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Ready-to-Use English Lessons by Sean Banville

Level 6 – 5th August 2024

18-km wide diamond layer on Mercury, says study

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https://breakingnewsenglish.com/2408/240805-mercury-diamonds.html

Contents

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

THE ARTICLE

From https://breakingnewsenglish.com/2408/240805-mercury-diamonds.html

Iconic American movie star Marilyn Monroe once famously sang, "Diamonds are a girl's best friend". Scientists from the University of Liege in Belgium believe they have unearthed a gargantuan amount of these precious stones. There could be an 18-km wide layer of the gems beneath the crust of the planet Mercury. Our nearest planetary neighbour could quite literally be a celestial jewel. Researchers tested how Mercury formed, approximately 4.5 billion years ago. The planet evolved from a gyrating cloud of cosmic dust and gas. Over millions of years, the dust was compressed into graphite, which is chemically identical to diamond. Both are solid forms of the element carbon. It is unlikely Mercury's diamonds could ever be mined as they are about 500 km below the surface.

Researchers used a machine called an anvil press to simulate the conditions under which Mercury was formed. The press is used to make synthetic diamonds. Researchers mixed elements inside a graphite capsule. These included silicon, magnesium and aluminium. The capsule was subjected to pressure 70,000 times greater than that on Earth. It was heated to temperatures of 2,000 degrees Celsius. The lead researcher speculated about the diamonds on Mercury. He said: "Diamonds are made of carbon only, so they should be similar to what we know on Earth…They would [resemble] pure diamonds." Scientists believe there are a quadrillion tons of diamonds beneath the Earth's surface. Experts say the value of these hidden gems is pretty much incalculable.

Sources: https://**boingboing.net**/2024/08/01/mercury-may-have-11-mile-deep-layer-of-diamonds.html
https://edition.**cnn.com**/2024/07/31/science/mercury-diamond-underground-layer/index.html
https://news.**sky.com**/story/mercury-has-a-layer-of-diamond-up-to-10-miles-thick-scientists-suggest-13184660

WARM-UPS

1. DIAMONDS: Students walk around the class and talk to other students about diamonds. 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?

> iconic / movie star / diamond / precious stone / Mercury / cosmic / dust / gas / carbon machine / synthetic / capsule / silicon / pressure / temperature / Earth / a quadrillion

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

3. MERCURY: Students A **strongly** believe we should mine for diamonds on Mercury; Students B **strongly** believe qqqqqqq. Change partners again and talk about your conversations.

4. MINING: What do you think of mining for these resources? How much do we need them? Complete this table with your partner(s). Change partners often and share what you wrote.

Resources	What I Think	How Much We Need Them
Diamonds		
Coal		
Gold		
Uranium		
Lithium		
Iron ore		

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

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

- Diamonds
- Rubies
- Sapphires
- Pearls
- Emeralds
- Crystals
- Jade
- Amethyst

VOCABULARY MATCHING

Paragraph 1

1.	unearthed	a.	Found something that was buried or hidden.
2.	gargantuan	b.	Moving around in circles.
3.	gem	c.	Very, very big.
4.	crust	d.	Related to the sky or space.
5.	celestial	e.	A beautiful stone used in jewellery.
6.	gyrating	f.	The hard outer layer of something, like bread or the Earth.
7.	compressed	g.	Made smaller or harder by being pressed together.

Paragraph 2

8.	anvil	h.	To look like something or someone.
9.	synthetic	i.	Thought about possible answers or ideas.
10.	graphite	j.	A heavy iron block used by blacksmiths to shape metal.
11.	speculated	k.	A number with fifteen zeros (1,000,000,000,000,000).
12.	resemble	l.	Made by people, not found in nature.
13.	quadrillion	m.	Too big to be counted or measured.
14.	incalculable	n.	A soft, black material used in pencils.

BEFORE READING / LISTENING

From https://breakingnewsenglish.com/2408/240805-mercury-diamonds.html

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

1. A movie star sang a song about diamonds being a girl's best find. **T / F**
2. Scientists believe there are diamonds 18 km below Mercury's crust. **T / F**
3. Mercury was formed 450 million years ago. **T / F**
4. Both diamonds and graphite are made of carbon. **T / F**
5. Researchers used a machine that also made synthetic diamonds. **T / F**
6. The scientists put graphite inside a silicon capsule. **T / F**
7. The scientists say the Mercury diamonds are probably pure diamonds. **T / F**
8. Scientists say the diamonds under the Earth are worth $100 quadrillion. **T / F**

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

1. unearthed	a. artificial
2. gargantuan	b. gem
3. precious stone	c. hypothesized
4. crust	d. indistinguishable
5. identical	e. discovered
6. simulate	f. genuine
7. synthetic	g. outer layer
8. speculated	h. replicate
9. pure	i. indeterminable
10. incalculable	j. enormous

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

1. Diamonds are a girl's	a. tons of diamonds
2. they have unearthed a gargantuan amount	b. of cosmic dust and gas
3. gems beneath the crust	c. pretty much incalculable
4. The planet evolved from a gyrating cloud	d. synthetic diamonds
5. compressed into graphite, which is chemically	e. of these precious stones
6. The press is used to make	f. that on Earth
7. Researchers mixed elements inside	g. of the planet
8. pressure 70,000 times greater than	h. a graphite capsule
9. there are a quadrillion	i. best friend
10. the value of these hidden gems is	j. identical to diamond

GAP FILL

From https://breakingnewsenglish.com/2408/240805-mercury-diamonds.html

Iconic American movie star Marilyn Monroe once (1) _____ sang, "Diamonds are a girl's best friend". Scientists from the University of Liege in Belgium believe they have (2) _____ a gargantuan amount of these precious stones. There could be an 18-km wide layer of the gems beneath the (3) _____ of the planet Mercury. Our nearest planetary neighbour could quite literally be a celestial (4) _____. Researchers tested how Mercury formed, approximately 4.5 billion years ago. The planet evolved from a gyrating cloud of cosmic (5) _____ and gas. Over millions of years, the dust was (6) _____ into graphite, which is chemically identical to diamond. Both are (7) _____ forms of the element carbon. It is unlikely Mercury's diamonds could ever be (8) _____ as they are about 500 km below the surface.

dust

crust

mined

famously

compressed

unearthed

jewel

solid

Researchers used a machine called an anvil press to (9) _____ the conditions under which Mercury was formed. The press is used to make (10) _____ diamonds. Researchers mixed elements inside a graphite (11) _____. These included silicon, magnesium and aluminium. The capsule was subjected to pressure 70,000 times greater than that on Earth. It was (12) _____ to temperatures of 2,000 degrees Celsius. The lead researcher (13) _____ about the diamonds on Mercury. He said: "Diamonds are made of (14) _____ only, so they should be similar to what we know on Earth…They would [resemble] (15) _____ diamonds." Scientists believe there are a quadrillion tons of diamonds beneath the Earth's surface. Experts say the value of these hidden gems is pretty much (16) _____.

synthetic

heated

incalculable

capsule

carbon

simulate

pure

speculated

LISTENING – Guess the answers. Listen to check.

From https://breakingnewsenglish.com/2408/240805-mercury-diamonds.html

1) believe they have unearthed a gargantuan amount of _____
   a. these precious stones
   b. these precocious stones
   c. these pressured stones
   d. these pressure stones
2) Our nearest planetary neighbour could quite literally be _____
   a. a cerebral jewel
   b. a celestial jewel
   c. a celebrates jewel
   d. a celibate jewel
3) Over millions of years, the dust was _____
   a. compressed onto graphite
   b. compressed as to graphite
   c. compressed unto graphite
   d. compressed into graphite
4) chemically identical to diamond. Both are solid forms of _____
   a. the elementary carbon
   b. the filament carbon
   c. the complement carbon
   d. the element carbon
5) It is unlikely Mercury's diamonds could ever be mined as they are about 500 km _____
   a. below the surf is
   b. below the surf its
   c. below the surface
   d. below the surfeits
6) Researchers used a machine called an anvil press to _____
   a. simulate the conditioned
   b. simulate the conditioning
   c. simulate the conditionals
   d. simulate the conditions
7) The press is used to _____
   a. make empathetic diamonds
   b. make pathetic diamonds
   c. make synthetic diamonds
   d. make prosthetic diamonds
8) He said diamonds are made of carbon only, so they _____
   a. should be similarity
   b. should be similar
   c. should be simile
   d. should be familiar
9) Scientists believe there are a quadrillion tons of diamonds beneath _____
   a. an Earth's surface
   b. at Earth's surface
   c. that Earth's surface
   d. the Earth's surface
10) Experts say the value of these hidden gems is _____
   a. prettily much incalculable
   b. petty much incalculable
   c. pretty much incalculable
   d. pre-mulch incalculable

LISTENING – Listen and fill in the gaps

From https://breakingnewsenglish.com/2408/240805-mercury-diamonds.html

Iconic American movie star Marilyn Monroe (1) _____, "Diamonds are a girl's best friend". Scientists from the University of Liege in Belgium believe they have unearthed (2) _____ of these precious stones. There could be an 18-km wide layer of the gems beneath (3) _____ the planet Mercury. Our nearest planetary neighbour could (4) _____ a celestial jewel. Researchers tested how Mercury formed, approximately 4.5 billion years ago. The planet evolved from (5) _____ of cosmic dust and gas. Over millions of years, the dust was compressed into graphite, which is chemically identical to diamond. Both are solid forms of (6) _____. It is unlikely Mercury's diamonds could ever be mined as they are about 500 km below the surface.

Researchers used a machine called an anvil (7) _____ the conditions under which Mercury was formed. The press is used to make synthetic diamonds. Researchers (8) _____ a graphite capsule. These included silicon, magnesium and aluminium. The capsule was (9) _____ 70,000 times greater than that on Earth. It was heated to temperatures of 2,000 degrees Celsius. The lead researcher (10) _____ diamonds on Mercury. He said: "Diamonds are made of carbon only, so they should be similar to what we know on Earth…They (11) _____ diamonds." Scientists believe there are a quadrillion tons of diamonds beneath the Earth's surface. Experts say the value of these hidden gems is (12) _____.

COMPREHENSION QUESTIONS

From https://breakingnewsenglish.com/2408/240805-mercury-diamonds.html

1. Who sang about diamonds being a girl's best friend?

2. What does the article say Mercury could be?

3. When was Mercury formed?

4. What was compressed over millions of years?

5. How deep are the diamonds on Mercury?

6. What is an anvil press used to make?

7. What was inside a graphite capsule besides magnesium and aluminium?

8. How high was a graphite capsule heated in the researchers' tests?

9. What are diamonds made of?

10. How much are the diamonds beneath the Earth worth?

MULTIPLE CHOICE - QUIZ

From https://breakingnewsenglish.com/2408/240805-mercury-diamonds.html

1) Who sang about diamonds being a girl's best friend?
a) Marilyn Monru
b) Marilyn Manson
c) Matt Monroe
d) Marilyn Monroe

2) What does the article say Mercury could be?
a) a dusty planet
b) a celestial jewel
c) the red planet
d) a dwarf star

3) When was Mercury formed?
a) 45 billion years ago
b) 4.5 billion years ago
c) 4.5 trillion years ago
d) 45 trillion years ago

4) What was compressed over millions of years?
a) dust
b) rock
c) carbon
d) diamonds

5) How deep are the diamonds on Mercury?
a) 300 km
b) 400 km
c) 500 km
d) 600 km

6) What is an anvil press used to make?
a) space rocket fuel tanks
b) synthetic diamonds
c) horseshoes
d) tiaras

7) What was inside a graphite capsule besides magnesium and aluminium?
a) lithium
b) moon dust
c) gold
d) silicon

8) How high was a graphite capsule heated in the researchers' tests?
a) 2,000ºC
b) 2,200ºC
c) 2,020ºC
d) 2,002ºC

9) What are diamonds made of?
a) crystals
b) silicon
c) carbon
d) glass

10) How much are the diamonds beneath the Earth worth?
a) $100 trillion
b) It's incalculable.
c) $100 quadrillion
d) $1 quadrillion

ROLE PLAY

From https://breakingnewsenglish.com/2408/240805-mercury-diamonds.html

Role A – Diamonds

You think diamonds are the best jewels. Tell the others three reasons why. Tell them what is wrong with their jewels. Also, tell the others which is the least attractive of these (and why): pearls, crystals or jade.

Role B – Pearls

You think pearls are the best jewels. Tell the others three reasons why. Tell them what is wrong with their jewels. Also, tell the others which is the least attractive of these (and why): pearls, crystals or jade.

Role C – Crystals

You think crystals are the best jewels. Tell the others three reasons why. Tell them what is wrong with their jewels. Also, tell the others which is the least attractive of these (and why): pearls, pearls or jade.

Role D – Jade

You think jade is the best jewel. Tell the others three reasons why. Tell them what is wrong with their jewels. Also, tell the others which is the least attractive of these (and why): pearls, crystals or pearls.

AFTER READING / LISTENING

From https://breakingnewsenglish.com/2408/240805-mercury-diamonds.html

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

- 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:

• famously • amount • crust • literally • cloud • unlikely	• anvil • mixed • pressure • similar • pure • hidden

DIAMONDS SURVEY

From https://breakingnewsenglish.com/2408/240805-mercury-diamonds.html

Write five GOOD questions about diamonds 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.

DIAMONDS 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 'diamond'?
3. What do you know about Marilyn Monroe?
4. Are diamonds a girl's best friend?
5. Why are diamonds so popular?
6. What uses are there for diamonds?
7. How did planets form?
8. Should we try to mine Mercury's diamonds?
9. What are your favourite precious stones?
10. What jewels do you have?

18-km wide diamond layer on Mercury, says study – 5th August 2024

DIAMONDS 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 'Mercury'?
13. What do you think about what you read?
14. What do you know about diamonds?
15. What do you know about Mercury?
16. Are synthetic diamonds as good as real ones?
17. What do you think is below the Earth's surface?
18. What do you think of the number 'one quadrillion'?
19. Would you rather have a diamond from Earth or from Mercury?
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/2408/240805-mercury-diamonds.html

Iconic American movie star Marilyn Monroe once (1) _____ sang, "Diamonds are a girl's best friend". Scientists from the University of Liege in Belgium believe they have unearthed a gargantuan amount of (2) _____ precious stones. There could be an 18-km wide layer of the gems beneath the (3) _____ of the planet Mercury. Our nearest planetary neighbour could quite (4) _____ be a celestial jewel. Researchers tested how Mercury formed, approximately 4.5 billion years ago. The planet (5) _____ from a gyrating cloud of cosmic dust and gas. Over millions of years, the dust was compressed into graphite, which is chemically identical to diamond. Both are solid forms of the element carbon. It is unlikely Mercury's diamonds could ever be (6) _____ as they are about 500 km below the surface.

Researchers used a machine called an anvil press to simulate the conditions (7) _____ which Mercury was formed. The press is used to make synthetic diamonds. Researchers mixed elements inside a graphite capsule. These included silicon, magnesium and aluminium. The capsule was (8) _____ to pressure 70,000 times greater than that on Earth. It was heated (9) _____ temperatures of 2,000 degrees Celsius. The lead researcher speculated about the diamonds on Mercury. He said: "Diamonds are made of carbon only, so they should be similar to what we know on Earth…They would (10) _____ pure diamonds." Scientists believe there are a (11) _____ tons of diamonds beneath the Earth's surface. Experts say the value of these hidden gems is pretty much (12) _____.

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

1.	(a)	famed	(b)	fame	(c)	famously	(d)	famous
2.	(a)	these	(b)	their	(c)	them	(d)	that
3.	(a)	crust	(b)	frost	(c)	blast	(d)	crest
4.	(a)	literally	(b)	literary	(c)	liberally	(d)	livery
5.	(a)	absolved	(b)	evolved	(c)	involved	(d)	solved
6.	(a)	mine	(b)	mining	(c)	mined	(d)	mined
7.	(a)	above	(b)	below	(c)	under	(d)	over
8.	(a)	abject	(b)	objected	(c)	rejected	(d)	subjected
9.	(a)	to	(b)	up	(c)	by	(d)	on
10.	(a)	amble	(b)	resemble	(c)	preamble	(d)	mumble
11.	(a)	quadrant	(b)	quadrillion	(c)	gazillion	(d)	quadrangle
12.	(a)	calculus	(b)	calculate	(c)	incalculable	(d)	inculcate

SPELLING

From https://breakingnewsenglish.com/2408/240805-mercury-diamonds.html

Paragraph 1

1. they have unearthed a rgnagtaaun amount
2. cepiruos stone
3. a elsciteal jewel
4. a rgtaying cloud of cosmic dust
5. the dust was mpercsoesd into graphite
6. 500 km below the rsfucae

Paragraph 2

7. lumaitse the conditions
8. make tshicyent diamonds
9. mixed elements inside a graphite scleuap
10. The lead researcher dctepulesa about the diamonds
11. a liqlnrouiad tons of diamonds
12. pretty much ibcelnlaualc

PUT THE TEXT BACK TOGETHER

From https://breakingnewsenglish.com/2408/240805-mercury-diamonds.html

Number these lines in the correct order.

( ) Mercury. He said: "Diamonds are made of carbon only, so they should be similar to what we know

( ) Researchers used a machine called an anvil press to simulate the conditions under which Mercury was formed. The press is

( ) amount of these precious stones. There could be an 18-km wide layer of the gems beneath the crust

( ) on Earth…They would [resemble] pure diamonds." Scientists believe there are a quadrillion tons

( ) of diamonds beneath the Earth's surface. Experts say the value of these hidden gems is pretty much incalculable.

( ) forms of the element carbon. It is unlikely Mercury's diamonds could ever be mined as they are about 500 km below the surface.

( ) Mercury formed, approximately 4.5 billion years ago. The planet evolved from a gyrating cloud of cosmic dust and

( ) used to make synthetic diamonds. Researchers mixed elements inside a graphite capsule. These included silicon, magnesium

( ) to temperatures of 2,000 degrees Celsius. The lead researcher speculated about the diamonds on

( ) friend". Scientists from the University of Liege in Belgium believe they have unearthed a gargantuan

(***1***) Iconic American movie star Marilyn Monroe once famously sang, "Diamonds are a girl's best

( ) gas. Over millions of years, the dust was compressed into graphite, which is chemically identical to diamond. Both are solid

( ) and aluminium. The capsule was subjected to pressure 70,000 times greater than that on Earth. It was heated

( ) of the planet Mercury. Our nearest planetary neighbour could quite literally be a celestial jewel. Researchers tested how

PUT THE WORDS IN THE RIGHT ORDER

From https://breakingnewsenglish.com/2408/240805-mercury-diamonds.html

1. gargantuan a precious these of Unearthed amount stones .

2. of a gyrating cloud cosmic Evolved from dust .

3. compressed . millions Over dust the years, was of

4. forms the are element Both carbon . of solid

5. unlikely mined . ever be diamonds Mercury's It's could

6. under Mercury conditions which formed . was Simulate the

7. make The synthetic diamonds . press to is used

8. on Earth . Pressure than that times greater 70,000

9. on what to Earth . know similar Be we

10. A tons the diamonds beneath Earth . of quadrillion

CIRCLE THE CORRECT WORD (20 PAIRS)

From https://breakingnewsenglish.com/2408/240805-mercury-diamonds.html

Iconic American movie star Marilyn Monroe *once / only* famously sang, "Diamonds are a girl's best friend". Scientists from the University of Liege in Belgium believe they have *earthed / unearthed* a gargantuan amount of these precious *stones / stone*. There could be an 18-km *wide / width* layer of the gems beneath the crust of the planet Mercury. Our nearest planetary neighbour could quite *laterally / literally* be a celestial jewel. Researchers tested how Mercury formed, *appropriately / approximately* 4.5 billion years ago. The planet evolved *for / from* a gyrating cloud of cosmic dust and gas. Over millions of years, the dust was compressed into graphite, which is chemically identical *to / of* diamond. Both are solid forms of the element carbon. It is unlikely Mercury's diamonds could ever be mined *has / as* they are about 500 km below *a / the* surface.

Researchers used a machine called an anvil press *for / to* simulate the conditions under which Mercury was formed. The press is *using / used* to make synthetic diamonds. Researchers mixed elements inside *the / a* graphite capsule. These included silicon, magnesium and aluminium. The capsule was subjected *of / to* pressure 70,000 times greater than that on Earth. It was heated *to / for* temperatures of 2,000 degrees Celsius. The lead researcher *speculated / specialized* about the diamonds on Mercury. He said: "Diamonds are made of carbon only, so they should be *similar / similarity* to what we know on Earth…They would [resemble] *pure / purity* diamonds." Scientists believe there are a quadrillion *dons / tons* of diamonds beneath the Earth's surface. Experts say the value of these hidden gems is pretty much *calculable / incalculable*.

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/2408/240805-mercury-diamonds.html

_c_n_c _m_r_c_n m_v__ st_r M_r_lyn M_nr__ _nc_ f_m__sly s_ng, "D__m_nds _r_ _ g_rl's b_st fr__nd". Sc__nt_sts fr_m th_ _n_v_rs_ty _f L__g_ _n B_lg__m b_l__v_ th_y h_v_ _n__rth_d _ g_rg_nt__n _m__nt _f th_s_ pr_c___s st_n_s. Th_r_ c__ld b_ _n 18-km w_d_ l_y_r _f th_ g_ms b_n__th th_ cr_st _f th_ pl_n_t M_rc_ry. __r n__r_st pl_n_t_ry n__ghb__r c__ld q__t_ l_t_r_lly b_ _ c_l_st__l j_w_l. R_s__rch_rs t_st_d h_w M_rc_ry f_rm_d, _ppr_x_m_t_ly 4.5 b_ll__n y__rs _g_. Th_ pl_n_t _v_lv_d fr_m _ gyr_t_ng cl__d _f c_sm_c d_st _nd g_s. _v_r m_ll__ns _f y__rs, th_ d_st w_s c_mpr_ss_d _nt_ gr_ph_t_, wh_ch _s ch_m_c_lly _d_nt_c_l t_ d__m_nd. B_th _r_ s_l_d f_rms _f th_ _l_m_nt c_rb_n. _t _s _nl_k_ly M_rc_ry's d__m_nds c__ld _v_r b_ m_n_d _s th_y _r_ _b__t 500 km b_l_w th_ s_rf_c_.

R_s__rch_rs _s_d _ m_ch_n_ c_ll_d _n _nv_l pr_ss t_ s_m_l_t_ th_ c_nd_t__ns _nd_r wh_ch M_rc_ry w_s f_rm_d. Th_ pr_ss _s _s_d t_ m_k_ synth_t_c d__m_nds. R_s__rch_rs m_x_d _l_m_nts _ns_d_ _ gr_ph_t_ c_ps_l_. Th_s_ _ncl_d_d s_l_c_n, m_gn_s__m _nd _l_m_n__m. Th_ c_ps_l_ w_s s_bj_ct_d t_ pr_ss_r_ 70,000 t_m_s gr__t_r th_n th_t _n __rth. _t w_s h__t_d t_ t_mp_r_t_r_s _f 2,000 d_gr__s C_ls__s. Th_ l__d r_s__rch_r sp_c_l_t_d _b__t th_ d__m_nds _n M_rc_ry. H_ s__d: "D__m_nds _r_ m_d_ _f c_rb_n _nly, s_ th_y sh__ld b_ s_m_l_r t_ wh_t w_ kn_w _n __rth…Th_y w__ld [r_s_mbl_] p_r_ d__m_nds." Sc__nt_sts b_l__v_ th_r_ _r_ _ q__dr_ll__n t_ns _f d__m_nds b_n__th th_ __rth's s_rf_c_. _xp_rts s_y th_ v_l__ _f th_s_ h_dd_n g_ms _s pr_tty m_ch _nc_lc_l_bl_.

PUNCTUATE THE TEXT AND ADD CAPITALS

From https://breakingnewsenglish.com/2408/240805-mercury-diamonds.html

iconic american movie star marilyn monroe once famously sang diamonds are a girls best friend scientists from the university of liege in belgium believe they have unearthed a gargantuan amount of these precious stones there could be an 18km wide layer of the gems beneath the crust of the planet mercury our nearest planetary neighbour could quite literally be a celestial jewel researchers tested how mercury formed approximately 45 billion years ago the planet evolved from a gyrating cloud of cosmic dust and gas over millions of years the dust was compressed into graphite which is chemically identical to diamond both are solid forms of the element carbon it is unlikely mercurys diamonds could ever be mined as they are about 500 km below the surface

researchers used a machine called an anvil press to simulate the conditions under which mercury was formed the press is used to make synthetic diamonds researchers mixed elements inside a graphite capsule these included silicon magnesium and aluminium the capsule was subjected to pressure 70000 times greater than that on earth it was heated to temperatures of 2000 degrees celsius the lead researcher speculated about the diamonds on mercury he said diamonds are made of carbon only so they should be similar to what we know on earth they would resemble pure diamonds scientists believe there are a quadrillion tons of diamonds beneath the earths surface experts say the value of these hidden gems is pretty much incalculable

PUT A SLASH (/) WHERE THE SPACES ARE

From https://breakingnewsenglish.com/2408/240805-mercury-diamonds.html

IconicAmericanmoviestarMarilynMonroeoncefamouslysang,"Diamondsareagirl'sbestfriend".ScientistsfromtheUniversityofLiegeinBelgiumbelievetheyhaveunearthedagargantuanamountofthesepreciousstones.Therecouldbean18-kmwidelayerofthegemsbeneaththecrustoftheplanetMercury.Ournearestplanetaryneighbourcouldquiteliterallybeacelestialjewel.ResearcherstestedhowMercuryformed,approximately4.5billionyearsago.Theplanetevolvedfromagyratingcloudofcosmicdustandgas.Overmillionsofyears,thedustwascompressedintographite,whichischemicallyidenticaltodiamond.Botharesolidformsoftheelementcarbon.ItisunlikelyMercury'sdiamondscouldeverbeminedastheyareabout500kmbelowthesurface.Researchersusedamachinecalledananvilpresstosimulatetheconditionsunderwhich Mercurywasformed.Thepressisusedtomakesyntheticdiamonds.Researchersmixedelementsinsideagraphitecapsule.Theseincludedsilicon,magnesiumandaluminium.Thecapsulewassubjectedtopressure70,000timesgreaterthanthatonEarth.Itwasheatedtotemperaturesof2,000degreesCelsius.Theleadresearcherspeculatedaboutthediamondson Mercury.Hesaid:"Diamondsaremadeofcarbononly,sotheyshouldbesimilartowhatweknowonEarth…Theywould[resemble]purediamonds."Scientistsbelievethereareaquadrilliontonsofdiamondsbeneaththe Earth'ssurface.Expertssaythevalueofthesehiddengemsisprettymuchincalculable.

FREE WRITING

From https://breakingnewsenglish.com/2408/240805-mercury-diamonds.html

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

ACADEMIC WRITING

From https://breakingnewsenglish.com/2408/240805-mercury-diamonds.html

We should go to Mercury to mine for diamonds. 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. DIAMONDS: Make a poster about diamonds. Show your work to your classmates in the next lesson. Did you all have similar things?

4. MINING: Write a magazine article about ending the mining of precious stones. 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 diamonds. Ask him/her three questions about them. Give him/her three of your ideas on mining for diamonds. Read your letter to your partner(s) in your next lesson. Your partner(s) will answer your questions.

ANSWERS

VOCABULARY (p.4)

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

TRUE / FALSE (p.5)

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

SYNONYM MATCH (p.5)

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

COMPREHENSION QUESTIONS (p.9)

1. Marilyn Monroe
2. A celestial jewel
3. About 4.5 billion years ago
4. Dust
5. About 500 km deep
6. Synthetic diamonds
7. Silicon
8. 2,000ºC
9. Carbon
10. It's incalculable

WORDS IN THE RIGHT ORDER (p.19)

1. Unearthed a gargantuan amount of these precious stones.
2. Evolved from a gyrating cloud of cosmic dust.
3. Over millions of years, the dust was compressed.
4. Both are solid forms of the element carbon.
5. It's unlikely Mercury's diamonds could ever be mined.
6. Simulate the conditions under which Mercury was formed.
7. The press is used to make synthetic diamonds.
8. Pressure 70,000 times greater than that on Earth.
9. Be similar to what we know on Earth.
10. A quadrillion tons of diamonds beneath the Earth.

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 ;-)