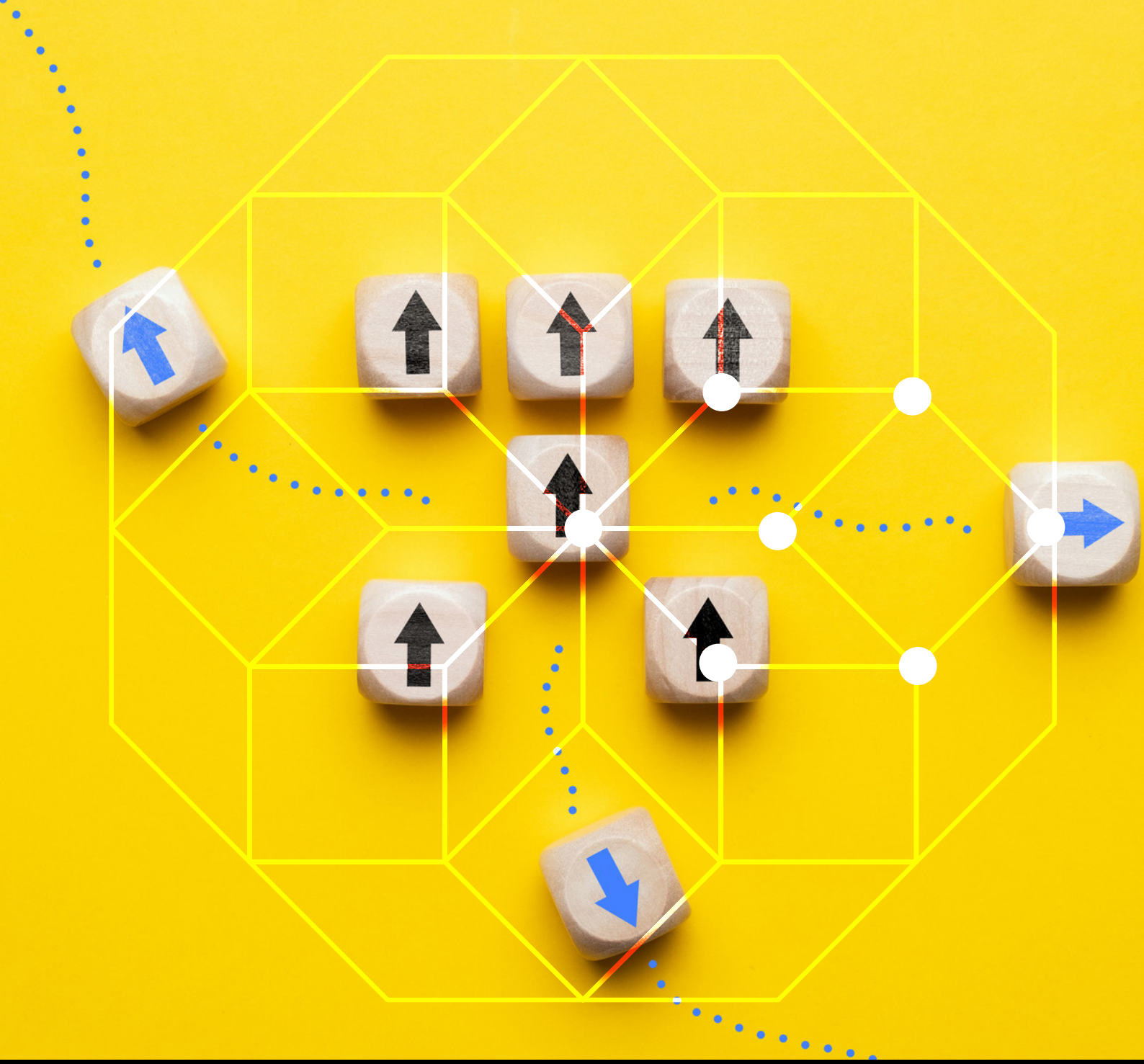


2024 Annual Report

AUSTRALIAN MATHS TRUST

CONTENTS

FROM THE CHAIR

I am pleased to present the Australian Mathematics Trust Annual Report for 2024, another year of remarkable achievements and significant transitions. As we reflect on 2024, it is clear that the Trust continues its long tradition of inspiring mathematical engagement in students in Australia and internationally.

Spotlight on the International Mathematics Olympiad (IMO)

With our hosting of the International Mathematics Olympiad (IMO) in 2025, a significant focus through 2024 has been on preparations for what we anticipate will be a wonderful experience for all involved. This prestigious event presents an opportunity to showcase Australia's commitment to mathematical excellence. The IMO not only celebrates the brilliance of young mathematical talent but also reinforces the importance of mathematics as a fundamental discipline. IMO 2025 will undoubtedly spotlight mathematics education in Australia and serve as an inspiration for the next generation of problem-solvers.

We are immensely grateful for the financial support from XTX Markets, whose generosity has significantly enhanced the quality of our preparations for IMO 2025. Their commitment has enabled us to lay the groundwork for a truly world-class event that will bring together the best young mathematicians from around the globe.

Child Wellbeing and Safety

The Australian Mathematics Trust is committed to child wellbeing and safety. This year, we undertook a comprehensive internal review to ensure that our practices align with the highest standards of safety and child protection, drawing on the findings and recommendations from the Royal Commission into Institutional Responses to Child Sexual Abuse. The safety and welfare of all participants in our programs are paramount, and we are dedicated to maintaining a safe and supportive environment. This ongoing work is central to our organisational planning and is embedded in every aspect of our operations. It also puts child safety at the centre of our preparations for IMO 2025.

Celebrating Olympiad Success

2024 was a year of exceptional performance for our Olympiad teams. Our students excelled on the international stage, achieving strong results at the International Mathematical Olympiad, and the European Girls' Mathematical Olympiad. Their achievements are a testament to the talent, perseverance, and dedication of our students and the invaluable support of their coaches, schools, and communities. The Trust takes immense pride in nurturing such talent and fostering a love of mathematics among Australia's brightest young minds.

In 2024, the AMT Board chose not to send a team to the 2024 International Informatics Olympiad based on Australian Government warnings to reconsider travel plans to the host country. This tough decision reflects our prioritisation of child safety. We look forward to participating in the 2025 International Informatics Olympiad to be held in Bolivia.

Leadership Transitions

2024 saw significant leadership changes at the Trust. Nathan Ford concluded his tenure as Chief Executive Officer, having served since 2017. Nathan played a pivotal role in strengthening the Trust's governance and operational effectiveness during a period of substantial growth and change. His contributions have left a lasting impact on the organisation. On behalf of the Board, I thank Nathan for his work at the AMT and wish him success in his future endeavours. The search for a new CEO is underway, with the aim of appointing a leader who will continue to advance the Trust's strategic vision.

We also farewelled three board members including outgoing Chair, Belinda Robinson. I extend my gratitude to Belinda for her service and for her commitment to ensuring that the Trust can look forward to a long and productive future ahead.

Leon Sterling also stepped down from the board at the end of his term. Leon's enduring passion for the work of the AMT, especially in informatics, will be missed in the Boardroom and among the AMT community. His decades of service are appreciated.

Finally, Susan Lever has stepped down from the AMT Board in 2024 at the end of her term, choosing to focus on her classroom teaching role. The AMT benefited from her legal training and her first-hand experience delivering mathematics across various NSW high schools.

The Board remains committed to ensuring the long-term sustainability of the Trust. Our strategic priorities include child safety, mathematical excellence, financial stability and being a wonderful collaborative environment for everyone contributing to the work of the AMT.

To strengthen our governance and strategic direction, three new board members joined the AMT in 2024, David Williams, Tracey Dodd and Mark Lawrence. The Board also appointed Mark Lawrence as Deputy Chair. Their experience and expertise and their enthusiasm for mathematics have become important influences on the direction of the AMT.

I would like to express my heartfelt appreciation to all members of the Board for their wisdom and leadership. With the substantial leadership changes in 2024, it has been a very busy year and many board members have gone above and beyond to support the work of the AMT.

I am also deeply grateful to the management team, staff, volunteers, educators, and the broader AMT community for their passion, dedication, and commitment to inspiring mathematical excellence. Your contributions are the foundation of the Trust's success and impact. We appreciate your commitment to each other, to mathematics, and to theTrust itself.

As we look forward to 2025 and the opportunity to host the IMO, the Trust is well positioned to continue its vital role in nurturing mathematical talent and inspiring a love of learning. We are excited about the journey ahead and are committed to advancing our mission with renewed energy and purpose.

Geoff Shuetrim
Chair, AMTT Board Ltd

FROM THE CEO

I find myself in the slightly unusual situation of writing a report for the 2024 year, when I only took over as CEO in January of this year. It is eight years since I last occupied this role and much has changed at the Trust since that time. However, it has been a great pleasure to meet the current team in the Canberra office and witness their dedication to promoting the Trust's many activities. They are a small but important part of a whole community which constitutes the AMT, an organisation dedicated to improving the problem-solving capacity of Australian students in both mathematics and informatics.

I start by offering my thanks to Nathan Ford, who has guided the organisation for the last eight years, and who decided to step down as CEO late last year. Nathan has presided over a number of significant developments, not the least being the many years of preparation required in hosting the 2025 IMO, which has been a major focus in 2024.

On the domestic scene, the AMT took over the running of the Bebras competition in 2024, and it was a major success. With over 45 000 students competing across the two rounds of the competition. Bebras is an introductory algorithmics competition, which was sat in 89 countries in 2024 and attracted 2.5 million participating students worldwide. It is a good stepping stone to our CAT competition and we hope that many of the participating students will try the CAT and our other informatics competitions in future years.

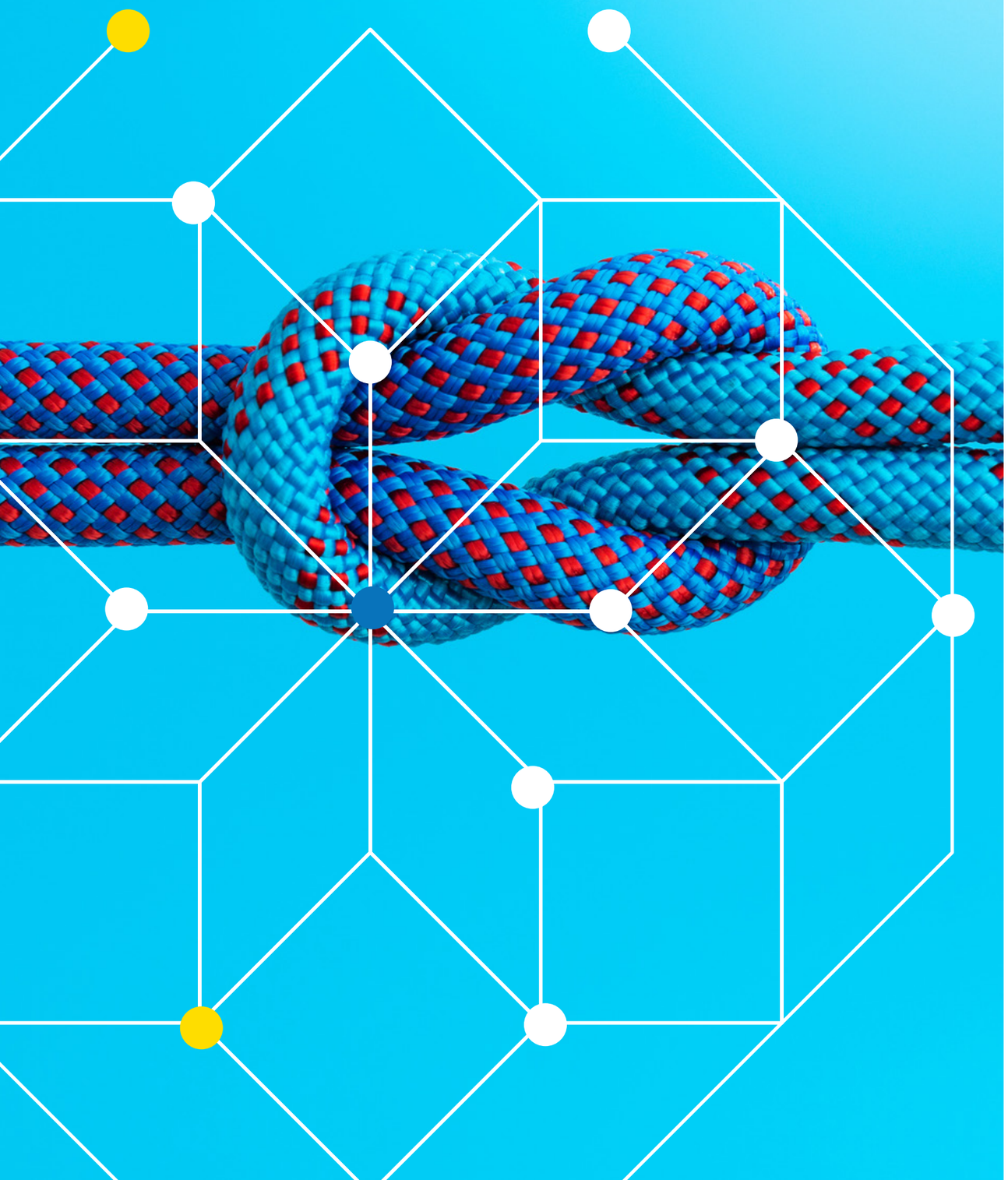
Another innovation in our informatics program was the trial of a new CAT coding challenge. This challenge took a number of questions from the CAT papers and encouraged students to produce algorithms and code these to solve the problems. Although numbers were quite small in the first year, we hope that this initiative will provide a natural pathway from Bebras and CAT to our programming competitions such as the AIO. We also entered our first ever team in the European Girls Olympiad in Informatics (EGOI) with the girls travelling to the Netherlands to take part. We were delighted that three out of four team members received medals and we know from our experience with EGMO that we will become stronger over time with such an initiative.

In mathematics, numbers improved in both of our baseline competitions, the AMC and the KSF, with the AMC almost back to pre-pandemic levels, but perhaps the real excitement was in our Olympiad competitions. The EGMO team, consisting of four outstanding young female mathematicians, travelled to Georgia, where they finished 2nd out of 54 competing countries, just behind the US and ahead of China, with all four girls receiving Gold medals. These four girls all went on to compete in the IMO, the first time we have had four girls in our six-member team. This result fully vindicates the decision to become involved in an all-girls competition, to promote the development of young female mathematicians.

2024 was another great year for the Trust, and I thank all of those who made it possible; teachers, parents, students and our wonderful AMT community.

Mike Clapper
CEO

AMT COMMUNITY



THE AUSTRALIAN MATHS TRUST (AMT) IS A COMMUNITY, WHICH WORKS TOGETHER WITH THE AIM OF PROVIDING:

1. Problem-solving and enrichment opportunities in mathematics and informatics for Australian and overseas students.
2. Mathematical and Informatics resources for both teachers and students to support the development of problem-solving skills.
3. Pathways for the development of talented students up to and including International Olympiad participation.

Most members of this community are mathematicians, informaticians or educators who develop competitions and resources and provide training for talented students. They are supported in their endeavours by a dedicated team of competition managers, publishing personnel and other administrative staff, which provides the infrastructure needed to:

1. Ensure the effective delivery of competitions and the integrity of competition materials.
2. Provide design and publishing support.
3. Facilitate problem committee meetings and other meetings in pursuit of the above aims.
4. Ensure a safe environment for all participants in the programs of the AMT.

The AMT is a not-for-profit organisation governed by a Board of Directors.

ABOUT US

OUR MISSION AND VISION

MISSION

To be a leader in helping young Australians realise their problem-solving potential using maths and algorithmics

VISION

A nation of creative problem solvers

OUR FOCUS AREAS

1. Enriching and extending student learning
2. Building teacher capacity
3. Enabling the problem-solving community

IMO 2025

Make Australia the centre of mathematical problem solving for young people in 2025. With the IMO competition as centrepiece, deliver nationwide events and programs to inspire and galvanise the next generation of Australian problem solvers

STRATEGIC PRIORITIES

a. Revitalise student engagement: Enrich and develop our current programs to maximise student participation

b. Inspire teachers: Work with systems, schools and teachers to enhance the teaching of problem solving

c. Activate the community: Use our staff and volunteer expertise to lead the development of an active community of problem solvers

STRATEGIC ENABLERS

a. People: Attract, develop and retain a high-performing staff and volunteer team

b. Internal systems: Address critical system and operating gaps

c. Financial stability: Conduct our business in a financially sustainable way

BUILDING COMMUNITY

We develop collaborative relationships with trust, openness and accountability

STRIVING FOR EXCELLENCE

We apply our experience and expertise to unlock quality learning and achievements

OUR VALUES

GROWING THROUGH INNOVATION

We value our past and adapt for the future

CREATING ENJOYMENT

We enrich education through a positive and supportive environment

OUR PARTNERS AND SUPPORTERS

Thank you to our valued partners and collaborators who help us achieve our mission of creating a nation of creative problem solvers through maths and algorithmic thinking.

Members of AMTT Ltd

UC is Australia's fastest rising university, and one of the fastest rising in the world. It's also #1 in the ACT for full-time employment and starting salaries for three years running.

To advance Australia as a nation that embraces scientific knowledge and whose people enjoy the benefits of science.

National Sponsor of the Australian Informatics and Mathematical Olympiads

National sponsor of the Australian Informatics and Mathematical Olympiad programs

As a global market maker, Optiver works to make the world's markets fairer, more transparent, and more efficient for everyone.

Major Sponsor of IMO 2025

IMO 2025 is made possible by AMT's Principal Supporter XTX Markets, the leading algorithmic trading firm, and proud donor to maths education globally.

Government Supporters

Curious Minds is funded by the Australian Government Department of Education through the Women's Economic Security Package 2018.

Our maths and informatics Olympiads are supported by the Australian Government Department of Industry, Science and Resources through the Science Competitions: Mathematics and Informatics Olympiads grant opportunity. Our EGMO initiative is supported by the Australian Government Department of Industry, Science and Resources through the Inspiring Australia – Science Engagement Program.

Higher Education Supporter

The University of New South Wales is a strategic higher education partner of the AMT, with a focus on expanding and improving the informatics (computer science) high performance pathway.

Competition Supporter

The Bebras competition is supported in 2024 by CSIRO.

Sector Partners

Australian Science Innovations delivers challenging science extension programs for high school students that aim to broaden horizons, identify capabilities and build Australia's scientific community.

The leading organisation that supports and promotes mathematics education in schools in Australia, including professional learning, collaborative research and projects, advocacy, events and journals.

The collaborative enterprise of Australia's mathematical sciences. It exists to give independence to these disciplines and provide infrastructure so that they can take initiatives on the national and international stage.

The national society of the mathematics profession in Australia. Its mission is the promotion and extension of mathematical knowledge and its applications. It represents all professional mathematicians in Australia, both pure and applied.

The Aboriginal and Torres Strait Islander Mathematics Alliance (ATSIMA) is an Indigenous-led charity, and the only national organisation specifically committed to creating ways of teaching and learning mathematics that connect to Aboriginal and Torres Strait Islander histories and cultures.

A not-for-profit organisation whose goal is to improve mathematics education across Western Australia.

MAWA is a vibrant organisation that provides support for anyone with an interest in mathematics including teachers, parents and students.

OPEN COMPETITIONS

COMPETITION OVERVIEW

In 2024, the AMT took over the running of the Bebras competition, which was previously run by CSIRO. With support from CSIRO, we were able to offer this competition free and we were delighted that, over the two sittings of the contest, we had over 45 000 entries. Whilst this free offering probably had a slightly negative effect on CAT numbers for this year, we are hoping that, in the longer term, schools and students will see the links between the two competitions and use Bebras as a pathway to the CAT competition.

We are pleased to see that domestic entries in all other competitions increased in 2024 and, whilst we have not yet returned to pre-pandemic numbers, we are optimistic that we are moving in a positive direction and the number of schools taking our competitions has increased.

In addition to our Australian entries, the AMC is taken in over thirty other countries, with a total in 2024 of 88 140 overseas entries so it certainly qualifies as a genuine international event!

Domestic entries

	2023	2024
KSF	8961	11687
AMC	177054	183331
OUCC	904	1444
CAT	18426	16484
BEBRAS		45041
CHA	11554	11919
ENR	6039	6272
AIO	693	758
AIMO	2136	2847

PROBLEMS

We are blessed with a vast network of creative and passionate volunteers and staff who create our content each year. Enjoy this sample of problems from 2024.

2024 IMO, Day 1, Problem 3
Author: William Steinberg – IMO alumnus

It is a rare honour indeed to have a problem selected for IMO! Several hundred problems are submitted from around the globe each year, which is whittled down to a shortlist of around 30 by the Problem Setting Committee, before the Jury settles on the final 6. William, a dual IMO gold-medallist, honed his problem-writing skills as a student competing in the 'Ashes' against the UK team. The solutions for all 6 problems can be found here: https://www.imo2024.uk/solutions

Problem

Let $a_1, a_2, a_3, \ldots$ be an infinite sequence of positive integers, and let N be a positive integer. Suppose that, for each $n > N$, a_n is equal to the number of times a_{n-1} appears in the list $a_1, a_2, \ldots, a_{n-1}$.

Prove that at least one of the sequences $a_1, a_3, a_5, \ldots$ and $a_2, a_4, a_6, \ldots$ is eventually periodic.

(An infinite sequence $b_1, b_2, b_3, \ldots$ is *eventually* periodic if there exist positive integers p and M such that $b_{m+p} = b_m$ for all $m \geqslant M$.)

2024 Maths Challenge, Upper Primary Problem 1: 'Mia's Mosaics'
Author: Lorraine Mottershead – Challenge Problems Committee member

Lorraine Mottershead has been a valuable contributor of novel problems over many years, with a particular interest in pre-algebraic and geometric reasoning at the primary level. A variation of this problem also appeared in the Middle Primary booklet.

Problem

Mia has many rectangular tiles and rectangular frames of different dimensions. They all have side lengths that are a whole number of units.

Mia wants to create some mosaics by fitting tiles into each frame. In a completed mosaic, the tiles must be placed within the frame so there are no gaps and no tiles overlap.

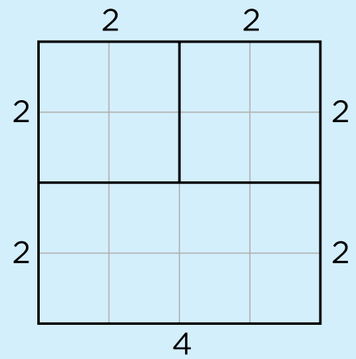
For example, Mia can fill a 4×4 frame with one 4×2 tile and two 2×2 tiles as shown below.

a. Mia wants to fit five tiles into a 5×5 frame. She wants one of the tiles to be a 3×3 square, and none of the other four tiles to be squares. Draw two different ways that Mia can do this.

b. Mia wants to fit seven tiles with areas 15, 16, 20, 20, 21, 24, and 28 into a square frame. Draw a diagram showing how she can do this.

c. Mia wants to fit ten square tiles into a frame with area 56. Find two possible dimensions for the frame, and draw a diagram showing how she could fill the frame in each case.

d. Mia wants to fit four 3×3 tiles, five 2×2 tiles, and eight 1×1 tiles into a frame. Explain why the frame must be a square, and draw a diagram showing how she could fill the frame.



2024 Maths Enrichment, Newton Problem 7
Author: Kevin McAvaney – Challenge Problems Committee Chair

As well as chairing the Challenge and AIMO Committees, Kevin McAvaney has been a long-time contributor to Maths Enrichment, as lead writer for the Newton and Dirichlet stages and author of graph theory problems for other stages. Newton is aimed at students in Years 5 and 6.

Problem

Find a single path that includes every numbered circle in the following array. The path must start at the bottom-left circle, finish at the top-right circle, and proceed in the numerical order 1, 2, 3, 4, 5, 6, 1, 2, 3, 4, 5, 6, and so on. The path must visit every circle exactly once and join each circle only to a neighbouring circle (horizontally, vertically, or diagonally).

Explain the method you use to construct a path.

1	6	4	3	4	6
2	5	3	2	2	5
3	4	1	4	3	1
4	6	5	5	6	2
5	3	1	6	1	5
1	2	2	3	4	6

2024 Computational and Algorithmic Thinking, Intermediate Prize 1: 'Multiswap'
Author: David Clark – Computational and Algorithmic Thinking (CAT) Committee Chair

In 2024, for the first time, Prizes were awarded to high achievers in the Intermediate and Senior divisions of the CAT. To sort out the top few students, we set two optional two-part prize questions, each based on one of the core problems from earlier in the paper. Multiswap was proposed by David Clark, chair of the CAT Problems Committee.

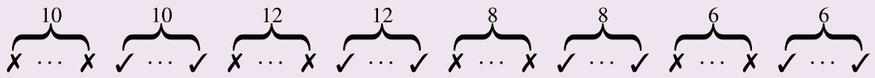
Problem

You have a line of ✓s and ✗s. You want all of the ✓s to be on the left and the ✗s to be on the right.

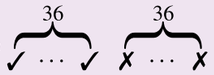
You will do this by several rounds of swapping. In each round:

1. a move consists of swapping a ✓ with the ✗ immediately before it
2. there can be several moves in a round
3. neither a ✓ nor a ✗ can be part of more than one move in a round.

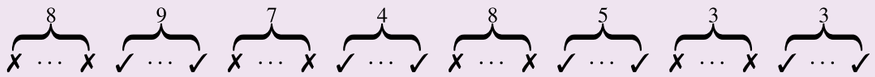
A. The following line has 36 ✗s and 36 ✓s.



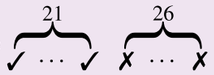
How many rounds would it take to move all of the ✓s to the left?

This would give 

B. The following line has 26 ✗s and 21 ✓s.



How many rounds would it take to move all of the ✓s to the left?

This would give 

INVITATIONAL PROGRAMS

OLYMPIADS OVERVIEW

The Australian Maths Trust runs invitational programs for outstanding young problem solvers in mathematics and algorithmics, as well as jointly delivering the Curious Minds program with Australian Science Innovations. Curious Minds is a hands-on extension and mentoring program, aimed at providing opportunities for talented girls who are passionate about science, technology, engineering and mathematics (STEM), with a particular focus on girls who may be from rural or remote regions or be experiencing socio-economic disadvantage.

Our Olympiad Program provides opportunities for students to develop their skills and demonstrate their abilities both here in Australia and on the world stage at international Olympiads. The Australian Maths Trust delivers a number of invitational competitions that provide opportunities for students to demonstrate their problem-solving capacity.

These competitions include:

- AMOC Senior Contest (ASC)
- Australian Mathematical Olympiad (AMO)
- Australian Invitational Informatics Olympiad (AIIO)
- French Australian Regional Informatics Olympiad (FARIO)

From these competitions, the AMT selects students for two annual training schools in each of the mathematics and informatics streams:

- School Of Excellence (held in November)
- Selection School (held in April)

The purpose of these training schools is to develop mathematical problem-solving skills, to help identify students to sit further invitational competitions, and to select students to represent Australia at international Olympiads:

- European Girls' Mathematical Olympiad (EGMO)
- European Girls' Olympiad in Informatics (EGOI)
- International Mathematical Olympiad (IMO)
- International Olympiad in Informatics (IOI)

The Olympiad programs are supported by the Australian Government Department of Industry, Science and Resources through the Science Competitions: Mathematics and Informatics Olympiads grant opportunity.

The Olympiad programs are also supported by the Trust's National Sponsor of the Australian Informatics and Mathematical Olympiads, Optiver, and our Higher Education partner, University of NSW (UNSW).

The Curious Minds program is funded by the Australian Government Department of Education and jointly delivered by the Australian Maths Trust and Australian Science Innovations. The program is also partnered with the Australian National University (ANU).

OLYMPIADS – INFORMATICS

European Girls Olympiad in Informatics (EGOI)

EGOI, a competitive computer programming contest, has been the premier opportunity for young women to test their skills and knowledge since its launch in 2021. In 2024, the AMT sent the first ever Australian team to compete, marking a significant moment in the AMT's history.

On the 25th of March, a team of four talented young women were officially announced Australia's first ever team to compete. The team was introduced by Team Leader, Paula Tennent, in a virtual announcement. Guest speaker, Dr Carolyn Huston, spoke of the importance these opportunities can create and congratulated the team. Director of Training for Informatics, Angus Ritossa, concluded the presentation wishing the team luck and sharing his excitement.

The 2024 European Girls' Olympiad in Informatics was held in Veldhoven, the Netherlands from 21–27 July 2024. The Olympiad saw over one hundred and eighty young women compete to solve complex problem-solving tasks to foster their technical skills, critical thinking and creativity.

Our four young Australian women made their mark on the world stage, receiving three bronze medals and with all students solving a whole problem outright (full solve):

- Ayana Fridkin – Bronze Medal (50th place)
- Christina Chen – Bronze Medal (65th place)
- Alexa Wu – Bronze Medal (66th place)
- Honey Raut – 116th place

This result couldn't have been achieved without the support of our program staff – Team Leader Paula Tennent, Deputy Team Leader Angeni Bai, Observer C Shayla Nguyen, and the leadership of our Director of Training, Angus Ritossa.

With this result, the AMT now has two clear pathways for young women who want to refine and develop their mathematical skills via our European Girls' Mathematical Olympiad (EGMO) and EGOI programs.

From left to right: Paula Tennent (Team Leader), Ayana Fridkin, Christina Chen, Alexa Wu, Honey Raut, Angeni Bai (Deputy Team Leader). Shayla Nguyen (Observer C) is not pictured.

International Olympiad in Informatics (IOI)

After a lengthy process identifying the travel and safety risks in going to Egypt for the 2024 International Olympiad in Informatics, the AMTT Ltd Board made the difficult decision to not send students or staff to compete.

All four students and their families decided to attend independently of the AMT and didn't compete as an official Australian team.

The AMT acknowledges the efforts of these students and congratulates them on their results:

- Alexander Wang – Silver Medal (69th place)
- Andy Wu – Silver Medal (35th place)
- Miles Conway – Gold Medal (26th place)
- Nathan Zhou – Bronze Medal (115th place)

The AMT would like to thank IOI team leader, Angus Ritossa, as well as the entire team that supports this program. Their hard work and support helps the AMT to continue to provide opportunities for young Australians to demonstrate their talents on the world stage.

Alexander Wang
Silver Medal (69th place)

Andy Wu
Silver Medal (35th place)

Miles Conway
Gold Medal (26th place)

Nathan Zhou
Bronze Medal (115th place)

AIO 2024 – Problem 3: Shopping Spree

Jerry Li – IOI Deputy Leader

Problem

After winning the lottery you have made the (perhaps unwise) decision to buy every item at the local Pair Mart store. Pair Mart has an unusual policy where customers are only allowed to buy items in pairs.

When buying a pair, you get two items for the cost of the more expensive one.

In addition, you have collected K Pair Mart coupons. Each coupon allows you to buy a pair of items for the cost of the cheaper one, rather than the more expensive one.

The store has N items and the ith item costs C_i dollars. You know that N is even and so you can buy every item in the store.

What is the minimum cost to buy all N items?

Your program must read input in a specific format:

- The 1st line of input contains the integers N and K.
- The 2nd line of input contains N integers describing the costs of the items. The ith of these is C_i.

Your program must print a single integer: the minimum cost (in dollars) to buy all the items.

OLYMPIADS – MATHS

European Girls Mathematical Olympiad (EGMO)

The 2024 European Girls' Mathematical Olympiad (EGMO) team was officially announced on the 26th of February in an online ceremony, with Guest Speaker Dr. Cathy Foley, Chief Scientist, in attendance. The four young women were introduced by Team Leader, Sally Tsang. Dr Cathy Foley spoke about the importance of mathematics in her line of work and encouraged the girls to keep working hard in achieving their goals. EGMO alumna and Deputy Team Leader, Grace He wished the team good luck.

The 2024 European Girls Mathematical Olympiad took place in Georgia from 11-17 April 2024 and was a huge success. The Australian team ranked second out of 54 participating countries, this being the highest ranking that an Australian team has achieved since first entering EGMO in 2018. This is the seventh year Australia has competed and since Australia's first time competing in 2018, Australian EGMO teams have placed: 20th, 14th, 12th, 12th, 3rd, 3rd and 2nd respectively.

Individually, each Australian team member received Gold Medals, marking the second time Australia has had each team member awarded Gold after achieving the feat in Hungary in 2022. The entire team helped Australia achieve its best ever performances on the EGMO international stage, showcasing the strength and depth of Australia's young female mathematical problem solvers.

The full list of team members and their achievements are as follows:

- Amber Li - Gold Medal (6th overall)
- Laura Nan - Gold Medal (6th overall)
- Cloris Xu - Gold Medal (2nd overall)
- Iris Xu - Gold Medal (23rd overall)

The AMT would like to thank EGMO team leader, Sally Tsang, as well as the entire Olympiad team that supports this program. Their contributions, support and enthusiasm mean that we can continue to help young Australian women take up these important opportunities to demonstrate their excellence in mathematical problem solving.

From Left to Right: Laura (Xiangyue) Nan, Amber Li, Iris Xu, Cloris Xu

International Mathematical Olympiad (IMO)

The 2024 International Mathematical Olympiad (IMO) was hosted in Bath, United Kingdom and was the 65th edition of the Olympiad. The IMO is the conclusion of the annual Maths Olympiad program, with six students selected to represent Australia at the highest level.

This IMO campaign was particularly special as it had the highest ever female representation with four out of the six students selected. All four female students also competed at EGMO, again showing the strength of the EGMO program.

The team competed against 603 other contestants from 108 countries, placing 38th overall. The team achieved one Gold medal, one Silver medal, two Bronze medals, and two Honourable Mentions.

Left to right: Top Row – Michelle Chen (Deputy Team Leader), Cloris Xu, Laura (Xiangyue) Nan, William Cheah, Amber Li, Hadyn Tang (Team Leader). Bottom row – Iris Xu, Alex Qiu

You can see all of the questions used in the AMO this year (and much more) by clicking here to download The Australian Scene, which is the yearbook of the Australian Mathematical Olympiad Committee's program

AUSTRALIAN OLYMPIAD TEAMS ANNOUNCEMENT

On Monday 24 June, 10 of Australia's best and brightest students in both maths and informatics were announced as members of the 2024 IMO and IOI teams. As usual, the ceremony was held at Australian Parliament House. Guest speakers, the Hon Ed Husic MP (Australia's Minister for Industry and Science) and Emeritus Professor Ian Chubb AC congratulated everyone on their selection and encouraged them to keep pursuing their goals. Amber Li, a 2024 IMO team member, delivered the student address. Amber spoke about how she fell in love with maths, her gratitude for her parents and families support, and her plans in combatting climate change.

Other speakers included Belinda Robinson (AMTT Ltd Board chair), Anna Davis (Australian Science Innovations Chair), and Brandon Nguyen from Optiver.

The AMT Olympiad programs are proudly supported by the Australian Government Department of Industry, Science and Resources (DISR) through the Science Competitions: Mathematics and Informatics Olympiads grant opportunity; Higher Education partner, University of NSW (UNSW); and the Trust's National Sponsor, Optiver.

IMO 2025

The Australian Maths Trust, on behalf of the Australian mathematics community, is excited and honoured to host the 66th International Mathematical Olympiad (IMO) on the Sunshine Coast, Queensland, Australia in 2025.

The IMO is the largest and most prestigious of all the international Olympiads, having grown from seven countries to over a hundred each year. Australia has participated since 1981 and has hosted only once before (Canberra, 1988).

IMO brings the brightest young minds from around the world and represents the culmination of many years of mathematical endeavour and hundreds of attempts at solving problems.

The vision of the Australian Maths Trust is to build a nation of creative problem solvers, and we are excited to extend this opportunity to the world in 2025.

IMO SUNSHINE COAST
66th International Mathematical Olympiad 2025

The AMT is proud to announce Terence Tao as one of the Guest Speakers for IMO2025. Terence is an Australian mathematician whose position as one of the world's leading mathematicians is well-known.

Terence competed in the IMO in Canberra in 1988 and was the youngest ever gold medallist, at the age of 12, and was presented with his medal by Prime Minister, Bob Hawke. Terry has always been a strong supporter of the IMO and related activities, and we are delighted to have him join us to further inspire a new generation of mathematicians.

Sponsors

Our valued partners

IMO 2025 is hosted in Australia thanks to our valued partners

[XTX] MARKETS
Principal Supporter

HUAWEI

Sunshine Coast COUNCIL
Host Region

Visit Sunshine Coast
Official Destination Host Region

OTHER RESOURCES

Problemo

POWERED BY
AUSTRALIAN MATHS TRUST

Problemo is the AMT's online problem-solving resource for teachers. It includes a library of maths problems for years 3-12, as well as detailed lesson cards. Each problem includes solutions; enabling and extending prompts; classification by curriculum strand and topic; suggested year level and difficulty rating. Teachers can create their own problem sets or use the ones provided, display them digitally for classroom use, create online quizzes or download PDFs for off-line use. Problemo has been in place since 2020, with a range of free and paid plans for schools, teachers, university students and coaching clinics. It is our primary resource for schoolteachers, drawing on a library of more than 800 problems drawn from past CAT and AMC competitions. It has free and paid subscriptions to allow teachers to have flexibility in the amount of content and functionality within the platform. As in previous years, we also provide practice and solution sets for KSF, CAT and AMC via Problemo, enabling teachers using those competitions to experience the Problemo platform.

AMT SHOP

The AMT also has a wealth of resources in the AMT Shop. There are books for every level, from students practising for AMC and CAT competitions, through to advanced Olympiad Problem Solving. Recent inclusions are revised editions of recent Australian Mathematical Olympiad papers (with fully worked solutions) and copies of The Australian Scene (which is a free digital download of all contests in the AMOC program for each year). There is also an international section which includes books from various Olympiad competitions from around the world.

CURIOUS MINDS

The Curious Minds program started in 2015 and has been delivered to thousands of students. The program empowers highly capable female students to pursue STEM careers, build confidence, interest, and skills to encourage them to continue STEM studies into the future. 277 student expressed interest to apply for the program. Of these, 5% identified as Indigenous or Torres Strait Islander and 82% of the students fell within the program eligibility criteria, i.e. they lived in regional or remote locations, attended schools with an Index of Community Socio-educational Advantage (ICSEA) less than 1000 and/or identified as Indigenous or Torres Strait Islander.

One hundred and fifteen students were invited to participate, with the selection of students based on multiple variables, including fair representation of students across all States and Territories, the number of students invited per school and teacher recommendation.

The 2023 – 24 program was delivered in a hybrid format, done both online and face-to-face in three major parts:

	Summer Camps (ONLINE)	4 – 8 Dec 2023
STEM	STEM Coach Mentoring (ONLINE)	1 Jan – 30 Jun 2024
	Winter Camps (F2F)	West: 1 – 6 Jun 2024 (QLD/NT/SA/WA students) East: 8 – 13 Jul 2024 (NSW/ACT/VIC/TAS students)

In previous years, the summer camps were split into two cohorts, with camps split across two weeks. This year the virtual camps combined, with all students participating at the same camp.

The summer camp was held Monday 4 to Friday 8 December 2023 via Zoom and Microsoft Teams. The summer camp consisted of:

- Welcome videos from the Hon Jason Clare, Education Minister, and Prof. Penny King, Associate Dean for Research in the College of Science at the Australian National University
- An integrated, hands-on, STEM activity investigating microplastics in sand. This ran over four days and was designed to show how STEM fields relate to each other, with a focus on the importance of science communication. The activity included an engineering component and a deep dive into plastic recycling
- Computer Science Education Research (CSER STEM PL) delivered a Privacy and Cybersecurity workshop enabling students to examine their online footprint and explore how they can keep information secure in an online world
- An Olympiad problem solving session where staff shared their experiences and guided students through practice Olympiad problems
- A Communication workshop delivered by Merryn McKinnon, the Associate Dean of Education in the College of Science, ANU and Associate Professor in the Australian National Centre for the Public Awareness of Science, with a focus on effective communication, writing elevator pitches, and how to deliver student presentations
- STEM coaching networking and workshop sessions which introduced students to successful women in STEM, highlighting diverse careers and STEM pathways and facilitated student-coach introductions and self-guided activities
- A University Life Q&A session with current University students sharing their lived experiences of study and research within a university setting
- Choose Your Own Adventure sessions with a focus on social engagement and connection through games, challenges, and chat.

Following this, students participated in a six-month mentoring program with a female STEM professional (STEM Coach). This program is designed to assist students in creating personal goals, support exploration of STEM topics of interest, and investigate university courses, careers, and pathways.

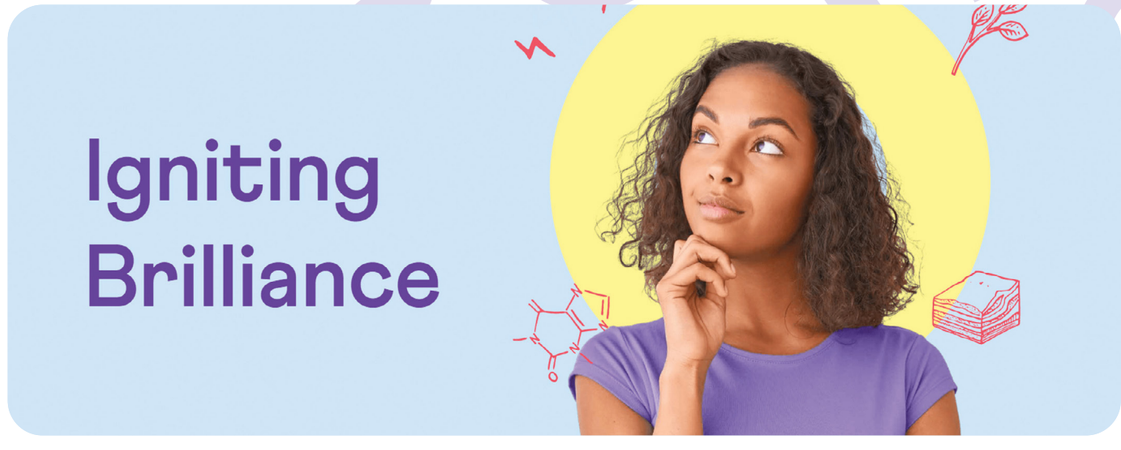
The winter camps were held in July in both Adelaide and Canberra respectively. 99 students attended these camps and engaged in the following subject areas:

- Biology
- Chemistry
- Digital Technologies
- Earth and Environmental Sciences
- Engineering
- Mathematics
- Physics

This total is inclusive of students who were invited to participate based off scores in the Australian Maths Competition, Big Science Competition, and Computational and Algorithmic Thinking competition. The 2024/25 program is the final year of the grant agreement with the Australian Government Department of Education and shapes up to be very exciting.

We'd like to thank university partner, Australian National University for their continued support of the program.

Curious Minds is jointly delivered by the Australian Maths Trust and Australian Science Innovations.



FINANCIAL OVERVIEW

Australian Mathematics Trust
ABN 39 120 172 502

Statement of Profit or Loss and Other Comprehensive Income

For the year ended 31 December 2024

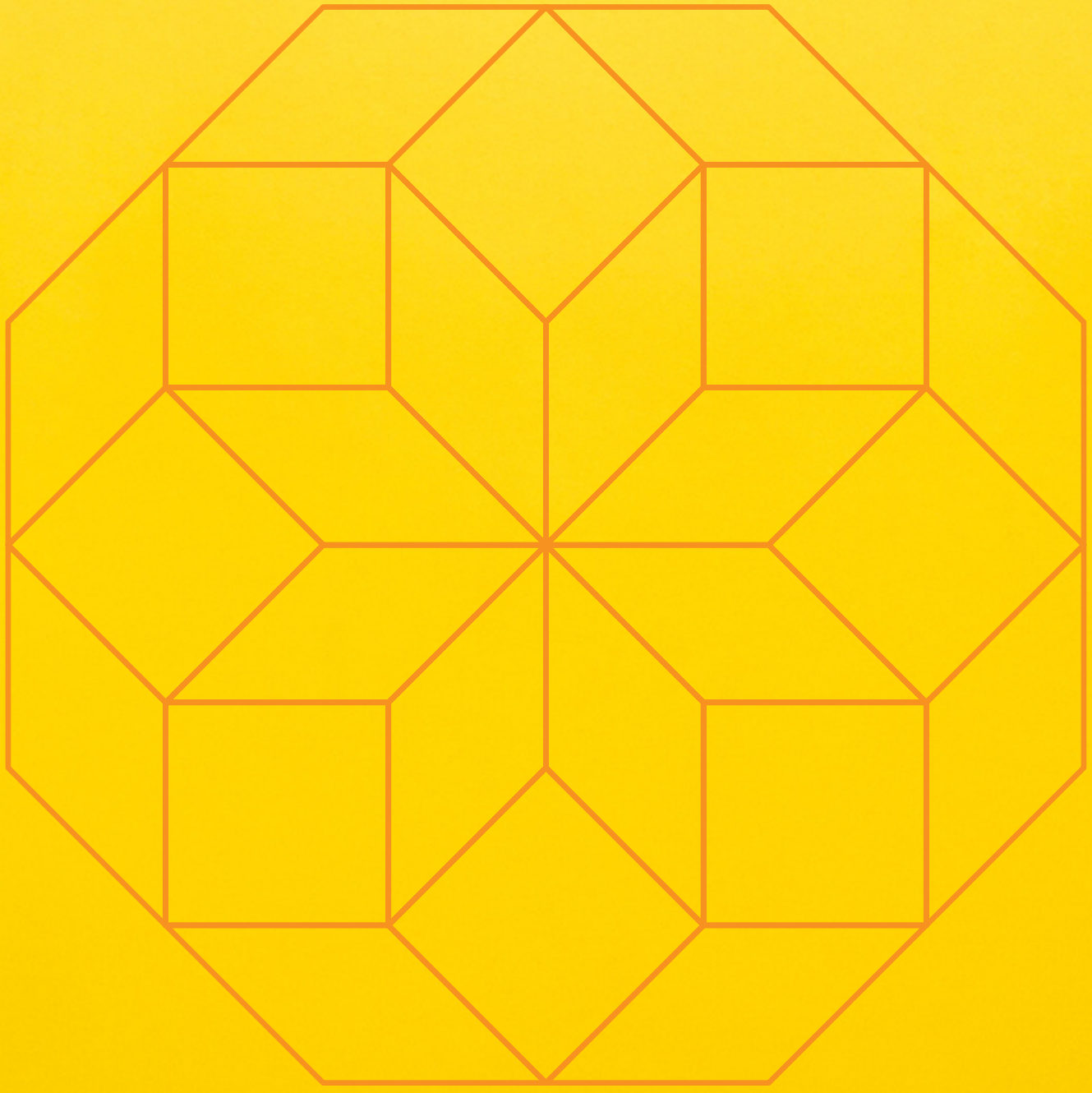
	2024 $	2023 $
Revenue		
Revenue from competition and workshop fees	3,591,940	3,404,893
Revenue from Problemo Plus subscriptions	80,597	108,810
Revenue from publications	200,928	165,110
Grants and sponsorship	2,068,442	1,122,440
Investment income	835,303	574,617
Profit on disposal of motor vehicle	13,396	-
Total revenue from operations	**6,790,606**	**5,375,870**
Expenses		
Accounting and legal	187,360	67,237
Advertising and promotion	481,281	190,658
Amortisation of intangibles	97,806	97,806
Bad debts	-	(875)
Consultants	484,560	434,036
Write down of inventory	68,805	-
Depreciation	12,458	21,968
Directors Fees	34,105	33,225
Insurance	38,674	28,799
Interest expense	(31)	125
Investment manager fees	41,813	33,990
Software licence fees	387,203	379,281
Meals and entertainment	139,794	105,312
Medals, prizes and awards	4,213	11,290
Office accommodation costs	60,521	62,092
Olympiad registration fees	62,184	22,703
Other expenses	187,619	191,117
Printing, postage and stationery	270,146	304,018
Repairs and maintenance	130,377	80,039
Salaries and contractors	3,096,346	2,679,508
Sponsorship	12,545	30,000
Superannuation	284,015	241,884
Travel and accommodation	878,810	517,655
Web and shop site hosting	127,316	62,652
Total expenses from operations	**7,087,920**	**5,594,520**
Deficit before income tax	**(297,314)**	**(218,650)**
Income tax expense	-	-
Net deficit from operations	**(297,314)**	**(218,650)**
Other comprehensive income		
Net realised and unrealised gains / (losses) on financial assets	1,314,194	969,738
Total comprehensive income / (loss) for the year	1,314,194	969,738
Total comprehensive surplus / (deficit) for the year	**1,016,880**	**751,088**

Australian Mathematics Trust
ABN 39 120 172 502

Statement of Financial Position

As at 31 December 2024

	2024 $	2023 $
ASSETS		
CURRENT ASSETS		
Cash and cash equivalents	1,906,078	477,339
Trade and other receivables	105,627	43,389
Inventories	-	68,805
Financial assets	2,523,096	2,565,699
Other assets	1,124,327	266,706
TOTAL CURRENT ASSETS	5,659,128	3,421,938
NON-CURRENT ASSETS		
Financial assets	15,066,415	13,238,562
Plant and equipment	43,130	43,226
Intangible assets	76,369	174,175
TOTAL NON-CURRENT ASSETS	15,185,914	13,455,963
TOTAL ASSETS	**20,845,042**	**16,877,901**
LIABILITIES		
CURRENT LIABILITIES		
Trade and other payables	513,978	325,056
Employee benefits	259,402	265,907
Income received in advance	3,022,771	241,916
TOTAL CURRENT LIABILITIES	3,796,151	832,879
NON-CURRENT LIABILITIES		
Employee benefits	59,315	72,326
TOTAL NON-CURRENT LIABILITIES	59,315	72,326
TOTAL LIABILITIES	**3,855,466**	**905,205**
NET ASSETS	**16,989,576**	**15,972,696**
EQUITY		
Financial asset reserves	1,472,725	823,976
Retained earnings	15,516,851	15,148,720
TOTAL EQUITY	**16,989,576**	**15,972,696**



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