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Ready-to-Use English Lessons by Sean Banville

Level 6 – 22nd August, 2021

Nuclear fusion test could start an energy revolution

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https://breakingnewsenglish.com/2108/210822-nuclear-fusion.html

Contents

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

THE ARTICLE

From https://breakingnewsenglish.com/2108/210822-nuclear-fusion.html

There has been a relentless quest to find sustainable energy sources in the past decades. One source of energy that has thus far eluded scientists is nuclear fusion. This is the Holy Grail of clean energy. Generations of physicists have tried to replicate this reaction. Scientists in the USA say they recreated the power of the Sun for a minuscule fraction of a second. Powerful lasers blasted a tiny target to create a reaction. The burst lasted just 100 trillionths of a second, but it created 10 quadrillion watts of power. Ten quadrillion is equal to 1 followed by 16 zeros. The power the scientists created is the equivalent of 6 per cent of all the energy from the Sun hitting Earth's surface at any given moment.

Nuclear fusion powers the Sun and other stars. The website cnet.com said it is "a long-sought-after panacea for many energy and environmental challenges". Nuclear fusion power plants could solve our clean energy conundrum and provide infinite, safe, clean and green power. It could also reverse the damage we do to the environment. Physicist Dr Debbie Callahan, who worked on the experiment, spoke about the breakthrough. She said it is a "huge advance for fusion" and a big step toward generating "a net-positive amount of energy". Futurism.com said: "The promise is as lucrative as it has ever been - an infinite supply of carbon-neutral energy without ever running the risk of a nuclear meltdown."

Sources: https://www.**cnet.com**/news/get-20-off-an-entire-year-of-nordvpn-and-protect-your-online-activity-for-only-47-20/
https://www.**yahoo.com**/lifestyle/nuclear-fusion-breakthrough-could-unlock-215644282.html
https://**futurism.com**/scientists-edge-fusion-power-breakthrough

WARM-UPS

1. CLEAN ENERGY: Students walk around the class and talk to other students about clean energy. 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?

> quest / sustainable / the past decades / Holy Grail / physicists / lasers / energy / Sun panacea / challenges / conundrum / green / environment / experiment / risk

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

3. CLEAN: Students A **strongly** believe all energy will be clean in the future; Students B **strongly** believe it won't. Change partners again and talk about your conversations.

4. SCIENTISTS: What do these scientists do? How will they improve our world in the next century? Complete this table with your partner(s). Change partners often and share what you wrote.

	What They Do	Improvements
Physicists		
Chemists		
Biologists		
Computer Scientists		
Meteorologists		
Roboticists		

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

6. ENERGY: Rank these with your partner. Put the best kind of energy at the top. Change partners often and share your rankings.

- Nuclear fusion
- Conventional nuclear
- Oil
- Coal
- Wind
- Biofuel
- Tidal power
- Geothermal

VOCABULARY MATCHING

Paragraph 1

1.	relentless	a.	Extremely small; tiny.
2.	quest	b.	A long search for something.
3.	sustainable	c.	Failed to attain an achievement, or something desired or pursued.
4.	eluded	d.	Non-stop.
5.	replicate	e.	Equal in value, amount, function, meaning, etc.
6.	minuscule	f.	Able to be maintained at a certain rate or level.
7.	equivalent	g.	Make an exact copy of; reproduce.

Paragraph 2

8.	panacea	h.	A sudden, dramatic, and important discovery or development.
9.	conundrum	i.	Limitless or endless in space, extent, or size; impossible to measure or calculate.
10.	infinite	j.	Making no net release of CO2 to the atmosphere, especially through offsetting emissions by planting trees.
11.	breakthrough	k.	A solution or remedy for all difficulties or diseases.
12.	lucrative	l.	A confusing and difficult problem or question.
13.	carbon-neutral	m.	A disastrous event caused by the overheating or the reactor core in a nuclear reactor.
14.	nuclear meltdown	n.	Producing a great deal of profit.

BEFORE READING / LISTENING

From https://breakingnewsenglish.com/2108/210822-nuclear-fusion.html

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

1. The article calls nuclear fusion the Holy Grail of clean energy. **T / F**
2. Scientists recreated the power of the Sun for a split second. **T / F**
3. Scientists created a reaction that lasted a billionth of a second. **T / F**
4. One quadrillion is a zero followed by 15 zeros. **T / F**
5. A website said nuclear fusion would address many challenges. **T / F**
6. The article says nuclear fusion wouldn't reverse damage done to Earth. **T / F**
7. A scientist called the test a huge advance for nuclear fusion. **T / F**
8. Nuclear fusion would end the risk of nuclear meltdowns. **T / F**

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

1. relentless	a. cure-all
2. eluded	b. tiny
3. replicate	c. advance
4. minuscule	d. evaded
5. equivalent	e. problem
6. panacea	f. possibility
7. conundrum	g. non-stop
8. breakthrough	h. profitable
9. lucrative	i. copy
10. risk	j. parallel

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

1. a relentless quest	a. panacea
2. One source of energy that has thus	b. fraction of a second
3. This is the Holy Grail	c. amount of energy
4. for a minuscule	d. far eluded scientists
5. the equivalent of 6 per cent of	e. clean energy conundrum
6. a long-sought-after	f. all the energy from the Sun
7. solve our	g. nuclear meltdown
8. reverse the damage we do	h. to find sustainable energy
9. a net-positive	i. to the environment
10. without ever running the risk of a	j. of clean energy

GAP FILL

From https://breakingnewsenglish.com/2108/210822-nuclear-fusion.html

There has been a (1) _____ quest to find sustainable energy sources in the past decades. One source of energy that has thus far (2) _____ scientists is nuclear fusion. This is the Holy Grail of clean energy. Generations of physicists have tried to (3) _____ this reaction. Scientists in the USA say they recreated the power of the Sun for a (4) _____ fraction of a second. Powerful lasers blasted a (5) _____ target to create a reaction. The burst lasted just 100 trillionths of a second, but it created 10 (6) _____ watts of power. Ten quadrillion is equal to 1 followed by 16 zeros. The power the scientists created is the (7) _____ of 6 per cent of all the energy from the Sun hitting Earth's (8) _____ at any given moment.

replicate

surface

relentless

tiny

equivalent

minuscule

eluded

quadrillion

Nuclear fusion (9) _____ the Sun and other stars. The website cnet.com said it is "a long-(10) _____ -after panacea for many energy and environmental challenges". Nuclear fusion power plants could solve our clean energy conundrum and provide (11) _____, safe, clean and green power. It could also (12) _____ the damage we do to the environment. Physicist Dr Debbie Callahan, who worked on the experiment, spoke about the (13) _____. She said it is a "huge advance for fusion" and a big step toward generating "a (14) _____ -positive amount of energy". Futurism.com said: "The promise is as lucrative as it has ever been - an (15) _____ supply of carbon-neutral energy without ever running the risk of a nuclear (16) _____."

meltdown

powers

net

reverse

infinite

infinite

sought

breakthrough

LISTENING – Guess the answers. Listen to check.

From https://breakingnewsenglish.com/2108/210822-nuclear-fusion.html

1) There has been _____
   a. a relentless guest
   b. a relentless quest
   c. a relentless jest
   d. a relentless gest
2) One source of energy that has thus _____
   a. far deluded scientists
   b. far alluded scientists
   c. far eluded scientists
   d. far concluded scientists
3) Generations of physicists have tried to _____
   a. replicate this reaction
   b. supplicate this reaction
   c. triplicate this reaction
   d. lubricate this reaction
4) The burst lasted just 100 trillionths of a second, but it created 10 quadrillion _____
   a. watts of power
   b. litres of power
   c. gigabytes of power
   d. horsepower of power
5) all the energy from the Sun hitting Earth's surface at _____
   a. any taken moment
   b. any being moment
   c. any given moment
   d. any pushed moment
6) Nuclear fusion power plants could solve our _____
   a. clean energy compendium
   b. clean energy conundrum
   c. clean energy consortium
   d. clean energy contraption
7) and provide infinite, safe, clean _____
   a. and green powering
   b. and green powered
   c. and green powers
   d. and green power
8) Dr Debbie Callahan, who worked on the experiment, spoke _____
   a. about the thorough break
   b. about the breaks through
   c. about the breakthrough
   d. about the break though
9) The promise is as lucrative as it has ever been - _____
   a. an infinity supply
   b. an infinite supply
   c. an infinitely supply
   d. an infinites supply
10) an infinite supply of carbon-neutral energy without ever running the risk of _____
   a. an unclear meltdown
   b. anew clear melt up
   c. a new, clear meltdown
   d. a nuclear meltdown

LISTENING – Listen and fill in the gaps

From https://breakingnewsenglish.com/2108/210822-nuclear-fusion.html

There has been a relentless (1) _____ sustainable energy sources in the past decades. One source of energy that has (2) _____ scientists is nuclear fusion. This is the Holy Grail of clean energy. Generations of physicists have tried to (3) _____. Scientists in the USA say they recreated the power of the Sun for a minuscule (4) _____ second. Powerful lasers blasted a tiny target to create a reaction. The burst lasted just 100 trillionths of a second, but it created 10 quadrillion (5) _____. Ten quadrillion is equal to 1 followed by 16 zeros. The power the scientists created is the equivalent of 6 per cent of all the energy from the Sun hitting Earth's surface at (6) _____.

Nuclear fusion (7) _____ and other stars. The website cnet.com said it is "a long-sought-(8) _____ many energy and environmental challenges". Nuclear fusion power plants could solve our (9) _____ and provide infinite, safe, clean and green power. It could also reverse the damage we do to the environment. Physicist Dr Debbie Callahan, who worked on the experiment, spoke about the breakthrough. She said it is a "(10) _____ fusion" and a big step toward generating "a net-(11) _____ energy". Futurism.com said: "The promise is as lucrative as it has ever been - an infinite supply of carbon-neutral energy without ever (12) _____ of a nuclear meltdown."

COMPREHENSION QUESTIONS

From https://breakingnewsenglish.com/2108/210822-nuclear-fusion.html

1. What has there been a relentless quest to find?

2. What does the article say is the Holy Grail of clean energy?

3. What did lasers blast?

4. How long did the laser burst last?

5. What was the power generated the equivalent of?

6. What did the website cnet.com call nuclear fusion?

7. What could nuclear fusion do to our environmental damage?

8. What conundrum could nuclear fusion solve?

9. What did a scientist say the test was a big step toward generating?

10. What does nuclear fusion mean there is no risk of?

MULTIPLE CHOICE - QUIZ

From https://breakingnewsenglish.com/2108/210822-nuclear-fusion.html

1) What has there been a relentless quest to find?

a) the key to perpetual motion
b) the meaning of life
c) the elixir of life
d) sustainable energy sources

2) What does the article say is the Holy Grail of clean energy?

a) solar power
b) nuclear fusion
c) wind power
d) air power

3) What did lasers blast?

a) nuclear
b) a reactor
c) a tiny target
d) a conundrum

4) How long did the laser burst last?

a) just 100 trillionths of a second
b) 100 billionths of a second
c) 100 trillionths of a second
d) 10 quadrillionths of a second

5) What was the power generated the equivalent of?

a) six suns
b) 10 quadrillion volts
c) six per cent of the Sun's energy
d) 826 nuclear reactors

6) What did the website cnet.com call nuclear fusion?

a) a much-needed pick-me-up
b) a long-sought-after panacea
c) mind-blowing
d) mind-bending

7) What could nuclear fusion do to our environmental damage?

a) maintain a status quo
b) cancel it
c) exacerbate it
d) reverse it

8) What conundrum could nuclear fusion solve?

a) our clean energy conundrum
b) one of Einstein's theories
c) the overpopulation conundrum
d) the conundrum of all conundrums

9) What did a scientist say the test was a big step toward generating?

a) free energy
b) a non-polluted world
c) a net-positive amount of energy
d) huge profits for energy companies

10) What does nuclear fusion mean there is no risk of?

a) pollution
b) a nuclear meltdown
c) accidents
d) running out of power

ROLE PLAY

From https://breakingnewsenglish.com/2108/210822-nuclear-fusion.html

Role A – Nuclear Fusion

You think nuclear fusion is the best form of energy. Tell the others three reasons why. Tell them what is wrong with their forms. Also, tell the others which is the worst of these (and why): oil, biofuel or solar.

Role B – Oil

You think oil is the best form of energy. Tell the others three reasons why. Tell them what is wrong with their forms. Also, tell the others which is the worst of these (and why): nuclear fusion, biofuel or solar.

Role C – Biofuel

You think biofuel is the best form of energy. Tell the others three reasons why. Tell them what is wrong with their forms. Also, tell the others which is the worst of these (and why): oil, nuclear fusion or solar.

Role D – Solar

You think solar is the best form of energy. Tell the others three reasons why. Tell them what is wrong with their forms. Also, tell the others which is the worst of these (and why): oil, biofuel or nuclear fusion.

AFTER READING / LISTENING

From https://breakingnewsenglish.com/2108/210822-nuclear-fusion.html

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

energy	**revolution**

- 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:

• quest • far • tiny • 100 • followed • moment	• stars • solve • reverse • spoke • huge • risk

CLEAN ENERGY SURVEY

From https://breakingnewsenglish.com/2108/210822-nuclear-fusion.html

Write five GOOD questions about clean energy 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.

CLEAN ENERGY 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 'energy'?
3. What do you know about nuclear fusion?
4. Have you ever been in a relentless quest?
5. Why is clean energy a Holy Grail?
6. How might nuclear fusion change the world?
7. Would you like to be a physicist?
8. How can we harness the power of the Sun?
9. What do you think of the numbers in the experiment?
10. What three adjectives best describe this story?

Nuclear fusion test could start an energy revolution – 22nd August, 2021
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CLEAN ENERGY 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 'revolution'?
13. What do you think about what you read?
14. What energy challenges does our planet face?
15. What environmental challenges does Earth face?
16. What conundrums do you face in life?
17. What's the difference between nuclear fusion and nuclear fission?
18. What energy sources will we be using in 50 years' time?
19. What damage does a nuclear meltdown cause?
20. What questions would you like to ask the physicists?

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/2108/210822-nuclear-fusion.html

There has been a relentless (1) _____ to find sustainable energy sources in the past decades. One source of energy that has thus (2) _____ eluded scientists is nuclear fusion. This is the Holy Grail of clean energy. Generations of physicists have tried to (3) _____ this reaction. Scientists in the USA say they recreated the power of the Sun for a (4) _____ fraction of a second. Powerful lasers blasted a tiny target to create a reaction. The burst lasted just 100 trillionths of a second, but it created 10 quadrillion watts of power. Ten quadrillion is (5) _____ to 1 followed by 16 zeros. The power the scientists created is the equivalent of 6 per cent of all the energy from the Sun hitting Earth's surface (6) _____ any given moment.

Nuclear fusion powers the Sun and other stars. The website cnet.com said it is "a (7) _____ -sought-after panacea for many energy and environmental challenges". Nuclear fusion power plants could solve our clean energy (8) _____ and provide infinite, safe, clean and green power. It could also reverse the damage we do to the environment. Physicist Dr Debbie Callahan, who worked (9) _____ the experiment, spoke about the breakthrough. She said it is a "huge advance for fusion" and a big step toward generating "a (10) _____-positive amount of energy". Futurism.com said: "The promise is as (11) _____ as it has ever been - an infinite supply of carbon-neutral energy without ever (12) _____ the risk of a nuclear meltdown."

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

1.	(a)	quell	(b)	quest	(c)	guest	(d)	jest
2.	(a)	for	(b)	far	(c)	fir	(d)	from
3.	(a)	applicant	(b)	supplicate	(c)	triplicate	(d)	replicate
4.	(a)	macro	(b)	minuscule	(c)	microscope	(d)	millipede
5.	(a)	equality	(b)	equal	(c)	equals	(d)	equalise
6.	(a)	to	(b)	on	(c)	at	(d)	up
7.	(a)	short	(b)	wide	(c)	long	(d)	deep
8.	(a)	addendum	(b)	compendium	(c)	conundrum	(d)	regimen
9.	(a)	by	(b)	of	(c)	at	(d)	on
10.	(a)	net	(b)	gross	(c)	taxed	(d)	minus
11.	(a)	lucrative	(b)	negatively	(c)	upend	(d)	authored
12.	(a)	ruining	(b)	arraigning	(c)	running	(d)	arranging

SPELLING

From https://breakingnewsenglish.com/2108/210822-nuclear-fusion.html

Paragraph 1

1. There has been a tleslernse quest
2. energy that has thus far dludee scientists
3. tried to tpecariel this reaction
4. 100 ihirstolltn of a second
5. 10 dlourqinlai watts of power.
6. the teniluqaev of 6 per cent

Paragraph 2

7. a long-sought-after aeapacn
8. solve our clean energy nrdnumcou
9. provide tninieif, safe, clean and green power
10. ciyphists Dr Debbie Callahan
11. as aicetlurv as it has ever been
12. carbon-alrnuet energy

PUT THE TEXT BACK TOGETHER

From https://breakingnewsenglish.com/2108/210822-nuclear-fusion.html

Number these lines in the correct order.

( ) generating "a net-positive amount of energy". Futurism.com said: "The promise is as lucrative as it has ever

( ) Nuclear fusion powers the Sun and other stars. The website cnet.com said it is "a long-sought-

( ) target to create a reaction. The burst lasted just 100 trillionths of a second, but it created 10

( ) been - an infinite supply of carbon-neutral energy without ever running the risk of a nuclear meltdown."

( ) quadrillion watts of power. Ten quadrillion is equal to 1 followed by 16 zeros. The power the scientists created is the

(***1***) There has been a relentless quest to find sustainable energy sources in the past decades. One source of

( ) about the breakthrough. She said it is a "huge advance for fusion" and a big step toward

( ) of physicists have tried to replicate this reaction. Scientists in the USA say they recreated the

( ) energy that has thus far eluded scientists is nuclear fusion. This is the Holy Grail of clean energy. Generations

( ) solve our clean energy conundrum and provide infinite, safe, clean and green power. It could also reverse the

( ) damage we do to the environment. Physicist Dr Debbie Callahan, who worked on the experiment, spoke

( ) after panacea for many energy and environmental challenges". Nuclear fusion power plants could

( ) equivalent of 6 per cent of all the energy from the Sun hitting Earth's surface at any given moment.

( ) power of the Sun for a minuscule fraction of a second. Powerful lasers blasted a tiny

PUT THE WORDS IN THE RIGHT ORDER

From https://breakingnewsenglish.com/2108/210822-nuclear-fusion.html

1. to relentless A find quest sources . energy sustainable

2. thus scientists . has far Energy that eluded

3. replicate physicists reaction . tried of this Generations to

4. minuscule second . fraction a a of For

5. is followed Ten by quadrillion one zeros . sixteen

6. Nuclear stars . Sun the powers other and fusion

7. clean fusion our Nuclear solve could conundrum . energy

8. the do to the we environment . Reverse damage

9. promise as lucrative as is ever . The

10. a of meltdown . nuclear ever running the Without risk

CIRCLE THE CORRECT WORD (20 PAIRS)

From https://breakingnewsenglish.com/2108/210822-nuclear-fusion.html

There has been a relentless *quest / question* to find sustainable energy sources in the past decades. One source of energy that has thus far *deluded / eluded* scientists is nuclear fusion. This is the Holy Grail of clean energy. Generations of physicists have tried to *complicate / replicate* this reaction. Scientists in the USA say they recreated the *powerful / power* of the Sun for a minuscule *fraction / friction* of a second. Powerful lasers *blistered / blasted* a tiny target to create a reaction. The *bust / burst* lasted just 100 trillionths of a second, but it created 10 quadrillion *whys / watts* of power. Ten quadrillion is equal to 1 *followed / following* by 16 zeros. The power the scientists created is the equivalent of 6 per cent of all the energy from the Sun hitting Earth's surface at any given *momentum / moment*.

Nuclear fusion *powers / strengthens* the Sun and other stars. The website cnet.com said it is "a long-sought-after panacea for *much / many* energy and environmental challenges". Nuclear fusion power plants could *absolve / solve* our clean energy *compendium / conundrum* and provide infinite, safe, clean and green power. It could also *reserve / reverse* the damage we do to the environment. Physicist Dr Debbie Callahan, who worked *on / in* the experiment, spoke about the *breakthrough / breakout*. She said it is a "huge advance for fusion" and a big step *forward / toward* generating "a net-positive amount of energy". Futurism.com said: "The promise is *was / as* lucrative as it has ever been - an infinite supply of carbon-neutral energy without ever *ruining / running* the risk of a nuclear meltdown."

Talk about the connection between each pair of words in italics, and why the correct word is correct.

INSERT THE VOWELS (a, e, i, o, u)

From https://breakingnewsenglish.com/2108/210822-nuclear-fusion.html

Th_r_ h_s b__n _ r_l_ntl_ss q__st t_ f_nd s_st__n_bl_ _n_rgy s__rc_s _n th_ p_st d_c_d_s. _n_ s__rc_ _f _n_rgy th_t h_s th_s f_r _l_d_d sc__nt_sts _s n_cl__r f_s__n. Th_s _s th_ H_ly Gr__l _f cl__n _n_rgy. G_n_r_t__ns _f phys_c_sts h_v_ tr__d t_ r_pl_c_t_ th_s r__ct__n. Sc__nt_sts _n th_ _S_ s_y th_y r_cr__t_d th_ p_w_r _f th_ S_n f_r _ m_n_sc_l_ fr_ct__n _f _ s_c_nd. P_w_rf_l l_s_rs bl_st_d _ t_ny t_rg_t t_ cr__t_ _ r__ct__n. Th_ b_rst l_st_d j_st 100 tr_ll__nths _f _ s_c_nd, b_t _t cr__t_d 10 q__dr_ll__n w_tts _f p_w_r. T_n q__dr_ll__n _s _q__l t_ 1 f_ll_w_d by 16 z_r_s. Th_ p_w_r th_ sc__nt_sts cr__t_d _s th_ _q__v_l_nt _f 6 p_r c_nt _f _ll th_ _n_rgy fr_m th_ S_n h_tt_ng __rth's s_rf_c_ _t _ny g_v_n m_m_nt.

N_cl__r f_s__n p_w_rs th_ S_n _nd _th_r st_rs. Th_ w_bs_t_ cn_t.c_m s__d _t _s "_ l_ng-s__ght-_ft_r p_n_c__ f_r m_ny _n_rgy _nd _nv_r_nm_nt_l ch_ll_ng_s". N_cl__r f_s__n p_w_r pl_nts c__ld s_lv_ __r cl__n _n_rgy c_n_ndr_m _nd pr_v_d_ _nf_n_t_, s_f_, cl__n _nd gr__n p_w_r. _t c__ld _ls_ r_v_rs_ th_ d_m_g_ w_ d_ t_ th_ _nv_r_nm_nt. Phys_c_st Dr D_bb__ C_ll_h_n, wh_ w_rk_d _n th_ _xp_r_m_nt, sp_k_ _b__t th_ br__kthr__gh. Sh_ s__d _t _s _ "h_g_ _dv_nc_ f_r f_s__n" _nd _ b_g st_p t_w_rd g_n_r_t_ng "_ n_t-p_s_t_v_ _m__nt _f _n_rgy". F_t_r_sm.c_m s__d: "Th_ pr_m_s_ _s _s l_cr_t_v_ _s _t h_s _v_r b__n - _n _nf_n_t_ s_pply _f c_rb_n n__tr_l _n_rgy w_th__t _v_r r_nn_ng th_ r_sk _f _ n_cl__r m_ltd_wn."

PUNCTUATE THE TEXT AND ADD CAPITALS

From https://breakingnewsenglish.com/2108/210822-nuclear-fusion.html

there has been a relentless quest to find sustainable energy sources in the past decades one source of energy that has thus far eluded scientists is nuclear fusion this is the holy grail of clean energy generations of physicists have tried to replicate this reaction scientists in the usa say they recreated the power of the sun for a minuscule fraction of a second powerful lasers blasted a tiny target to create a reaction the burst lasted just 100 trillionths of a second but it created 10 quadrillion watts of power ten quadrillion is equal to 1 followed by 16 zeros the power the scientists created is the equivalent of 6 per cent of all the energy from the sun hitting earths surface at any given moment

nuclear fusion powers the sun and other stars the website cnetcom said it is a longsoughtafter panacea for many energy and environmental challenges nuclear fusion power plants could solve our clean energy conundrum and provide infinite safe clean and green power it could also reverse the damage we do to the environment physicist dr debbie callahan who worked on the experiment spoke about the breakthrough she said it is a huge advance for fusion and a big step toward generating a netpositive amount of energy futurismcom said the promise is as lucrative as it has ever been an infinite supply of carbon-neutral energy without ever running the risk of a nuclear meltdown

PUT A SLASH (/) WHERE THE SPACES ARE

From https://breakingnewsenglish.com/2108/210822-nuclear-fusion.html

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eptowardgenerating"anet-positiveamountofenergy".Futurism.com
said:"Thepromiseisaslucrativeasithaseverbeen-aninfinitesupplyofc
arbonneutralenergywithouteverrunningtheriskofanuclearmeltdown
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FREE WRITING

From https://breakingnewsenglish.com/2108/210822-nuclear-fusion.html

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

ACADEMIC WRITING

From https://breakingnewsenglish.com/2108/210822-nuclear-fusion.html

Scientists will save the environment. 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. CLEAN ENERGY: Make a poster about clean energy. Show your work to your classmates in the next lesson. Did you all have similar things?

4. NUCLEAR FUSION: Write a magazine article about governments spending billions of dollars on trying to create nuclear fusion power. 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 nuclear fusion. Ask him/her three questions about it. Give him/her three of your opinions on it. Read your letter to your partner(s) in your next lesson. Your partner(s) will answer your questions.

ANSWERS

VOCABULARY (p.4)

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

TRUE / FALSE (p.5)

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

SYNONYM MATCH (p.5)

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

COMPREHENSION QUESTIONS (p.9)

1. Sustainable energy sources
2. Nuclear fusion
3. A tiny target
4. Just 100 trillionths of a second
5. Six per cent of the Sun's energy
6. A long-sought-after panacea
7. Reverse it
8. Our clean energy conundrum
9. A net-positive amount of energy
10. A nuclear meltdown

WORDS IN THE RIGHT ORDER (p.19)

1. A relentless quest to find sustainable energy sources.
2. Energy that has thus far eluded scientists.
3. Generations of physicists tried to replicate this reaction.
4. For a minuscule fraction of a second.
5. Ten quadrillion is one followed by sixteen zeros.
6. Nuclear fusion powers the Sun and other stars.
7. Nuclear fusion could solve our clean energy conundrum.
8. Reverse the damage we do to the environment.
9. The promise is as lucrative as ever.
10. Without ever running the risk of a nuclear meltdown.

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 ;-)