

Scientists discover Earth has two cores

27th February 2023



Little is known about the geology of the very centre of Earth. It was believed our planet had just one core – a scorching hot mass of molten rock and gas surrounded by a solid, rock mantle. The mantle is a ring between the earth's crust and core. The core is found 2,900 kilometres below Earth's surface. It has a radius of around 3,485 kilometres. Scientists from the University of Chicago have discovered that there may be a second core deep below our feet. Research has led geophysicist Dr Sunyoung Park to believe there is another core. She analyzed data from a 560-km-deep earthquake. Her calculations showed the possibility of a second core, consisting of a layer of fluid rock, at the bottom of the mantle.

After Dr Park studied the deep earthquake, she spoke about why she found the Earth's core so intriguing. She said: "Even though the mantle makes up the largest part of Earth, there's still a lot we don't know about it." She added: "There's a lot more we can learn by using deep earthquakes as a way to probe these questions." Ms Park explained the importance of understanding more about the centre of our planet. She said: "We want to know exactly how fast the mantle flows because that influences the evolution of the entire Earth. It affects how much heat the planet retains for how long, and how the Earth's materials are cycled over time. Our current understanding is very limited and includes a lot of assumptions."

Sources: scitechdaily.com / indy100.com / sciencealert.com

Writing

It is essential we know more about Earth's core. Discuss.

Chat

Talk about these words from the article.

geology / Earth / planet / core / molten rock / gas / scientists / data / earthquake / intriguing / learn / probe / questions / influences / evolution / materials / assumptions

True / False

- 1) Scientists know a lot about Earth's core. T / F
- 2) The mantle is a flat layer of crust that consists of molten rock. T / F
- 3) The radius of Earth's core is around 2,900 km. T / F
- 4) Data from a deep earthquake fuelled belief in a second core. T / F
- 5) A geophysicist thinks Earth's core is intriguing. T / F
- 6) The mantle constitutes the bulk of Earth. T / F
- 7) Scientists want to know how fast water flows deep under the ground. T / F
- 8) What we currently know about the core is based on many assumptions. T / F

Synonym Match

(The words in **bold** are from the news article.)

- | | |
|------------------------|-----------------|
| 1. scorching | a. narrow |
| 2. surrounded | b. sums |
| 3. crust | c. flowing |
| 4. calculations | d. development |
| 5. fluid | e. red-hot |
| 6. intriguing | f. suppositions |
| 7. probe | g. encircled |
| 8. evolution | h. examine |
| 9. limited | i. fascinating |
| 10. assumptions | j. outer layer |

Discussion – Student A

- a) What do you think of Earth?
- b) What do you know about the geology of Earth?
- c) What do you know about Earth's core?
- d) Why is it important to know about what's beneath our feet?
- e) How interested are you in geology?
- f) Would you like to travel deep underground?
- g) Where's the best place on Earth?
- h) What will Earth be like in the future?

Phrase Match

- | | |
|------------------------------------|----------------------------|
| 1. a scorching hot | a. crust and core |
| 2. a ring between the earth's | b. the planet retains |
| 3. a radius of | c. of fluid rock |
| 4. there may be a second core deep | d. so intriguing |
| 5. consisting of a layer | e. flows |
| 6. she found the Earth's core | f. around 3,485 kilometres |
| 7. the mantle makes up the largest | g. mass of molten rock |
| 8. exactly how fast the mantle | h. of the entire Earth |
| 9. that influences the evolution | i. below our feet |
| 10. It affects how much heat | j. part of Earth |

Discussion – Student B

- What do you think about what you read?
- What do you know about earthquakes?
- What questions about Earth do you want answered?
- What other planets do you like?
- How was Earth created?
- What would Earth be like without humans?
- What dangers might Earth face in the future?
- What questions would you like to ask a geophysicist?

Spelling

- Little is known about the lgyeogo
- a ocqrhsin hot mass
- etnolm rock and gas
- a durisa of around 3,485 kilometres
- ieiygohscpst Dr Sunyoung Park
- a layer of ifdul rock
- she found the Earth's core so gtninuirig
- deep etqakraush
- a way to eropb these questions
- We want to know etalyxc how fast
- the lieuvtono of the entire Earth
- a lot of ssamsunoitp

Answers – Synonym Match

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

Role Play

Role A – Geology

You think geology is the most useful science. Tell the others three reasons why. Tell them what is wrong with their sciences. Also, tell the others which is the least useful of these (and why): sociology, zoology or psychology.

Role B – Sociology

You think sociology is the most useful science. Tell the others three reasons why. Tell them what is wrong with their sciences. Also, tell the others which is the least useful of these (and why): geology, zoology or psychology.

Role C – Zoology

You think zoology is the most useful science. Tell the others three reasons why. Tell them what is wrong with their sciences. Also, tell the others which is the least useful of these (and why): sociology, geology or psychology.

Role D – Psychology

You think psychology is the most useful science. Tell the others three reasons why. Tell them what is wrong with their sciences. Also, tell the others which is the least useful of these (and why): sociology, zoology or geology.

Speaking – ~ologies

Rank these with your partner. Put the best -ology at the top. Change partners often and share your rankings.

- | | |
|--------------|----------------|
| • Geology | • Physiology |
| • Biology | • Zoology |
| • Sociology | • Anthropology |
| • Psychology | • Astrology |

Answers – True False

1	F	2	F	3	F	4	T	5	T	6	T	7	F	8	T
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Answers to Phrase Match and Spelling are in the text.