Taranaki Junior Science Tournament

2026, REGULATIONS

1. Educational Goals

The Taranaki Junior Science Tournament (TJST) aims to implement strategies to facilitate the integration of authentic inquiry approaches into science classrooms and to have students work as research scientists. Scientific research is a search for knowledge and understanding and then organising and condensing that knowledge into testable laws and theories. The success and credibility of science are anchored in the willingness of scientists to work in a climate of uncertainty, collaborate with others and subject their work to critical review.

One of the aspects of the science research process is competition. A scientist's success is measured by the new knowledge they can discover but the competition in science research is also performed within a code of ethics that protects individuals and institutions and preserves the credibility of science.

The International Young Physicists Tournament (IYPT), the Junior Young Physicists' Tournament, the International Young Naturalists' tournament and the New Zealand Young Scientists' Tournament are research-based competitions that already address these ideas for high school students. Several months prior to the competitions, each team is supplied with open ended problems. At the competition, teams present their research and justify and defend the validity of their solutions against teams from other countries, in a manner reminiscent of the rigorous processes employed by practising scientists. Juries consisting of respected physicists and science educators rate the teams' presentations and the discussion that those reports generate.

This program aims to promote the processes of the IYPT and JYPT to more junior science students and support the later involvement in these tournaments. In a similar manner to IYPT these processes will be promoted by hosting a competition, the TJST.

2. Taranaki Junior Science Tournament

The Taranaki Junior Scientists' Tournament (TJST) is a competition among teams of students who are studying at a local school in year 9 or 10. The intention is to offer a simple entry-level tournament, to kindle interest in the more advanced competitions. This is a tournament for 'ordinary bright students', exceptionally gifted students who have been accelerated into Year 11-13. Only those who have taken part in the international JYPT or IYPT are excluded.

The teams conduct open-ended science research, on three open-ended problems, this is

based upon the processes of the International Young Physicists' Tournament, IYPT. The Taranaki Junior Scientists' Tournament will take place in July/August each year during the Elemental Group Taranaki Science and Technology Fair. Students need to explore complicated scientific concepts, to present solutions to these problems. They then need to communicate their learning in a convincing form, along with defending them in scientific discussions, called Science Matches.

3. The Organisation of the TJST

TJST is managed by an Organising Committee that consists of:

- The Chair (teacher at the hosting school)
- One Organising Teacher from the hosting or a different high school of the Taranaki region
- A problem selection committee containing 2 experienced I/NZ/JYPT members to manage the selection of 3 past IYPT problems for the TJST the following year according to the procedure detailed in the regulations.
- An umbrella organization, once recognised by the Organising Committee, acts to promote the TJST in the region. Current recognised organisations:
- Elemental Group Taranaki Science and Technology Fair.

4. Registration fees and costs

There are no fees to enter the TJST.

The costs of photocopying, name badges, certificates, signs, maps, juror packs are part of the expenses of the Elemental Group Taranaki Science and Technology Fair. All other expenses incurred by each competing school are the responsibility of that school (e.g. lunch, snacks, accommodation, catering, travel, tours, etc).

5. The problems of the TJST

The selection of the 3 problems for each tournament is the responsibility of the problem selection committee. The selected problems should be old IYNT problems. The problems can focus on the applications of basic forces, motion or waves for physics problems, but will also include a wide range of problems across the sciences; including psychology, ecology, epidemiology, biology, chemistry and data science.

Each participating school may want to suggest at least one past IYNT problem for the TJST as early as four months before the competition. The problem selection committee then selects three appropriate problems so that the problem can be released 6 to 8 weeks in advance of the tournament.

6. The participants of the TJST

A. <u>The competing teams</u>

Competing teams represent an individual school or similar organisation. There is no restriction regarding the eligibility of schools to participate in TJST. Schools may enter up to four teams.

B. <u>The membership of the teams</u>

Each TJST team is composed of two to six students plus one teacher/mentor/parent. Students should be in Year 9 or 10 AND have not participated in J/IYPT competitions. The composition of the team cannot be changed during the tournament. The teacher/mentor/parent is required to act on a jury, judging another fight (not their own

team and, if possible, not their own school). Each school must provide one juror per team entered.

7. The Jury

The Jury is nominated and organised by the host school. The Jury consists of at least two teachers from different schools but preferably more. Additional jurors from Universities, Industry, I/NZ/JYPT students or teachers may be invited by the host school. The juries should be balanced so that no particular school is favored.

8. The agenda of the TJST

The TJST is carried out during the Elemental group Taranaki Science and Technology Fair, which typically is held on the 3rd week of the 3rd term each year. The exact dates are set by the host school. All teams participate in the three rounds of competition and will need solutions to all three problems. A draw will be conducted so that each team does not meet the same team twice (where possible).

9. Structure

In each round all three teams present and oppose, with each team presenting a different problem.

10. The Science Matches regulations

Three teams participate in a Science Match. In each stage of the Science Match one team will act as a ***Reporter*** and present the solution to the problem, another team will act as an ***Opponent*** that will critique the presentation and the third team is an ***Observer***.

Teams will be allocated to Science Matches according to a Draw. Where possible, teams will be allocated into groups containing three teams but if the number of entries is not divisible by three, Science Matches with two teams for some will occur (in which case there is no Observer).

Teams change places in successive stages to each report and oppose once.

During a Science Match, the students of a team can communicate only with each other. The use of cell phones and the Internet is strictly forbidden. Team Leaders cannot interact with their students during any one stage. Before the beginning of a Science Match the Jury and the teams are introduced.

No one team member may report more than two solutions.

11. The Stages

Each team will report and oppose the three problems as determined by the draw.

The performance order in the stage of a Science Match: Maximum time in minutes

- Presentation of the report 10 min
- Questions of the Opponent to the Reporter and answers of the Reporter 2 min
- Preparation of the Opponent 3 min
- The Opponent takes the floor, maximum 4 minutes, and discussion between the Reporter and the Opponent 10 min
- Preparation of the Reporter 1 min
- Concluding remarks of the Reporter 2 min

- Clarifying questions from the Jury 3 min
- Awarding of Marks 2 min
- Juror feedback to the teams 3 min

Total time of stage 36 min

Minimum break between stages 4 minutes

12. The team performance in the Stages

The Reporter presents the essence of the solution to the problem, attracting the attention of the audience to the main scientific ideas and conclusions.

The Opponent puts questions to the Reporter and criticises the report, pointing to possible inaccuracy and errors in the understanding of the problem and in the solution. The Opponent analyses the advantages and drawbacks of both the solution and the presentation of the Reporter. The Opponent can raise new scientific concepts that clearly apply to the work of the Reporter but cannot present his/her own solution.

The discussion between the Reporter and the Opponent should be focused on the reporter's solution and the critique of the Opponent. It cannot become a presentation of the Opponent's own solution.

During a Science Match only one member of a team takes the floor as Reporter or Opponent. Other members of the team are allowed to pass notes to the person on the floor, make brief clarifying remarks or help with the presentation technically.

13. The rules of the problem-allocation

A. All problems presented in the same Science Match are different.

B. The problems are allocated by the position a team receives in the draw. All problems allocated must be presented. All teams will present and ideally oppose all three set problems.

14. The grading

After each stage the Jury grades the teams, taking into account all presentations of the members of the team, questions and answers to the questions, and participation in the discussion. Each Jury member shows integer marks from 1 to 30 for the report and 1 to 20 for the opposition. Where four or more jurors are present, the mean of the highest and lowest marks will count as one score.

15. The resulting parameters

A. *For a team in the Science Match*

The sum of points is the sum of mean marks, multiplied by the corresponding coefficients and rounded to one decimal place. The maximum sum of points in each round is 50 points.

B. *For a team in the Tournament*

The total sum of points equals the sum of points of the team in all the Science Matches.

16. Sample DRAW

Three-Team Science Matches

Match 1 (stages start at approx 9.00 a.m., 9.40, 10.20, ends at 11.00)

Team	A1	B1	C1
Stage 1	Presents problem 1	Opposes problem 1	Observes
Stage 2	Observes	Presents problem 2	Opposes problem 2
Stage 3	Opposes problem 3	Observes	Presents problem 3

Match 2 (stages start at approx 11.20, 12.00, 12.40, ends at 1.10)

Team	A1	B1	C1
Stage 1	Observes	Presents problem 1	Opposes problem 1
Stage 2	Opposes problem 2	Observes	Presents problem 2
Stage 3	Presents problem 3	Opposes problem 3	Observes

Match 3 (stages start at approx 2.00, 2.40, 3.20, ends at 4.00) Prize-giving at 4.20.

Team	A1	B1	C1
Stage 1	Opposes problem 1	Observes	Presents problem 1
Stage 2	Presents problem 2	Opposes problem 2	Observes
Stage 3	Observes	Presents problem 3	Opposes problem 3

Two -Team Science Matches

Match 1

Team	A1	B1
Stage 1	Presents problem 1	Opposes problem 1
Stage 2	Opposes problem 2	Presents problem 2

Match 2

Team	A1	B1
Stage 1	Opposes problem 3	Presents problem 3
Stage 2	Presents problem 2	Opposes problem 2

Match 3

Team	A1	B1
Stage 2	Presents problem 3	Opposes problem 3
Stage 3	Opposes problem 1	Presents problem 1