



FUTURE
Problem
Solving®

New Zealand

National Finals

Global Issues

2025 Handbook

For Senior Division

& Remote Competitors

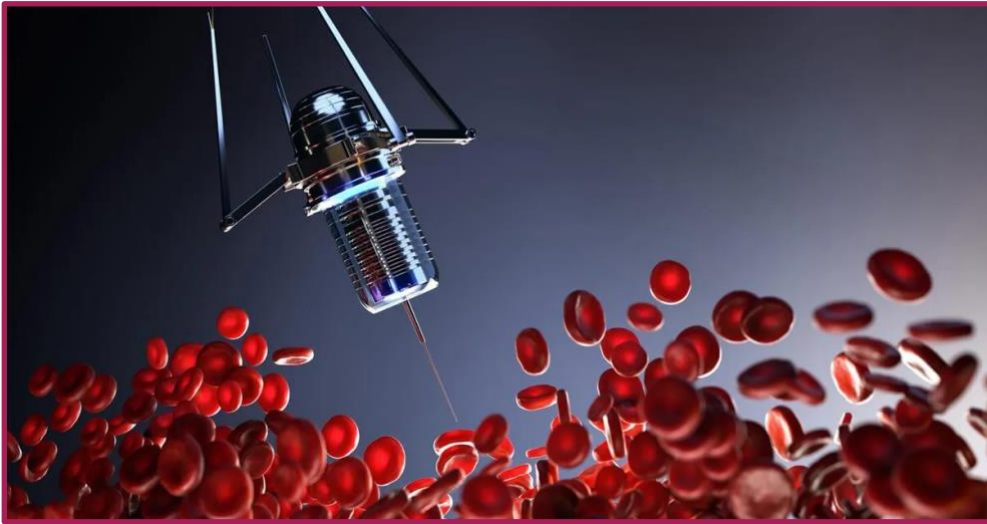
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National Finals Topic:

Nanotechnology



Background

Nanotechnology deals with dimensions and tolerances of less than 100 nanometers. A single strand of human hair, for scale, is typically 100,000 nanometers thick! At this scale, individual atoms of larger materials can be manipulated. Placing atoms as though they were bricks, nanotechnology has the potential to give control over the structure of matter, allowing us to build powerful, yet microscopic substances.

Context

Nanotechnology is widely used in food industries, medicine, energy, automobiles, the environment, electronics, textiles, and cosmetics. Nanotechnology has direct benefits for medicine and the environment, but it may have unintended effects, like all technologies. Nanoparticles of typically unharmed materials, for example, can be toxic if inhaled. Not easily observed, nanotechnology poses risks to security and privacy.

Challenge

How will the efficiency of autonomous vehicles affect the development of transportation, on land and sea, in the air, and possibly space?
How will autonomous transport cope with unexpected risk situations and ethical decisions?
In what ways will autonomous transport impact jobs, industries, infrastructure, and lifestyles?



Nanotechnology Resources

A Practice Future Scene will be available for your students and will be set up in the [Practice Online Booklet](#) site. (We will not be able to provide feedback for them.)

A suggested reading list along with a video featuring a discussion with a Nanotechnology Research Panel can be found at this [link](#), provided by the International Office.

There is a 2025 National Finals Nanotechnology Set available for \$45 plus GST. This is a combined resource featuring the topic specific chapters on Nanotechnology from both the Reading, Research and Resources AND the Topic Activity Units publications.



Rules & Procedures for Remote Global Issues Competition

REMOTE NATIONAL FINALS RULES

The following rules are in place to ensure the integrity of this competition and to provide equity for all students.

The National Finals competition will be held under the same rules as the Qualifying Problem.

Senior students may complete the competition in any appropriate venue where they will be undisturbed for the duration. The window will open on **Friday 24th October at 8:30am and close at 4pm on Friday 31st October**. You may do your booklet at any time during this window.

1. Declaration: Before students commence work, coaches and students must be familiar with and agree to comply with the Declaration.

2. Future Scene access: Coaches will need to email the FPSNZ office on the day before their students sit the National Finals Problem, in order to have the Future Scene released. Students should not have any prior knowledge of the Future Scene before entering the room or logging on to the online National Finals booklet.

3. Future Scene: Coaches may photocopy the Future Scene on the morning the students sit the National Finals Problem but should not read it themselves until after the student(s) have commenced work. Coaches can also provide a hard copy of the Future Scene to their students provided it is not seen by students or themselves prior to the timer starting.

4. Supervision: The student(s) must work under 'best practice' exam conditions. Future Problem Solving coaches will NOT be in the exam room, once the students have started the booklet. A supervising adult must monitor the competition to ensure that all rules are strictly adhered to. The supervising adult(s) must not, in any instance, offer any form of interaction with the students in any way that could affect the content of their booklet.

5. Time Limits: Timing is automated for those sitting through the online system. Senior division teams and Senior Individuals have **EXACTLY** two hours and 15 minutes.

6. Allowed Materials: Students may choose to use/access the following: blank A4 sheets as required, blank sticky notes, pens/pencils, erasers, sellotape, a dictionary/thesaurus, a non-programmable calculator, and a timing device.

7. Strictly Excluded Resources: No reference materials, mobile phones (even as a timing device) or similar devices, written texts or notes of any kind may be taken into or used during the National Finals Problem.

8. Online Access: For the duration of the National Finals Problem students' internet access should be strictly limited to the FPS online portal. They may not access any other online resources/websites/URLS, chats etc. The only allowed exclusion to this is for students who choose to work on a shared blank Google doc or similar work platform to plan and write their steps prior transposing their work onto the FPSNZ online portal. Use of any AI programme is not allowed. If it is determined AI has been used, the booklet may be disqualified from the competition.

9. Handwritten Booklets: Coaches with students doing handwritten booklets should contact Julie.

10. Disclosure: Students who have completed the National Finals Problem may not disclose or discuss the contents of the Future Scene with others before the final due date **Friday, 31st October**. Coaches should ensure that students are made aware of this rule. We rely on your honesty. We suggest you collect any hard copies of the Future Scenes back from your students until the date above.



Declaration

Prior to the release of the future scene you will need to complete the Declaration that you have read, understood and adhered (or will adhere) to all the competition rules listed above.

This includes an Optional section for those of you that have students with Special Assessment Conditions. This will only apply to students that had special assessment conditions for the Qualifying Problem.

If you are unsure of, or are unable to meet these conditions, then please contact the Administration Director at admin@fpsnz.co.nz prior to your students sitting the competition.

Competition Advice for your Students

Please refer to the 2025 Global Issues Onsite Guide.

Most importantly ensure that your students take on-board their evaluators feedback from your Qualifying Problem Score Sheet.

Practice Future Scene

A practice Future Scene has been set up in the practice site - <https://practice.fpsnz.co.nz/> This is available for use at your discretion. Please note that your practice booklets will not be evaluated by our evaluation team.

The practice Future Scene is the same scene for all divisions.

Presentation of Action Plan

There is no requirement for Senior Division students to prepare a Presentation of Action Plan. There is no senior competition for this event.