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Level 3 – 16th November 2023

Diseases in 'Factor X' could be next global threat

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

<https://breakingnewsenglish.com/2311/231116-factor-x.html>

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

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THE ARTICLE

From <https://breakingnewsenglish.com/2311/231116-factor-x.html>

Scientists say there could be something under frozen ground that contains many deadly diseases. Ancient microbes have been trapped for millennia in the permafrost that covers large areas of Earth. Permafrost is ground that stays completely frozen for at least two years. It is common high in mountains and near the North and South Poles. The scientists say the permafrost is melting because of climate change. The result could be the release of unknown, harmful viruses, which scientists are calling 'Factor X'. Birgitta Evengard, a professor in infectious diseases at a university in Sweden, said we know little about Factor X and the biological dangers trapped in Earth's permafrost.

Virologist Jean-Michel Claverie says there are viruses deep in the permafrost that are more than 50,000 years old. He said these could be harmful to humans. Professor Claverie said "ancient viruses up to a million years old" would be the most terrifying because they are unknown and we have never encountered them before. He added that deadly bacterial diseases like smallpox and anthrax could be released on a large scale. Factor X could pose even bigger problems. However, many scientists agree that a bigger danger from melting permafrost is the release of methane. This is a greenhouse gas that is 80 times more harmful than CO₂.

Sources: <https://www.newsweek.com/scientists-fear-cataclysmic-disease-emerge-earth-permafrost-climate-change-pandemic-1842724>
<https://www.sciencealert.com/a-dangerous-factor-x-could-be-lurking-in-earths-ice-scientist-warns>
<https://www.msn.com/en-in/news/world/rising-global-temperature-could-awaken-ancient-pathogens-in-russian-permafrost/ar-AA1jS25C>

WARM-UPS

1. WORLD THREATS: Students walk around the class and talk to other students about world threats. 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 / frozen / deadly diseases / microbes / permafrost / the North Pole / virus / virologist / ancient / terrifying / smallpox / anthrax / methane / greenhouse gas / CO2

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

3. PREPARATION: Students A **strongly** believe we should start preparing to protect ourselves from Factor X; Students B **strongly** believe the opposite. Change partners again and talk about your conversations.

4. DISEASES: What do you know about these diseases? How can we deal with them? Complete this table with your partner(s). Change partners often and share what you wrote.

	What I Know	How to Deal with Them
Heart disease		
Diabetes		
Alzheimer's		
Malaria		
Tuberculosis		
Cholera		

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

6. GLOBAL THREATS: Rank these with your partner. Put the best at the top. Change partners often and share your rankings.

- Melting permafrost
- Viruses
- The Internet
- Nuclear War
- Climate change
- Water shortages
- Overpopulation
- Migration

VOCABULARY MATCHING

Paragraph 1

- | | |
|---------------|---|
| 1. frozen | a. Periods of a thousand years old. |
| 2. ancient | b. A micro-organism, especially bacteria causing disease or fermentation. |
| 3. microbes | c. Very, very, very old. |
| 4. trapped | d. Of a disease that can pass from person to person. |
| 5. millennia | e. Turned into ice as a result of extreme cold. |
| 6. melting | f. In a place that is difficult to escape from. |
| 7. infectious | g. Turning from ice (or a frozen state) to water or a non-frozen state. |

Paragraph 2

- | | |
|-----------------|--|
| 8. virus | h. Unexpectedly be faced with or experience something dangerous or difficult. |
| 9. harmful | i. Have the same opinion about something. |
| 10. terrifying | j. Be a problem or danger. |
| 11. encountered | k. Causing or likely to cause physical or mental damage, pain or injury. |
| 12. pose | l. Set free. |
| 13. agree | m. A (harmful) tiny biological agent that is able to multiply in the living cells of a host. |
| 14. release | n. Very, very, very scary. |

BEFORE READING / LISTENING

From <https://breakingnewsenglish.com/2311/231116-factor-x.html>

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

1. Scientists say there could be deadly diseases on the permafrost. **T / F**
2. The article says ancient bacteria has been trapped for billions of years. **T / F**
3. Permafrost is found near the North and South Poles. **T / F**
4. Scientists say they know a lot about Factor X. **T / F**
5. The deadliest viruses are in permafrost that is 50,000 years old. **T / F**
6. The diseases anthrax and smallpox are trapped in the permafrost. **T / F**
7. Melting permafrost is a bigger danger than the release of methane. **T / F**
8. Methane is 80 times more harmful than CO2. **T / F**

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

- | | |
|-----------------------|----------------|
| 1. under | a. freeing |
| 2. deadly | b. experienced |
| 3. common | c. contagious |
| 4. release | d. fatal |
| 5. infectious | e. peril |
| 6. harmful | f. beneath |
| 7. ancient | g. present |
| 8. encountered | h. damaging |
| 9. pose | i. widespread |
| 10. danger | j. very old |

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

- | | |
|--|------------------------------|
| 1. there could be something under | a. harmful viruses |
| 2. Ancient microbes have been trapped | b. stays completely frozen |
| 3. Permafrost is ground that | c. even bigger problems |
| 4. The result could be the release of unknown, | d. in Earth's permafrost |
| 5. the biological dangers trapped | e. the release of methane |
| 6. ancient viruses up | f. like smallpox and anthrax |
| 7. deadly bacterial diseases | g. frozen ground |
| 8. Factor X could pose | h. more harmful than CO2 |
| 9. a bigger danger from melting permafrost is | i. to a million years old |
| 10. a greenhouse gas that is 80 times | j. for millennia |

GAP FILL

From <https://breakingnewsenglish.com/2311/231116-factor-x.html>

Scientists say there could be something under (1) _____ ground that contains many deadly diseases. Ancient (2) _____ have been trapped for millennia in the permafrost that covers large (3) _____ of Earth. Permafrost is ground that stays completely frozen for at least two years. It is (4) _____ high in mountains and near the North and South Poles. The scientists say the permafrost is (5) _____ because of climate change. The result could be the release of unknown, harmful viruses, which scientists are (6) _____ 'Factor X'. Birgitta Evengard, a professor in (7) _____ diseases at a university in Sweden, said we know little about Factor X and the biological dangers (8) _____ in Earth's permafrost.

calling
trapped
areas
infectious
frozen
common
microbes
melting

Virologist Jean-Michel Claverie says there are viruses (9) _____ in the permafrost that are more than 50,000 years old. He said these could be (10) _____ to humans. Professor Claverie said "ancient viruses up to a million years old" would be the most (11) _____ because they are unknown and we have never encountered them before. He added that deadly (12) _____ diseases like smallpox and anthrax could be released on a large (13) _____. Factor X could (14) _____ even bigger problems. However, many scientists (15) _____ that a bigger danger from melting permafrost is the release of methane. This is a greenhouse (16) _____ that is 80 times more harmful than CO2.

bacterial
deep
terrifying
pose
gas
harmful
agree
scale

LISTENING – Guess the answers. Listen to check.

From <https://breakingnewsenglish.com/2311/231116-factor-x.html>

- 1) there could be something under frozen ground that contains _____
 - a. many death diseases
 - b. many deadly diseases
 - c. many dead diseases
 - d. many deadly disease
- 2) trapped for millennia in the permafrost that covers large _____
 - a. arenas of Earth
 - b. areas of Earth
 - c. areas off Earth
 - d. arenas off Earth
- 3) Permafrost is ground that stays completely frozen for at _____
 - a. last two years
 - b. lest two years
 - c. lost two years
 - d. least two years
- 4) The scientists say the _____
 - a. permafrost is melding
 - b. permafrost is meeting
 - c. permafrost is melting
 - d. permafrost is smelting
- 5) calling 'Factor X'. Birgitta Evengard, a professor _____
 - a. to infectious diseases
 - b. in infectious diseases
 - c. an infectious diseases
 - d. ring infectious diseases
- 6) Claverie said ancient viruses up to a million years old would be _____
 - a. the most terrifying
 - b. the must terrifying
 - c. the mast terrifying
 - d. the mist terrifying
- 7) because they are unknown and we have never _____
 - a. encountered them afore
 - b. encountered them beef or
 - c. encountered them be four
 - d. encountered them before
- 8) deadly bacterial diseases like smallpox and anthrax could be released on _____
 - a. a large skull
 - b. a large stale
 - c. a large scale
 - d. a large shale
- 9) a bigger danger from melting permafrost is the _____
 - a. release off methane
 - b. real lease of methane
 - c. reel lease of methane
 - d. real ease of methane
- 10) This is a greenhouse gas that is 80 times more _____
 - a. harm fuel than CO2
 - b. harms full than CO2
 - c. harmed full than CO2
 - d. harmful than CO2

LISTENING – Listen and fill in the gaps

From <https://breakingnewsenglish.com/2311/231116-factor-x.html>

Scientists say there could be something (1) _____ that contains many deadly diseases. Ancient microbes have been trapped for millennia in the permafrost that (2) _____ of Earth. Permafrost is ground that stays completely frozen for at least two years. It is (3) _____ mountains and near the North and South Poles. The scientists say the permafrost (4) _____ of climate change. The result could be the release of unknown, harmful viruses, which scientists are calling 'Factor X'. Birgitta Evengard, a professor (5) _____ at a university in Sweden, said we know little about Factor X (6) _____ dangers trapped in Earth's permafrost.

Virologist Jean-Michel Claverie says there are (7) _____ the permafrost that are more than 50,000 years old. He said these could be (8) _____. Professor Claverie said "ancient viruses up to a million years old" would be (9) _____ because they are unknown and we have never encountered them before. He added that (10) _____ like smallpox and anthrax could be released on a large scale. Factor X could pose even bigger problems. However, many scientists (11) _____ bigger danger from melting permafrost is the release of methane. This is a (12) _____ is 80 times more harmful than CO2.

COMPREHENSION QUESTIONS

From <https://breakingnewsenglish.com/2311/231116-factor-x.html>

1. What does the article say has been trapped for millennia?
2. For how long must the ground be frozen for it to be permafrost?
3. Where is permafrost common besides in mountains?
4. What is Birgitta Evengard a professor in?
5. What kind of dangers did Professor Evengard say we know little about?
6. How old were the viruses that a professor say could be harmful to us?
7. What did a professor say would be most terrifying?
8. What does the article say Factor X could pose?
9. What is a bigger danger from melting permafrost than diseases?
10. How much more harmful is methane than CO2?

MULTIPLE CHOICE - QUIZ

From <https://breakingnewsenglish.com/2311/231116-factor-x.html>

- 1) What does the article say has been trapped for millennia?
 - a) ancient vaccines
 - b) ancient fossils
 - c) dinosaurs
 - d) ancient microbes
- 2) For how long must the ground be frozen for it to be permafrost?
 - a) two thousand years
 - b) at least two years
 - c) at least 20 thousand years
 - d) at least 2 million years
- 3) Where is permafrost common besides in mountains?
 - a) Iceland
 - b) in the tropics
 - c) near the North and South Poles
 - d) in caves
- 4) What is Birgitta Evengard a professor in?
 - a) infectious diseases
 - b) permafrost
 - c) global dangers
 - d) Factor X
- 5) What kind of dangers did Professor Evengard say we know little about?
 - a) hidden dangers
 - b) microbial dangers
 - c) biological dangers
 - d) unknown dangers
- 6) How old were the viruses that a professor say could be harmful to us?
 - a) more than 40,000 years old
 - b) more than 50,000 years old
 - c) more than 60,000 years old
 - d) more than 70,000 years old
- 7) What did a professor say would be most terrifying?
 - a) viruses in snow
 - b) viruses from dinosaurs
 - c) the melting of all ice
 - d) ancient viruses up to a million years old
- 8) What does the article say Factor X could pose?
 - a) even bigger problems
 - b) models
 - c) threats to end humankind
 - d) a puzzle
- 9) What is a bigger danger from melting permafrost than diseases?
 - a) acid rain
 - b) the possibility of new volcanos
 - c) the release of methane
 - d) global floods
- 10) How much more harmful is methane than CO2?
 - a) eight times more harmful
 - b) eighty times more harmful
 - c) eighteen times more harmful
 - d) 800 times more harmful

ROLE PLAY

From <https://breakingnewsenglish.com/2311/231116-factor-x.html>

Role A – Melting Permafrost

You think melting permafrost is the biggest threat to the world. Tell the others three reasons why. Tell them why their things aren't as big a threat. Also, tell the others which is the least threatening of these (and why): viruses, the Internet or overpopulation.

Role B – Viruses

You think viruses are the biggest threat to the world. Tell the others three reasons why. Tell them why their things aren't as big a threat. Also, tell the others which is the least threatening of these (and why): melting permafrost, the Internet or overpopulation.

Role C – The Internet

You think the Internet is the biggest threat to the world. Tell the others three reasons why. Tell them why their things aren't as big a threat. Also, tell the others which is the least threatening of these (and why): viruses, melting permafrost or overpopulation.

Role D – Overpopulation

You think overpopulation is the biggest threat to the world. Tell the others three reasons why. Tell them why their things aren't as big a threat. Also, tell the others which is the least threatening of these (and why): viruses, the Internet or melting permafrost.

AFTER READING / LISTENING

From <https://breakingnewsenglish.com/2311/231116-factor-x.html>

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

disease	threat

- 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">• something• covers• common• change• calling• biological	<ul style="list-style-type: none">• deep• humans• most• scale• agree• 80
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WORLD THREATS SURVEY

From <https://breakingnewsenglish.com/2311/231116-factor-x.html>

Write five GOOD questions about world threats 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.

WORLD THREATS 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 'disease'?
3. How much do you worry about diseases?
4. What do you know about microbes?
5. How can we make sure microbes do not trouble us?
6. What do you know about permafrost?
7. What do you know about the North and South Poles?
8. What do you think about the release of Factor X?
9. How can we stop the permafrost melting?
10. How big a threat is factor X compared to other global threats?

Diseases in 'Factor X' could be next global threat – 16th November 2023
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WORLD THREATS 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 'threat'?
13. What do you think about what you read?
14. How can doctors help us with ancient, deadly viruses?
15. What would you do if there was another deadly pandemic?
16. What do you know about smallpox and anthrax?
17. Do you like looking at movies about viruses?
18. What do you know about methane and CO2?
19. Are you more worried about viruses or methane?
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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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/2311/231116-factor-x.html>

Scientists say there could be (1) _____ under frozen ground that contains many deadly diseases. Ancient microbes have been trapped (2) _____ millennia in the permafrost that covers large (3) _____ of Earth. Permafrost is ground that stays completely frozen for at least two years. It is common high in mountains and near the North and South (4) _____. The scientists say the permafrost is melting because of climate change. The result could be the release of unknown, harmful viruses, which scientists are (5) _____ 'Factor X'. Birgitta Evengard, a professor in infectious diseases at a university in Sweden, said we know (6) _____ about Factor X and the biological dangers trapped in Earth's permafrost.

Virologist Jean-Michel Claverie says there are viruses (7) _____ in the permafrost that are more than 50,000 years old. He said these could be (8) _____ to humans. Professor Claverie said "ancient viruses up to a million years old" would be the most (9) _____ because they are unknown and we have never encountered them (10) _____. He added that deadly bacterial diseases like smallpox and anthrax could be released on a large scale. Factor X could (11) _____ even bigger problems. However, many scientists agree that a bigger danger from melting permafrost is the release (12) _____ methane. This is a greenhouse gas that is 80 times more harmful than CO₂.

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

- | | | | | |
|-----|----------------|--------------|-----------------|-----------------|
| 1. | (a) nothing | (b) thing | (c) something | (d) thingamajig |
| 2. | (a) for | (b) by | (c) of | (d) in |
| 3. | (a) areas | (b) auras | (c) auroras | (d) arenas |
| 4. | (a) Poles | (b) Sticks | (c) Posts | (d) Stakes |
| 5. | (a) call | (b) calling | (c) calls | (d) called |
| 6. | (a) small | (b) few | (c) tiny | (d) little |
| 7. | (a) deepen | (b) depend | (c) deep | (d) depth |
| 8. | (a) harm | (b) harms | (c) harmed | (d) harmful |
| 9. | (a) terrifying | (b) terrific | (c) terrestrial | (d) terror |
| 10. | (a) earlier | (b) before | (c) past | (d) previous |
| 11. | (a) dose | (b) pose | (c) hose | (d) lose |
| 12. | (a) at | (b) by | (c) of | (d) to |

SPELLING

From <https://breakingnewsenglish.com/2311/231116-factor-x.html>

Paragraph 1

1. something under neorfz ground
2. trapped for miallnine in the permafrost
3. It is omnmoc high in mountains
4. the eslaeer of unknown, harmful viruses
5. fuetnciois diseases
6. iaollcogbi dangers

Paragraph 2

7. these could be harmful to shanum
8. n-teicna viruses
9. the most ytrfgeinri
10. we have never conereenutd them before
11. released on a large caseI
12. a bigger danger from neglmti permafrost

PUT THE TEXT BACK TOGETHER

From <https://breakingnewsenglish.com/2311/231116-factor-x.html>

Number these lines in the correct order.

- () them before. He added that deadly bacterial diseases like smallpox and anthrax could be released on a large
- () of climate change. The result could be the release of unknown, harmful viruses, which scientists are calling
- () scale. Factor X could pose even bigger problems. However, many scientists agree
- () 'Factor X'. Birgitta Evengard, a professor in infectious diseases at a university in Sweden, said we know
- () greenhouse gas that is 80 times more harmful than CO2.
- () mountains and near the North and South Poles. The scientists say the permafrost is melting because
- () Virologist Jean-Michel Claverie says there are viruses deep in the permafrost that are more than
- () of Earth. Permafrost is ground that stays completely frozen for at least two years. It is common high in
- () that a bigger danger from melting permafrost is the release of methane. This is a
- () 50,000 years old. He said these could be harmful to humans. Professor Claverie said "ancient viruses up
- (**1**) Scientists say there could be something under frozen ground that contains many deadly
- () to a million years old" would be the most terrifying because they are unknown and we have never encountered
- () little about Factor X and the biological dangers trapped in Earth's permafrost.
- () diseases. Ancient microbes have been trapped for millennia in the permafrost that covers large areas

PUT THE WORDS IN THE RIGHT ORDER

From <https://breakingnewsenglish.com/2311/231116-factor-x.html>

1. that frozen deadly Something ground under diseases . contains
2. millennia . trapped have Ancient microbes been for
3. of that Earth . large permafrost areas The covers
4. The melting change . is permafrost climate of because
5. biological The Earth's in trapped permafrost . dangers
6. humans . said these could harmful He to be
7. million years up to a old . viruses Ancient
8. They and are encountered unknown them . we've never
9. A is melting from methane . danger bigger permafrost
10. is more times It CO2 . 80 than harmful

CIRCLE THE CORRECT WORD (20 PAIRS)

From <https://breakingnewsenglish.com/2311/231116-factor-x.html>

Scientists say there could be something under frozen ground that *contents* / *contains* many deadly diseases. Ancient microbes have *been* / *being* trapped for millennia in the permafrost that covers large *arenas* / *areas* of Earth. Permafrost is *ground* / *aground* that stays completely frozen for at *least* / *last* two years. It is common high in mountains and *nearly* / *near* the North and South Poles. The scientists say the permafrost is *molten* / *melting* because of climate change. The result could be the release of unknown, harmful viruses, which scientists are *calling* / *called* 'Factor X'. Birgitta Evengard, a professor in *infectiously* / *infectious* diseases at a university in Sweden, said we know little about Factor X and the biological *dangerous* / *dangers* trapped in Earth's permafrost.

Virologist Jean-Michel Claverie says there are viruses *deeply* / *deep* in the permafrost that are more than 50,000 years old. He said *these* / *them* could be harmful to *humans* / *humane*. Professor Claverie said "ancient viruses up to a million years old" would be the most *terrific* / *terrifying* because they are unknown and we have never *counted* / *encountered* them before. He added that *deadly* / *dead* bacterial diseases like smallpox and anthrax could be released *in* / *on* a large scale. Factor X could pose even bigger problems. However, many scientists agree that a *biggest* / *bigger* danger from melting permafrost is the release *on* / *of* methane. This is a greenhouse gas that is 80 times more *harmful* / *harmed* than CO2.

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/2311/231116-factor-x.html>

Sc__nt_sts s_y th_r_ c__ld b_ s_m_th_ng _nd_r fr_z_n gr__nd th_t c_nt__ns m_ny d__dly d_s__s_s. _nc__nt m_cr_b_s h_v_ b__n tr_pp_d f_r m_ll_nn__ _n th_ p_rm_fr_st th_t c_v_rs l_rg_ _r__s _f __rth. P_rm_fr_st _s gr__nd th_t st_ys c_mpl_t_ly fr_z_n f_r _t l__st tw_ y__rs. _t _s c_mmm_n h_gh _n m__nt__ns _nd n__r th_ N_rth _nd S__th P_l_s. Th_ sc__nt_sts s_y th_ p_rm_fr_st _s m_lt_ng b_c__s_ _f cl_m_t_ ch_ng_. Th_ r_s_lt c__ld b_ th_ r_l__s_ _f _nkn_wn, h_rmf_l v_r_s_s, wh_ch sc__nt_sts _r_ c_ll_ng 'F_ct_r X'. B_rg_tt_ _v_ng_rd, _ pr_f_ss_r _n _nf_ct__s d_s__s_s _t _ _n_v_rs_ty _n Sw_d_n, s__d w_ kn_w lttl_ _b__t F_ct_r X _nd th_ b__l_g_c_l d_ng_rs tr_pp_d _n __rth's p_rm_fr_st.

V_r_l_g_st J__n-M_ch_l Cl_v_r__ s_ys th_r_ _r_ v_r_s_s d__p _n th_ p_rm_fr_st th_t _r_ m_r_ th_n 50,000 y__rs _ld. H_ s__d th_s_ c__ld b_ h_rmf_l t_ h_m_ns. Pr_f_ss_r Cl_v_r__ s__d "_nc__nt v_r_s_s _p t_ _ m_ll__n y__rs _ld" w__ld b_ th_ m_st t_rr_fy_ng b_c__s_ th_y _r_ _nkn_wn _nd w_ h_v_ n_v_r _nc__nt_r_d th_m b_f_r_. H_ _dd_d th_t d__dly b_ct_r__l d_s__s_s l_k_ sm_llp_x _nd _nthr_x c__ld b_ r_l__s_d _n _ l_rg_ sc_l_. F_ct_r X c__ld p_s_ _v_n b_gg_r pr_bl_ms. H_w_v_r, m_ny sc__nt_sts _gr__ th_t _ b_gg_r d_ng_r fr_m m_lt_ng p_rm_fr_st _s th_ r_l__s_ _f m_th_n_. Th_s _s _ gr__nh__s_ g_s th_t _s 80 t_m_s m_r_ h_rmf_l th_n C_2.

PUNCTUATE THE TEXT AND ADD CAPITALS

From <https://breakingnewsenglish.com/2311/231116-factor-x.html>

scientists say there could be something under frozen ground that contains many deadly diseases ancient microbes have been trapped for millennia in the permafrost that covers large areas of earth permafrost is ground that stays completely frozen for at least two years it is common high in mountains and near the north and south poles the scientists say the permafrost is melting because of climate change the result could be the release of unknown harmful viruses which scientists are calling factor x birgitta evengard a professor in infectious diseases at a university in sweden said we know little about factor x and the biological dangers trapped in earths permafrost

virologist jeanmichel claverie says there are viruses deep in the permafrost that are more than 50000 years old he said these could be harmful to humans professor claverie said ancient viruses up to a million years old would be the most terrifying because they are unknown and we have never encountered them before he added that deadly bacterial diseases like smallpox and anthrax could be released on a large scale factor x could pose even bigger problems however many scientists agree that a bigger danger from melting permafrost is the release of methane this is a greenhouse gas that is 80 times more harmful than co2

PUT A SLASH (/) WHERE THE SPACES ARE

From <https://breakingnewsenglish.com/2311/231116-factor-x.html>

Scientists say there could be something under frozen ground that contains many deadly diseases. Ancient microbes have been trapped for millennia in the permafrost that covers large areas of Earth. Permafrost is ground that stays completely frozen for at least two years. It is common high in mountains and near the North and South Poles. The scientists say the permafrost is melting because of climate change. The result could be the release of unknown, harmful viruses, which scientists are calling 'Factor X'. Birgitta Evengard, a professor in infectious diseases at a university in Sweden, said we know little about Factor X and the biological danger trapped in Earth's permafrost. Virologist Jean-Michel Claverie says there are viruses deep in the permafrost that are more than 50,000 years old. He said these could be harmful to humans. Professor Claverie said "ancient viruses up to a million years old" would be the most terrifying because they are unknown and we have never encountered them before. He added that deadly bacterial diseases like smallpox and anthrax could be released on a large scale. Factor X could pose even bigger problems. However, many scientists agree that a bigger danger from melting permafrost is the release of methane. This is a greenhouse gas that is 80 times more harmful than CO₂.

FREE WRITING

From <https://breakingnewsenglish.com/2311/231116-factor-x.html>

Write about **world threats** for 10 minutes. Comment on your partner's paper.

ACADEMIC WRITING

From <https://breakingnewsenglish.com/2311/231116-factor-x.html>

We should start protecting ourselves from the dangers of Factor X 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. WORLD THREATS: Make a poster about world threats. Show your work to your classmates in the next lesson. Did you all have similar things?

4. FACTOR X: Write a magazine article about taking action now to protect ourselves from Factor X. 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 Factor X. Ask him/her three questions about it. Give him/her three of your ideas on how to keep safe if Factor X is released. Read your letter to your partner(s) in your next lesson. Your partner(s) will answer your questions.

ANSWERS

VOCABULARY (p.4)

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

TRUE / FALSE (p.5)

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

SYNONYM MATCH (p.5)

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

COMPREHENSION QUESTIONS (p.9)

1. Ancient microbes
2. At least two years
3. Near the North and South Poles
4. Infectious diseases
5. Biological dangers
6. More than 50,000 years old
7. Ancient viruses up to a million years old
8. Even bigger problems
9. The release of methane
10. Eighty times more harmful

WORDS IN THE RIGHT ORDER (p.19)

1. Something under frozen ground that contains deadly diseases.
2. Ancient microbes have been trapped for millennia.
3. The permafrost that covers large areas of Earth.
4. The permafrost is melting because of climate change.
5. The biological dangers trapped in Earth's permafrost.
6. He said these could be harmful to humans.
7. Ancient viruses up to a million years old.
8. They are unknown and we've never encountered them.
9. A bigger danger from melting permafrost is methane.
10. It is 80 times more harmful than CO2.

MULTIPLE CHOICE - QUIZ (p.10)

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

ALL OTHER EXERCISES

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