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Ready-to-Use English Lessons by Sean Banville

Level 6 – 14th April 2025

Scientists discover new water purification microbes

FREE online quizzes, mp3 listening and more for this lesson here:
https://breakingnewsenglish.com/2504/250414-water-purification.html

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

THE ARTICLE

From https://breakingnewsenglish.com/2504/250414-water-purification.html

Scientists have unearthed a previously unknown species of microbes in the earth beneath us. Researchers at Michigan State University have been exploring an area just below and above the Earth's surface called the Critical Zone. This zone is essential to providing the conditions that sustain life. The researchers called the microbes CSP1-3. The microorganisms could be a key part of the process of purifying our water. Microbiologist James Tiedje said that while layers of soil are responsible for much of the filtration of rainwater, CSP1-3 are also indispensable. He said: "CSP1-3 are the scavengers cleaning up what got through the surface layer of soil." They have a job to do to purify our drinking water.

Dr Tiedje and his team focused on the microbes living in the deep soil, up to 200 metres beneath our feet. He said the CSP1-3 microbes remove harmful contaminants and detritus from the water supply. He now wants to cultivate CSP1-3 in his lab to find out more about their properties. He believes they could be utilized to clean up pollution in the soil. He said: "We don't know their capacities for metabolizing tough pollutants and, if we could learn that, we can help solve one of the Earth's most pressing problems." The scitechdaily.com website said: "Understanding this newly found group could boost conservation efforts and help address climate change."

Sources: https://**scitechdaily.com**/scientists-discover-bizarre-new-lifeforms-in-earths-mysterious-critical-zone/
https://www.**sci.news**/biology/deep-soil-bacteria-13810.html
https://www.**earth.com**/news/new-microbes-found-deep-underground-critical-zone-help-clean-our-water/

WARM-UPS

1. WATER: Students walk around the class and talk to other students about water. 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?

> scientists / species / microbes / Earth / purification / water / microbiologist / soil / beneath our feet / contaminant / detritus / lab / pollution / problems / climate change

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

3. WATER QUALITY: Students A **strongly** believe water quality will continue to go down; Students B **strongly** believe the opposite. Change partners again and talk about your conversations.

4. MICROBES: What do you know and what do you want to know about these microbes? Complete this table with your partner(s). Change partners often and share what you wrote.

	What I Know	What I Want to Know
Bacteria		
Protozoa		
Algae		
Fungi		
Viruses		
Parasites		

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

6. POLLUTANTS: Rank these with your partner. Put the most worrying water pollutants at the top. Change partners often and share your rankings.

- Organic waste
- Fertilizers
- Oil
- Microplastics
- Industrial waste
- Radiation
- Toxic waste
- Sewage

VOCABULARY MATCHING

Paragraph 1

1.	unearthed	a.	Animals that look around for and eat dead things.
2.	critical	b.	Found something new.
3.	sustain	c.	The dirt where plants grow; the ground outside.
4.	purifying	d.	Very important: Something you really, really need.
5.	soil	e.	Making something clean; taking the dirt or bad things out.
6.	indispensable	f.	To keep something going; to help something stay alive or continue.
7.	scavengers	g.	You cannot live without it; something you absolutely need.

Paragraph 2

8.	microbe	h.	A very, very, very small living thing.
9.	contaminant	i.	To try to fix something that is wrong.
10.	detritus	j.	Something that makes something dirty or unsafe.
11.	cultivate	k.	Very important and needs to be done now.
12.	metabolizing	l.	Small pieces of waste or dead things.
13.	pressing	m.	To grow plants by taking care of them.
14.	address	n.	How living things use food for energy.

BEFORE READING / LISTENING

From https://breakingnewsenglish.com/2504/250414-water-purification.html

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

1. The new species of microbes are largely found in rain and waterfalls. **T / F**
2. The researchers looked at an area called the Crucial Zone. **T / F**
3. A researcher said the microbes could be a key part of water filtration. **T / F**
4. The researcher called the microbes scavengers. **T / F**
5. The microbes can be found 200 metres beneath our feet. **T / F**
6. The researcher wants to grow the new microbes in his laboratory. **T / F**
7. The researcher said the microbes could help our metabolism. **T / F**
8. The researcher says the microbes will reverse climate change. **T / F**

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

1. unearthed	a. concentrated
2. exploring	b. put to use
3. sustain	c. cleanse
4. indispensable	d. looking into
5. purify	e. ability
6. focused	f. discovered
7. detritus	g. urgent
8. utilize	h. waste
9. capacity	i. essential
10. pressing	j. support

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

1. Scientists have unearthed a previously	a. efforts
2. just below and above the	b. purifying our water
3. providing the conditions	c. problems
4. the process of	d. of rainwater
5. the filtration	e. unknown species
6. He now wants to	f. climate change
7. they could be utilized	g. cultivate CSP1-3 in his lab
8. solve one of the Earth's most pressing	h. Earth's surface
9. boost conservation	i. to clean up pollution
10. help address	j. that sustain life

GAP FILL

From https://breakingnewsenglish.com/2504/250414-water-purification.html

Scientists have (1) _____ a previously unknown species of microbes in the earth beneath us. Researchers at Michigan State University have been (2) _____ an area just below and above the Earth's surface called the Critical Zone. This zone is (3) _____ to providing the conditions that sustain life. The researchers called the microbes CSP1-3. The microorganisms could be a key part of the (4) _____ of purifying our water. Microbiologist James Tiedje said that while (5) _____ of soil are responsible for much of the filtration of rainwater, CSP1-3 are also (6) _____. He said: "CSP1-3 are the (7) _____ cleaning up what got through the surface layer of soil." They have a job to do to (8) _____ our drinking water.

exploring

process

indispensable

unearthed

purify

essential

layers

scavengers

Dr Tiedje and his team focused on the microbes living in the deep (9) _____, up to 200 metres beneath our feet. He said the CSP1-3 microbes remove (10) _____ contaminants and detritus from the water supply. He now wants to (11) _____ CSP1-3 in his lab to find out more about their properties. He believes they could be (12) _____ to clean up pollution in the soil. He said: "We don't know their (13) _____ for metabolizing tough pollutants and, if we could learn that, we can help (14) _____ one of the Earth's most pressing problems." The scitechdaily.com website said: "Understanding this (15) _____ found group could boost conservation efforts and help (16) _____ climate change."

address

cultivate

capacities

newly

soil

solve

harmful

utilized

LISTENING – Guess the answers. Listen to check.

From https://breakingnewsenglish.com/2504/250414-water-purification.html

1) unearthed a previously unknown species of microbes in the _____
   a. earth bequeath us
   b. earth be neat us
   c. earth beneath us
   d. earth beneath the US
2) Michigan State University have been exploring an area just below and above _____
   a. the Earth's surfaced
   b. the Earth's surface
   c. the Earth's surf face
   d. the Earth's sir face
3) This zone is essential to providing the conditions _____
   a. that suss stain life
   b. that sass stain life
   c. that sustains life
   d. that sustain life
4) The microorganisms could be a key part of the process of _____
   a. purify in our water
   b. purifying our water
   c. purify on our water
   d. pure refining our water
5) CSP1-3 are the scavengers cleaning up what got through the surface _____
   a. layer of soil
   b. layer off soil
   c. layer rough soil
   d. layer of soiled
6) Dr Teaja and his team focused on the microbes living in _____
   a. the depth soil
   b. the deep soil
   c. the deepen soil
   d. the deeps soil
7) CSP1-3 microbes remove harmful contaminants and detritus from _____
   a. the water supply
   b. the watery supply
   c. the watered supply
   d. the waters supply
8) We don't know their capacities for _____
   a. metabolizing rough pollutants
   b. metabolizing though pollutants
   c. metabolizing through pollutants
   d. metabolizing tough pollutants
9) we could learn that, we can help solve one of the Earth's _____
   a. most press in problems
   b. most passing problems
   c. most pressing problems
   d. most pressed in problems
10) this newly found group could boost conservation efforts and help _____
   a. address climate change
   b. redress climate change
   c. add dress climate change
   d. a dress climate change

LISTENING – Listen and fill in the gaps

From https://breakingnewsenglish.com/2504/250414-water-purification.html

Scientists (1) _____ previously unknown species of microbes in the earth beneath us. Researchers at Michigan State University have been (2) _____ just below and above the Earth's surface called the Critical Zone. This zone is (3) _____ the conditions that sustain life. The researchers called the microbes CSP1-3. The microorganisms could be a key part of the (4) _____ our water. Microbiologist James Tiedje said that while layers of soil are responsible for much of the filtration of rainwater, CSP1-3 (5) _____. He said: "CSP1-3 are the scavengers cleaning up what got through the surface layer of soil." They have a job (6) _____ purify our drinking water.

Dr Tiedje and his team focused on the microbes living in the deep soil, up to 200 metres (7) _____. He said the CSP1-3 microbes remove harmful contaminants (8) _____ the water supply. He now wants to cultivate CSP1-3 in his lab to find out more about their properties. He believes they could (9) _____ clean up pollution in the soil. He said: "We don't know their capacities for metabolizing (10) _____, if we could learn that, we can help solve one of the Earth's (11) _____." The scitechdaily.com website said: "Understanding this newly found group could boost conservation efforts (12) _____ climate change."

COMPREHENSION QUESTIONS

From https://breakingnewsenglish.com/2504/250414-water-purification.html

1. What university are the researchers from?

2. What area of the Earth did the researchers look at?

3. What is the area essential in providing conditions for?

4. What role did a microbiologist say the CSP1-3 microbes have?

5. What job do the microbes have to do with our drinking water?

6. How far beneath the earth do the microbes live?

7. What do the CSP1-3 microbes remove from our water supply?

8. What does the microbiologist want to do to the microbes in his lab?

9. What does the microbiologist think the microbes can solve?

10. What could the microbes help to address?

MULTIPLE CHOICE - QUIZ

From https://breakingnewsenglish.com/2504/250414-water-purification.html

1) What university are the researchers from?
a) the University of New York
b) the University of Milwaukee
c) the University of Minnesota
d) the University of Michigan

2) What area of the Earth did the researchers look at?
a) the Crucial Zone
b) the Critical Zone
c) the Critics' Zone
d) the Critique Zone

3) What is the area essential in providing conditions for?
a) exploration
b) photosynthesis
c) plant decomposition
d) sustaining life

4) What role did a microbiologist say the CSP1-3 microbes have?
a) to regulate water temperature
b) to remove radiation
c) as scavengers
d) to regulate water pH levels

5) What job do the microbes have to do for our drinking water?
a) make it white
b) freeze it
c) keep dust out
d) purify it

6) How far beneath the earth do the microbes live?
a) up to 400 metres
b) up to 500 metres
c) up to 200 metres
d) up to 900 metres

7) What do the CSP1-3 microbes remove from our water supply?
a) contaminants and detritus
b) acids and alkalis
c) dust and sand
d) hydrogen and oxygen

8) What does the microbiologist want to do to the microbes in his lab?
a) freeze them
b) keep them as pets
c) grow them
d) make organic food from them

9) What does the microbiologist think the microbes can solve?
a) all human illnesses
b) Earth's most pressing problems
c) the meaning of life
d) puzzles

10) What could the microbes help to address?
a) climate change
b) envelopes
c) the envelope of space
d) large crowds

ROLE PLAY

From https://breakingnewsenglish.com/2504/250414-water-purification.html

Role A – Fertilizers

You think fertilizers are the most worrying water pollutants. Tell the others three reasons why. Tell them why their pollutants are more easily managed. Also, tell the others which is the least worrying of these (and why): oil, radiation or microplastics.

Role B – Oil

You think oil is the most worrying water pollutants. Tell the others three reasons why. Tell them why their pollutants are more easily managed. Also, tell the others which is the least worrying of these (and why): fertilizers, radiation or microplastics.

Role C – Radiation

You think radiation is the most worrying water pollutants. Tell the others three reasons why. Tell them why their pollutants are more easily managed. Also, tell the others which is the least worrying of these (and why): oil, fertilizers or microplastics.

Role D – Microplastics

You think microplastics are the most worrying water pollutants. Tell the others three reasons why. Tell them why their pollutants are more easily managed. Also, tell the others which is the least worrying of these (and why): oil, radiation or fertilizers.

AFTER READING / LISTENING

From https://breakingnewsenglish.com/2504/250414-water-purification.html

1. WORD SEARCH: Look online / in your dictionary to find collocates, information on, synonyms for… the words 'microbe' and 'water'.

microbe	**water**

- 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:

• previously • just • life • key • while • job	• focused • remove • lab • know • most • boost

WATER PURIFICATION SURVEY

From https://breakingnewsenglish.com/2504/250414-water-purification.html

Write five GOOD questions about water purification 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.

WATER PURIFICATION 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 'water'?
3. What do you know about microbes?
4. What do you think of tap water?
5. Do you ever think about the quality of the water you drink?
6. What do you know about Earth's Critical Zone?
7. What are the conditions that sustain life?
8. Do you drink enough water?
9. How might pollution be affecting the quality of drinking water?
10. How does water compare to other drinks?

WATER PURIFICATION 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 'microbe'?
13. What do you think about what you read?
14. What do you know about water purification?
15. What do you think of bottled water?
16. What do you know about what lives 200 metres below ground?
17. What are Earth's most pressing problems?
18. In what ways can we boost conservation efforts?
19. How can we address climate change?
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. _____

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/2504/250414-water-purification.html

Scientists have (1) _____ a previously unknown species of microbes in the earth beneath us. Researchers at Michigan State University have been exploring an area (2) _____ below and above the Earth's surface called the Critical Zone. This zone is essential (3) _____ providing the conditions that sustain life. The researchers called the microbes CSP1-3. The microorganisms could be a key part of the process (4) _____ purifying our water. Microbiologist James Tiedje said that while layers of soil are responsible (5) _____ much of the filtration of rainwater, CSP1-3 are also indispensable. He said: "CSP1-3 are the (6) _____ cleaning up what got through the surface layer of soil." They have a job to do to purify our drinking water.

Dr Tiedje and his team focused on the microbes living in the deep soil, up to 200 metres beneath our (7) _____. He said the CSP1-3 microbes remove harmful contaminants and detritus from the water supply. He now wants to (8) _____ CSP1-3 in his lab to find out more about their properties. He believes they could be utilized (9) _____ clean up pollution in the soil. He said: "We don't know their capacities for metabolizing tough (10) _____ and, if we could learn that, we can help solve one of the Earth's most (11) _____ problems." The scitechdaily.com website said: "Understanding this newly found group could (12) _____ conservation efforts and help address climate change."

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

1.	(a)	earthy	(b)	earthed	(c)	earthly	(d)	unearthed
2.	(a)	justly	(b)	adjust	(c)	adjusted	(d)	just
3.	(a)	at	(b)	to	(c)	of	(d)	by
4.	(a)	at	(b)	to	(c)	of	(d)	by
5.	(a)	to	(b)	by	(c)	for	(d)	as
6.	(a)	scavengers	(b)	scriveners	(c)	scapegoats	(d)	sceptics
7.	(a)	heel	(b)	feet	(c)	foot arch	(d)	little toe
8.	(a)	cultivate	(b)	percolate	(c)	inundate	(d)	inculcate
9.	(a)	for	(b)	to	(c)	at	(d)	as
10.	(a)	pollinates	(b)	pollutes	(c)	pollutants	(d)	pollen
11.	(a)	pushing	(b)	parsing	(c)	pressing	(d)	ironing
12.	(a)	best	(b)	boast	(c)	baste	(d)	boost

SPELLING

From https://breakingnewsenglish.com/2504/250414-water-purification.html

Paragraph 1

1. nuetrahed a previously unknown species

2. aommrniricsosg could be a key part

3. responsible for much of the afitiltonr of rainwater

4. CSP1-3 are also liaiedepnbnss

5. CSP1-3 are the eagsnservc cleaning up

6. rpfyiu our drinking water

Paragraph 2

7. harmful actsnamotnin

8. rdtetusi from the water supply

9. utcetiavl CSP1-3 in his lab

10. their capacities for ianozltibemg

11. tough sulopattnl

12. boost sercvtnonaio efforts

PUT THE TEXT BACK TOGETHER

From https://breakingnewsenglish.com/2504/250414-water-purification.html

Number these lines in the correct order.

( ) above the Earth's surface called the Critical Zone. This zone is essential to providing the conditions that sustain

( ) Dr Tiedje and his team focused on the microbes living in the deep soil, up to 200 metres beneath our

( ) feet. He said the CSP1-3 microbes remove harmful contaminants and detritus from the water

( ) found group could boost conservation efforts and help address climate change."

( ) life. The researchers called the microbes CSP1-3. The microorganisms could be a key

( ) of the filtration of rainwater, CSP1-3 are also indispensable. He said: "CSP1-3 are the scavengers cleaning

( ) part of the process of purifying our water. Microbiologist James Tiedje said that while layers of soil are responsible for much

( ) pollutants and, if we could learn that, we can help solve one of the Earth's most pressing

( ) problems." The scitechdaily.com website said: "Understanding this newly

(***1***) Scientists have unearthed a previously unknown species of microbes in the earth beneath

( ) supply. He now wants to cultivate CSP1-3 in his lab to find out more about their properties. He believes they could be

( ) up what got through the surface layer of soil." They have a job to do to purify our drinking water.

( ) us. Researchers at Michigan State University have been exploring an area just below and

( ) utilized to clean up pollution in the soil. He said: "We don't know their capacities for metabolizing tough

PUT THE WORDS IN THE RIGHT ORDER

From https://breakingnewsenglish.com/2504/250414-water-purification.html

1. Scientists have species unknown a previously unearthed microbe .

2. An Earth the above and below just area .

3. A purifying of of process the part key .

4. Cleaning layer surface the through got what up .

5. A our purify to do to job water .

6. The soil deep the in living microbes .

7. They pollution up clean to utilized be could .

8. We pollutants metabolizing for capacities their know don't .

9. Solve problems pressing most Earth's the of one .

10. This efforts conservation boost could group found newly .

CIRCLE THE CORRECT WORD (20 PAIRS)

From https://breakingnewsenglish.com/2504/250414-water-purification.html

Scientists have unearthed a *previous / previously* unknown species of microbes in the earth beneath *them / us*. Researchers at Michigan State University have been exploring an area just below and above the Earth's surface called the Critical Zone. This zone is *essential / essence* to providing the conditions that *retrain / sustain* life. The researchers called the microbes CSP1-3. The microorganisms could be a *key / quay* part of the process of purifying our *watery / water*. Microbiologist James Tiedje said that while layers of *foil / soil* are responsible for much of the *filtration / fluctuation* of rainwater, CSP1-3 are also indispensable. He said: "CSP1-3 are the *scriveners / scavengers* cleaning up what got through the surface layer of soil." They *have / get* a job to do to purify our drinking water.

Dr Tiedje and his team focused *in / on* the microbes living in the *depth / deep* soil, up to 200 metres beneath our *foot / feet*. He said the CSP1-3 microbes remove harmful contaminants and *delirium / detritus* from the water supply. He now wants to cultivate CSP1-3 in his lab to find out more about their *real estate / properties*. He believes they could be utilized to clean up pollution *at / in* the soil. He said: "We don't know their capacities *at / for* metabolizing tough pollutants and, if we could learn that, we can help solve one of the Earth's most *pressing / passing* problems." The scitechdaily.com website said: "Understanding this newly *funded / found* group could boost conservation efforts and help *post / address* climate change."

Talk about the connection between each pair of words in italics, and why the correct word is correct. Look up the definition of new words.

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

From https://breakingnewsenglish.com/2504/250414-water-purification.html

Sc__nt_sts h_v_ _n__rth_d _ pr_v___sly _nkn_wn sp_c__s _f m_cr_b_s _n th_ __rth b_n__th _s. R_s__rch_rs _t M_ch_g_n St_t_ _n_v_rs_ty h_v_ b__n _xpl_r_ng _n _r__ j_st b_l_w _nd _b_v_ th_ __rth's s_rf_c_ c_ll_d th_ Cr_t_c_l Z_n_. Th_s z_n_ _s _ss_nt__l t_ pr_v_d_ng th_ c_nd_t__ns th_t s_st__n l_f_. Th_ r_s__rch_rs c_ll_d th_ m_cr_b_s CSP1-3. Th_ m_cr__rg_n_sms c__ld b_ _ k_y p_rt _f th_ pr_c_ss _f p_r_fy_ng __r w_t_r. M_cr_b__l_g_st J_m_s T__dj_ s__d th_t wh_l_ l_y_rs _f s__l _r_ r_sp_ns_bl_ f_r m_ch _f th_ f_ltr_t__n _f r__nw_t_r, CSP1-3 _r_ _ls_ _nd_sp_ns_bl_. H_ s__d: "CSP1-3 _r_ th_ sc_v_ng_rs cl__n_ng _p wh_t g_t thr__gh th_ s_rf_c_ l_y_r _f s__l." Th_y h_v_ _ j_b t_ d_ t_ p_r_fy __r dr_nk_ng w_t_r.

Dr T__dj_ _nd h_s t__m f_c_s_d _n th_ m_cr_b_s l_v_ng _n th_ d__p s__l, _p t_ 200 m_tr_s b_n__th __r f__t. H_ s__d th_ CSP1-3 m_cr_b_s r_m_v_ h_rmf_l c_nt_m_n_nts _nd d_tr_t_s fr_m th_ w_t_r s_pply. H_ n_w w_nts t_ c_lt_v_t_ CSP1-3 _n h_s l_b t_ f_nd __t m_r_ _b__t th__r pr_p_rt__s. H_ b_l__v_s th_y c__ld b_ _t_l_z_d t_ cl__n _p p_ll_t__n _n th_ s__l. H_ s__d: "W_ d_n't kn_w th__r c_p_c_t__s f_r m_t_b_l_z_ng t__gh p_ll_t_nts _nd, _f w_ c__ld l__rn th_t, w_ c_n h_lp s_lv_ _n_ _f th_ __rth's m_st pr_ss_ng pr_bl_ms." Th_ sc_t_chd__ly.c_m w_bs_t_ s__d: "_nd_rst_nd_ng th_s n_wly f__nd gr__p c__ld b__st c_ns_rv_t__n _ff_rts _nd h_lp _ddr_ss cl_m_t_ ch_ng_."

PUNCTUATE THE TEXT AND ADD CAPITALS

From https://breakingnewsenglish.com/2504/250414-water-purification.html

scientists have unearthed a previously unknown species of microbes in the earth beneath us researchers at michigan state university have been exploring an area just below and above the earths surface called the critical zone this zone is essential to providing the conditions that sustain life the researchers called the microbes csp13 the microorganisms could be a key part of the process of purifying our water microbiologist james tiedje said that while layers of soil are responsible for much of the filtration of rainwater csp13 are also indispensable he said csp13 are the scavengers cleaning up what got through the surface layer of soil they have a job to do to purify our drinking water

dr tiedje and his team focused on the microbes living in the deep soil up to 200 metres beneath our feet he said the csp13 microbes remove harmful contaminants and detritus from the water supply he now wants to cultivate csp13 in his lab to find out more about their properties he believes they could be utilized to clean up pollution in the soil he said we dont know their capacities for metabolizing tough pollutants and if we could learn that we can help solve one of the earths most pressing problems the scitechdailycom website said understanding this newly found group could boost conservation efforts and help address climate change

PUT A SLASH (/) WHERE THE SPACES ARE

From https://breakingnewsenglish.com/2504/250414-water-purification.html

Scientistshaveunearthedapreviouslyunknownspeciesofmicrobesintheearthbeneathus.ResearchersatMichiganStateUniversityhavebeenexploringanareajustbelowandabovetheEarth'ssurfacecalledtheCriticalZone.Thiszoneisessentialtoprovidingtheconditionsthatsustainlife.TheresearcherscalledthemicrobesCSP1-3.Themicroorganismscouldbeakeypartoftheprocessofpurifyingourwater.MicrobiologistJamesTiedjesaidthatwhilelayersofsoilareresponsibleformuchofthefiltrationofrainwater,CSP1-3arealsoindispensable.Hesaid:"CSP1-3arethescavengerscleaningupwhatgotthroughthesurfacelayerofsoil."Theyhaveajobtodotopurifyourdrinkingwater.DrTiedjeandhisteamfocusedonthemicrobeslivinginthedeepsoil,upto200metresbeneathourfeet.HesaidtheCSP1-3microbesremoveharmfulcontaminantsanddetritusfromthewatersupply.HenowwantstocultivateCSP1-3inhislabtofindoutmoreabouttheirproperties.Hebelievestheycouldbeutilizedtocleanuppollutioninthesoil.Hesaid:"Wedon'tknowtheircapacitiesformetabolizingtoughpollutantsand,ifwecouldlearnthat,wecanhelpsolveoneoftheEarth'smostpressingproblems."Thescitechdaily.comwebsitesaid:"Understandingthisnewlyfoundgroupcouldboostconservationeffortsandhelpaddressclimatechange."

FREE WRITING

From https://breakingnewsenglish.com/2504/250414-water-purification.html

Write about **water purification** for 10 minutes. Comment on your partner's paper.

ACADEMIC WRITING

From https://breakingnewsenglish.com/2504/250414-water-purification.html

We need to worry about how safe our water is to drink. 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. WATER PURIFICATION: Make a poster about water purification. Show your work to your classmates in the next lesson. Did you all have similar things?

4. BOTTLED WATER: Write a magazine article about banning bottled water. 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 water purification. Ask him/her three questions about it. Give him/her three of your ideas. Read your letter to your partner(s) in your next lesson. Your partner(s) will answer your questions.

ANSWERS

VOCABULARY (p.4)

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

TRUE / FALSE (p.5)

1	F	2	F	3	T	4	T	5	T	6	T	7	F	8	F

SYNONYM MATCH (p.5)

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

COMPREHENSION QUESTIONS (p.9)

1. The University of Michigan
2. The Critical Zone
3. Sustaining life
4. As scavengers
5. Purifying it
6. Up to 200 metres
7. Harmful contaminants and detritus
8. Cultivate them
9. Earth's most pressing problems
10. Climate change

WORDS IN THE RIGHT ORDER (p.19)

1. Scientists have unearthed a previously unknown microbe species.
2. An area just below and above the Earth.
3. A key part of the process of purifying.
4. Cleaning up what got through the surface layer.
5. A job to do to purify our water.
6. The microbes living in the deep soil.
7. They could be utilized to clean up pollution.
8. We don't know their capacities for metabolizing pollutants.
9. Solve one of the Earth's most pressing problems.
10. This newly found group could boost conservation efforts.

MULTIPLE CHOICE - QUIZ (p.10)

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

ALL OTHER EXERCISES

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