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Ready-to-Use English Lessons by Sean Banville

Level 3 – 12th May, 2021

IBM makes 'next-generation' microchip

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https://breakingnewsenglish.com/2105/210512-microchips.html

Contents

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

THE ARTICLE

From https://breakingnewsenglish.com/2105/210512-microchips.html

Computers, tablets and smartphones can do more and more things these days. Fifteen years ago, they were not powerful enough to store movies or play high-definition games. Computer chip technology has advanced at a fast rate. We can now stream movies on our smartphones and store huge amounts of data. IBM has announced it has made a significant breakthrough in microchip power. It has created chips that improve performance by 45 per cent. Its new chips also use 75 per cent less energy. This is good for the environment, and means batteries will be more energy efficient. The technology could quadruple mobile phone battery life. We might only need to charge our phones every four days.

IBM has greatly improved its microchips by reducing their size. The tech giant has created a two-nanometre chip. Computer engineers use nanometres to measure the size of chips. One nanometre is just a billionth of a metre. A chip that is 2nm in size is incredibly small. IBM says its 2nm processor can store 50 billion transistors on "a chip the size of a fingernail". Computer expert Peter Rudden said: "We have seen semiconductor manufacturers moving from 14nm to 10nm to 7nm, with 7nm being a real challenge for some." He said IBM's new chip could advance artificial intelligence (AI). The chips could also let data centres store more information. Data centres use one per cent of the world's electricity.

Sources: https://www.**computerweekly.com**/news/252500454/IBM-Another-chip-in-the-wall
https://www.**bbc.com**/news/technology-57009930
https://edition.**cnn.com**/2021/05/06/tech/ibm-semiconductor-two-nanometer/index.html

WARM-UPS

1. MICROCHIPS: Students walk around the class and talk to other students about microchips. 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?

> computers / tablets / smartphones / games / microchip / performance / energy / chip size / giant / engineers / measure / processor / fingernail / manufacturer / electricity

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

3. TECHNOLOGY: Students A **strongly** believe technology makes our life better; Students B **strongly** believe it doesn't. Change partners again and talk about your conversations.

4. THE FUTURE: What do you think of these companies? What will they be like in the future? Complete this table with your partner(s). Change partners often and share what you wrote.

	What I Think	The Future
IBM		
Apple		
Tesla		
Huawei		
Google		
Microsoft		

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

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

- Tablets
- Laptop computer
- Smartphone
- E-readers
- USB Flash drives
- Speakers
- Television
- Digital photo frame

VOCABULARY MATCHING

Paragraph 1

1.	store	a.	Extremely large; enormous.
2.	advanced	b.	Keep something somewhere for future use.
3.	huge	c.	A sudden, dramatic, and important discovery or development.
4.	breakthrough	d.	Getting maximum productivity with minimum wasted effort or expense.
5.	efficient	e.	Make or cause to make progress.
6.	quadruple	f.	Fill something with electrical energy in a battery or battery-operated device.
7.	charge	g.	Increase or be increased by four times.

Paragraph 2

8.	improved	h.	A very, very, very large company.
9.	giant	i.	A person who has a lot of knowledge skill in a particular area.
10.	measure	j.	Make or become better.
11.	incredibly	k.	Find the size, amount, or degree of something.
12.	expert	l.	A person or company that makes goods for sale.
13.	manufacturer	m.	Extremely or unusually.
14.	artificial	n.	Made by people rather than occurring naturally, especially as a copy of something natural.

BEFORE READING / LISTENING

From https://breakingnewsenglish.com/2105/210512-microchips.html

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

1. The article says computers were not so powerful 50 years ago. **T / F**
2. The article says we can store huge movies on our smartphones. **T / F**
3. IBM's new chip uses 75% less energy. **T / F**
4. The new chip means we only need four days to charge our phones. **T / F**
5. IBM has created a giant chip. **T / F**
6. Computer engineers measure microchip sizes in nanometres. **T / F**
7. The new chips could lead to advances in artificial intelligence. **T / F**
8. Data centres use more than one percent of the world's electricity. **T / F**

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

1. these days	a. tiny
2. advanced	b. made
3. huge	c. keep
4. created	d. very large
5. improve	e. specialist
6. reducing	f. moved forward
7. small	g. makers
8. expert	h. boost
9. manufacturers	i. cutting
10. store	j. nowadays

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

1. smartphones can do more and more	a. mobile phone battery life
2. they were not powerful	b. a fast rate
3. chip technology has advanced at	c. intelligence
4. it has made a significant	d. measure the size
5. The technology could quadruple	e. enough
6. improved its microchips by	f. of a fingernail
7. engineers use nanometres to	g. things these days
8. on a chip the size	h. reducing their size
9. artificial	i. world's electricity
10. use one per cent of the	j. breakthrough

GAP FILL

From https://breakingnewsenglish.com/2105/210512-microchips.html

Computers, tablets and smartphones can do more and more (1) _____ these days. Fifteen years ago, they were not powerful enough to store movies or play high-(2) _____ games. Computer chip technology has advanced at a (3) _____ rate. We can now stream movies on our smartphones and store huge (4) _____ of data. IBM has announced it has made a significant (5) _____ in microchip power. It has created chips that improve performance by 45 per cent. Its new chips also use 75 per cent less (6) _____. This is good for the environment, and means batteries will be more energy (7) _____. The technology could quadruple mobile phone battery life. We might only need to (8) _____ our phones every four days.

amounts

things

efficient

breakthrough

fast

charge

definition

energy

IBM has (9) _____ improved its microchips by reducing their size. The tech giant has created a two-nanometre chip. Computer engineers use nanometres to (10) _____ the size of chips. One nanometre is just a (11) _____ of a metre. A chip that is 2nm in size is (12) _____ small. IBM says its 2nm processor can store 50 billion transistors on "a chip the size of a (13) _____ ". Computer expert Peter Rudden said: "We have seen semiconductor manufacturers moving from 14nm to 10nm to 7nm, with 7nm being a real (14) _____ for some." He said IBM's new chip could (15) _____ artificial intelligence (AI). The chips could also let data centres (16) _____ more information. Data centres use one per cent of the world's electricity.

incredibly

store

greatly

billionth

advance

measure

challenge

fingernail

LISTENING – Guess the answers. Listen to check.

From https://breakingnewsenglish.com/2105/210512-microchips.html

1) Computers, tablets and smartphones can do more and more _____
   a. things this days
   b. things freeze days
   c. things thesis days
   d. things these days
2) not powerful enough to store movies or play high-_____
   a. define mission games
   b. definite issue games
   c. definition games
   d. definitions games
3) We can now stream movies on our smartphones and _____
   a. store huge amount
   b. store huge amounts
   c. store huge a mount
   d. store huge all mounts
4) This is good for the environment, and means batteries will be _____
   a. more energy efficient
   b. more energetic efficient
   c. more energies efficient
   d. more energise efficient
5) The technology could quadruple mobile _____
   a. phone bat a teal life
   b. phonics battle airy life
   c. phonic buttery life
   d. phone battery life
6) IBM has greatly improved its microchips by _____
   a. reduce in their size
   b. reducing their size
   c. reducing they're size
   d. reducing dare size
7) measure the size of chips. One nanometre is just a _____ metre
   a. billions of a
   b. billionth of a
   c. billion of a
   d. billionaire of a
8) store 50 billion transistors on "a chip the size _____
   a. of a fingernail
   b. off a fingernail
   c. oft a fingernail
   d. offer fingernail
9) moving from 14nm to 10nm to 7nm, with 7nm being a real _____
   a. challenges for some
   b. challenged for some
   c. challenger for some
   d. challenge for some
10) The chips could also let data centres _____
   a. stare more information
   b. stair more information
   c. sty more information
   d. store more information

LISTENING – Listen and fill in the gaps

From https://breakingnewsenglish.com/2105/210512-microchips.html

Computers, tablets and smartphones can do (1) _____ things these days. Fifteen years ago, they were not powerful enough to store movies or play (2) _____. Computer chip technology has advanced at a fast rate. We can now stream movies on our smartphones and (3) _____ of data. IBM has announced it has made a significant breakthrough in microchip power. It has created chips that (4) _____ 45 per cent. Its new chips also use 75 per cent less energy. This is good for the environment, and means batteries will be (5) _____. The technology could quadruple mobile phone battery life. We might only need (6) _____ phones every four days.

IBM has (7) _____ microchips by reducing their size. The tech giant has created a two-nanometre chip. Computer engineers use nanometres to (8) _____ of chips. One nanometre is just a billionth of a metre. A chip that is 2nm in size (9) _____. IBM says its 2nm processor can store 50 billion transistors on "a chip the size (10) _____". Computer expert Peter Rudden said: "We have seen semiconductor manufacturers moving from 14nm to 10nm to 7nm, with 7nm being a (11) _____ some." He said IBM's new chip could advance artificial intelligence (AI). The chips could also let data centres store more information. Data centres use one per cent of (12) _____.

COMPREHENSION QUESTIONS

From https://breakingnewsenglish.com/2105/210512-microchips.html

1. What does the article say tablets and smartphones can do these days?

2. How much data does the article say we can store on our smartphones?

3. How much less energy do the new chips use?

4. What could the new chips do to mobile phone battery life?

5. How often might we be charging our mobile phones?

6. What is the size of IBM's new chip?

7. How many transistors could IBM put on a fingernail-sized chip?

8. Who is Peter Rudden?

9. What could the new chips allow data centres to store?

10. How much of the world's energy do data centres use?

MULTIPLE CHOICE - QUIZ

From https://breakingnewsenglish.com/2105/210512-microchips.html

1) What does the article say tablets and smartphones can do these days?
a) predict the future
b) more and more things
c) choose our partner
d) reduce our size

2) How much data does the article say we can store on our smartphones?
a) all the world's data
b) about 63GB
c) quite a lot
d) huge amounts

3) How much less energy do the new chips use?
a) 75% less
b) 85% less
c) 70% less
d) 70.5% less

4) What could the new chips do to mobile phone battery life?
a) double it
b) increase it five-fold
c) quadruple it
d) triple it

5) How often might we be charging our mobile phones?
a) every three days
b) every four days
c) every day
d) every four hours

6) What is the size of IBM's new chip?
a) 12 nanometres
b) 20 nanometres
c) two nanometres
d) 200 nanometres

7) How many transistors could IBM put on a fingernail-sized chip?
a) 15 billion
b) 50 million
c) 15 million
d) 50 billion

8) Who is Peter Rudden?
a) a computer expert
b) a chip designer
c) a data centre owner
d) a semiconductor

9) What could the new chips allow data centres to store?
a) more information
b) more transistors
c) more processors
d) better security

10) How much of the world's energy do data centres use?
a) 2%
b) 1%
c) 0.5%
d) 5%

ROLE PLAY

From https://breakingnewsenglish.com/2105/210512-microchips.html

Role A – Smartphones

You think smartphones are the best digital devices. Tell the others three reasons why. Tell them what is wrong with their devices. Also, tell the others which is the least useful of these (and why): televisions, laptop computers or USB Flash drives.

Role B – Televisions

You think televisions are the best digital devices. Tell the others three reasons why. Tell them what is wrong with their devices. Also, tell the others which is the least useful of these (and why): smartphones, laptop computers or USB Flash drives.

Role C – Laptop Computers

You think laptop computers are the best digital devices. Tell the others three reasons why. Tell them what is wrong with their devices. Also, tell the others which is the least useful of these (and why): televisions, smartphones or USB Flash drives.

Role D – USB Flash Drives

You think USB Flash drives are the best digital devices. Tell the others three reasons why. Tell them what is wrong with their devices. Also, tell the others which is the least useful of these (and why): televisions, laptop computers or smartphones.

AFTER READING / LISTENING

From https://breakingnewsenglish.com/2105/210512-microchips.html

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

micro	**chip**

- 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:

• tablets • rate • huge • 45 • batteries • four	• greatly • measure • 50 • moving • advance • one

MICROCHIPS SURVEY

From https://breakingnewsenglish.com/2105/210512-microchips.html

Write five GOOD questions about microchips 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.

MICROCHIPS 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 'micro'?
3. What do you think of computers and smartphones?
4. How important is your smartphone to you?
5. How much better is your smartphone now than 10 years ago?
6. What do you need your smartphone for?
7. What do you know about microchips?
8. What do you know about the tech giant IBM?
9. What could our phones do with lots more power?
10. How much do you like technology?

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MICROCHIPS 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 'chip'?
13. What do you think about what you read?
14. What do you know about microchips?
15. What does a computer engineer do all day?
16. What is the world's best technology company?
17. What new technology would you like to see?
18. What do you think of artificial intelligence?
19. Why do data centres use so much electricity?
20. What questions would you like to ask IBM's 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 https://breakingnewsenglish.com/2105/210512-microchips.html

Computers, tablets and smartphones can do (1) _____ and more things these days. Fifteen years ago, they were not powerful (2) _____ to store movies or play high-definition games. Computer chip technology has advanced at a fast rate. We can now stream movies on our smartphones and store (3) _____ amounts of data. IBM has announced it has made a significant breakthrough in microchip power. It has created chips (4) _____ improve performance by 45 per cent. Its new chips also use 75 per cent less energy. This is good for the environment, and means batteries will be more (5) _____ efficient. The technology could quadruple mobile phone battery life. We might only need to (6) _____ our phones every four days.

IBM has greatly improved its microchips (7) _____ reducing their size. The tech giant has created a two-nanometre chip. Computer engineers use nanometres to measure the (8) _____ of chips. One nanometre is just a billionth of a metre. A chip that is 2nm in size is incredibly small. IBM says its 2nm processor can store 50 billion transistors on "a chip the size of a fingernail". Computer (9) _____ Peter Rudden said: "We have seen semiconductor manufacturers moving from 14nm to 10nm to 7nm, with 7nm (10) _____ a real challenge for some." He said IBM's new chip could advance (11) _____ intelligence (AI). The chips could also let data centres store more information. Data centres use one per cent of the world's (12) _____.

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

1.	(a)	any	(b)	some	(c)	much	(d)	most
2.	(a)	plenty	(b)	suffice	(c)	satisfy	(d)	enough
3.	(a)	hug	(b)	huge	(c)	hugs	(d)	hg
4.	(a)	what	(b)	so	(c)	that	(d)	such
5.	(a)	energetic	(b)	energetically	(c)	energy	(d)	energise
6.	(a)	charge	(b)	chart	(c)	change	(d)	chant
7.	(a)	as	(b)	by	(c)	to	(d)	on
8.	(a)	size	(b)	big	(c)	enormous	(d)	minute
9.	(a)	expect	(b)	expert	(c)	exact	(d)	extent
10.	(a)	been	(b)	be	(c)	being	(d)	boing
11.	(a)	actual	(b)	actually	(c)	artificial	(d)	actuary
12.	(a)	electrical	(b)	electricians	(c)	electrics	(d)	electricity

SPELLING

From https://breakingnewsenglish.com/2105/210512-microchips.html

Paragraph 1

1. Computers, tablets and phneoasmsrt
2. fwperluo enough to store movies
3. play high-inofinidet games
4. it has made a ngiitfisnac breakthrough
5. batteries will be more energy nieefictf
6. eqldpauur mobile phone battery life

Paragraph 2

7. IBM has greatly odeimpvr its microchips
8. use nanometres to usaeemr the size of chips
9. 2nm in size is bidnceyrli small
10. its 2nm esscoorpr can store 50 billion
11. Computer eteprx
12. IBM's new chip could advance talciirafi intelligence

PUT THE TEXT BACK TOGETHER

From https://breakingnewsenglish.com/2105/210512-microchips.html

Number these lines in the correct order.

( ) could quadruple mobile phone battery life. We might only need to charge our phones every four days.

( ) centres store more information. Data centres use one per cent of the world's electricity.

(***1***) Computers, tablets and smartphones can do more and more things these days. Fifteen years

( ) advanced at a fast rate. We can now stream movies on our smartphones and store huge amounts

( ) billionth of a metre. A chip that is 2nm in size is incredibly small. IBM says its 2nm processor can store 50 billion transistors

( ) ago, they were not powerful enough to store movies or play high-definition games. Computer chip technology has

( ) chip. Computer engineers use nanometres to measure the size of chips. One nanometre is just a

( ) on "a chip the size of a fingernail". Computer expert Peter Rudden said: "We have seen semiconductor

( ) some." He said IBM's new chip could advance artificial intelligence (AI). The chips could also let data

( ) manufacturers moving from 14nm to 10nm to 7nm, with 7nm being a real challenge for

( ) chips that improve performance by 45 per cent. Its new chips also use 75 per cent less

( ) energy. This is good for the environment, and means batteries will be more energy efficient. The technology

( ) of data. IBM has announced it has made a significant breakthrough in microchip power. It has created

( ) IBM has greatly improved its microchips by reducing their size. The tech giant has created a two-nanometre

PUT THE WORDS IN THE RIGHT ORDER

From https://breakingnewsenglish.com/2105/210512-microchips.html

1. and more things more Smartphones can do nowadays .

2. not to movies . were They powerful enough store

3. We can now our stream movies smartphones . on

4. power . in significant truly breakthrough A microchip

5. phone mobile The quadruple battery technology could life .

6. tech giant a created The two-nanometre has chip .

7. is of One billionth a metre . a nanometre

8. On of chip fingernail . size a a the

9. intelligence . artificial could chip new IBM's advance

10. electricity . of Data one per cent centres world's the use

CIRCLE THE CORRECT WORD (20 PAIRS)

From https://breakingnewsenglish.com/2105/210512-microchips.html

Computers, tablets and smartphones can do more *and / to* more things these days. Fifteen years ago, they were not powerful *plenty / enough* to store movies or play high-definition games. Computer chip technology has advanced at a *speed / fast* rate. We can now stream movies on our smartphones and store huge *amounts / amount* of data. IBM has announced it has made a significant breakthrough *in / on* microchip power. It has created chips *that / what* improve performance by 45 per cent. Its new chips also *useful / use* 75 per cent less energy. This is good *from / for* the environment, and means batteries will be more energy *deficient / efficient*. The technology could quadruple mobile phone battery life. We might only need to *charge / change* our phones every four days.

IBM has *greatly / great* improved its microchips by *reduction / reducing* their size. The tech *giant / gigantic* has created a two-nanometre chip. Computer engineers use nanometres to measure the size of chips. One nanometre is just *the / a* billionth of a metre. A chip that is 2nm in size is *incredible / incredibly* small. IBM says its 2nm processor can *store / storage* 50 billion transistors on "a chip the *large / size* of a fingernail". Computer expert Peter Rudden said: "We have seen semiconductor manufacturers *moves / moving* from 14nm to 10nm to 7nm, with 7nm *be / being* a real challenge for some." He said IBM's new chip could advance artificial intelligence (AI). The chips could also let data centres store more information. Data centres use one per cent of the world's *electricians / electricity*.

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/2105/210512-microchips.html

C_mp_t_rs, t_bl_ts _nd sm_rtph_n_s c_n d_ m_r_ _nd m_r_ th_ngs th_s_ d_ys. F_ft__n y__rs _g_, th_y w_r_ n_t p_w_rf_l _n__gh t_ st_r_ m_v__s _r pl_y h_gh-d_f_n_t__n g_m_s. C_mp_t_r ch_p t_chn_l_gy h_s _dv_nc_d _t _ f_st r_t_. W_ c_n n_w str__m m_v__s _n __r sm_rtph_n_s _nd st_r_ h_g_ _m__nts _f d_t_. _BM h_s _nn__nc_d _t h_s m_d_ _ s_gn_f_c_nt br__kthr__gh _n m_cr_ch_p p_w_r. _t h_s cr__t_d ch_ps th_t _mpr_v_ p_rf_rm_nc_ by 45 p_r c_nt. _ts n_w ch_ps _ls_ _s_ 75 p_r c_nt l_ss _n_rgy. Th_s _s g__d f_r th_ _nv_r_nm_nt, _nd m__ns b_tt_r__s w_ll b_ m_r_ _n_rgy _ff_c__nt. Th_ t_chn_l_gy c__ld q__dr_pl_ m_b_l_ ph_n_ b_tt_ry l_f_. W_ m_ght _nly n__d t_ ch_rg_ __r ph_n_s _v_ry f__r d_ys.

_BM h_s gr__tly _mpr_v_d _ts m_cr_ch_ps by r_d_c_ng th__r s_z_. Th_ t_ch g__nt h_s cr__t_d _ tw_-n_n_m_tr_ ch_p. C_mp_t_r _ng_n__rs _s_ n_n_m_tr_s t_ m__s_r_ th_ s_z_ _f ch_ps. _n_ n_n_m_tr_ _s j_st _ b_ll__nth _f _ m_tr_. _ ch_p th_t _s 2nm _n s_z_ _s _ncr_d_bly sm_ll. _BM s_ys _ts 2nm pr_c_ss_r c_n st_r_ 50 b_ll__n tr_ns_st_rs _n "_ ch_p th_ s_z_ _f _ f_ng_rn__l". C_mp_t_r _xp_rt P_t_r R_dd_n s__d: "W_ h_v_ s__n s_m_c_nd_ct_r m_n_f_ct_r_rs m_v_ng fr_m 14nm t_ 10nm t_ 7nm, w_th 7nm b__ng _ r__l ch_ll_ng_ f_r s_m_." H_ s__d _BM's n_w ch_p c__ld _dv_nc_ _rt_f_c__l _nt_ll_g_nc_ (__). Th_ ch_ps c__ld _ls_ l_t d_t_ c_ntr_s st_r_ m_r_ _nf_rm_t__n. D_t_ c_ntr_s _s_ _n_ p_r c_nt _f th_ w_rld's _l_ctr_c_ty.

PUNCTUATE THE TEXT AND ADD CAPITALS

From https://breakingnewsenglish.com/2105/210512-microchips.html

computers tablets and smartphones can do more and more things these days fifteen years ago they were not powerful enough to store movies or play highdefinition games computer chip technology has advanced at a fast rate we can now stream movies on our smartphones and store huge amounts of data ibm has announced it has made a significant breakthrough in microchip power it has created chips that improve performance by 45 per cent its new chips also use 75 per cent less energy this is good for the environment and means batteries will be more energy efficient the technology could quadruple mobile phone battery life we might only need to charge our phones every four days

ibm has greatly improved its microchips by reducing their size the tech giant has created a twonanometre chip computer engineers use nanometres to measure the size of chips one nanometre is just a billionth of a metre a chip that is 2nm in size is incredibly small ibm says its 2nm processor can store 50 billion transistors on a chip the size of a fingernail computer expert peter rudden said we have seen semiconductor manufacturers moving from 14nm to 10nm to 7nm with 7nm being a real challenge for some he said ibms new chip could advance artificial intelligence ai the chips could also let data centres store more information data centres use one per cent of the worlds electricity

PUT A SLASH (/) WHERE THE SPACES ARE

From https://breakingnewsenglish.com/2105/210512-microchips.html

Computers,tabletsandsmartphonescandomoreandmorethingsthesedays.Fifteenyearsago,theywerenotpowerfulenoughtostoremoviesorplayhigh-definitiongames.Computerchiptechnologyhasadvancedatafastrate.Wecannowstreammoviesonoursmartphonesandstorehugeamountsofdata.IBMhasannouncedithasmadeasignificantbreakthroughinmicrochippower.Ithascreatedchipsthatimproveperformanceby45percent.Itsnewchipsalsouse75percentlessenergy.Thisisgoodfortheenvironment,andmeansbatterieswillbemoreenergyefficient.Thetechnologycouldquadruplemobilephonebatterylife.Wemightonlyneedtochargeourphoneseveryfourdays.IBMhasgreatlyimproveditsmicrochipsbyreducingtheirsize.Thetechgianthascreatedatwo-nanometrechip.Computerengineersusenanometrestomeasurethesizeofchips.Onenanometreisjustabillionthofametre.Achipthatis2nminsizeisincrediblysmall.IBMsaysits2nmprocessorcanstore50billiontransistorson"achipthesizeofafingernail".ComputerexpertPeterRuddensaid:"Wehaveseensemiconductormanufacturersmovingfrom14nmto10nmto7nm,with7nmbeingarealchallengeforsome."HesaidIBM'snewchipcouldadvanceartificialintelligence(AI).Thechipscouldalsoletdatacentresstoremoreinformation.Datacentresuseonepercentoftheworld'selectricity.

FREE WRITING

From https://breakingnewsenglish.com/2105/210512-microchips.html

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

ACADEMIC WRITING

From https://breakingnewsenglish.com/2105/210512-microchips.html

Technology will save the world. 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. MICROCHIPS: Make a poster about microchips. Show your work to your classmates in the next lesson. Did you all have similar things?

4. TECHNOLOGY: Write a magazine article about microchips being implanted in our bodies one day. 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 microchips. Ask him/her three questions about them. Give him/her three of your ideas on microchips. Read your letter to your partner(s) in your next lesson. Your partner(s) will answer your questions.

ANSWERS

VOCABULARY (p.4)

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

TRUE / FALSE (p.5)

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

SYNONYM MATCH (p.5)

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

COMPREHENSION QUESTIONS (p.9)

1. More and more things
2. Huge amounts
3. 75% less
4. Quadruple it
5. Every four days
6. Two nanometres
7. 50 billion
8. A computer expert
9. More information
10. One per cent

WORDS IN THE RIGHT ORDER (p.19)

1. Smartphones can do more and more things nowadays.
2. They were not powerful enough to store movies.
3. We can now stream movies on our smartphones.
4. A truly significant breakthrough in microchip power.
5. The technology could quadruple mobile phone battery life.
6. The tech giant has created a two-nanometre chip.
7. One nanometre is a billionth of a metre.
8. On a chip the size of a fingernail.
9. IBM's new chip could advance artificial intelligence.
10. Data centres use one per cent of the world's electricity.

MULTIPLE CHOICE - QUIZ (p.10)

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

ALL OTHER EXERCISES

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