

Hotter weather lowers exam results

Sources: <https://www.thenational.ae/uae/education/hot-weather-lowers-exam-results-study-shows-1.735280> <http://www.bbc.com/news/business-44288982> <http://www.nber.org/papers/w24639>

Hotter weather leads to lower exam results, according to a new study from Harvard University, the University of California and Georgia State University. What's more, hot weather may reduce learning in both the short term and long term. Researchers reported that hot weather on test days and higher than average temperatures throughout the school year resulted in poorer grades. The study is the first major research into the effect of heat on students in the USA. Researchers analyzed how test scores from 10 million American students were impacted by the weather. Their findings showed that an average temperature increase of just 0.55°C over one year resulted in a 1 per cent decrease in learning. The research is in a paper called "Heat and Learning" and was published last month by the USA's National Bureau of Economic Research. One of the more concerning conclusions contained in the study is that global warming may affect learning and the income-earning potential of students around the world. The researchers predicted that if global temperatures continued to rise, the average American student could lose \$25,000 in income over their lifetime because of lower exam results. Using air conditioning in classrooms could circumvent this. The researchers also found that hotter weather was, "particularly damaging...for low income and minority students" across the USA.

EXAM RESULTS:

Rank these with your partner. Put the things that help exam results most at the top. Change partners often and share your rankings.

- | | |
|-------------------|-----------------------|
| •air conditioning | •good teacher |
| •hard work | •sleep |
| •preparation | •practice-test papers |
| •exercise | •lucky charms |

TRUE / FALSE:

Read the headline. Guess if a-h below are true (T) or false (F).

- Three US universities took part in the new study into exam results. T / F
- Hot weather can affect studying in the short and long term. T / F
- Hot weather on test days had no impact on test scores. T / F
- Researchers looked at the test results of ten million students in the US. T / F
- The research paper was called "Heat and Exam Success". T / F
- Global warming may affect students' later income when working. T / F
- The use of air conditioning would not help students do better in exams. T / F
- Hotter weather was particularly damaging for rich and poor students. T / F

COMPREHENSION QUESTIONS

- How many universities took part in the research?
- What kind of temperatures during the school year affected exam results?
- What did researchers study the effect of on students?
- How many students' test scores did the researchers look at?
- How much of a temperature rise caused a 1% decrease in learning?

6. What is the name of the research paper?
7. What other thing did the researchers say global warming might affect?
8. How much money could the average American student lose?
9. What could help avoid falling exam scores?
10. Who is hotter weather particularly damaging for?

MULTIPLE CHOICE – QUIZ

- 1) How many universities took part in the research?
 - a) 2
 - b) 3
 - c) 4
 - d) 5

- 2) What kind of temperatures during the school year affected exam results?
 - a) varying
 - b) boiling
 - c) extreme
 - d) higher than average

- 3) What did researchers study the effect of on students?
 - a) heat
 - b) lack of sleep
 - c) UV-rays
 - d) stress

- 4) How many students' test scores did the researchers look at?
 - a) 100,000,000
 - b) 100,000
 - c) 10,000,000
 - d) 1,000,000

- 5) How much of a temperature rise caused a 1% decrease in learning?
 - a) 0.45°C
 - b) 0.55°C
 - c) 0.85°C
 - d) 0.35°C

- 6) What is the name of the research paper?
 - a) Heat and Learning
 - b) Heat and Stress
 - c) Heat and Exams
 - d) Heat and Performance

- 7) What other thing did the researchers say global warming might affect?
 - a) stress
 - b) weight and obesity levels
 - c) income-earning potential
 - d) relationships

8) How much money could the average American student lose?

- a) \$25,000
- b) \$35,000
- c) \$85,000
- d) \$550,000

9) What could help avoid falling exam scores?

- a) air conditioning
- b) sleep
- c) water
- d) better teachers

10) Who is hotter weather particularly damaging for?

- a) schools and businesses
- b) students who don't eat
- c) sleepy and overweight students
- d) low income and minority students

ROLE PLAY

Role A –Air Conditioning

You think air conditioning is the best thing to help with exam results. Tell the others three reasons why. Tell them what is wrong with their things. Also, tell the others which is the least effective of these (and why): a good teacher, sleep or a lucky charm.

Role B –Good Teacher

You think a good teacher is the best thing to help with exam results. Tell the others three reasons why. Tell them what is wrong with their things. Also, tell the others which is the least effective of these (and why): air conditioning, sleep or a lucky charm.

Role C –Sleep

You think sleep is the best thing to help with exam results. Tell the others three reasons why. Tell them what is wrong with their things. Also, tell the others which is the least effective of these (and why): a good teacher, air conditioning or a lucky charm.

Role D –Lucky Charm

You think a lucky charm is the best thing to help with exam results. Tell the others three reasons why. Tell them what is wrong with their things. Also, tell the others which is the least effective of these (and why): a good teacher, sleep or air conditioning.

PUT THE TEXT BACK TOGETHER

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FREE WRITING

Write about exam results for 10 minutes. Comment on your partner's paper.

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