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Level 6 – 27th February 2023

Scientists discover Earth has two cores

FREE online quizzes, mp3 listening and more for this lesson here:
https://breakingnewsenglish.com//2302/230227-earths-core.html

Contents

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

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THE ARTICLE

From https://breakingnewsenglish.com//2302/230227-earths-core.html

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: https://**scitechdaily.com**/deep-earthquakes-reveal-shocking-secrets-of-the-inner-earth/
https://www.**indy100.com**/science-tech/earth-two-cores-scientists
https://www.**sciencealert.com**/after-a-20-year-search-scientists-have-finally-found-earths-true-innermost-core

WARM-UPS

1. EARTH: Students walk around the class and talk to other students about Earth. 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?

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

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

3. RESEARCH: Students A **strongly** believe we should spend more money on researching the centre of Earth; Students B **strongly** believe otherwise. Change partners again and talk about your conversations.

4. SCIENCES: How interesting are these sciences? Why? How might they help us? Complete this table with your partner(s). Change partners often and share what you wrote.

	How Interesting	Why	How It Might Help Us
Geology			
Seismology			
Astrophysics			
Genetics			
A.I.			
Linguistics			

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

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

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

VOCABULARY MATCHING

Paragraph 1

1.	geology	a.	The outermost layer of rock of which a planet consists.
2.	molten	b.	Being composed or made up of.
3.	crust	c.	The science that deals with the earth's physical structure.
4.	radius	d.	Especially of materials with a high melting point, such as metal and glass, that are liquefied by heat.
5.	calculations	e.	A straight line from the centre to the circumference of a circle or sphere.
6.	consisting of	f.	Using maths to find out the amount or number of something.
7.	fluid	g.	Of a substance able to flow easily.

Paragraph 2

8.	intriguing	h.	With no part left out; whole.
9.	probe	i.	Arousing one's curiosity or interest; fascinating.
10.	flow	j.	The gradual development of something.
11.	evolution	k.	Keep something in place.
12.	entire	l.	Seek to uncover information about someone or something.
13.	retain	m.	Things that are accepted as true or as certain to happen, without proof.
14.	assumptions	n.	Of a liquid, gas, or electricity that moves steadily and continuously in a current or stream.

BEFORE READING / LISTENING

From https://breakingnewsenglish.com//2302/230227-earths-core.html

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

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**

2. 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

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

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

GAP FILL

From https://breakingnewsenglish.com//2302/230227-earths-core.html

Little is known about the (1) _____ of the very centre of Earth. It was believed our planet had just one core – a (2) _____ hot mass of molten rock and gas surrounded by a solid, rock mantle. The mantle is a (3) _____ between the earth's crust and core. The core is found 2,900 kilometres below Earth's (4) _____. It has a radius of around 3,485 kilometres. Scientists from the University of Chicago have discovered that there may be a second core (5) _____ below our feet. Research has led geophysicist Dr Sunyoung Park to believe there is another core. She analyzed (6) _____ from a 560-km-deep earthquake. Her (7) _____ showed the possibility of a second core, consisting of a layer of (8) _____ rock, at the bottom of the mantle.

ring

deep

fluid

geology

calculations

surface

scorching

data

After Dr Park studied the deep earthquake, she spoke about why she found the Earth's core so (9) _____. 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 (10) _____ these questions." Ms Park explained the (11) _____ of understanding more about the centre of our planet. She said: "We want to know exactly how fast the mantle (12) _____ because that influences the (13) _____ of the entire Earth. It affects how much heat the planet (14) _____ for how long, and how the Earth's (15) _____ are cycled over time. Our current understanding is very limited and includes a lot of (16) _____."

importance

retains

flows

assumptions

probe

materials

intriguing

evolution

LISTENING – Guess the answers. Listen to check.

From https://breakingnewsenglish.com//2302/230227-earths-core.html

1) Little is known about the geology of _____
   a. the verily centre
   b. the berry centre
   c. the very centre
   d. the veering centre
2) our planet had just one core – a scorching hot mass _____
   a. of melting rock
   b. of molten rock
   c. of mole ten rock
   d. of molding rock
3) The mantle is a ring between the earth's _____
   a. thrust and thaw
   b. rust and raw
   c. lust and law
   d. crust and core
4) discovered that there may be a second core deep _____
   a. below our feet
   b. bellow our feet
   c. billow our feet
   d. belie our feet
5) the possibility of a second core, consisting of a layer _____
   a. of fluids rock
   b. of fluidity rock
   c. off fluid rock
   d. of fluid rock
6) she spoke about why she found the Earth's _____
   a. core so intrigue in
   b. core so inter rigging
   c. core so intriguing
   d. core so trigonometry
7) a lot more we can learn by using deep earthquakes as a way _____
   a. to probate these
   b. to proboscis these
   c. to prove these
   d. to probe these
8) exactly how fast the mantle flows because that influences the evolution of _____
   a. the entire Earth
   b. the entry Earth
   c. the un-tire Earth
   d. the ten-tire Earth
9) It affects how much heat _____
   a. the planet remains
   b. the planet regains
   c. the planet retains
   d. the planet retails
10) Our current understanding is very limited and includes a _____
   a. lot of consumption
   b. lot of assumptions
   c. lot of assertions
   d. lot of resumptions

LISTENING – Listen and fill in the gaps

From https://breakingnewsenglish.com//2302/230227-earths-core.html

Little is known about (1) _____ the very centre of Earth. It was believed our planet had just one core – a scorching hot (2) _____ rock and gas surrounded by a solid, rock mantle. The mantle is a ring between the earth's (3) _____. The core is found 2,900 kilometres below Earth's surface. It has (4) _____ 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 (5) _____ a 560-km-deep earthquake. Her calculations showed the possibility of a second core, consisting of a (6) _____ rock, at the bottom of the mantle.

After Dr Park studied (7) _____, she spoke about why she found the Earth's (8) _____. 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 (9) _____ 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 (10) _____ because that influences the (11) _____ entire Earth. It affects how much heat the planet retains for how long, and how the Earth's materials are (12) _____. Our current understanding is very limited and includes a lot of assumptions."

COMPREHENSION QUESTIONS

From https://breakingnewsenglish.com//2302/230227-earths-core.html

1. How much is known about the geology of Earth's centre?

2. What surrounds Earth's core?

3. How deep is the core below the surface of the earth?

4. What is Dr Sunyoung Park's field of expertise?

5. What might the second core consist of?

6. What does Dr Sunyoung Park find intriguing?

7. What constitutes the largest part of Earth?

8. What does Dr Park say can help us to learn more about the core?

9. What influences the evolution of our planet?

10. What is our limited understanding of Earth currently based on?

MULTIPLE CHOICE - QUIZ

From https://breakingnewsenglish.com//2302/230227-earths-core.html

1) How much is known about the geology of Earth's centre?
a) next to nothing
b) little
c) loads
d) everything

2) What surrounds Earth's core?
a) lava
b) oceans
c) a (solid rock) mantle
d) a (delicate) underground ecosystem

3) How deep is the core below the surface of the earth?
a) 29,000 km
b) 3,485 kilometres
c) 3,855 kilometres
d) 2,900 km

4) What is Dr Sunyoung Park's field of expertise?
a) astrophysics
b) geophysics
c) biophysics
d) quantum physics

5) What might the second core consist of?
a) a layer of fluid rock
b) water
c) mineral deposits
d) a vacuum

6) What does Dr Sunyoung Park find intriguing?
a) Earth's core
b) space
c) minerals
d) rocks

7) What constitutes the largest part of Earth?
a) the crust
b) oceans
c) mountain ranges
d) the mantle

8) What does Dr Park say can help us to learn more about the core?
a) ChatGPT
b) the Internet
c) deep earthquakes
d) minerals

9) What influences the evolution of our planet?
a) seismic forces
b) time
c) waves
d) the speed of mantle flows

10) What is our limited understanding of Earth currently based on?
a) our brain's power
b) a lot of assumptions
c) computing power
d) not much

ROLE PLAY

From https://breakingnewsenglish.com//2302/230227-earths-core.html

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.

AFTER READING / LISTENING

From https://breakingnewsenglish.com//2302/230227-earths-core.html

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

Earth	**core**

- 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:

• geology • solid • below • feet • data • bottom	• found • part • learn • flows • affects • lot

EARTH SURVEY

From https://breakingnewsenglish.com//2302/230227-earths-core.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.

EARTH 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 'Earth'?
3. What do you think of Earth?
4. What do you know about the geology of Earth?
5. What do you know about Earth's core?
6. Why is it important to know about what's beneath our feet?
7. How interested are you in geology?
8. Would you like to travel deep underground?
9. Where's the best place on Earth?
10. What will Earth be like in the future?

Scientists discover Earth has two cores – 27th February 2023
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EARTH 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 'core'?
13. What do you think about what you read?
14. What do you know about earthquakes?
15. What questions about Earth do you want answered?
16. What other planets do you like?
17. How was Earth created?
18. What would Earth be like without humans?
19. What dangers might Earth face in the future?
20. What questions would you like to ask a geophysicist?

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//2302/230227-earths-core.html

Little is known about the (1) _____ of the very centre of Earth. It was believed our planet had just one core – a scorching hot mass of (2) _____ rock and gas surrounded by a solid, rock mantle. The mantle is a ring between the earth's (3) _____ 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 (4) _____ below our feet. Research has (5) _____ 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 (6) _____ 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 (7) _____. 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 (8) _____ 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 (9) _____ because that influences the evolution of the (10) _____ Earth. It affects how much heat the planet (11) _____ for how long, and how the Earth's materials are cycled (12) _____ time. Our current understanding is very limited and includes a lot of assumptions."

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

1.	(a)	genealogy	(b)	genecology	(c)	genetics	(d)	geology
2.	(a)	smitten	(b)	bitumen	(c)	moldy	(d)	molten
3.	(a)	rust	(b)	crust	(c)	trust	(d)	thrust
4.	(a)	deepen	(b)	depth	(c)	deep	(d)	deeply
5.	(a)	pursued	(b)	followed	(c)	led	(d)	developed
6.	(a)	layer	(b)	shallow	(c)	ground	(d)	bastion
7.	(a)	deepening	(b)	intriguing	(c)	levelling	(d)	boring
8.	(a)	probe	(b)	grove	(c)	lobe	(d)	lode
9.	(a)	growls	(b)	flows	(c)	endows	(d)	shallows
10.	(a)	mass	(b)	geology	(c)	entire	(d)	matter
11.	(a)	pertains	(b)	stains	(c)	retains	(d)	attains
12.	(a)	at	(b)	on	(c)	in	(d)	over

SPELLING

From https://breakingnewsenglish.com//2302/230227-earths-core.html

Paragraph 1

1. Little is known about the lgyeogo
2. a occgrhsin hot mass
3. etnolm rock and gas
4. a durisa of around 3,485 kilometres
5. ieiygohscpst Dr Sunyoung Park
6. a layer of ifdul rock

Paragraph 2

7. she found the Earth's core so gtninuirig
8. deep etqeakraush
9. a way to eropb these questions
10. We want to know etalyxc how fast
11. the lieuvtono of the entire Earth
12. a lot of ssamsunoitp

PUT THE TEXT BACK TOGETHER

From https://breakingnewsenglish.com//2302/230227-earths-core.html

Number these lines in the correct order.

( ) probe these questions." Ms Park explained the importance of understanding more about the centre

( ) Dr Sunyoung Park to believe there is another core. She analyzed data from a 560-km-deep earthquake. Her calculations

( ) of our planet. She said: "We want to know exactly how fast the mantle flows because that influences the

(***1***) Little is known about the geology of the very centre of Earth. It was believed our planet had just one

( ) a ring between the earth's crust and core. The core is found 2,900 kilometres below Earth's

( ) that there may be a second core deep below our feet. Research has led geophysicist

( ) After Dr Park studied the deep earthquake, she spoke about why she found the Earth's core so

( ) showed the possibility of a second core, consisting of a layer of fluid rock, at the bottom of the mantle.

( ) surface. It has a radius of around 3,485 kilometres. Scientists from the University of Chicago have discovered

( ) cycled over time. Our current understanding is very limited and includes a lot of assumptions."

( ) evolution of the entire Earth. It affects how much heat the planet retains for how long, and how the Earth's materials are

( ) core – a scorching hot mass of molten rock and gas surrounded by a solid, rock mantle. The mantle is

( ) 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

PUT THE WORDS IN THE RIGHT ORDER

From https://breakingnewsenglish.com//2302/230227-earths-core.html

1. very geology centre Earth. of of The the

2. was believed It had our core. one planet

3. has a kilometres. It around of radius 3,485

4. second There's below deep core our feet. a

5. core of the possibility showed Calculations second a .

6. Earth's so core Why she the found intriguing.

7. part The of is mantle largest the Earth .

8. Using as probe a earthquakes to deep way .

9. planet It heat much how affects retains. the

10. over materials are How cycled Earth's time. the

CIRCLE THE CORRECT WORD (20 PAIRS)

From https://breakingnewsenglish.com//2302/230227-earths-core.html

Little is known about the geology of the *very / really* centre of Earth. It was believed our planet had just one core – a scorching hot *amass / mass* of molten rock and gas surrounded *by / on* a solid, rock mantle. The mantle is a *circular / ring* between the earth's crust and core. The core is found 2,900 kilometres below Earth's *surface / top*. It has a *radial / radius* of around 3,485 kilometres. Scientists from the University of Chicago have discovered that there may be a second core *deep / deeply* below our feet. Research has *led / followed* 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 / at* a second core, consisting *of / at* 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 / conflating*. She said: "Even though the mantle makes *down / up* the largest part of Earth, there's still a lot we don't know about *them / it*." She added: "There's a lot more we can learn by *usage / using* deep earthquakes as a way to *probe / probate* these questions." Ms Park explained the importance of understanding more about the centre of our planet. She said: "We want to know *exact / exactly* how fast the mantle *blows / flows* because that influences the evolution of the *entire / entirety* Earth. It affects how much heat the planet *retrains / 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 *assumes / assumptions*."

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//2302/230227-earths-core.html

L_ttl_ _s kn_wn _b__t th_ g__l_gy _f th_ v_ry c_ntr_ _f __rth. _t w_s b_l__v_d __r pl_n_t h_d j_st _n_ c_r_ – _ sc_rch_ng h_t m_ss _f m_lt_n r_ck _nd g_s s_rr__nd_d by _ s_l_d, r_ck m_ntl_. Th_ m_ntl_ _s _ r_ng b_tw__n th_ __rth's cr_st _nd c_r_. Th_ c_r_ _s f__nd 2,900 k_l_m_tr_s b_l_w __rth's s_rf_c_. _t h_s _ r_d__s _f _r__nd 3,485 k_l_m_tr_s. Sc__nt_sts fr_m th_ _n_v_rs_ty _f Ch_c_g_ h_v_ d_sc_v_r_d th_t th_r_ m_y b_ _ s_c_nd c_r_ d__p b_l_w __r f__t. R_s__rch h_s l_d g__phys_c_st Dr S_ny__ng P_rk t_ b_l__v_ th_r_ _s _n_th_r c_r_. Sh_ _n_lyz_d d_t_ fr_m _ 560-km-d__p __rthq__k_. H_r c_lc_l_t__ns sh_w_d th_ p_ss_b_l_ty _f _ s_c_nd c_r_, c_ns_st_ng _f _ l_y_r _f fl__d r_ck, _t th_ b_tt_m _f th_ m_ntl_.

_ft_r Dr P_rk st_d__d th_ d__p __rthq__k_, sh_ sp_k_ _b__t why sh_ f__nd th_ __rth's c_r_ s_ _ntr_g__ng. Sh_ s__d: "_v_n th__gh th_ m_ntl_ m_k_s _p th_ l_rg_st p_rt _f __rth, th_r_'s st_ll _ l_t w_ d_n't kn_w _b__t _t." Sh_ _dd_d: "Th_r_'s _ l_t m_r_ w_ c_n l__rn by _s_ng d__p __rthq__k_s _s _ w_y t_ pr_b_ th_s_ q__st__ns." Ms P_rk _xpl__n_d th_ _mp_rt_nc_ _f _nd_rst_nd_ng m_r_ _b__t th_ c_ntr_ _f __r pl_n_t. Sh_ s__d: "W_ w_nt t_ kn_w _x_ctly h_w f_st th_ m_ntl_ fl_ws b_c__s_ th_t _nfl__nc_s th_ _v_l_t__n _f th_ _nt_r_ __rth. _t _ff_cts h_w m_ch h__t th_ pl_n_t r_t__ns f_r h_w l_ng, _nd h_w th_ __rth's m_t_r__ls _r_ cycl_d _v_r t_m_. __r c_rr_nt _nd_rst_nd_ng _s v_ry l_m_t_d _nd _ncl_d_s _ l_t _f _ss_mpt__ns."

PUNCTUATE THE TEXT AND ADD CAPITALS

From https://breakingnewsenglish.com//2302/230227-earths-core.html

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 earths crust and core the core is found 2900 kilometres below earths surface it has a radius of around 3485 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 560kmdeep 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 earths core so intriguing she said even though the mantle makes up the largest part of earth theres still a lot we dont know about it she added theres 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 earths materials are cycled over time our current understanding is very limited and includes a lot of assumptions

PUT A SLASH (/) WHERE THE SPACES ARE

From https://breakingnewsenglish.com//2302/230227-earths-core.html

Littleisknownaboutthegeologyoftheverycentreofearth.Itwasbelieve dourplanethadjustonecore–ascorchinghotmassofmoltenrockandg assurroundedbyasolid,rockmantle.Themantleisaringbetweentheea rth'scrustandcore.Thecoreisfound2,900kilometresbelowEarth'ssurf ace.Ithasaradiusofaround3,485kilometres.ScientistsfromtheUniver sityofChicagohavediscoveredthattheremaybeasecondcoredeepbelo wourfeet.ResearchhasledgeophysicistDrSunyoungParktobelieveth ereisanothercore.Sheanalyzeddatafroma560-km-deepearthquak e.Hercalculationsshowedthepossibilityofasecondcore,consistingofal ayeroffluidrock,atthebottomofthemantle.AfterDrParkstudiedthede epearthquake,shespokeaboutwhyshefoundtheEarth'scoresointrigui ng.Shesaid:"Eventhoughthemantlemakesupthelargestpartofearth, there'sstillalotwedon'tknowaboutit."Sheadded:"There'salotmorewe canlearnbyusingdeepearthquakesasawaytoprobethesequestions." MsParkexplainedtheimportanceofunderstandingmoreaboutthecent reofourplanet.Shesaid:"Wewanttoknowexactlyhowfastthemantlefl owsbecausethatinfluencestheevolutionoftheentireearth.Itaffectsho wmuchheattheplanetretainsforhowlong,andhowtheEarth'smaterial sarecycledovertime.Ourcurrentunderstandingisverylimitedandinclu desalotofassumptions."

FREE WRITING

From https://breakingnewsenglish.com//2302/230227-earths-core.html

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

ACADEMIC WRITING

From https://breakingnewsenglish.com//2302/230227-earths-core.html

It is essential we know more about Earth's core. 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. EARTH: Make a poster about Earth. Show your work to your classmates in the next lesson. Did you all have similar things?

4. RESEARCH: Write a magazine article about spending lots more money on researching Earth's core. 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 Earth. Ask him/her three questions about it. Give him/her three of your opinions on doing more research on Earth's core. 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.	a	4.	e	5.	f	6.	b	7.	g
8.	i	9.	l	10.	n	11.	j	12.	h	13.	k	14.	m

TRUE / FALSE (p.5)

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

SYNONYM MATCH (p.5)

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

COMPREHENSION QUESTIONS (p.9)

1. Little
2. A (solid rock) mantle
3. 2,900 km
4. Geophysics
5. A layer of fluid rock
6. Earth's core
7. The mantle
8. Deep earthquakes
9. The speed of mantle flows
10. A lot of assumptions

WORDS IN THE RIGHT ORDER (p.19)

1. The geology of the very centre of Earth.
2. It was believed our planet had one core.
3. It has a radius of around 3,485 kilometres.
4. There's a second core deep below our feet.
5. Calculations showed the possibility of a second core.
6. Why she found the Earth's core so intriguing.
7. The mantle is the largest part of Earth.
8. Using deep earthquakes as a way to probe.
9. It affects how much heat the planet retains.
10. How the Earth's materials are cycled over time.

MULTIPLE CHOICE - QUIZ (p.10)

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

ALL OTHER EXERCISES

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