

Background Notes

Australian Mathematical Olympiad Committee (AMOC) and International Mathematical Olympiad (IMO)

Australian Mathematical Olympiad Committee

In 1980, a group of distinguished mathematicians formed the Australian Mathematical Olympiad Committee to coordinate an Australian entry in the International Mathematical Olympiad.

Since then, the AMOC has developed a comprehensive program to enable all students (not only the few who aspire to national selection) to enrich and extend their knowledge of mathematics. The activities in this program are not designed to accelerate students. Rather the aim is to enable students to broaden their mathematical experience and knowledge.

The aims of the AMOC include:

- giving leadership in developing sound mathematics programs in Australian schools
- identifying, challenging and motivating highly gifted young Australian school students in mathematics
- training and sending Australian teams to future International Mathematical Olympiads.

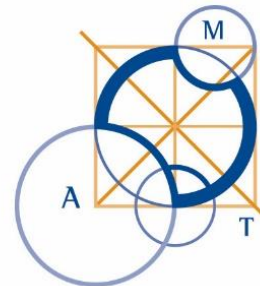
The largest of these activities is the Mathematics Challenge for Young Australians, a problem solving event held in second term, in which approximately 15,000 young Australians explore carefully developed mathematical problems. Students who wish to continue to extend their mathematical experience can then participate in the Enrichment Stage of the Challenge and pursue further activities leading to the Australian Mathematical Olympiad and international events.

AMOC schedule for potential IMO team members

Each year many hundreds of gifted young Australian school students are identified using the results from the Australian Mathematics Competition, the Mathematics Challenge for Young Australians Program and other smaller mathematics competitions. A network of thirty or so dedicated mathematicians and teachers has been organised to give these students support during the year either by correspondence programs or by special teaching sessions.

It is these students who sit the Australian Intermediate Mathematics Olympiad, or who are invited to sit the AMOC Senior Contest. Each State also runs individual training programs, either through enrichment groups or correspondence programs. These programs are known to the respective AMOC State Directors. The outstanding students in recent AMOC programs and other mathematical competitions are identified and then invited to attend the residential AMOC School of Excellence.

Approximately 100 students are invited to attempt the Australian Mathematical Olympiad. The best 20 or so of these students will then be invited to represent Australia in the correspondence Asian



Pacific Mathematics Olympiad¹. Successful students are then selected for the AMOC Selection School (where the Australian team of six students plus one reserve will be selected for the International Mathematical Olympiad (IMO). A personalised mentoring system for the Australian team operates in the lead up to the IMO.

It should be appreciated that the AMOC program is not meant to develop only future mathematicians. Local and overseas experience has shown that many choose fields in engineering, computing, medical sciences, the physical and life sciences while others will study law or go into the business world. It is hoped that the AMOC Mathematics Problem Solving Program will help students to think logically, creatively, deeply and with dedication and perseverance; that it will prepare these talented students to be future leaders of Australia.

International Mathematical Olympiad

The IMO is the pinnacle of excellence and achievement for school students of mathematics throughout the world. The concept of national mathematics competitions started with the Eotvos Competition in Hungary during 1894. This idea was later extended to an international mathematics competition in 1959 when the first IMO was held in Romania. The aims of the IMO include:

- to discover, encourage and challenge mathematically gifted young people in all countries;
- to foster friendly international relationships among mathematicians of all countries;
- to create an opportunity for the exchange of information on school syllabuses and practices throughout the world;
- to promote mathematics generally.

It was not until the mid-1960s that countries from the western world competed at the IMO. The United States of America first entered in 1975. Australia has entered teams since 1981. It has achieved varying successes. A summary of Australia's achievements at previous IMOs can be found by following this link: https://www.imo-official.org/country_team_r.aspx?code=AUS

Each IMO team member will receive an Australian IMO team blazer and tie as well as correspondence and mentor support in the months prior to the IMO commencing. They will be also be supported during a special five day IMO Training Camp to be held prior to the IMO.

Australian students who have completed Year 12 cannot sit the AMO or APMO and cannot attend AMOC training schools or the IMO. Students are only eligible if they are still attending secondary school. They must be under 20 years of age at the time of the IMO and not have enrolled at a tertiary institution. The IMO contest consists of two four-and-a half hour papers, each with three questions.

¹ For Year 10 or lower students, there is the Mathematics Challenge for Young Australians Program.