MATHS MATTERS

Welcome to the new look newsletter of the Australian Mathematics Trust (AMT). Our vision at AMT is that all young Australians have the opportunity to realise their intellectual potential in mathematics and informatics. Through this newsletter we want to provide teachers with inspiration and resources for the classroom and highlight the endless possibilities and creativity of mathematics and informatics.

This edition of *Maths Matters* features articles about our Australian Olympians, the 2014 Australian Mathematics Competition sponsored by the Commonwealth Bank, our new look website and online activities.

AUSTRALIA TOPS THE WORLD IN OLYMPIADS

In a remarkable first for Australia, Alex Gunning achieved a perfect score and equal first place in the IMO (International Mathematical Olympiad) held in Cape Town in early July. Then, just a fortnight later, Ishraq Huda achieved a perfect score in the International Olympiad in Informatics (IOI) held in Taiwan.

These two results were just the pinnacle of very strong team performances which saw our Maths team of six students finish 11th out of 101 teams, whilst the Informatics team came third, behind China and the USA, out of a total of nearly 80 teams.

Further details about Alex Gunning and the IMO can be found at www.amt.edu.au/2014-imo and further details about Ishraq Huda and the IOI can be found at www.amt.edu.au/2014-ioi.

Above left: Alex Gunning with his Gold Medal at the closing ceremony of the IMO.

Above right: Ishraq Huda (centre) at the IOI closing ceremony.

Above: All the Australian olympiad teams were presented with their blazers by Adam Spencer at the 2014 Australian Olympiad Teams Announcement at Parliament House in July.

AUSTRALIAN MATHEMATICS COMPETITION
sponsored by the CommonwealthBank

This year's Australian Mathematics Competition (AMC) sponsored by the Commonwealth Bank was held on 7 August. Nearly 300 000 students in over 40 countries entered five divisions of papers from Middle Primary to Senior. This year, we have awarded 77 medals, 34 from Australia, to students whose performance qualifies as outstanding, both within their own country/Australian state and overall.

Of these medallists, 44 are in the Junior Division (15 from Australia), 16 in the Intermediate Division (6 from Australia) and 17 in the Senior Division (11 from Australia). The complete list of medallists is on the AMT website at www.amt.edu.au/2014-australian-mathematics-competition-medallists-announced .

The medal ceremony for Australia will take place on 7 November at Government House in Brisbane where medals will be presented by His Excellency the Honourable Paul de Jersey AC, Governor of Queensland. Ceremonies for prize winners in each state and a number of overseas countries will be held in late October and November.

CATALYST PROGRAM ON FERMAT'S LAST THEOREM

AMT and AMSI (Australian Mathematical Sciences Institute) have worked together with the ABC in assisting with a recently filmed edition of *Catalyst*. Mathematical comedian Simon Pampena outlined the history of one of the most intriguing theorems in mathematics, Fermat's Last Theorem, which was finally solved in the early '90s by English mathematician Andrew Wiles.

The AMT identified appropriate audience participants, including some of our Olympians or Olympiad trainees, and these students were able to ensure that the audience for the production filming was a lively one.

The *Catalyst* episode will go to air in late November or early December as one of the last episodes in the series for 2014.

ONLINE CAT COMPETITION

In 2015, our informatics competition will also be available online. Currently known as the Australian Informatics Competition (AIC), a multiple-choice written competition, it will be re-badged as the Computational and Algorithmic Thinking (CAT) competition. We feel this name better explains what the competition is about because the term informatics is not well understood. This competition introduces students to algorithmic thinking, now a component of the Australian Curriculum, without the need for programming expertise. Once again, we want to reach a wide range of students to find out who our potential programmers are, without the need for specific expertise in schools.

MCYA CHALLENGE AND ENRICHMENT

We have been delighted to see a significant increase in entries for both the Challenge and Enrichment stages of the MCYA program. It was particularly pleasing to see how many schools took the new Upper Primary stage of the Challenge. We are currently working on a new level of the Enrichment program which will provide further extension for keen Middle Primary students.

FREE AIMO ENTRY FOR AMC PRIZE WINNERS

One of the great challenges for us at the AMT is to work towards equality of opportunity for all students in accessing mathematical challenges of an appropriate level. We often hear students who have been successful in Olympiad competitions or similar talking about an inspirational teacher or a program run by their school which got them interested in the higher levels of competition. However, this raises the question of what happens to those potentially able students who happen not to have an inspirational teacher or a well-established enrichment program in their school.

One initiative we have put in place this year is to open up access to the Australian Intermediate Mathematics Olympiad (AIMO) by offering free places to AMC prize winners and marketing the competition to all schools, not just those who take the MCYA Challenge or Enrichment program. This has been very successful with an increase of over 50% in entries and many of these entries are of very high quality. Students who have performed well may be invited to state or national enrichment programs. Many prize winners may have struggled with the competition, having never been challenged to the same extent before. We would strongly encourage these students to work through the levels of the MCYA Enrichment program, as the style of questions in the AIMO is based on these. We would also recommend them looking through previous AIMO papers, and a collection of these is now available in a new book, *Australian Intermediate Mathematics Olympiads 1999–2013,* which can be purchased from the AMT bookshop .

STUDENT AND TEACHER WORKSHOPS

We will be offering some workshops for high-achieving students in the AMC on the same day as our Awards presentation in each state. Invitations for these will be sent out shortly and places are limited. In most states, we will offer a workshop for Years 5/6 and another for Years 7/8.

We are also trying to reach out to teachers to provide strategies and resources for able students through our Enrichment and Problem Solving teacher workshops, which have now been offered in every state and territory. We will be continuing this program, so do look out for these when they next come your way. For more remote areas, we will consider running a workshop if the numbers can be found to justify it.

NEW LOOK WEBSITE

For further information about any of the above items and much more visit our new look website www.amt.edu.au

ONLINE TRAINING

Our online training program called GetSet has been established for the AMC. A similar training program for the CAT competition (formerly AIC) will be available in time for preparation for the 2015 competition. Schools will have the opportunity to purchase bulk access to these programs (at a much-discounted price) when making entries to these competitions next year.