

SPONSORED AND SUPPORTED BY



CNOOC



SERICAENERGY



sse

TWP

THISTLE  
WIND  
PARTNERS



# CHEMISTRY & BIOLOGICAL SCIENCES



[WWW.TECHFEST.ORG.UK](http://WWW.TECHFEST.ORG.UK)



CNOOC



SERICA ENERGY



SSE

THISTLE  
WIND  
PARTNERS

# CHEMISTRY & BIOLOGICAL SCIENCES

TechFest's STEM Next essay competition is open to all 16 - 18 year olds.

This is a solo project that will require independent research and writing. However, it is encouraged that participants get feedback from their peers or teachers before the final submission.

Entrants are invited to submit an essay that addresses one of the essay titles or questions outlined below. There is the option to write broadly about a general topic, or you can choose to go into greater detail on a specific aspect or question. Essay questions are provided below. You must select one of the topics provided, however, you have the freedom to tailor the question to your preference. In addition, regardless of your approach, your essay should fulfil the below requirements.

## ESSAY REQUIREMENTS

The essay should be **between 1000 to a maximum of 3000 words** in length (excluding footnotes, figure captions and references). All sources must be appropriately acknowledged and cited (including all websites and personal correspondence), and a full reference list should be included. In addition, **at least** one external industry professional must be interviewed as part of the research for the essay. A database of industry professionals (including their area of expertise and contact details) will be provided to each participating student as potential sources to contact. However, students are also free to make their own connections, or to get in touch for help identifying an expert in a particular field.

There is no rigid requirement for the structure and format of the essays, but good submissions will present clear arguments, a detailed reference list of sources, include illustrations (which could be graphs, plots, diagrams or pictures) and where possible provide some specific examples or cases. A good level of technical content is expected, but you should aim to make the essay interesting and accessible to an intelligent non-specialist audience. The essays will be judged by a panel of experts from various fields and prizes will be awarded to the winning entries.

## TECHFEST'S STEM NEXT ESSAY COMPETITION IMPORTANT DATES

**Deadline to register interest - 13/06/25**

**Deadline for essay submission - 29/08/25**

(don't forget to submit the cover sheet as well!)

**Winning essays announced - November 2025**



## TECHFEST'S STEM NEXT CHEMISTRY & BIOLOGICAL SCIENCES ESSAY COMPETITION PRIZES



First place - £200 Amazon vouchers  
Second place - £100 Amazon vouchers  
Third place - £50 Amazon voucher



Please note Amazon vouchers cannot be exchanged for cash or alternative prize.

### ESSAY CRITERIA SUMMARY:

- **Between 1000 to a maximum of 3000** words in length (excluding footnotes, figure captions, in text references and reference list).
- 12-point font minimum
- 2cm margins minimum
- 1.5 line spacing minimum
- Harvard style referencing for in text citations and full reference list (a downloadable referencing guide as well as online tutorials will be available).
- At least one illustration (this could be a graph, plot, diagram, table or picture) with appropriate figure or table legend and source material reference.
- An interview with at least one external industry professional (TechFest can help you find an appropriate interviewee, or you are welcome to find your own).
- Submissions must include a cover sheet (which can be downloaded from TechFest's website).
- **Authors of the top essays will be required to discuss their work in an online meeting with the panel of judges.**

### REGISTRATION

Students that wish to take part should register their interest **no later than 13/06/25** by submitting the online form --> [CLICK](#).

The project officially launches on **16/06/25** - at that point registered students will be sent a starting pack with all the information they will need to complete the project.

In addition, throughout the course of the competition we will be posting pre-recorded lectures on topics related to essay writing that will provide additional support and information. What is more, students are encouraged to contact us should they have specific questions about their essay.

**If you have any questions, please check the FAQ section on our website first. If your query is not there, contact [gabijablazyte@techfest.org.uk](mailto:gabijablazyte@techfest.org.uk)**



CNOOC



SERICA ENERGY



SSE

TWP

THISTLE  
WIND  
PARTNERS

## ESSAY QUESTIONS

### Question 1.

Evaluate the effectiveness of Marine Protected Areas (MPAs) in conserving marine biodiversity and ecosystems. Discuss the advantages and disadvantages of MPAs, providing examples to support your arguments.

### Question 2.

While the principle of lower emissions from electric vehicles is commendable, is this negated by the environmental cost of mining the lithium, cobalt and nickel required to make the batteries, as well as the carbon footprint of transporting the batteries to car manufacturers around the World?

### Question 3.

How do vehicle tyres contribute to the level of microplastics being released into the environment and what can we do to reduce it? As Electric vehicles are heavier than those with an internal combustion engine also consider how this may impact on the generation of micro plastics.

### Question 4.

Can synthetic chemistry create sustainable food sources for a growing population?

### Question 5.

How does regeneration & rewilding of marshlands contribute to carbon capture and flood prevention? Include examples.

### Question 6.

Our waterways are increasingly at risk from pollution. What are the challenges facing the biodiversity of our waterways and what possible solutions are available?

SPONSORED AND SUPPORTED BY



**cnooc**



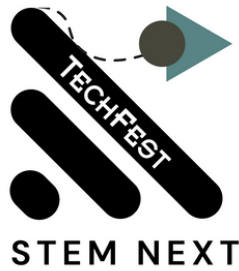
**SERICAENERGY**



**sse**



**THISTLE  
WIND  
PARTNERS**



**DON'T FORGET TO**

# **FOLLOW US**



**[WWW.TECHFEST.ORG.UK](http://WWW.TECHFEST.ORG.UK)**