

**Education Report:** Background notes for Minister's attendance and speech at the 2012 Australian Mathematics Trust presentation ceremony as the Guest of Honour

<b>Date:</b>	19 October 2012	<b>Priority:</b>	High
<b>Security Level:</b>	In confidence	<b>METIS No:</b>	694205

### Action Sought

Addressee	Action Sought	Deadline
Minister of Education	<b>Note</b> that you are the host and Guest of Honour at the 2012 Australian Mathematics Trust Awards on 1 November, at 12 noon in the Legislative Council Chamber, at which you will speak.	
<b>Enclosure: Yes</b>		<b>Round robin: No</b>

### Contact for telephone discussion (if required)

Name	Position	Telephone	1 <sup>st</sup> Contact
9(2)(a)	Group Manager, CTL, Student Achievement Group	04 463 8110	9(2)(a) ✓
	Drafter	04 463 8000	

The following departments/agencies have seen this report:

<b>Minister to Complete</b> (please circle)	1 = very poor	2 = poor	3 = acceptable
	4 = good	5 = very good	
<b>Minister's Office to Complete:</b>	<input type="checkbox"/> Approved	<input type="checkbox"/> Declined	
	<input type="checkbox"/> Noted	<input type="checkbox"/> Needs change	
	<input type="checkbox"/> Seen	<input type="checkbox"/> Overtaken by events	
	<input type="checkbox"/> See minister's notes	<input type="checkbox"/> Withdrawn	
	<input type="checkbox"/> Signed		
<b>Comments:</b>			

19 October 2012

METIS: 694205

**Education Report:** Background notes for Minister's attendance and speech at the 2012 Australian Mathematics Trust presentation ceremony as the Guest of Honour

---

**Recommendations:**

---

**We recommend that you**

- a. **note** you have accepted to be the Guest of Honour at the 2012 Australian Mathematics Trust Awards. It will be held on Thursday, 1 November from 12 noon until 2pm in the Legislative Council Chamber.
- b. **note** this event will bring together representatives of key groups in mathematics education, who are interested in hearing you speak on the virtues of achievement in mathematics.
- c. **note** the background information, press release, and speech notes attached for your address.

9(2)(a) [REDACTED]  
Group Manager  
Curriculum, Teaching and Learning

NOTED / APPROVED

Hon Hekia Parata  
**Minister of Education**

\_\_\_\_/\_\_\_\_/\_\_\_\_

**Education Report:** Background notes for Minister's attendance and speech at the 2012 Australian Mathematics Trust presentation ceremony as the Guest of Honour

---

**Purpose of report**

---

1. This report provides background on the 2012 Australian Mathematics Trusts Awards and speech notes for your address at the event. You agreed to host the presentation ceremony and to present this year's medals as the Guest of Honour.

**The Australian Mathematics Competition**

---

2. The Australian Mathematics Competition is in its 35<sup>th</sup> year, and in 2012 the competition attracted entries from approximately 325,000 students in 40 countries. Outside of Australia, New Zealand is second only to Singapore for the number of entries in the competition.
3. The aims of the competition are to enrich mathematics learning, discover talent and generate classroom resources.
4. The competition is administered by the Board of the Australian Mathematics Trust, a not-for-profit body based at the University of Canberra. Its purpose is to enrich the teaching and learning of mathematics for students of all standards.
5. The Australian Mathematics Trust has representatives on its board from the Australian Association of Mathematics Teachers, Australian Academy of Science and Australian Mathematical Society. It administers mathematical enrichment activities for Australian and international students and publishes books on mathematical enrichment.
6. The Australian Mathematics Competition is for students of all ability levels, ages 8 to 19. Students are asked to solve thirty problems in 60 minutes, for primary age students, or 75 minutes for intermediate and secondary age students. The problems get progressively more difficult until they are challenging to the most gifted student, so that all students will make progress and find a point of challenge<sup>1</sup>.
7. The awards structure:
  - a. Peter O'Halloran Certificate – awarded to students who gain a perfect score at any level of the competition.
  - b. Medals - for students of secondary school level, generally no more than 3 students by region or nation who have performed to an outstanding level.
  - c. Prudence awards - for the student in each school (minimum of 50 entrants) who has the most consecutive responses correct starting from question 1.

<sup>1</sup> <http://www.amt.edu.au/amcfact.html>

- d. Prizes - are generally awarded to no more than 1 student for every 300 students from the same region/country and year level.
  - e. High Distinction - awarded to a student who has not received a higher award but is in the top 2% of their year and region (top 5% for senior secondary).
  - f. Distinction Certificate - awarded to a student who has not received a higher award but is in the top 15% (25% for senior secondary) of their year and region.
  - g. Credit Certificate - awarded to a student who has not received a higher award but is in the top 50% (60% for senior secondary) of their year and region.
  - h. Proficiency or participation certificates - awarded to students who do not receive higher awards.
8. Recognised benefits of participation in the Australian Mathematics Competition are:
- a. Students receive a certificate or award commensurate with the level of their performance, and a report showing how they performed for each question with comparative statistics.
  - b. By participating in a large event and attempting the same problems as other students in other countries, students gain a statistically reliable measure of the standard they have reached regionally, nationally and globally.
  - c. Schools receive a confidential set of statistics to inform their achievement data relative to other regions.
  - d. Mathematics competitions, not only the Australian Mathematics Competition, provide opportunities for students to exhibit their special talents and abilities, are part of the continuum of curriculum provision, enhance students' self-directed learning skills, sense of autonomy and achievement<sup>2</sup>.

### **New Zealand student participation and achievement in the Australian Mathematics Competition**

---

9. The Australian Mathematics Competition is one of a number of mathematical competitions available to students in New Zealand. It is viewed by teachers and students as an enhancement of the provision for mathematical learning experiences in the school curriculum.
10. In 2012 a total number of 20,244 students participated from 330 New Zealand schools. This year 60 prizes were awarded, including 5 medals.

<sup>2</sup> Bicknell, B. (2012). *Competitions and the mathematically gifted*. The University of Waikato, New Zealand. Available from <http://www.giftednz.org.nz/Conference%20PDFs/BIC12030.pdf>

11. Typically the top 0.01% globally of the students who sit the competition qualify for a medal, so as a country New Zealand has performed above the expected ratio of 1 medal per 10,000 entrants. We usually achieve between 3 – 5 medals each year.
12. The competition's aims reflect the vision of *The New Zealand Curriculum* of young New Zealanders as confident, connected, actively involved life-long learners. It encourages thinking and problem solving, self-management, as well as embodying the principle of high expectations, and dispositions for personal excellence.

### **Virtues of achievement in mathematics**

---

13. The essence statement for mathematics and statistics in *The New Zealand Curriculum* identifies that in this learning area “students explore relationships in quantities, space, and data and learn to express these relationships in ways that help them to make sense of the world around them” (page 17).
14. Evelyn Boyd Granville, who is the first African-American woman to earn a doctorate in mathematics in the United States, has spoken all over America on the beauty of math and the need for students to study math in order to train their minds for rigorous and logical thinking. She says, “The study of mathematics enhances one's skill to think logically, to solve problems and to be creative thinkers”<sup>3</sup>.
15. Common ideas about the usefulness of mathematics, and virtues of learning mathematics include:
  - a. Practising mathematics
    - i develops problem solving and organisational skills useful for everyday life, such as managing personal finances and time
    - ii improves the ability to recognise patterns, and to think logically, analytically, critically and creatively
    - iii develops fluency with the symbolic language of mathematical notation and abstract logic.
  - b. Mathematics learning improves
    - i career choices and pathways. Mathematical knowledge is utilised for study and performance in other fields, such as engineering, design, economics and even baking. Consider, which doors of choice close when you stop learning mathematics?
    - ii understanding of the world around you. Mathematics is a universal language and understanding shared by all cultures; it influences our perception of our world and other's lives.
  - c. Mathematics has value for individuals and wider society because
    - i the technologies and science that shape our world and underpin innovation depend on advanced mathematical understanding

<sup>3</sup> <http://www.yale.edu/opa/arc-ybc/v28.n23/story9.html>

- ii the physical world is governed by tremendous amounts of mathematical relations; quantities, rates of change, accumulation of effects, even how parents provide iPads or petrol for their teenagers
  - iii mathematics communicates relationships concisely
  - iv it empowers individuals to manage their own lives and New Zealand to compete globally.
16. An unnamed student summed up the virtue of learning mathematics as “math might be hard, but it is hardly useless.”<sup>4</sup>

### **Details for the Awards Ceremony**

---

17. The event is to be held from 12 noon until 2pm on Thursday, 1 November 2012. The award ceremony will take place in the Legislative Council Chamber, followed by refreshments in the Grand Hall. The host is Executive Director of the Australian Mathematics Trust, Professor Peter Taylor, who will retire at the end of this year.
18. The number of people expected to attend is 100-120, including students and their parents, teachers, Trust staff, Committee Members and other guests. The Ministry cannot provide a confirmed guest list or that of the awardees, but Australian Mathematics Competition Trust in Canberra have said these will be forwarded to your office directly.
19. You have been asked to speak for up to 10 minutes on the virtues of achievement in mathematics, or other appropriate topic; speech notes are attached. You will be introduced by Mr Atkins, and your speech is scheduled to occur at 12.25pm.
20. You will present the top awards which are the Australian Mathematics Competition Medals, to five New Zealand winners.
21. The awards ceremony was previously held in the same venue, hosted by Hon Steve Maharey in 2006, and the Trust kindly acknowledges this past hospitality, and your own for this event.

<sup>4</sup> <http://www.math.uakron.edu/~norfolk/why223f03.pdf>

## 2012 Australian Mathematics Competition

### New Zealand Awards Presentation

Legislative Council Chamber, Parliament Buildings, Wellington

Thursday 1 November 2012

### DRAFT RUNNING ORDER

#### Pre-ceremony

11:00 am	9(2)(a)	arrives and sets up room – seat labels, nametags etc.
11:30 am	9(2)(a)	meets photographer; photographer sets up.
11:45 am	9(2)(a)	briefs students on proceedings.
11.55 am	<b>Prof Taylor</b>	greet Hon Hekia Parata and accompanying staff in foyer.

#### Ceremony

Master of Ceremonies:		Mr Warren Atkins Chair of the Australian Mathematics Foundation
12:00 noon	<b>Mr Atkins</b>	welcomes guests and recipients of awards and introduces AMT Executive Director, Professor Peter Taylor.
12.05 pm	<b>Prof Taylor</b>	speaks about the AMC and Trust activities.
12:15 pm	<b>Mr Atkins</b>	introduces AMC Director for New Zealand, Mr Gus Gale.
12:16 pm	<b>Mr Atkins</b>	explains the Prudence Awards and invites Mr Gale to present <b>15</b> Prudence Awards for the Wellington region.
	<b>Mr Atkins</b>	reads out the name of each Prudence award winner. <i>(Alan Parris hands certificates to Mr Gale as each name is called.)</i>
	<b>Mr Gale</b>	Presents <b>15</b> AMC Prudence Awards.
12:23 pm	<b>Mr Atkins</b>	explains the Prize Awards and invites Mr Gale to present <b>five (5)</b> Prize Awards for the Wellington region.
	<b>Mr Atkins</b>	reads out the name of each prize winner. <i>(Alan Parris hands certificates to Mr Gale as each name is called.)</i>
	<b>Mr Gale</b>	Presents <b>five (5)</b> AMC Prize Awards.
	<b>Mr Atkins</b>	introduces Guest of Honour, Hon Hekia Parata, Minister of Education.
12:25 pm	<b>Hon Hekia Parata</b>	<i>speaks to students and guests.</i>
12:35 pm	<b>Mr Atkins</b>	reads out the name of each of the <b>five (5)</b> medallists and short biography.
	<b>Hon Hekia Parata</b>	<i>presents AMC Medals to five (5) students. (Alan Parris hands the Medals to Hon Hekia Parata as each name is called.)</i>

	<b>Photographer</b>	takes photo of each student accepting their Award, and takes photos of groups as requested at end of presentations.
12:45 pm	<b>Medallists</b>	remain on the stage for group photo after individual presentations have concluded.
	<b>Prof Taylor</b>	thanks Hon Hekia Parata and presents her with a memento.
12:50 pm	<b>Mr Atkins</b>	thanks everyone for their attendance and invites all guests to move to Grand Hall for refreshments.
2 pm – 2.15 pm		<b>Guests depart.</b>

**AMT contact:**

9(2)(a)

**Photographer:**

9(2)(a)

**Caterer:**

9(2)(a)

**Venue:**

9(2)(a)