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#### Level 2

## New, super-thin material cools buildings

15th February, 2017

http://www.breakingnewsenglish.com/1702/170215-air-conditioning-2.html

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Please try Levels 0, 1 and 3. They are (a little) harder.

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#### THE READING

From http://www.breakingnewsenglish.com/1702/170215-air-conditioning-2.html

Engineers from the University of Colorado Boulder have made a super-thin material that could help keep buildings cool. The engineers developed the amazing new material, that can cool objects even under direct Sunlight. The material does not need energy to work. It does not need water to help keep things cool. The new material could do the work of air conditioners, which need a lot of energy and water. The material is not like anything found in nature. It is a glass-polymer hybrid and is just 50 micrometers thick - about the same as the aluminium foil we use for cooking.

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

Sources: https://knowridge.com/2017/02/new-engineered-material-can-cool-roofs-structures-with-zeroenergy-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

### PHRASE MATCHING

From http://www.breakingnewsenglish.com/1702/170215-air-conditioning-2.html

#### **PARAGRAPH ONE:**

- 1. help keep
- 2. The engineers developed the
- 3. cool objects even under direct
- 4. The material does not need
- 5. not like anything
- 6. It is a glass-polymer
- 7. just 50 micrometers
- 8. the aluminium foil we

- a. hybrid
- b. energy to work
- c. use for cooking
- d. buildings cool
- e. thick
- f. amazing new material
- g. found in nature
- h. sunlight

#### **PARAGRAPH TWO:**

- 1. When it is put on
- 2. takes away heat from the object
- 3. The key
- 4. it works
- 5. the opportunity to explore potential
- 6. in the power
- 7. Just 10 to 20
- 8. cool down a

- a. industry
- b. 24/7
- c. house in summer
- d. top of something
- e. square meters
- f. underneath
- g. uses
- h. advantage

## **LISTEN AND FILL IN THE GAPS**

From http://www.breakingnewsenglish.com/1702/170215-air-conditioning-2.html

Engineers	from	the	University	of	Colorado	Boulder
(1)			super-thin n	nateria	l that could	help keep
buildings co	ol. The e	enginee	rs developed	(2)		
material, th	at can co	ool obje	cts (3)			_ Sunlight.
The materia	ıl does n	ot need	energy to w	ork. It	does not r	need water
to (4)			cool. The	e new	material co	uld do the
work of air	conditior	ners, wh	nich need a lo	ot of e	nergy and v	water. The
material is	not like	anythi	ng (5)			It is a
glass-polym	er hybri	d and i	s just 50 mi	cromet	ers thick -	about the
same as the	alumini	um foil	(6)		co	oking.
The enginee	ers expla	ined ho	w the (7)			When
it is put on	top of so	omethir	ıg, (8)			The first
is it cools	the obje	ct unde	erneath (9)			the
Sun's rays.	At the	same	time, the se	econd	thing happ	ens - the
material tak	ces away	heat f	rom the obje	ct unc	lerneath. Ai	n engineer
said: "The	key (10	)			technology	is that it
works 24/7	with no	electri	city or wate	rWe	're excited	about the
opportunity	to (11	)			uses in t	the power
industry, a	erospace	, agricu	ilture and m	ore." :	Just 10 to	20 square
meters of	this mat	erial (1	12)		a	house in
summer.						

## PUT A SLASH ( / )WHERE THE SPACES ARE

From http://www.breakingnewsenglish.com/1702/170215-air-conditioning-2.html

EngineersfromtheUniversityofColoradoBoulderhavemadeasuperthinmaterialthatcouldhelpkeepbuildingscool. The engineers develope dtheamazingnewmaterial, that can cool objects even under direct Sunli ght.Thematerialdoesnotneedenergytowork.Itdoesnotneedwatertoh elpkeepthingscool. The new material could do the work of airconditioner s, which need a lot of energy and water. The material is not like anything for undinnature. It is a glass-polymerhy bridandisjust 50 micrometers t hick-aboutthesameasthealuminiumfoilweuseforcooking. The engine ersexplainedhowthenewmaterialworks. Whenitisputontopofsomethi ng, two things happen. The first is it cools the object under neathby reflect ingtheSun'srays. At the same time, the second thing happens-thema terialtakesawayheatfromtheobjectunderneath. Anengineersaid: "Th ekeyadvantageofthistechnologyisthatitworks24/7withnoelectricity orwater....We'reexcitedabouttheopportunitytoexplorepotentialuses inthepowerindustry, aerospace, agriculture and more. "Just 10 to 20 sq. uaremetersofthismaterial could cool down a house in summer.

## **AIR CONDITIONING SURVEY**

From <a href="http://www.breakingnewsenglish.com/1702/170215-air-conditioning-4.html">http://www.breakingnewsenglish.com/1702/170215-air-conditioning-4.html</a>

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.

## WRITE QUESTIONS & ASK YOUR PARTNER(S)

Student A: Do not show these to your speaking partner(s).

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	QUESTIONS & ASK YOUR PARTION Do not show these to your speaking partner(s).
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## **WRITING**

 $\textbf{From} \quad \underline{\text{http://www.breakingnewsenglish.com/1702/170215-air-conditioning-2.html}}$ 

Write about <b>air</b> paper.	conditioning	for 10 minutes.	Read and talk about your partner	r's