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Level 4 – 19th June 2023

Groundwater pumping by humans has tilted Earth's axis

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<https://breakingnewsenglish.com/2306/230619-earths-axis-4.html>

Contents

The Reading	2
Phrase Matching	3
Listening Gap Fill	4
No Spaces	5
Survey	6
Writing and Speaking	7
Writing	8

Please try Levels 5 and 6. They are (a little) harder.

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THE READING

From <https://breakingnewsenglish.com/2306/230619-earths-axis-4.html>

Underground reservoirs affect Earth's balance. Geophysicist Ki-Weon Seo has discovered that we have extracted so much underground water that the tilt of Earth's axis has changed. This has caused the North Pole to move. It is drifting by more than four centimetres a year. Professor Seo calculated that we used more than two trillion tons of groundwater between 1993 and 2010. This caused Earth to wobble.

Groundwater affects Earth's gravity. Seo said: "Every mass moving around on the surface of the Earth can change the rotation axis." Scientists previously thought water-driven shifts were caused by melting glaciers. Seo was puzzled at how this alone could cause a tilt. He concluded that underground water was also a factor. Most groundwater we use is for irrigation. Another researcher said: "The very way the planet wobbles is impacted by our activities."

Sources: <https://www.nature.com/articles/d41586-023-01993-z>
<https://www.science.org/content/article/humanity-s-groundwater-pumping-has-altered-earth-s-tilt>
<https://www.eurekalert.org/news-releases/992713>

PHRASE MATCHING

From <https://breakingnewsenglish.com/2306/230619-earths-axis-4.html>

PARAGRAPH ONE:

- | | |
|-----------------------------------|------------------------|
| 1. Underground reservoirs affect | a. to move |
| 2. we have extracted | b. wobble |
| 3. the tilt | c. tons of groundwater |
| 4. This has caused the North Pole | d. drifting |
| 5. It is | e. Earth's balance |
| 6. Professor Seo calculated that | f. so much |
| 7. two trillion | g. we used more |
| 8. This caused Earth to | h. of Earth's axis |

PARAGRAPH TWO:

- | | |
|--------------------------------|-----------------------|
| 1. Groundwater affects Earth's | a. wobbles |
| 2. Every mass moving around | b. could cause a tilt |
| 3. caused by melting | c. also a factor |
| 4. puzzled at how this alone | d. our activities |
| 5. underground water was | e. gravity |
| 6. Most groundwater we use | f. glaciers |
| 7. The very way the planet | g. is for irrigation |
| 8. impacted by | h. on the surface |

LISTEN AND FILL IN THE GAPS

From <https://breakingnewsenglish.com/2306/230619-earths-axis-4.html>

Underground reservoirs (1) _____. Geophysicist Ki-Weon Seo has discovered that (2) _____ so much underground water (3) _____ of Earth's axis has changed. This has caused the North (4) _____. It is drifting by more than four centimetres a year. Professor Seo (5) _____ used more than two trillion tons of groundwater between 1993 and 2010. This caused (6) _____.

Groundwater (7) _____. Seo said: "Every mass moving around on the surface of the Earth can change (8) _____." Scientists previously thought water-driven shifts were caused (9) _____. Seo was puzzled at how this alone could (10) _____. He concluded that underground water was (11) _____. Most groundwater we use is for irrigation. Another researcher said: "The very way the planet wobbles is impacted (12) _____."

PUT A SLASH (/) WHERE THE SPACES ARE

From <https://breakingnewsenglish.com/2306/230619-earths-axis-4.html>

Underground reservoirs affect Earth's balance. Geophysicist Ki-Weon Seo has discovered that we have extracted so much groundwater that the tilt of Earth's axis has changed. This has caused the North Pole to move. It is drifting by more than four centimetres a year. Professor Seo calculated that we used more than two trillion tons of groundwater between 1993 and 2010. This caused Earth to wobble. Groundwater affects Earth's gravity. Seo said: "Every mass moving around on the surface of the Earth can change the rotation axis." Scientists previously thought water-driven shifts were caused by melting glaciers. Seo was puzzled at how this alone could cause a tilt. He concluded that groundwater was also a factor. Most groundwater we use is for irrigation. Another researcher said: "The very way the planet wobbles is impacted by our activities."

EARTH SURVEY

From <https://breakingnewsenglish.com/2306/230619-earths-axis-4.html>

Write five GOOD questions about Earth 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.

WRITE QUESTIONS & ASK YOUR PARTNER(S)

Student A: Do not show these to your speaking partner(s).

a) _____

b) _____

c) _____

d) _____

e) _____

f) _____

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WRITE QUESTIONS & ASK YOUR PARTNER(S)

Student B: Do not show these to your speaking partner(s).

a) _____

b) _____

c) _____

d) _____

e) _____

f) _____

