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Ready-to-Use English Lessons by Sean Banville

Level 3

New, super-thin material cools buildings

15th February, 2017

http://www.breakingnewsenglish.com/1702/170215-air-conditioning.html

Contents

Please try Levels 0, 1 and 2 (they are easier).

THE ARTICLE

From http://www.BreakingNewsEnglish.com/1702/170215-air-conditioning.html

A team of engineers has created a super-thin material that could help keep buildings cool. The team is from the University of Colorado Boulder in the USA. Engineers from the university developed the revolutionary new material, that is very thin and can cool objects even under direct sunlight. The material does not need energy to work nor does it need water to help keep things cool. The engineers say the new material could provide an answer to air conditioners, which are expensive to run and need a lot of water. The material is unlike anything found in nature. It is a glass-polymer hybrid that is just 50 micrometers thick. That's slightly thicker than the aluminum foil we use for cooking.

The engineers explained how their new material works. They said when it is put on top of something, two things happen. The first thing is that it cools the object underneath by reflecting the Sun's rays back into space. At the same time, the second thing happens - the material removes the object's own heat and sends that into the air. An engineer said: "The key advantage of this technology is that it works 24/7 with no electricity or water usage….We're excited about the opportunity to explore potential uses in the power industry, aerospace, agriculture and more." Another researcher said: "Just 10 to 20 square meters of this material on the rooftop could nicely cool down a…house in summer."

Sources: https://**knowridge.com**/2017/02/new-engineered-material-can-cool-roofs-structures-with-zero-energy-consumption/
http://www.**ctvnews.ca**/sci-tech/scientists-make-thin-material-that-acts-as-air-conditioner-1.3281871
http://www.**techtimes.com**/articles/196976/20170211/new-material-can-cool-structures-without-consuming-water-and-energy.htm

WARM-UPS

1. AIR CONDITIONING: Students walk around the class and talk to other students about air conditioning. 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?

team / engineers / buildings / cool / revolutionary / direct / sunlight / expensive / material / object / heat / technology / electricity / aerospace / agriculture / summer

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

3. ENGINEERS: Students A **strongly** believe engineers and scientists will save the world; Students B **strongly** believe they won't. Change partners again and talk about your conversations.

4. KEEPING COOL: How can buildings keep these areas cooler? Complete this table with your partner(s). Change partners often and share what you wrote.

	Problems	Solutions
Shopping malls		
Office buildings		
Apartment buildings		
Schools		
Homes		
Museums		

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

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

- cooling material
- warming material
- silk
- waterproof material
- leather
- bulletproof material
- denim
- camouflage material

BEFORE READING / LISTENING

From http://www.BreakingNewsEnglish.com/1702/170215-air-conditioning.html

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

a. A team of computer scientists created the super-thin material. **T / F**
b. The super-thin cooling materials does not work under direct sunlight. **T / F**
c. The new material does not need energy and water to work. **T / F**
d. The material is thinner than the aluminium foil we use for cooking. **T / F**
e. The material works by absorbing the sun's rays and keeping the heat. **T / F**
f. The material works all day, every day. **T / F**
g. An engineer is looking forward to seeing the material used in agriculture. **T / F**
h. Around 15 square meters on a roof could cool a house in the summer. **T / F**

2. SYNONYM MATCH:

Match the following synonyms. The words in **bold** are from the news article.

1. super	a. thing
2. revolutionary	b. mixture
3. under	c. benefit
4. provide	d. advanced
5. hybrid	e. possible
6. object	f. ultra
7. happens	g. only
8. advantage	h. give
9. potential	i. takes place
10. just	j. beneath

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

1. A team	a. new material works
2. under direct	b. thicker
3. The material is unlike	c. explore potential uses
4. slightly	d. of this technology
5. the aluminium foil	e. anything found in nature
6. engineers explained how their	f. of engineers
7. reflecting the Sun's rays	g. sunlight
8. The key advantage	h. down a house in summer
9. the opportunity to	i. we use for cooking
10. cool	j. back into space

GAP FILL

From http://www.BreakingNewsEnglish.com/1702/170215-air-conditioning.html

A team of engineers has created a super-thin material that could (1) _____ keep buildings cool. The team is from the University of Colorado Boulder in the USA. Engineers from the university developed the (2) _____ new material, that is very thin and can cool objects even under (3) _____ sunlight. The material does not need energy to work (4) _____ does it need water to help keep things cool. The engineers say the new material could provide an (5) _____ to air conditioners, which are (6) _____ to run and need a lot of water. The material is unlike anything found in (7) _____. It is a glass-polymer hybrid that is just 50 micrometers thick. That's slightly thicker than the aluminum (8) _____ we use for cooking.

nature

answer

revolutionary

nor

help

foil

expensive

direct

The engineers explained how their new material works. They said when it is put on (9) _____ of something, two things happen. The first thing is that it cools the object underneath by (10) _____ the Sun's rays back into space. At the same time, the second thing happens - the material (11) _____ the object's own heat and sends that into the (12) _____. An engineer said: "The key advantage of this technology is that it works (13) _____ with no electricity or water usage….We're excited about the opportunity to explore (14) _____ uses in the power industry, aerospace, agriculture and more." Another researcher said: "Just 10 to 20 (15) _____ meters of this material on the rooftop could (16) _____ cool down a…house in summer."

air

potential

top

removes

nicely

reflecting

square

24/7

LISTENING – Guess the answers. Listen to check.

From http://www.BreakingNewsEnglish.com/1702/170215-air-conditioning.html

1) A team of engineers has created a super-thin material that could help keep _____
   a. buildings cools
   b. buildings cool
   c. building cool
   d. building school
2) Engineers from the university developed the _____ material
   a. revolution airy new
   b. revolutionise a new
   c. revolutionaries new
   d. revolutionary new
3) very thin and can cool objects even under _____
   a. directed sunlight
   b. directs sunlight
   c. direct sunlight
   d. directly sunlight
4) The material is unlike anything _____
   a. funded in nature
   b. found in nature
   c. found in natural
   d. fund in naturism
5) That's slightly thicker than the aluminium foil we _____
   a. use for cooking
   b. useful cooking
   c. use for cook in
   d. useful cook in
6) The first thing is that it cools the object underneath by reflecting _____
   a. the Sun's rays
   b. a Sun's rays
   c. the Sun's ray
   d. a Sun's ray
7) the material removes the object's own heat and sends _____
   a. that into the stare
   b. that into the bear
   c. that into the where
   d. that into the air
8) The key advantage of this technology is that _____
   a. it works 20/4/7
   b. it works 7/24
   c. it works 24/7
   d. it works 20/7/4
9) We're excited about the opportunity to explore potential uses in the _____
   a. powering industry
   b. powered industry
   c. power industrial
   d. power industry
10) Just 10 to 20 square meters of this material on the rooftop could nicely cool _____
   a. down a house
   b. downer house
   c. down a horse
   d. downer horse

LISTENING – Listen and fill in the gaps

From http://www.BreakingNewsEnglish.com/1702/170215-air-conditioning.html

A team of engineers (1) _____ super-thin material that could help keep buildings cool. The team is from the University of Colorado Boulder in the USA. Engineers from the university (2) _____ revolutionary new material, that is very thin and can cool objects (3) _____ sunlight. The material does not need energy to work nor does it need water to help keep things cool. The engineers say the new material could (4) _____ to air conditioners, which are expensive to run and need a lot of water. The (5) _____ anything found in nature. It is a glass-polymer hybrid that is just 50 micrometers thick. That's slightly thicker than the (6) _____ we use for cooking.

The engineers explained (7) _____ material works. They said when it is put on top of something, two things happen. The first thing is (8) _____ object underneath by reflecting the Sun's rays back into space. At the same time, the second thing happens - the material removes the object's (9) _____ that into the air. An engineer said: "The key advantage of this technology is that it works 24/7 with no electricity (10) _____….We're excited about the opportunity to explore (11) _____ the power industry, aerospace, agriculture and more." Another researcher said: "Just 10 to 20 square meters of this material (12) _____ could nicely cool down a…house in summer."

COMPREHENSION QUESTIONS

From http://www.BreakingNewsEnglish.com/1702/170215-air-conditioning.html

1. Who created the super-thin material?

2. What does the material not need to work?

3. What could the new material provide an answer to?

4. How thick is the new material?

5. What is the new material slightly thicker than?

6. How many things happen when the material is put on top of something?

7. What does the material reflect back into space?

8. How often will this new material work?

9. What industry was mentioned besides power and aerospace?

10. How much of the material could cool down a house in the summer?

MULTIPLE CHOICE - QUIZ

From http://www.BreakingNewsEnglish.com/1702/170215-air-conditioning.html

1) Who created the super-thin material?
a) computer scientists
b) a team of engineers
c) silk workers
d) Microsoft

2) What does the material not need to work?
a) revolutions
b) sunlight
c) answers
d) energy and water

3) What could the new material provide an answer to?
a) engineers
b) the meaning of life
c) air conditioners
d) water

4) How thick is the new material?
a) 50 micrometers
b) 50 mm
c) 15 micrometers
d) 15 mm

5) What is the new material slightly thicker than?
a) water
b) aluminium foil
c) cardboard
d) paper

6) How many things happen when the material is put on top of something?
a) 2
b) 3
c) 4
d) 5

7) What does the material reflect back into space?
a) ozone
b) air
c) the Sun's rays
d) water

8) How often will this new material work?
a) 24/7
b) five days a week
c) six days a week
d) during daylight hours

9) What industry was mentioned besides power and aerospace?
a) housing
b) aluminium making
c) engineering
d) agriculture

10) How much of the material could cool down a house in the summer?
a) enough to cover a football field
b) 2 square meters
c) 10 to 20 square metres
d) 24/7

ROLE PLAY

From http://www.BreakingNewsEnglish.com/1702/170215-air-conditioning.html

Role A – Cooling Material

You think cooling material is the best kind of material. Tell the others three reasons why. Tell them why their material is not as good . Also, tell the others which is the worst of these (and why): leather, bulletproof material or silk.

Role B – Leather

You think leather is the best kind of material. Tell the others three reasons why. Tell them why their material is not as good . Also, tell the others which is the worst of these (and why): cooling material, bulletproof material or silk.

Role C – Bulletproof Material

You think bulletproof material is the best kind of material. Tell the others three reasons why. Tell them why their material is not as good . Also, tell the others which is the worst of these (and why): leather, cooling material or silk.

Role D – Silk

You think silk is the best kind of material. Tell the others three reasons why. Tell them why their material is not as good . Also, tell the others which is the worst of these (and why): leather, bulletproof material or cooling material.

AFTER READING / LISTENING

From http://www.BreakingNewsEnglish.com/1702/170215-air-conditioning.html

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

super	**thin**

- 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:

• team • developed • even • answer • glass • cooking	• top • rays • time • air • 24 • 20

AIR CONDITIONING SURVEY

From http://www.BreakingNewsEnglish.com/1702/170215-air-conditioning.html

Write five GOOD questions about air conditioning 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.

AIR CONDITIONING 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 'air conditioner'?
3. How important is air conditioning to you?
4. What do you think about what you read?
5. How do you think the new material will change our life?
6. Would you wear clothes made from the new material?
7. What other things can we do to keep buildings cool?
8. What other things could we use the material for?
9. What do you do to keep cool?
10. Is it better to be too cool or too hot?

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AIR CONDITIONING 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 'cool'?
13. What are the disadvantages of air conditioners?
14. What meanings of the word 'cool' do you know of?
15. How does the new material work?
16. What are the advantages of the new material?
17. Why do buildings get hot?
18. How could the aerospace industry use the new material?
19. How could the agriculture industry use the new material?
20. What questions would you like to ask the engineers?

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 http://www.BreakingNewsEnglish.com/1702/170215-air-conditioning.html

A team of engineers has (1) _____ a super-thin material that could help keep buildings cool. The team is from the University of Colorado Boulder in the USA. Engineers from the university (2) _____ the revolutionary new material, that is very thin and can cool objects (3) _____ under direct sunlight. The material does not need energy to work (4) _____ does it need water to help keep things cool. The engineers say the new material could provide an answer to air conditioners, which are expensive to (5) _____ and need a lot of water. The material is unlike anything found in nature. It is a glass-polymer hybrid that is just 50 micrometers thick. That's (6) _____ thicker than the aluminum foil we use for cooking.

The engineers explained how their new material works. They said when it is put on top of something, two things (7) _____. The first thing is that it cools the object underneath by (8) _____ the Sun's rays back into space. At the same time, the second thing happens - the material removes the object's (9) _____ heat and sends that into the air. An engineer said: "The (10) _____ advantage of this technology is that it works 24/7 with no electricity or water usage….We're excited about the opportunity to explore potential (11) _____ in the power industry, aerospace, agriculture and more." Another researcher said: "Just 10 to 20 square meters of this material on the rooftop could nicely cool (12) _____ a…house in summer."

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

1.	(a)	create	(b)	created	(c)	creation	(d)	creative
2.	(a)	redevelop	(b)	developed	(c)	development	(d)	develops
3.	(a)	event	(b)	every	(c)	ever	(d)	even
4.	(a)	not	(b)	nor	(c)	now	(d)	non
5.	(a)	juice	(b)	run	(c)	energy	(d)	electric
6.	(a)	slights	(b)	slight	(c)	slightly	(d)	sleight
7.	(a)	occurs	(b)	event	(c)	happen	(d)	do
8.	(a)	reflected	(b)	reflects	(c)	reflecting	(d)	reflection
9.	(a)	disown	(b)	owned	(c)	owner	(d)	own
10.	(a)	key	(b)	lock	(c)	chain	(d)	combination
11.	(a)	uses	(b)	useful	(c)	using	(d)	used
12.	(a)	up	(b)	on	(c)	down	(d)	over

SPELLING

From http://www.BreakingNewsEnglish.com/1702/170215-air-conditioning.html

Paragraph 1

1. A team of rensgiene
2. pdeeevdol the revolutionary new material
3. can cool sjtbcoe
4. under dtierc sunlight
5. eenpivesx to run
6. hysgllit thicker than the aluminium foil

Paragraph 2

7. indelexap how
8. gilenctefr the Sun's rays
9. reovmes the object's own heat
10. The key avegdntaa of this
11. eoexlpr potential uses
12. the power tisuyndr

PUT THE TEXT BACK TOGETHER

From http://www.BreakingNewsEnglish.com/1702/170215-air-conditioning.html

Number these lines in the correct order.

( ) uses in the power industry, aerospace, agriculture and more." Another researcher said: "Just 10 to 20 square

( ) and sends that into the air. An engineer said: "The key advantage of this technology is that it works

( ) work nor does it need water to help keep things cool. The engineers say the new material could provide an

( ) new material, that is very thin and can cool objects even under direct sunlight. The material does not need energy to

(***1***) A team of engineers has created a super-thin material that could help keep buildings cool. The team is from

( ) thick. That's slightly thicker than the aluminium foil we use for cooking.

( ) space. At the same time, the second thing happens - the material removes the object's own heat

( ) answer to air conditioners, which are expensive to run and need a lot of water. The material is unlike

( ) the University of Colorado Boulder in the USA. Engineers from the university developed the revolutionary

( ) meters of this material on the rooftop could nicely cool down a…house in summer."

( ) 24/7 with no electricity or water usage….We're excited about the opportunity to explore potential

( ) The engineers explained how their new material works. They said when it is put on top of something, two things

( ) happen. The first thing is that it cools the object underneath by reflecting the Sun's rays back into

( ) anything found in nature. It is a glass-polymer hybrid that is just 50 micrometers

PUT THE WORDS IN THE RIGHT ORDER

From http://www.BreakingNewsEnglish.com/1702/170215-air-conditioning.html

1. thin material A cool buildings keep help could that super - .

2. The developed revolutionary material university the new .

3. can and thin very is It sunlight direct under even objects cool .

4. conditioners material an air new provide to The could answer .

5. we cooking than foil for thicker aluminium use Slightly the .

6. engineers The works material new their how explained .

7. by Sun's cools underneath the It object reflecting rays the .

8. The 24 that this key / it technology advantage 7 works is of .

9. to uses power opportunity potential the The explore in industry .

10. house This material on the rooftop could nicely cool down a .

CIRCLE THE CORRECT WORD (20 PAIRS)

From http://www.BreakingNewsEnglish.com/1702/170215-air-conditioning.html

A *team / teem* of engineers has created a super-thin material that could help *keep / stay* buildings cool. The team is from the University of Colorado Boulder in the USA. Engineers from the university *development / developed* the revolutionary new material, that is very thin and can *cooling / cool* objects even under *directly / direct* sunlight. The material does not need energy *to / for* work nor does it need water to help keep *things / thing* cool. The engineers say the new material could provide an *answer / solution* to air conditioners, which are expensive to run and *need / needs* a lot of water. The material is unlike anything found in nature. It is a glass-polymer hybrid that is just 50 micrometers thick. That's slightly *thicken / thicker* than the aluminum foil we use for cooking.

The engineers explained how their new material *works / work*. They said when it is put on top of something, two things *happening / happen*. The first thing is that it cools the object underneath *as / by* reflecting the Sun's rays back *onto / into* space. At the same time, the *second / secondly* thing happens - the material removes the object's own heat and sends that into the air. An engineer said: "The *lock / key* advantage of this technology is that it works 24/7 with *no / not* electricity or water usage….We're excited about the opportunity *to / for* explore potential uses in the power industry, aerospace, agriculture and more." Another researcher said: "Just 10 to 20 square *meter / meters* of this material on the rooftop could nicely cool *down / up* a…house in summer."

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 http://www.BreakingNewsEnglish.com/1702/170215-air-conditioning.html

_ t__m _f _ng_n__rs h_s cr__t_d _ s_p_r-th_n m_t_r__l th_t c__ld h_lp k__p b__ld_ngs c__l. Th_ t__m _s fr_m th_ _n_v_rs_ty _f C_l_r_d_ B__ld_r _n th_ _S_. _ng_n__rs fr_m th_ _n_v_rs_ty d_v_l_p_d th_ r_v_l_t__n_ry n_w m_t_r__l, th_t _s v_ry th_n _nd c_n c__l _bj_cts _v_n _nd_r d_r_ct s_nl_ght. Th_ m_t_r__l d__s n_t n__d _n_rgy t_ w_rk n_r d__s _t n__d w_t_r t_ h_lp k__p th_ngs c__l. Th_ _ng_n__rs s_y th_ n_w m_t_r__l c__ld pr_v_d_ _n _nsw_r t_ __r c_nd_t__n_rs, wh_ch _r_ _xp_ns_v_ t_ r_n _nd n__d _ l_t _f w_t_r. Th_ m_t_r__l _s _nl_k_ _nyth_ng f__nd _n n_t_r_. _t _s _ gl_ss-p_lym_r hybr_d th_t _s j_st 50 m_cr_m_t_rs th_ck. Th_t's sl_ghtly th_ck_r th_n th_ _l_m_n_m f__l w_ _s_ f_r c__k_ng.

Th_ _ng_n__rs _xpl__n_d h_w th__r n_w m_t_r__l w_rks. Th_y s__d wh_n _t _s p_t _n t_p _f s_m_th_ng, tw_ th_ngs h_pp_n. Th_ f_rst th_ng _s th_t _t c__ls th_ _bj_ct _nd_rn__th by r_fl_ct_ng th_ s_n's r_ys b_ck _nt_ sp_c_. _t th_ s_m_ t_m_, th_ s_c_nd th_ng h_pp_ns - th_ m_t_r__l r_m_v_s th_ _bj_ct's _wn h__t _nd s_nds th_t _nt_ th_ __r. _n _ng_n__r s__d: "Th_ k_y _dv_nt_g_ _f th_s t_chn_l_gy _s th_t _t w_rks 24/7 w_th n_ _l_ctr_c_ty _r w_t_r _s_g_….W_'r_ _xc_t_d _b__t th_ _pp_rt_n_ty t_ _xpl_r_ p_t_nt__l _s_s _n th_ p_w_r _nd_stry, __r_sp_c_, _gr_c_lt_r_ _nd m_r_." _n_th_r r_s__rch_r s__d: "J_st 10 t_ 20 sq__r_ m_t_rs _f th_s m_t_r__l _n th_ r__ft_p c__ld n_c_ly c__l d_wn _…h__s_ _n s_mm_r."

PUNCTUATE THE TEXT AND ADD CAPITALS

From http://www.BreakingNewsEnglish.com/1702/170215-air-conditioning.html

a team of engineers has created a super-thin material that could help keep buildings cool the team is from the university of colorado boulder in the usa engineers from the university developed the revolutionary new material that is very thin and can cool objects even under direct sunlight the material does not need energy to work nor does it need water to help keep things cool the engineers say the new material could provide an answer to air conditioners which are expensive to run and need a lot of water the material is unlike anything found in nature it is a glass-polymer hybrid that is just 50 micrometers thick that's slightly thicker than the aluminum foil we use for cooking

the engineers explained how their new material works they said when it is put on top of something two things happen the first thing is that it cools the object underneath by reflecting the Sun's rays back into space at the same time the second thing happens - the material removes the object's own heat and sends that into the air an engineer said "the key advantage of this technology is that it works 24/7 with no electricity or water usage…we're excited about the opportunity to explore potential uses in the power industry aerospace agriculture and more" another researcher said "just 10 to 20 square meters of this material on the rooftop could nicely cool down a…house in summer"

PUT A SLASH (/) WHERE THE SPACES ARE

From http://www.BreakingNewsEnglish.com/1702/170215-air-conditioning.html

Ateamofengineershascreatedasuper-thinmaterialthatcouldhelpkeepbuildingscool.TheteamisfromtheUniversityofColoradoBoulderintheUSA.Engineersfromtheuniversitydevelopedtherevolutionarynewmaterial,thatisverythinandcancoolobjectsevenunderdirectsunlight.Thematerialdoesnotneedenergytoworknordoesitneedwatertohelpkeepthingscool.Theengineerssaythenewmaterialcouldprovideananswertoairconditioners,whichareexpensivetorunandneedalotofwater.Thematerialisunlikeanythingfoundinnature.Itisaglass-polymerhybridthatisjust50micrometersthick.That'sslightlythickerthanthealuminiumfoilweuseforcooking.Theengineersexplainedhowtheirnewmaterialworks.Theysaidwhenitisputontopofsomething,twothingshappen.Thefirstthingisthatitcoolstheobjectunderneathbyreflectingthesun'sraysbackintospace.Atthesametime,thesecondthinghappens-thematerialremovestheobject'sownheatandsendsthatintotheair.Anengineersaid:"Thekeyadvantageofthistechnologyisthatitworks24/7withnoelectricityorwaterusage….We'reexcitedabouttheopportunitytoexplorepotentialusesinthepowerindustry,aerospace,agriculturean dmore."Anotherresearchersaid:"Just10to20squaremetersofthismaterialontherooftopcouldnicelycooldowna…houseinsummer."

FREE WRITING

From http://www.BreakingNewsEnglish.com/1702/170215-air-conditioning.html

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

ACADEMIC WRITING

From http://www.BreakingNewsEnglish.com/1702/170215-air-conditioning.html

Scientists will find an answer to all our problems. 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 air conditioning. Share what you discover with your partner(s) in the next lesson.

3. AIR CONDITIONING: Make a poster about air conditioning. Show your work to your classmates in the next lesson. Did you all have similar things?

4. WASTE: Write a magazine article about air conditioning being a waste of energy and water. Include imaginary interviews with people who are for and against it.

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 air conditioning. Ask him/her three questions about it. Give him/her three of your ideas on how to keep buildings cool in hot weather. Read your letter to your partner(s) in your next lesson. Your partner(s) will answer your questions.

ANSWERS

TRUE / FALSE (p.4)

a F b F c T d F e F f T g T h T

SYNONYM MATCH (p.4)

1.	**super**	a.	ultra
2.	**revolutionary**	b.	advanced
3.	**under**	c.	beneath
4.	**provide**	d.	give
5.	**hybrid**	e.	mixture
6.	**object**	f.	thing
7.	**happens**	g.	takes place
8.	**advantage**	h.	benefit
9.	**potential**	i.	possible
10.	**just**	j.	only

COMPREHENSION QUESTIONS (p.8)

1. A team of engineers
2. Energy or water
3. Air conditioners
4. 50 micrometers
5. Aluminium foil
6. Two
7. The Sun's rays
8. 24/7
9. Agriculture
10. 10 to 20 square meters

MULTIPLE CHOICE - QUIZ (p.9)

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

ALL OTHER EXERCISES

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