

China's artificial sun five times hotter than real sun

6th January, 2022



Creative Commons 2.0
via Mike McBey on flickr.com

China has set a record for creating the highest heat ever recorded. Scientists created temperatures of up to 70,000,000°C in an "artificial sun". The new record was for keeping the heat at a temperature that is five times hotter than the

sun. It did this for more than 17 minutes. The extreme heat was created in a nuclear fusion reactor. The reactor is part of the Experimental Advanced Super-conducting Tokamak project (EAST). It reproduces the natural reactions that happen inside our sun and other stars. The scientists want to develop the artificial sun to create a near-endless supply of clean energy. The EAST project has cost China more than \$950 billion. Total costs will run over \$1 trillion this year.

Scientists around the world have been trying for decades to develop nuclear fusion. They say it is the best way to produce clean energy. The nuclear fusion process needs no fossil fuels and leaves behind no dangerous waste. If scientists can make it work, the world will become greener and cleaner. It could also mean lower fuel bills. EAST set the new record in a laboratory. Nuclear fusion technology is still not advanced enough to become a global industry. However, researcher Dr Gong Xianzu, a nuclear fusion expert, says the EAST project is an important step. He said: "The recent operation lays a solid scientific and experimental foundation towards the running of a fusion reactor."

Sources: china.org / yahoo.com / xinhua.net

Writing

Clean energy is the most important goal in science. Discuss.

Chat

Talk about these words from the article.

record / heat / temperature / artificial / nuclear / scientist / supply / clean energy / decade / fossil fuels / waste / fuel bills / laboratory / global / expert / operation

True / False

- 1) Scientists in China created temperatures of 70 million° C. T / F
- 2) The scientists maintained the record heat for nearly 17 seconds. T / F
- 3) The artificial sun project in China is called FAST. T / F
- 4) The cost of the project is already over \$1 trillion. T / F
- 5) Scientists have been working on nuclear fusion for decades. T / F
- 6) The artificial sun project needs fossil fuels to work well. T / F
- 7) Nuclear fusion could mean we will pay less for fuel. T / F
- 8) A researcher said the artificial sun was an important step forward. T / F

Synonym Match

(The words in **bold** are from the news article.)

- | | |
|-----------------------|----------------|
| 1. set | a. create |
| 2. keeping | b. established |
| 3. extreme | c. base |
| 4. reproduces | d. limitless |
| 5. endless | e. great |
| 6. develop | f. specialist |
| 7. way | g. maintaining |
| 8. lower | h. method |
| 9. expert | i. copies |
| 10. foundation | j. reduced |

Discussion – Student A

- a) What do you think about what you read?
- b) What do you want to know about the sun?
- c) What are the best clean energies we have today?
- d) What do you think of fossil fuels?
- e) Do you worry about your fuel bills?
- f) How might nuclear fusion change our lives?
- g) What three adjectives best describe this story?
- h) What questions would you like to ask the researchers?

Phrase Match

- | | |
|---|--------------------------------|
| 1. creating the highest heat | a. fuels |
| 2. The extreme heat was created in | b. inside our sun |
| 3. the natural reactions that happen | c. over \$1 trillion this year |
| 4. create a near-endless supply | d. advanced enough |
| 5. Total costs will run | e. a nuclear fusion reactor |
| 6. Scientists around the world have been | f. clean energy |
| 7. it is the best way to produce | g. ever recorded |
| 8. fossil | h. trying for decades |
| 9. Nuclear fusion technology is still not | i. foundation |
| 10. a solid scientific and experimental | j. of clean energy |

Discussion – Student B

- What do you know about the sun?
- Why is the sun so important?
- What do you know about nuclear fusion?
- What do you think of temperatures of 70,000,000°C?
- What do you think of this new record?
- Why is clean energy so important?
- Do you think we will ever have clean energy?
- What do you think of the cost of this project?

Spelling

- ntesteuerapr of up to 70,000,000°C
- a caurlne fusion reactor
- natural raoetsni that happen inside our sun
- elovdpe the artificial sun
- create a near-endless pulpsy of clean energy
- Total costs will run over \$1 orniiltl
- trying for acdseed
- The nuclear fusion crsoeps
- dangerous tsewa
- in a aorrbaoty
- a nuclear fusion rpetxe
- The recent epntorioa

Answers – Synonym Match

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

Role Play

Role A – Electricity Bills

You think electricity bills are the worst. Tell the others three reasons why. Tell them why their bills aren't as bad. Also, tell the others which of these are the easiest to pay (and why): water bills, phone / Internet bills or hospital bills.

Role B – Water Bills

You think water bills are the worst. Tell the others three reasons why. Tell them why their bills aren't as bad. Also, tell the others which of these are the easiest to pay (and why): electricity bills, phone / Internet bills or hospital bills.

Role C – Phone/Internet Bills

You think phone / Internet bills are the worst. Tell the others three reasons why. Tell them why their bills aren't as bad. Also, tell the others which of these are the easiest to pay (and why): water bills, electricity bills or hospital bills.

Role D – Hospital Bills

You think hospital bills are the worst. Tell the others three reasons why. Tell them why their bills aren't as bad. Also, tell the others which of these are the easiest to pay (and why): water bills, phone / Internet bills or electricity bills.

Speaking – Bills

Rank these with your partner. Put the worst bills at the top. Change partners often and share your rankings.

- | | |
|---------------------|------------------|
| • Electricity bills | • Gas bills |
| • Repair bills | • Tax bills |
| • Water bills | • Food bills |
| • Phone bills | • Hospital bills |

Answers – True False

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

Answers to Phrase Match and Spelling are in the text.