

NZMSC Opportunities for Gifted Learners

PROGRAMME SCHEDULE

The following schedule is outlined for 2019. A similar programme will be offered for 2020, exact dates have not been scheduled yet.

Year 10 Gifted and Talented Programme - *Making Sense of the Marine World* Open to any year 10 student (up to 2 students per school) who is an exceptionally able and enthusiastic science student and/or who is identified as gifted, not necessarily in the sciences.

- 8 days (over 3 residential blocks) x 2 sessions
- 25 students/session
- Session One 2019 dates: Block #1 - May 17, 18, 19, - Block #2 - June 7, 8, 9. Block #3- July 6, 7
- Session Two 2019 dates: Block #1 - May 2, 3, 4, Block #2 - May 25, 26, 27, Block #3 - June 14, 15

Year 11 Gifted and Talented Programme – *Deep Thought* Open to all Year 11 students who have previously participated in a Year 10 NZMSC Gifted and Talented Programme. Research projects are based on the Research Vessel *Polaris II*.

- 25 students
- 5 consecutive days (over 1 residential block)
- Dates 2019: July 8, 9, 10, 11, 12

Year 10 Māori Gifted and Talented Programme - *Te Rauawa o te Pahī* Open to any Year 10 Māori students (1-3 per school) who are exceptionally able and enthusiastic science students and/or who are identified as gifted. The last night/day are held on the local marae, Te Rūnanga o Ōtākou.

- 25 students
- 6 days (over 2 residential blocks)
- Dates 2019: Block #1 – June 28, 29, 30. Block #2 – July 25, 26, 27

Year 11 & 12 Māori Gifted and Talented Programme - *Rangatahi o te Moana* Open to any Year 11 and 12 Māori students (up to 2 per school) who are exceptionally able and enthusiastic science students, and/or who are identified as gifted. Preference will be given to those who have participated in a NZMSC Year 10 programme previously. Research projects

are based on the Research Vessel Polaris II. The first night/day is held on the local marae, Te Rūnanga o Ōtākou.

- 25 students
- 5 consecutive days (over 1 residential block)
- Dates 2019: August 20, 21, 22, 23, 24

Year 9 Māori Gifted and Talented Programme - *Te ara wai ki te oranga* Open to exceptionally able and enthusiastic year 9 students from schools in the Dunedin area. This programme is supported by 3 University of Otago departments/schools: Health Science (Te Tangata), Sport and Exercise Science (Te he Māoriora), Marine Science (Te Taonga Moana).

- 25 students
- 5 separate days (not residential)
- Proposed dates 2019: October 18th (NZMSC / Portobello Marine Lab) 25th (Health Sciences), November 1st (Sport and Exercise Sciences), 8th (Puketeraki Marae), 15th (NZMSC / Portobello Marine Lab)

Year 6, 7 & 8 Primary Gifted and Talented Programme - *Science and the Sea* Open to exceptionally able and enthusiastic Year 6, 7 and 8 students from schools in the Dunedin

area. • 25 students

- 4 separate days (not residential)
- Proposed dates 2019: September 5, 12, 19 and 26

Year 6, 7 & 8 Pacific Gifted and Talented Programme – *Mapu Kimi-ara Pasifika* Open to exceptionally able and/or enthusiastic Pacific Year 6, 7 and 8 students from schools in the Dunedin area. The programme will involve other University of Otago departments (eg. Health Sciences, Chemistry, Sport and Exercise Science).

- 25 students
- 4 separate days (not residential)
- Dates 2019: October 24, 31 and Nov 7, 14.

NZ Marine Studies Centre will send out programme details, gear lists, health and safety information and parent waiver forms once application and selection processes are completed.

Overview In 2019 and 2020 we plan to offer 8 multiday programmes for gifted and talented students including four residential programmes open to students from schools in southern New Zealand. These programmes are led by NZMSC educators and students are mentored by post-graduate research students from the Department of Marine Science (University of Otago) in a supportive and friendly environment. 'Like-minds' living and working together will create an enriching knowledge building community. The programmes will cater for a range of ages, levels and support.

PROGRAMME STRUCTURE

Only 1-2 students/school will be eligible for each programme. This will allow students to mix with like-minded peers from a diverse range of backgrounds and experience. Although the primary contact for the NZMSC will be with schools, an application can be initiated by teachers, students, family, and wider whānau. Each application needs to be accompanied by a student profile and an endorsement completed by a teacher (or in some cases by parent with endorsement from the school). Once applications have been received and participants selected, small research teams are put together using detailed information from the students' applications. We aim to have a balance of roles in the teams and to also balance strengths and weaknesses of participants.

Teaching – NZMSC teaching staff and invited experts will give presentations on aspects of science, science philosophy, team work, meta-cognition and thinking, data analysis and modelling, analogy and conceptual development. The application form, communication challenges and research presentations are used to stimulate and challenge students to look deeper and extend their learning and problem solving skills.

Research Project - Postgraduate research students will mentor student research teams. The teams are each given a broad research topic (within the Postgraduates area of expertise) to develop questions, hypotheses and methods to carry out a practical hands-on investigation into specific, real world topics using the university facilities and equipment available. Mentors are trained to support the development of the students thinking and research skills by questioning and modelling the key ideas rather than teaching. There is a gradual transition to ownership of the project by the student team.

Seminars – At the the end of each day, and at key points during the programme, the teams reflect, review and prepare presentations to communicate their work. These presentations introduce the process of peer review and critique as an essential part of science and learning in general. Communication challenges, scaffolded throughout the programme, include: a press release (for local or school media), an oral presentation (supported with power point slides), a scientific poster (for NZMSC web site), and a novel presentation. The idea of the novel presentation challenge is to get the students to think creatively about ways to convey their ideas and research process, as well as share the results, with to different audiences. Examples of novel approaches include: puppet show, TV interview, soap opera, mini drama, song, animation of clay model figurines etc. Students enjoy the opportunity to use analogies and humour!

Residential Component - Five of the programmes include a residential component where students stay overnight together in bunkroom accommodation on Quarantine Island, a 5-minute boat trip from the NZMSC. Students are placed in 'residential' teams which are different from their 'research' team. They all share the cooking and cleaning duties as well as getting involved in evening challenges designed to add a social element to the programme but also relate to the broad theme of the programmes. This is where the social-emotional development of the students leads to further bonding and increased confidence and friendships.