



## ANGLAIS

Lightning may never strike the same place twice, but your phone doesn't need to know that. **That's** because a group of scientists from the University of Southampton have teamed up with Nokia to explore the possibility of *harnessing the energy of a lightning bolt* to charge a mobile device.

5 Sound impossible? Well, the scientists have already done it. In order to create a "lightning bolt" for their test, the team first generated an alternating current through a transformer. They then channeled that current between a gap that was a little under an inch thick, *surging 200,000 volts* — well within the average strength of a typical lightning strike — in the form of a bolt of electricity. The signal was then transferred into another controlling transformer, where it was able to charge the battery of a Nokia Lumia 925. "As one of the first companies to introduce wireless charging into our products, we believe that this experiment has the potential *to jump-start new ideas* on how we charge our phones in the future," Chris Weber, Nokia's vice president of sales and marketing, told *Phys.org*.

10 This research indicates that we may one day harness the power of a lightning strike for our own personal use. Consider **the energy implications**, which reach beyond cellphone charging: lightning is totally renewable, incredibly sustainable and readily available. Neil Palmer, one of the project's lead researchers, said Nokia presented them with the original idea for the experiment. This is not surprising coming from Nokia, a company that is known for *pushing the boundaries* and constantly researching new concepts and technologies. Palmer said that the circuitry of the Nokia device was able to stabilize the signal of the lightning, **which** then allowed the battery to be charged. This is important to note because one of the main arguments against the notion of harnessing lightning for energy has been that lightning is too unpredictable. **"This discovery** proves devices can be charged with a current that passes through the air," he said, "and is a huge step towards understanding a natural power like lightning and harnessing its energy."

20 Using the power of lightning has long been *a staple of science fiction*. But if this experiment proves anything, it is that some of those seemingly impossible scenarios depicted in science fiction may soon become a reality.

25 Do you think we should harvest lightning for energy?

By Samantha DEAN

<http://mashable.com/2013/10/05/nokia-lightning-phone-charge>)

### **Foot notes:**

*1 coup d'éclair*

**I. READING COMPREHENSION**

**A. Title for a text:**

1. Choose the letter corresponding to the suitable title for the text. (1 mark)
- a. Nokia creates a new cellphone
  - b. Creating lightning bolts from electricity
  - c. Charging cellphones with energy from lightning

**B. What do the words in bold refer to in the text? .....(2 marks)**

2. "**that**" (paragraph 1): .....
3. "**the energy implications**" (paragraph 3).....
4. "**which**" (paragraph 3):.....
5. "**This discovery**" (paragraph 3): .....

**C. Are the following statements TRUE or FALSE? Put T or F and justify by quoting the text. (3 marks)**

6. Lightning power is now being used as a source of energy.  
 .....
7. This experiment is one of Nokia's first research programs on new concepts and technologies.  
 .....
8. There have been many experiments on the power of lightning in the past.  
 .....

**D. Complete the table using information from the text. (1.5 marks)**

Project initiators	Purpose of the project	Conditions for testing the idea	Characteristics of the current from the lightning
9. .... 10. ....	11.....	12. .... 13. ....	14. ....

**E. Choose the letter corresponding to the meaning of the expressions. (2.5 marks)**

15. "harnessing the energy of a lightning bolt" **means**
- a. controlling the energy of a lightning bolt
  - b. distributing the energy of a lightning bolt
  - c. exploiting the energy of a lightning bolt
16. "surging 200,000 volts" **means**
- a. charging 200,000 volts
  - b. transforming suddenly 200,000 volts
  - b. producing up to 200,000 volts
17. "to jump-start" new ideas: **means to**
- a. stimulate new ideas
  - b. consider new ideas
  - c. present new ideas
18. "pushing the boundaries" **means**
- a. measuring the limits
  - b. reducing the limits
  - c. increasing the limits
19. "a staple of science fiction" **means a main**
- a. step in science fiction
  - b. discovery in science fiction
  - c. object of science fiction

**II. LINGUISTIC COMPETENCE****F. Complete the sentences with the appropriate link words in the box.****(2 marks)****BECAUSE — ON ACCOUNT OF — ALTHOUGH — THANKS TO - DESPITE**

20. Our authorities should invest more on alternative sources of power ----- the energy dependence of our country.
21. ....the experiment on lightning energy is full of promises, we cannot tell when power from a lightning will ever be put to use.
22. ....the result of this first experiment, charging one's telephone or any other device has not been a reality yet.
23. The rural areas will be provided with electricity-----this new energy programme.

**G. Reformulate the sentences using the prompts given.****(2 marks)**

24. Chris Weber told Phys. org: "We believe that this experiment has the potential to jump-start new ideas about charging mobile phones."  
**Chris Weber said that**-----
25. Scientists may one day harness the power of a lightning strike for our personal use.  
**It is possible for** -----
26. If investments in scientific research increase, economic benefits will also increase.  
**The** ----- **the investments in scientific research, the**----- **the economic benefits.**
27. It was a pity that they didn't push far enough to get a solution.  
**They should**-----

**H. Put the verbs in brackets in the correct tenses.****(2 marks)**

Abdul's computer broke down last week. He ----- <sup>28</sup> **(CANNOT)** use it to complete his work. Furthermore, Microsoft ----- <sup>29</sup> **(DECIDE)**, starting from April 8<sup>th</sup>, to stop any support to computers using Windows XP. Therefore, Abdul ----- <sup>30</sup> **(HAVE TO)** buy a new one running on Windows 7 next week if he ----- <sup>31</sup> **(WANT)** to finish his work as soon as possible.

**III. WRITING****(4 marks)****32. Choose one of the topics and write a passage of about 150 words.****Topic 1:**

Harnessing lightning for charging a device is now possible. Now, considering lightning, solar and other energy sources, which form of energy, would you say, is more appropriate for African countries? Why?

**Topic 2:**

For African countries to develop, what would you advise them to do in order to encourage innovations or improvements of existing technologies?