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Level 3

New plants can produce light in the dark

18th December, 2017

<https://breakingnewsenglish.com/1712/171218-plants.html>

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

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THE ARTICLE

From <https://breakingnewsenglish.com/1712/171218-plants.html>

Scientists have created plants that glow in the dark. They are hoping to produce plants that can light up our lives. The scientists are from the Massachusetts Institute of Technology in the USA. They hope their discovery could lead to plant lights replacing electric lights. One day, even light that trees produce could replace street lights. Professor Michael Strano, lead author of the research, explained that his team wants to create sustainable light sources and help the environment. He said: "The vision is to make a plant that will function as a desk lamp - a lamp that you don't have to plug in. The light is ultimately powered by the energy metabolism of the plant itself."

The researchers got the idea for their lighting plants from fireflies. They looked at the substance in fireflies that makes them glow. They created nanoparticles that contain the substance. They then put the nanoparticles into plant leaves to make them glow. The scientists were able to make plants that glowed for nearly four hours. The research team has tested the substance on salad leaves, including spinach and watercress. Professor Strano said: "Our target is to perform one treatment, when the plant is a seedling or a mature plant, and have it last for the lifetime of the plant." He thinks plant lights will be a part of our life in the future. He said: "We think this is an idea whose time has come."

Sources: <http://www.independent.co.uk/news/science/glowing-plants-streetlamps-lamps-replacement-new-invention-a8113191.html>
<http://news.mit.edu/2017/engineers-create-nanobionic-plants-that-glow-1213>
<https://phys.org/news/2017-12-engineers-create-plants-that-glow.html>

WARM-UPS

1. LIGHT PLANTS: Students walk around the class and talk to other students about light plants. 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?

scientists / plants / our lives / electric lights / trees / research / environment / energy
fireflies / leaves / spinach / substance / glowed / target / mature / future / idea

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

3. NATURE ENERGY: Students A **strongly** believe nature will provide us with all our energy in the future; Students B **strongly** believe this is impossible. Change partners again and talk about your conversations.

4. PLANT USE: How could plants help us with these things? Complete this table with your partner(s). Change partners often and share what you wrote.

	How could they help?	Why?
energy		
clothes		
medicine		
mental health		
hobbies		
interiors		

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

6. PLANTS: Rank these with your partner. Put the most important at the top. Change partners often and share your rankings.

- grass
- roses
- moss
- rice
- bamboo
- pine trees
- cacti
- spinach

VOCABULARY MATCHING

Paragraph 1

- | | |
|----------------|---|
| 1. glow | a. Make or create something. |
| 2. produce | b. The chemical processes that happen in a living thing so it can live. |
| 3. discovery | c. Able to be done or used at a rate or level so it does not finish or get used up. |
| 4. replace | d. A writer of a book, article, or report. |
| 5. author | e. Change something with something else; take the place of. |
| 6. sustainable | f. Give out steady light without a flame or fire. |
| 7. metabolism | g. The action or process of finding something new. |

Paragraph 2

- | | |
|------------------|---|
| 8. substance | h. A young plant, especially one started from a seed. |
| 9. nanoparticles | i. The use of a chemical or something else to make something last longer or to change it. |
| 10. target | j. Carry out; do. |
| 11. perform | k. A chemical, liquid or other kind of material. |
| 12. treatment | l. Fully developed physically; full-grown. |
| 13. seedling | m. Very, very, very, very small pieces of something – so small we can't see it. |
| 14. mature | n. Aim; the thing you want to do or achieve. |

BEFORE READING / LISTENING

From <https://breakingnewsenglish.com/1712/171218-plants.html>

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

- a. Scientists want to make plants that light up our lives. **T / F**
- b. The scientists hope trees that light up could replace street lights. **T / F**
- c. The scientists want to replace desk lamps with plants with lights. **T / F**
- d. The plants do not use their metabolism to generate their energy. **T / F**
- e. Fireflies provided the inspiration for the plant lights. **T / F**
- f. The scientists did not use any substances from fireflies. **T / F**
- g. The longest the plants glowed for was forty minutes. **T / F**
- h. A scientist suggested we are not ready for the idea of plant lights. **T / F**

2. SYNONYM MATCH:

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

- | | |
|----------------------|----------------------|
| 1. created | a. shine |
| 2. discovery | b. basically |
| 3. replace | c. made |
| 4. vision | d. moment |
| 5. ultimately | e. take the place of |
| 6. substance | f. trialed |
| 7. glow | g. fully grown |
| 8. tested | h. finding |
| 9. mature | i. material |
| 10. time | j. hope |

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

- | | |
|---|--------------------------|
| 1. Scientists have created plants that glow | a. plant |
| 2. produce plants that can light up | b. light sources |
| 3. light that trees produce could | c. that makes them glow |
| 4. his team wants to create sustainable | d. of the plant |
| 5. a lamp that you don't have to | e. in the dark |
| 6. the substance in fireflies | f. has come |
| 7. tested the substance on salad leaves, | g. replace street lights |
| 8. a seedling or a mature | h. plug in |
| 9. last for the lifetime | i. our lives |
| 10. this is an idea whose time | j. including spinach |

GAP FILL

From <https://breakingnewsenglish.com/1712/171218-plants.html>

Scientists have created plants that (1) _____ in the dark. They are hoping to produce plants that can light up our (2) _____. The scientists are from the Massachusetts Institute of Technology in the USA. They hope their (3) _____ could lead to plant lights replacing electric lights. One day, even light that trees produce could (4) _____ street lights. Professor Michael Strano, lead author of the research, explained that his (5) _____ wants to create sustainable light sources and help the environment. He said: "The (6) _____ is to make a plant that will function as a (7) _____ lamp - a lamp that you don't have to plug in. The light is ultimately powered by the energy (8) _____ of the plant itself."

discovery
team
metabolism
lives
replace
desk
glow
vision

The researchers got the (9) _____ for their lighting plants from fireflies. They looked at the (10) _____ in fireflies that makes them glow. They created nanoparticles that (11) _____ the substance. They then put the nanoparticles into plant leaves to make them glow. The scientists were able to make plants that glowed for (12) _____ four hours. The research team has tested the substance on salad (13) _____, including spinach and watercress. Professor Strano said: "Our target is to (14) _____ one treatment, when the plant is a seedling or a (15) _____ plant, and have it last for the lifetime of the plant." He thinks plant lights will be a (16) _____ of our life in the future. He said: "We think this is an idea whose time has come."

nearly
perform
substance
part
idea
mature
contain
leaves

LISTENING – Guess the answers. Listen to check.

From <https://breakingnewsenglish.com/1712/171218-plants.html>

- 1) They are hoping to produce plants that can _____ lives
 - a. light up our
 - b. lie tough our
 - c. lighter hour
 - d. ride up our
- 2) One day, even light that trees produce could _____ lights
 - a. replays streets
 - b. replace street
 - c. replays sheet
 - d. replaces treat
- 3) his team wants to create sustainable light sources and _____ environment
 - a. help a
 - b. help an
 - c. help the
 - d. help all
- 4) make a plant that will function as a desk lamp - a lamp that you don't have _____
 - a. to plug by
 - b. to plug out
 - c. to plug on
 - d. to plug in
- 5) The light is ultimately powered by the energy _____ the plant
 - a. metabolism off
 - b. metabolism of
 - c. metabolism on
 - d. metabolism if
- 6) They looked at the substance in fireflies that _____ glow
 - a. makes them
 - b. make them
 - c. making then
 - d. makes then
- 7) The scientists were able to make plants that glowed for _____ hours
 - a. nearly for
 - b. near lifer
 - c. nearly of
 - d. nearly from
- 8) tested the substance on salad leaves, _____ and watercress
 - a. include in spinach
 - b. in clued in spinning
 - c. in clue din spinach
 - d. including spinach
- 9) perform one treatment, when the plant is a seedling or _____
 - a. immature plant
 - b. a nature plant
 - c. an immature plant
 - d. a mature plant
- 10) He thinks plant lights will be a part of our _____ future
 - a. life to a
 - b. life on the
 - c. life in the
 - d. life in a

LISTENING – Listen and fill in the gaps

From <https://breakingnewsenglish.com/1712/171218-plants.html>

Scientists have created plants that (1) _____ dark. They are hoping to produce plants that can (2) _____ lives. The scientists are from the Massachusetts Institute of Technology in the USA. They hope their discovery (3) _____ plant lights replacing electric lights. One day, even (4) _____ produce could replace street lights. Professor Michael Strano, lead author of the research, explained that his team wants to create sustainable light sources and help the environment. He said: "The (5) _____ make a plant that will function as a desk lamp - a lamp that you don't have to plug in. The light is ultimately powered by the energy metabolism of (6) _____."

The researchers got (7) _____ their lighting plants from fireflies. They looked at the substance in fireflies that makes them glow. They created nanoparticles (8) _____ substance. They then put the nanoparticles into plant leaves to make them glow. The scientists were able to make plants that glowed (9) _____ hours. The research team has tested the substance on salad leaves, including spinach and watercress. Professor Strano said: "Our (10) _____ perform one treatment, when the plant is a seedling (11) _____ plant, and have it last for the lifetime of the plant." He thinks plant lights will be a part of our life in the future. He said: "We think this (12) _____ whose time has come."

COMPREHENSION QUESTIONS

From <https://breakingnewsenglish.com/1712/171218-plants.html>

1. Where did the article say the plants glowed?
2. What do the scientists say plant lights could replace?
3. What could replace street lights one day?
4. What electrical appliance that needs plugging in might plants replace?
5. What is the light in the plants powered by?
6. Where did the scientists get the idea of their plant lights from?
7. Which part of the plants glow?
8. How long did the scientists make plants glow for?
9. What two salad vegetables did scientists do tests on?
10. What did a scientist say plants will be a part of in the future?

MULTIPLE CHOICE - QUIZ

From <https://breakingnewsenglish.com/1712/171218-plants.html>

- 1) Where did the article say the plants glowed?
 - a) in laboratories
 - b) in the USA
 - c) in the dark
 - d) in the jungle
- 2) What do the scientists say plant lights could replace?
 - a) electric lights
 - b) electricity
 - c) trees
 - d) plugs
- 3) What could replace street lights one day?
 - a) plugs
 - b) trees
 - c) grass
 - d) electricity
- 4) What electrical appliance that needs plugging in might plants replace?
 - a) microwave ovens
 - b) TVs
 - c) refrigerators
 - d) desk lamps
- 5) What is the light in the plants powered by?
 - a) alternative energy
 - b) nuclear power
 - c) the plants' metabolism
 - d) electricity
- 6) Where did the scientists get the idea of their plant lights from?
 - a) a magazine
 - b) fireflies
 - c) botanists
 - d) a furniture store
- 7) Which part of the plants glow?
 - a) the flower
 - b) the roots
 - c) the stem
 - d) the leaves
- 8) How long did the scientists make plants glow for?
 - a) 30 minutes
 - b) almost 4 hours
 - c) exactly 2 hours
 - d) about 40 minutes
- 9) What two salad vegetables did scientists do tests on?
 - a) lettuce and cabbage
 - b) spinach and watercress
 - c) lettuce and watercress
 - d) spinach and lettuce
- 10) What did a scientist say plants will be a part of in the future?
 - a) our life
 - b) nuclear energy
 - c) electricity
 - d) ideas

ROLE PLAY

From <https://breakingnewsenglish.com/1712/171218-plants.html>

Role A – Grass

You think grass is the most important plant. Tell the others three reasons why. Tell them what is wrong with their plants. Also, tell the others which is the least important of these (and why): rice, bamboo or spinach.

Role B – Rice

You think rice is the most important plant. Tell the others three reasons why. Tell them what is wrong with their plants. Also, tell the others which is the least important of these (and why): grass, bamboo or spinach.

Role C – Bamboo

You think bamboo is the most important plant. Tell the others three reasons why. Tell them what is wrong with their plants. Also, tell the others which is the least important of these (and why): rice, grass or spinach.

Role D – Spinach

You think spinach is the most important plant. Tell the others three reasons why. Tell them what is wrong with their plants. Also, tell the others which is the least important of these (and why): rice, bamboo or grass.

AFTER READING / LISTENING

From <https://breakingnewsenglish.com/1712/171218-plants.html>

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

light	plant

- 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:

<ul style="list-style-type: none">• produce• electric• even• sources• vision• itself	<ul style="list-style-type: none">• looked• contain• able• including• mature• come
---	---

LIGHT PLANTS SURVEY

From <https://breakingnewsenglish.com/1712/171218-plants.html>

Write five GOOD questions about light plants 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.

LIGHT PLANTS 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 'plant'?
3. What are your favourite plants?
4. How useful would plants that light up be?
5. What other things could scientists get plants to do?
6. How dangerous is it to change nature?
7. What would streets lit up by trees be like?
8. How much could these plants help the environment?
9. Would you like a light plant on your desk?
10. How would you turn the lights on plants on and off?

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LIGHT PLANTS 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 'light'?
13. What do you think about what you read?
14. What do you think of fireflies?
15. What other animal abilities could scientists put into plants?
16. How dangerous would it be to eat leaves that light up?
17. If all plants lit up, how would the world be different?
18. What would owls think if all trees lit up?
19. If grass, trees and crops lit up, would we lose the dark?
20. What questions would you like to ask the researchers?

DISCUSSION (Write your own questions)

STUDENT A's QUESTIONS (Do not show these to student B)

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

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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/1712/171218-plants.html>

Scientists have created plants that (1) _____ in the dark. They are hoping to produce plants that can light (2) _____ our lives. The scientists are from the Massachusetts Institute of Technology in the USA. They (3) _____ their discovery could lead to plant lights replacing electric lights. One day, even light that trees produce could (4) _____ street lights. Professor Michael Strano, lead author of the research, explained that his team wants to create sustainable light sources and help the environment. He said: "The (5) _____ is to make a plant that will function as a desk lamp - a lamp that you don't have to plug in. The light is ultimately powered by the energy metabolism of the plant (6) _____."

The researchers got the (7) _____ for their lighting plants from fireflies. They looked at the substance in fireflies that (8) _____ them glow. They created nanoparticles that contain the substance. They then put the nanoparticles into plant leaves to make them glow. The scientists were (9) _____ to make plants that glowed for nearly four hours. The research team has tested the substance (10) _____ salad leaves, including spinach and watercress. Professor Strano said: "Our target is to perform one treatment, when the plant is a seedling or a (11) _____ plant, and have it last for the lifetime of the plant." He thinks plant lights will be a part of our life in the future. He said: "We think this is an idea whose (12) _____ has come."

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

- | | | | | |
|-----|-----------------|--------------|---------------|--------------|
| 1. | (a) glower | (b) glow | (c) glows | (d) glowing |
| 2. | (a) in | (b) up | (c) down | (d) along |
| 3. | (a) harp | (b) heap | (c) hop | (d) hope |
| 4. | (a) replacement | (b) replace | (c) replacing | (d) replaced |
| 5. | (a) visual | (b) vision | (c) visor | (d) visa |
| 6. | (a) themselves | (b) selfless | (c) itself | (d) self |
| 7. | (a) sense | (b) meaning | (c) idea | (d) guess |
| 8. | (a) is | (b) does | (c) makes | (d) was |
| 9. | (a) capable | (b) abled | (c) ability | (d) able |
| 10. | (a) to | (b) at | (c) by | (d) on |
| 11. | (a) mature | (b) nature | (c) rapture | (d) capture |
| 12. | (a) span | (b) second | (c) time | (d) watch |

SPELLING

From <https://breakingnewsenglish.com/1712/171218-plants.html>

Paragraph 1

1. lwog in the dark
2. pcrodeu plants that can light up
3. their icrvsydoe
4. could lrpecea street lights
5. create sustainable light rseocsu
6. tnucnfio as a desk lamp

Paragraph 2

7. from elferfiis
8. They looked at the bnaecusst
9. for raleny four hours
10. npiachs and watercress
11. a auermt plant
12. last for the tifeielm of the plant

PUT THE TEXT BACK TOGETHER

From <https://breakingnewsenglish.com/1712/171218-plants.html>

Number these lines in the correct order.

- () as a desk lamp - a lamp that you don't have to plug in. The light is ultimately
- () fireflies that makes them glow. They created nanoparticles that contain the substance. They then put the nanoparticles into
- () four hours. The research team has tested the substance on salad leaves, including spinach
- () plant leaves to make them glow. The scientists were able to make plants that glowed for nearly
- (**1**) Scientists have created plants that glow in the dark. They are hoping to produce plants that can light
- () sustainable light sources and help the environment. He said: "The vision is to make a plant that will function
- () replace street lights. Professor Michael Strano, lead author of the research, explained that his team wants to create
- () up our lives. The scientists are from the Massachusetts Institute of Technology in the USA. They hope their
- () and watercress. Professor Strano said: "Our target is to perform one treatment, when the plant is a seedling or a
- () The researchers got the idea for their lighting plants from fireflies. They looked at the substance in
- () powered by the energy metabolism of the plant itself."
- () of our life in the future. He said: "We think this is an idea whose time has come."
- () discovery could lead to plant lights replacing electric lights. One day, even light that trees produce could
- () mature plant, and have it last for the lifetime of the plant." He thinks plant lights will be a part

PUT THE WORDS IN THE RIGHT ORDER

From <https://breakingnewsenglish.com/1712/171218-plants.html>

1. the glow created that in dark have plants Scientists .
2. discovery lead plant Their could to lights .
3. team His create light to sustainable sources wants .
4. desk will lamp function A as plant a that .
5. by the the plant energy itself metabolism Powered of .
6. in substance The glow them makes that fireflies .
7. for four Plants glowed nearly hours that .
8. Last the of plant for lifetime the .
9. life a in part the of future our Be .
10. has time whose idea An come .

CIRCLE THE CORRECT WORD (20 PAIRS)

From <https://breakingnewsenglish.com/1712/171218-plants.html>

Scientists have created plants that *blow / glow* in the dark. They are hoping to produce plants that can light *down / up* our lives. The scientists are from the Massachusetts Institute of Technology *in / at* the USA. They hope their discovery could lead to plant lights *replace / replacing* electric lights. One day, even light *that / what* trees produce could replace street lights. Professor Michael Strano, *lead / iron* author of the research, explained that his team wants to create *sustain / sustainable* light sources and help the environment. He said: "The vision is to make a plant that will function *has / as* a desk lamp - a lamp that you don't have to plug *in / out*. The light is ultimately *powered / power* by the energy metabolism of the plant itself."

The researchers got the *idea / ideal* for their lighting plants from fireflies. They looked at the substance in fireflies that *makes / make* them glow. They created nanoparticles that *content / contain* the substance. They then put the nanoparticles into plant leaves to make *it / them* glow. The scientists were *able / ability* to make plants that glowed *for / in* nearly four hours. The research team has tested the substance on salad leaves, *include / including* spinach and watercress. Professor Strano said: "Our target is *for / to* perform one treatment, when the plant is a seedling or a *mature / nature* plant, and have it last for the lifetime of the plant." He thinks plant lights will be a part of our life in the future. He said: "We think this is an idea whose time has *coming / come*."

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/1712/171218-plants.html>

Sc__nt_sts h_v_ cr__t_d pl_nts th_t gl_w _n th_ d_rk.
Th_y _r_ h_p_ng t_ pr_d_c_ pl_nts th_t c_n l_gh_t _p
__r l_v_s. Th_ sc__nt_sts _r_ fr_m th_ M_ss_ch_s_tts
_nst_t_t_ _f T_chn_l_gy _n th_ _S_. Th_y h_p_ th__r
d_sc_v_ry c__ld l__d t_ pl_nt l_gh_t_s r_pl_c_ng _l_ctr_c
l_gh_t_s. _n_ d_y, _v_n l_gh_t th_t tr__s pr_d_c_ c__ld
r_pl_c_ str__t l_gh_t_s. Pr_f_ss_r M_ch__l Str_n_, l__d
__th_r _f th_ r_s__rch, _xpl__n_d th_t h_s t__m w_nts
t_ cr__t_ s_st__n_b_l_ l_gh_t s__rc_s _nd h_lp th_
_nv_r_nm_nt. H_s__d: "Th_ v_s__n_s t_m_k_ _pl_nt
th_t w_ll f_nct__n_s _d_s_k l_imp - _l_imp th_t y__
d_n't h_v_ t_ pl_g_n. Th_ l_gh_t_s _lt_m_t_ly p_w_r_d
by th_ _n_rgy m_t_b_l_sm _f th_ pl_nt _ts_lf."

Th_ r_s__rch_rs g_t th_ _d__ _f_r th__r l_gh_t_ng pl_nts
fr_m f_r_fl__s. Th_y l__k_d _t th_ s_bst_nc_ _n
f_r_fl__s th_t m_k_s th_m gl_w. Th_y cr__t_d
n_n_p_rt_cl_s th_t c_nt__n th_ s_bst_nc_. Th_y th_n
p_t th_ n_n_p_rt_cl_s _nt_ pl_nt l__v_s t_m_k_ th_m
gl_w. Th_ sc__nt_sts w_r_ _bl_ t_m_k_ pl_nts th_t
gl_w_d f_r n__rly f__r h__rs. Th_ r_s__rch t__m h_s
t_st_d th_ s_bst_nc_ _n s_l_d l__v_s, _ncl_d_ng
sp_n_ch _nd w_t_rcr_ss. Pr_f_ss_r Str_n_ s__d: "_r
t_rg_t_s t_p_rf_rm _n tr__tm_nt, wh_n th_ pl_nt_s
_s__dlng _r _m_t_r_ pl_nt, _nd h_v_ _t l_st f_r th_
l_f_t_m_ _f th_ pl_nt." H_ th_nks pl_nt l_gh_t_s w_ll b__
p_rt_f__r l_f__n th_ f_t_r. H_s__d: "W_ th_nk th_s
_s_n_d__ wh_s t_m_h_s c_m_."

PUNCTUATE THE TEXT AND ADD CAPITALS

From <https://breakingnewsenglish.com/1712/171218-plants.html>

scientists have created plants that glow in the dark they are hoping to produce plants that can light up our lives the scientists are from the massachusetts institute of technology in the usa they hope their discovery could lead to plant lights replacing electric lights one day even light that trees produce could replace street lights professor michael strano lead author of the research explained that his team wants to create sustainable light sources and help the environment he said "the vision is to make a plant that will function as a desk lamp - a lamp that you don't have to plug in the light is ultimately powered by the energy metabolism of the plant itself"

the researchers got the idea for their lighting plants from fireflies they looked at the substance in fireflies that makes them glow they created nanoparticles that contain the substance they then put the nanoparticles into plant leaves to make them glow the scientists were able to make plants that glowed for nearly four hours the research team has tested the substance on salad leaves including spinach and watercress professor strano said "our target is to perform one treatment when the plant is a seedling or a mature plant and have it last for the lifetime of the plant" he thinks plant lights will be a part of our life in the future he said "we think this is an idea whose time has come"

PUT A SLASH (/) WHERE THE SPACES ARE

From <https://breakingnewsenglish.com/1712/171218-plants.html>

Scientists have created plants that glow in the dark. They are hoping to produce plants that can light up our lives. The scientists are from the Massachusetts Institute of Technology in the USA. They hope their discovery could lead to plant lights replacing electric lights. One day, even light that trees produce could replace street lights. Professor Michael Strano, lead author of the research, explained that his team wants to create sustainable light sources and help the environment. He said: "The vision is to make a plant that will function as a desk lamp - a lamp that you don't have to plug in. The light is ultimately powered by the energy metabolism of the plant itself." The researchers got the idea for their lighting plants from fireflies. They looked at the substance in fireflies that makes them glow. They created a nanoparticle that contains the substance. They then put the nanoparticles in plant leaves to make them glow. The scientists were able to make plants that glowed for nearly four hours. The research team has tested the substance on salad leaves, including spinach and watercress. Professor Strano said: "Our target is to perform one treatment, when the plant is a seedling or a mature plant, and have it last for the lifetime of the plant." He thinks plant lights will be a part of our life in the future. He said: "We think this is an idea whose time has come."

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. LIGHT PLANTS: Make a poster about light plants. Show your work to your classmates in the next lesson. Did you all have similar things?

4. NATURE ENERGY: Write a magazine article about nature providing all our energy needs in the future by genetically engineering plants. 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 plants. Ask him/her three questions about them. Give him/her three of your ideas on how they can help us more in our lives. Read your letter to your partner(s) in your next lesson. Your partner(s) will answer your questions.

ANSWERS

VOCABULARY (p.4)

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

TRUE / FALSE (p.5)

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

SYNONYM MATCH (p.5)

- | | |
|---------------|----------------------|
| 1. created | a. made |
| 2. discovery | b. finding |
| 3. replace | c. take the place of |
| 4. vision | d. hope |
| 5. ultimately | e. basically |
| 6. substance | f. material |
| 7. glow | g. shine |
| 8. tested | h. trialed |
| 9. mature | i. fully grown |
| 10. time | j. moment |

COMPREHENSION QUESTIONS (p.9)

1. In the dark
2. Electric lights
3. Trees
4. Desk lamps
5. Its metabolism
6. Fireflies
7. Their leaves
8. 4 hours
9. Spinach and watercress
10. Our life

MULTIPLE CHOICE - QUIZ (p.10)

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

ALL OTHER EXERCISES

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