_, hospital equipment and food containers.

*transparent*

*shrink*

*lie*

*taps*

*prevent*

*wrap*

*incidences*

*repel*

The researchers said the (9) \_\_\_\_\_ for their new material came from the lotus plant. They attempted to (10) \_\_\_\_\_ the method in which the leaves of this plant repelled water. Drops of water either sit on the (11) \_\_\_\_\_ of the leaves or bounce off. Researcher Leyla Soleymani wanted to apply that (12) \_\_\_\_\_ to the new plastic. She said: "We're structurally tuning that plastic. This material gives us something that can be (13) \_\_\_\_\_ to all kinds of things." Another researcher, Tohid Didar, said: "We can see this technology being used in all kinds of (14) \_\_\_\_\_ and domestic settings. As the world confronts the (15) \_\_\_\_\_ of anti-microbial resistance, we hope it will become an important part of the anti-bacterial (16) \_\_\_\_\_."

*surface*

*toolbox*

*replicate*

*applied*

*inspiration*

*crisis*

*process*

*institutional*

# LISTENING – Guess the answers. Listen to check.

From <https://breakingnewsenglish.com/1912/191217-self-cleaning-plastic.html>

- 1) A revolutionary new plastic could help to \_\_\_\_\_
  - a. prevention bacteria
  - b. prevented bacteria
  - c. prevents bacteria
  - d. prevent bacteria
- 2) Scientists have developed a new kind of transparent, \_\_\_\_\_
  - a. plastic wonder-wrap
  - b. plastic wander-wrap
  - c. plastic winder-wrap
  - d. plastic one-dough-wrap
- 3) hospitals, restaurants, kitchens, bathrooms and other places where \_\_\_\_\_
  - a. bugs lie in wait
  - b. bugs lay in wait
  - c. bugs lice in wait
  - d. bugs like in wait
- 4) a conventional transparent wrap used to cover food. It can \_\_\_\_\_
  - a. be shrank-wrapped
  - b. be shrunk-wrapped
  - c. be shrink-wrapped
  - d. be stink-wrapped
- 5) worktops, door handles, taps, hospital equipment \_\_\_\_\_
  - a. and food trainers
  - b. and food retainers
  - c. and food maintainers
  - d. and food containers
- 6) The researchers said the inspiration for their new material came from \_\_\_\_\_
  - a. the low tusk plant
  - b. the lotus plant
  - c. the radius plant
  - d. the rote as plant
- 7) replicate the method in which the leaves of this \_\_\_\_\_
  - a. plant repelled water
  - b. plant impaled water
  - c. plant pealed water
  - d. plant reaped water
- 8) Drops of water either sit on the surface of the leaves \_\_\_\_\_
  - a. or bounce in
  - b. or bounce on
  - c. or bounce off
  - d. or bounce up
- 9) This material gives us something that can be applied to all \_\_\_\_\_
  - a. kind of things
  - b. kinds of things
  - c. kinds of thing
  - d. kind of thing
- 10) we hope it will become an important part of the \_\_\_\_\_
  - a. anti-bacterial lunch box
  - b. anti-bacterial cardboard box
  - c. anti-bacterial fool box
  - d. anti-bacterial toolbox

# LISTENING – Listen and fill in the gaps

From <https://breakingnewsenglish.com/1912/191217-self-cleaning-plastic.html>

A revolutionary new plastic could help (1) \_\_\_\_\_ and superbugs causing disease and illness. Scientists have developed a new kind of transparent, (2) \_\_\_\_\_. They say it will drastically cut incidences of (3) \_\_\_\_\_ hospitals, restaurants, kitchens, bathrooms and other places where (4) \_\_\_\_\_ wait. The plastic was created by researchers from McMaster University in Canada. They say their material can (5) \_\_\_\_\_ of bacteria, including superbugs like MRSA. The material is like a conventional transparent wrap used to cover food. It can (6) \_\_\_\_\_ protect places that attract bacteria, like worktops, door handles, taps, hospital equipment and food containers.

The researchers said (7) \_\_\_\_\_ their new material came from the lotus plant. They attempted to (8) \_\_\_\_\_ in which the leaves of this plant repelled water. Drops of water either sit on the surface of the leaves (9) \_\_\_\_\_. Researcher Leyla Soleymani wanted to apply that process to the new plastic. She said: "We're (10) \_\_\_\_\_ plastic. This material gives us something that can be applied to all kinds of things." Another researcher, Tohid Didar, said: "We can see this technology being used in all kinds of (11) \_\_\_\_\_ settings. As the world confronts the crisis of anti-microbial resistance, we hope it will become an important part of the (12) \_\_\_\_\_."

# COMPREHENSION QUESTIONS

From <https://breakingnewsenglish.com/1912/191217-self-cleaning-plastic.html>

1. What two things did the article say the plastic could prevent?
2. How opaque is the revolutionary new plastic?
3. By how much did the article say the plastic would cut microbe transfer?
4. What happens to the plastic before it covers things?
5. What kind of equipment did the article say the plastic could cover?
6. What was the inspiration for the plastic?
7. What did the article say happens to water that doesn't sit on leaves?
8. What kind of tuning is a researcher doing to the plastic?
9. What did a researcher say the world is confronting?
10. What did a researcher say the plastic will be an important part of?

# MULTIPLE CHOICE - QUIZ

From <https://breakingnewsenglish.com/1912/191217-self-cleaning-plastic.html>

- 1) What two things did the article say the plastic could prevent?
  - a) pandemics and epidemics
  - b) bacteria and superbugs
  - c) colds and influenza
  - d) headaches and migraines
- 2) How opaque is the revolutionary new plastic?
  - a) not at all see-through
  - b) not very see-through
  - c) slightly see-through
  - d) transparent
- 3) By how much did the article say the plastic would cut microbe transfer?
  - a) drastically
  - b) a little
  - c) totally
  - d) marginally
- 4) What happens to the plastic before it covers things?
  - a) it is sprayed with water
  - b) it is covered in glue
  - c) it is shrunk
  - d) it is folded
- 5) What kind of equipment did the article say the plastic could cover?
  - a) computer equipment
  - b) hospital equipment
  - c) kitchen equipment
  - d) sports equipment
- 6) What was the inspiration for the plastic?
  - a) the lotus plant
  - b) the sunflower
  - c) the rose
  - d) bamboo
- 7) What did the article say happens to water that doesn't sit on leaves?
  - a) it mixes with air
  - b) it evaporates
  - c) it bounces off
  - d) it enters the leaf
- 8) What kind of tuning is a researcher doing to the plastic?
  - a) structural tuning
  - b) fine tuning
  - c) rough tuning
  - d) musical tuning
- 9) What did a researcher say the world is confronting?
  - a) an anti-microbe resistance
  - b) an epidemic
  - c) a pandemic
  - d) a lack of penicillin
- 10) What did a researcher say the plastic will be an important part of?
  - a) restaurant hygiene
  - b) medicine
  - c) school life
  - d) an anti-bacterial toolbox

# ROLE PLAY

From <https://breakingnewsenglish.com/1912/191217-self-cleaning-plastic.html>

## **Role A – Door Handles**

You think door handles are the dirtiest things. Tell the others three reasons why. Tell them why their things aren't as dirty. Also, tell the others which are the cleanest of these (and why): shopping carts, toilet seats or computer keyboards.

## **Role B – Shopping Cart**

You think shopping carts are the dirtiest things. Tell the others three reasons why. Tell them why their things aren't as dirty. Also, tell the others which are the cleanest of these (and why): door handles, toilet seats or computer keyboards.

## **Role C – Toilet Seat**

You think toilet seats are the dirtiest things. Tell the others three reasons why. Tell them why their things aren't as dirty. Also, tell the others which are the cleanest of these (and why): shopping carts, door handles or computer keyboards.

## **Role D – Computer Keyboard**

You think computer keyboards are the dirtiest things. Tell the others three reasons why. Tell them why their things aren't as dirty. Also, tell the others which are the cleanest of these (and why): shopping carts, toilet seats or door handles.

# AFTER READING / LISTENING

From <https://breakingnewsenglish.com/1912/191217-self-cleaning-plastic.html>

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

|                |                 |
|----------------|-----------------|
| <b>plastic</b> | <b>bacteria</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>• help</li><li>• wonder</li><li>• transfer</li><li>• repel</li><li>• cover</li><li>• equipment</li></ul> | <ul style="list-style-type: none"><li>• lotus</li><li>• leaves</li><li>• tuning</li><li>• see</li><li>• crisis</li><li>• toolbox</li></ul> |
|--|--|

# PLASTIC SURVEY

From <https://breakingnewsenglish.com/1912/191217-self-cleaning-plastic.html>

Write five GOOD questions about plastic 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<br>_____ | STUDENT 2<br>_____ | STUDENT 3<br>_____ |
|------|--------------------|--------------------|--------------------|
| 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.

# PLASTIC 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 'plastic'?
3. What do you think of plastic?
4. What is revolutionary about the new plastic?
5. How much do you worry about bacteria and superbugs?
6. How useful is plastic wrap?
7. What effect might the new plastic have on our lives?
8. How clean are the places in your house?
9. Will you be using this new plastic?
10. In what other ways could we protect against bacteria?

*Scientists create plastic that repels all bacteria – 17th December, 2019*  
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# PLASTIC 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 'bacteria'?
13. What do you think about what you read?
14. What do you know about plastic?
15. Can we live without plastic?
16. What do you know about lotus plants?
17. What inspiration could scientists get from other flowers?
18. Will scientists ever protect us from superbugs?
19. What should be in your anti-bacterial toolbox?
20. What questions would you like to ask the researchers?

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

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

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

# LANGUAGE - CLOZE

From <https://breakingnewsenglish.com/1912/191217-self-cleaning-plastic.html>

A revolutionary new plastic could help to (1) \_\_\_\_\_ bacteria and superbugs causing disease and illness. Scientists have developed a new kind of transparent, plastic (2) \_\_\_\_\_-wrap. They say it will drastically cut incidences of microbe transfer in hospitals, restaurants, kitchens, bathrooms and other places where bugs (3) \_\_\_\_\_ in wait. The plastic was created by researchers from McMaster University in Canada. They say their material can (4) \_\_\_\_\_ all forms of bacteria, including superbugs like MRSA. The material is like a conventional transparent wrap used to (5) \_\_\_\_\_ food. It can be shrink-wrapped to protect places that attract bacteria, like worktops, door handles, (6) \_\_\_\_\_, hospital equipment and food containers.

The researchers said the (7) \_\_\_\_\_ for their new material came from the lotus plant. They attempted to replicate the method in which the leaves of this plant repelled water. Drops of water either sit on the surface of the leaves or bounce (8) \_\_\_\_\_. Researcher Leyla Soleymani wanted to apply that process to the new plastic. She said: "We're structurally (9) \_\_\_\_\_ that plastic. This material gives us something that can be applied (10) \_\_\_\_\_ all kinds of things." Another researcher, Tohid Didar, said: "We can see this technology being used in all kinds of institutional and domestic (11) \_\_\_\_\_. As the world confronts the crisis of anti-microbial resistance, we hope it will become an important part of the anti-bacterial (12) \_\_\_\_\_."

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

- |     |                 |                  |                |                |
|-----|-----------------|------------------|----------------|----------------|
| 1.  | (a) project     | (b) prevent      | (c) produce    | (d) proponent  |
| 2.  | (a) wander      | (b) wonder       | (c) windier    | (d) wounded    |
| 3.  | (a) lay         | (b) lee          | (c) ley        | (d) lie        |
| 4.  | (a) label       | (b) repel        | (c) rebel      | (d) level      |
| 5.  | (a) cook        | (b) recipe       | (c) reduce     | (d) cover      |
| 6.  | (a) tips        | (b) tops         | (c) taps       | (d) topes      |
| 7.  | (a) inspiration | (b) perspiration | (c) aspiration | (d) irritation |
| 8.  | (a) on          | (b) up           | (c) off        | (d) down       |
| 9.  | (a) booming     | (b) looming      | (c) fuming     | (d) tuning     |
| 10. | (a) to          | (b) of           | (c) at         | (d) up         |
| 11. | (a) settings    | (b) titles       | (c) conduction | (d) advocates  |
| 12. | (a) toolbox     | (b) gift box     | (c) lunch box  | (d) money box  |

# SPELLING

From <https://breakingnewsenglish.com/1912/191217-self-cleaning-plastic.html>

## Paragraph 1

1. A ovatlynuoreri new plastic
2. npasetarnr, plastic wonder-wrap
3. it will adaiyrlltsc cut incidences
4. microbe sfetarnr in hospitals
5. repel all forms of atcierba
6. hospital eenitpumq

## Paragraph 2

7. the ionisairpn for their new material
8. attempted to paetceril the method
9. the leaves of this plant reeeldpl water
10. We're yusuctrraltl tuning that plastic
11. all kinds of nilsatinoutit and domestic settings
12. the crisis of anti-microbial atcserinse

# PUT THE TEXT BACK TOGETHER

From <https://breakingnewsenglish.com/1912/191217-self-cleaning-plastic.html>

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

- ( ) The researchers said the inspiration for their new material came from the lotus
- ( ) plant. They attempted to replicate the method in which the leaves of this plant repelled water. Drops of
- ( ) repel all forms of bacteria, including superbugs like MRSA. The material is like a conventional
- ( ) applied to all kinds of things." Another researcher, Tohid Didar, said: "We can see this technology being used in all kinds
- ( ) transparent wrap used to cover food. It can be shrink-wrapped to protect places that attract bacteria,
- ( ) like worktops, door handles, taps, hospital equipment and food containers.
- ( **1** ) A revolutionary new plastic could help to prevent bacteria and superbugs causing disease
- ( ) places where bugs lie in wait. The plastic was created by researchers from McMaster University in Canada. They say their material can
- ( ) and illness. Scientists have developed a new kind of transparent, plastic wonder-wrap. They say it will drastically
- ( ) of institutional and domestic settings. As the world confronts the crisis of anti-
- ( ) to the new plastic. She said: "We're structurally tuning that plastic. This material gives us something that can be
- ( ) water either sit on the surface of the leaves or bounce off. Researcher Leyla Soleymani wanted to apply that process
- ( ) cut incidences of microbe transfer in hospitals, restaurants, kitchens, bathrooms and other
- ( ) microbial resistance, we hope it will become an important part of the anti-bacterial toolbox."

# PUT THE WORDS IN THE RIGHT ORDER

From <https://breakingnewsenglish.com/1912/191217-self-cleaning-plastic.html>

1. plastic new prevent could bacteria . help to Revolutionary
2. wonder-wrap . new kind plastic A of transparent,
3. cut will incidences It drastically microbe of transfer .
4. material of repel can all bacteria . forms Their
5. can It be shrink-wrapped to places . protect
6. from the lotus material plant . Their came new
7. leaves or Sit of surface the bounce on off .
8. all Something that kinds . applied can to be
9. world The of the resistance . confronts anti-microbial crisis
10. anti-bacterial toolbox . important An the part of

# CIRCLE THE CORRECT WORD (20 PAIRS)

From <https://breakingnewsenglish.com/1912/191217-self-cleaning-plastic.html>

A revolutionary new plastic could help to *prevent / protect* bacteria and superbugs causing disease and illness. Scientists have developed a new kind of *transparency / transparent*, plastic wonder-wrap. They say it will drastically cut *coincidences / incidences* of microbe transfer in hospitals, restaurants, kitchens, bathrooms and *another / other* places where bugs *lay / lie* in wait. The plastic was created by researchers from McMaster University in Canada. They say their material can *repeal / repel* all forms of bacteria, including superbugs like MRSA. The *materialism / material* is like a conventional transparent *wrap / rapper* used to cover food. It can be shrink-wrapped to protect places that *attract / deflect* bacteria, like worktops, door handles, *tops / taps*, hospital equipment and food containers.

The researchers said the *inspiration / perspiration* for their new material came from the lotus plant. They attempted to *replicate / implicate* the method in which the leaves of this *pliant / plant* repelled water. Drops of water either sit on the surface of the leaves or *trounce / bounce* off. Researcher Leyla Soleymani wanted to *apply / reply* that process to the new plastic. She said: "We're *structured / structurally* tuning that plastic. This material gives us something that can be applied to all kinds of things." Another researcher, Tohid Didar, said: "We can *see / look* this technology being used in all kinds of institutional and *domicile / domestic* settings. As the world confronts the *crisis / crisscrosses* of anti-microbial resistance, we hope it will become an important part of the anti-bacterial *snack box / toolbox*."

**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/1912/191217-self-cleaning-plastic.html>

A r\_v\_l\_t\_\_ n\_r y n\_w p\_l\_s\_t\_c c\_\_ l\_d h\_l p t\_ p  
r\_v\_n t b\_c\_t\_r\_\_ \_n\_d s\_p\_r\_b\_g\_s c\_\_ s\_n\_g d\_s\_\_  
s\_ \_n\_d \_l\_l\_n\_s\_s . S c\_\_ n\_t\_s\_t\_s h\_v\_ d\_v\_l\_p\_d \_  
n\_w k\_n\_d \_f t\_r\_n\_s\_p\_r\_n\_t , p\_l\_s\_t\_c w\_n\_d\_r - w  
r\_p . Th\_y s\_y \_t w\_l\_l d\_r\_s\_t\_c\_l\_l\_y c\_t \_n\_c\_d\_n  
c\_s \_f m\_c\_r\_b\_ t\_r\_n\_s\_f\_r \_n h\_s\_p\_t\_l\_s , r\_s\_t\_\_  
r\_n\_t\_s , k\_t\_c\_h\_n\_s , b\_t\_h\_r\_\_ m\_s \_n\_d \_t\_h\_r p  
l\_c\_s w\_h\_r\_ b\_g\_s l\_\_ \_n w\_\_ t . Th\_ p\_l\_s\_t\_c  
w\_s c\_r\_\_ t\_d b\_y r\_s\_\_ r\_c\_h\_r\_s f\_r\_m M\_c\_M\_s\_t\_r  
U\_n\_v\_r\_s\_t\_y \_n C\_n\_d\_ . Th\_y s\_y th\_\_ r\_m\_t\_r\_\_  
l\_c\_n r\_p\_l \_l\_l f\_r\_m\_s \_f b\_c\_t\_r\_\_ , \_n\_c\_l\_d\_n\_g  
s\_p\_r\_b\_g\_s l\_k\_ M\_R\_S\_A . Th\_ m\_t\_r\_\_ l\_s l\_k\_ \_  
c\_n\_v\_n\_t\_\_ n\_l t\_r\_n\_s\_p\_r\_n\_t w\_r\_p \_s\_d t\_ c\_v\_r  
f\_\_ d . It c\_n b\_ s\_h\_r\_n\_k - w\_r\_p\_p\_d t\_ p\_r\_t\_c\_t  
p\_l\_c\_s th\_t \_t\_t\_r\_c\_t b\_c\_t\_r\_\_ , l\_k\_ w\_r\_k\_t\_p\_s ,  
d\_\_ r\_h\_n\_d\_l\_s , t\_p\_s , h\_s\_p\_t\_l \_q\_\_ p\_m\_n\_t \_n\_d  
f\_\_ d c\_n\_t\_\_ n\_r\_s .

Th\_ r\_s\_\_ r\_c\_h\_r\_s s\_\_ d th\_ \_n\_s\_p\_r\_t\_\_ n\_f\_r t  
h\_\_ r\_n\_w m\_t\_r\_\_ l\_c\_m\_ f\_r\_m th\_ l\_t\_s p\_l\_n\_t .  
Th\_y \_t\_t\_m\_p\_t\_d t\_ r\_p\_l\_c\_t\_ th\_ m\_t\_h\_d \_n w  
h\_c\_h th\_ l\_\_ v\_s \_f th\_s p\_l\_n\_t r\_p\_l\_l\_d w\_t\_r .  
D\_r\_p\_s \_f w\_t\_r \_\_ th\_r s\_t \_n th\_ s\_r\_f\_c\_ \_f t  
h\_ l\_\_ v\_s \_r b\_\_ n\_c\_ \_f\_f . R\_s\_\_ r\_c\_h\_r L\_y\_l\_  
S\_l\_y\_m\_n\_ w\_n\_t\_d t\_ p\_p\_l\_y th\_t p\_r\_c\_s\_s t\_ t  
h\_ n\_w p\_l\_s\_t\_c . S\_h\_ s\_\_ d : " W\_'r\_s\_t\_r\_c\_t\_r\_l\_l  
y\_t\_n\_n\_g th\_t p\_l\_s\_t\_c . Th\_s m\_t\_r\_\_ l\_g\_v\_s  
\_s\_s\_m\_t\_h\_n\_g th\_t c\_n b\_ \_p\_p\_l\_\_ d t\_\_ l\_l k\_n\_d  
s \_f th\_n\_g\_s . " A\_n\_t\_h\_r r\_s\_\_ r\_c\_h\_r , Th\_d  
D\_d\_r , s\_\_ d : " W\_ c\_n s\_\_ th\_s t\_c\_h\_n\_l\_g\_y  
b\_\_ n\_g \_s\_d \_n \_l\_l k\_n\_d\_s \_f \_n\_s\_t\_t\_\_ n\_l \_n\_d  
d\_m\_s\_t\_c s\_t\_t\_n\_g\_s . A\_s th\_ w\_r\_l\_d c\_n\_f\_r\_n\_t\_s  
th\_ c\_r\_s\_s \_f \_n\_t\_- m\_c\_r\_b\_\_ l\_r\_s\_s\_t\_n\_c\_ , w\_  
h\_p\_ \_t w\_l\_l b\_c\_m\_ \_n \_m\_p\_r\_t\_n\_t p\_r\_t \_f th\_ \_n  
t\_- b\_c\_t\_r\_\_ l\_t\_\_ l\_b\_x . "

# PUNCTUATE THE TEXT AND ADD CAPITALS

From <https://breakingnewsenglish.com/1912/191217-self-cleaning-plastic.html>

a revolutionary new plastic could help to prevent bacteria and superbugs causing disease and illness scientists have developed a new kind of transparent plastic wonderwrap they say it will drastically cut incidences of microbe transfer in hospitals restaurants kitchens bathrooms and other places where bugs lie in wait the plastic was created by researchers from mcmaster university in canada they say their material can repel all forms of bacteria including superbugs like mrsa the material is like a conventional transparent wrap used to cover food it can be shrinkwrapped to protect places that attract bacteria like worktops door handles taps hospital equipment and food containers

the researchers said the inspiration for their new material came from the lotus plant they attempted to replicate the method in which the leaves of this plant repelled water drops of water either sit on the surface of the leaves or bounce off researcher leyla soleymani wanted to apply that process to the new plastic she said were structurally tuning that plastic this material gives us something that can be applied to all kinds of things another researcher tohid didar said we can see this technology being used in all kinds of institutional and domestic settings as the world confronts the crisis of antimicrobial resistance we hope it will become an important part of the antibacterial toolbox"

# PUT A SLASH ( / ) WHERE THE SPACES ARE

From <https://breakingnewsenglish.com/1912/191217-self-cleaning-plastic.html>

A revolutionary new plastic could help to prevent bacteria and superbugs causing disease and illness. Scientists have developed a new kind of transparent, plastic wonder-wrap. They say it will drastically cut incidences of microbe transfer in hospitals, restaurants, kitchens, bathrooms and other places where bugs lie in wait. The plastic was created by researchers from McMaster University in Canada. They say their material can repel all forms of bacteria, including superbugs like MRSA. The material is like a conventional transparent wrap used to cover food. It can be shrink-wrapped to protect places that attract bacteria, like worktops, door handles, taps, hospital equipment and food containers. The researchers said the inspiration for their new material came from the lotus plant. They attempted to replicate the method in which the leaves of this plant repelled water. Drop of water either sits on the surface of the leaves or bounces off. Researcher Leyla Soleymani wanted to apply that process to the new plastic. She said: "We're restructurally tuning that plastic. This material gives us something that can be applied to all kinds of things." Another researcher, Tohid Didar, said: "We can see this technology being used in all kinds of institutional and domestic settings. As the world confronts the crisis of anti-microbial resistance, we hope it will become an important part of the anti-bacterial toolbox."





# HOMWORK

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

**4. NO PLASTIC:** Write a magazine article about replacing all plastic. 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 plastic. Ask him/her three questions about it. Give him/her three of your ideas on what we could use instead of plastic. Read your letter to your partner(s) in your next lesson. Your partner(s) will answer your questions.

# ANSWERS

## VOCABULARY (p.4)

1. c    2. d    3. g    4. e    5. a    6. f    7. b  
8. k    9. m    10. n    11. j    12. i    13. h    14. l

## TRUE / FALSE (p.5)

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

## SYNONYM MATCH (p.5)

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

## COMPREHENSION QUESTIONS (p.9)

1. Bacteria and superbugs
2. It's transparent
3. Drastically
4. It is shrunk
5. Hospital equipment
6. The lotus plant
7. It bounces off
8. Structural tuning
9. Anti-microbial resistance
10. The anti-bacterial toolbox

## WORDS IN THE RIGHT ORDER (p.20)

1. Revolutionary new plastic could help to prevent bacteria.
2. A new kind of transparent, plastic wonder-wrap.
3. It will drastically cut incidences of microbe transfer.
4. Their material can repel all forms of bacteria.
5. It can be shrink-wrapped to protect places.
6. Their new material came from the lotus plant.
7. Sit on the surface of leaves or bounce off.
8. Something that can be applied to all kinds.
9. The world confronts the crisis of anti-microbial resistance.
10. An important part of the anti-bacterial toolbox.

## MULTIPLE CHOICE - QUIZ (p.10)

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

## ALL OTHER EXERCISES

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