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# Maths Talent Quest 2017

## Information for Students, Teachers and Parents

### **What is the Maths Talent Quest?**

The focus of the Maths Talent Quest is on the process of mathematical investigations. Open to all primary and secondary students, the Maths Talent Quest aims to promote interest in mathematics and foster positive attitudes amongst students, teachers and parents. First held in 1982, the Maths Talent Quest (MTQ) is an annual activity organised by the Student Activities Committee of The Mathematical Association of Victoria (MAV).

Looking at real life situations and finding that mathematics is everywhere helps capture the imagination of both teachers and students alike. The Maths Talent Quest allows students to investigate mathematics on an individual, group or class basis with the opportunity to have fun exploring mathematics in real life situations.

All MTQ entrants will receive a certificate. Gift vouchers will be awarded to both High Distinction and Distinction winners for each year level at the MTQ Awards Ceremony held in October 2017. The entries that receive a High Distinction at state level are judged separately, one entry from this group forwarded for judging at the National Maths Talent Quest. National Award Winners will also be presented with their prizes at the State MTQ Awards Ceremony.



## Why participate in the Maths Talent Quest?

The Maths Talent Quest:

- Promotes an interest in and increases the awareness of mathematics.
- Facilitates the integration of learning outcomes across the mathematics and across other curriculum areas with in the Victorian or Australian Curriculum.
- Develops student research and communication skills.
- Encourages students to verify and justify the results of an investigation.
- Equips students with problem solving strategies.
- Provides students with the opportunity to discover the practical applications of mathematics.
- Supports independent and collaborative learning.
- Creates avenues for extension for the more able students.
- Allows all students to achieve some measure of success.
- Caters for mixed ability teaching and a variety of learning styles and preferences.

Projects and investigations address all three Victorian and Australian Curriculum content strands:

- Number and Algebra
- Measurement and Geometry
- Statistics and Probability

As well as ensures students work with the four Victorian and Australian Curriculum proficiency strands:

- Understanding
- Fluency
- Problem Solving
- Reasoning

Students are typically required to research, design, explore, create, question, articulate, communicate, think, solve problems, collaborate and communicate whilst completing their MTQ projects. Audiences often range from classmates and teachers, to parents and broader communities.

Digital technology is frequently used as a tool during MTQ for both mathematics and communication. Real-world applications, historical research and working models completed either individually, in groups or as a class are all part of the MTQ process.

Projects and investigations cater for student diversity. They not only provide gifted and talented students with the opportunity to show their ability and to follow interests; they also allow students from diverse backgrounds (particularly those from different cultures and rural centres) to demonstrate how mathematics relates to their lives.

The Maths Talent Quest engages students in mathematics project work and investigations, as well as providing them with an opportunity to use ICT and communicate to their peers, and a state-wide and national audience. In addition, participating in the MTQ rewards student's efforts. MTQ supports teachers with professional learning and resources on how to implement and manage investigative projects, and how to assess and report student achievement.

MTQ investigations can become an ongoing resource for the students in future classes and the work undertaken will assist in addressing the Victorian and Australian Curriculum.

### Who can enter the MTQ?

All students from Foundation to Year 12 can enter the Maths Talent Quest. The Maths Talent Quest is categorised into year levels from foundation to year 9 and a combined year's 10-12 level. Children in early year's settings are also welcome to enter the MTQ, these entries will be entered at a Foundation level.

Entries can be received from:

- Individuals
- Groups of no more than 6 students or;
- Classes of no more than 30 students.





If two or more classes of the same school and year level have investigated a common theme, entries should be submitted separately for each class, ensuring that the entries address a different aspect of the investigation. Where group or class entries involve students from mixed year levels, they will be placed in the higher year level category. **A maximum of 8 entries per year level will be accepted for state judging.** Students following a non-standard pattern of study (home schooling, accelerated students and students in special programs) may choose to enter the MTQ in either the class/year grouping that relates to their age, or they may choose to enter into an older division.



### What can be entered into MTQ?

Please see the Student Information Sheet for a comprehensive list of what can be entered. This document is available at the MAV website:

[www.mav.vic.edu.au/activities/student-activities/maths-talent-quest.html](http://www.mav.vic.edu.au/activities/student-activities/maths-talent-quest.html)

### What is involved in a mathematics investigation?

A mathematics investigation allows students to examine a situation originating in mathematics or the real world which lends itself to inquiry. It involves a series of steps:

- getting to know the situation and formulating questions
- exploring systematically
- making and testing conjectures
- explaining or justifying results
- extending the situation by formulating further questions
- summarising the findings

Investigations require students to use mathematical processes to understand the problem or situation. The types of processes developed by work on investigations include:

- data collection
- symbolising
- classifying
- simplifying
- abstracting
- following and extending patterns
- conjecturing
- communicating



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- justifying and proving
- generalising and hypothesising
- predicting

The important difference between a mathematics investigation and a mathematics problem-solving task is that students need to formulate their own questions from a given situation. By formulating their own questions, students give their teachers a clear indication of their level of knowledge and understanding of their chosen topic.



### How to enter the Maths Talent Quest:

Please refer to the MTQ Coordinator's Checklist. Information on how to enter is summarised below:

- Organise and complete judging at the school level.
- Complete and submit the online registration form for State level judging by Friday 24 July 2017. This can be found on the MAV website at:  
[www.mav.vic.edu.au/activities/student-activities/maths-talent-quest.html](http://www.mav.vic.edu.au/activities/student-activities/maths-talent-quest.html)
- Complete the payment details online to ensure your entries are registered.
- Nominate your judge/s and fill out their details and availabilities online – this is a compulsory component of the MTQ. Please see the judging opportunities information sheet.
- Wait for your MTQ information package to be emailed to your nominated email address two weeks after registration. **Please note entry barcodes will be posted to your school address after MTQ registration closes on Friday 28 July 2017.**

### Please note:

- MTQ Registration opens Tuesday 18 April 2017.
- A maximum of 8 entries per year level will be accepted for state judging.
- Refunds will only be accepted prior to Friday 28 July 2017 (less 50% of entry fee per entry). Please provide your cancellation in writing and include any documentation already sent out. Strictly no refunds will be accepted after this date.
- Registrations close at 5pm on Friday 28 July 2017. No late registrations will be accepted.

### Maths Talent Quest Cost Structure

Number of entries per year level (max 8)	Fee per year level - MAV members (Inc. GST)	Fee per year level - non-members (Inc. GST)
1	\$30	\$37.50
2	\$60	\$75
3	\$90	\$112.5
4	\$120	\$150
5	\$150	\$187.50
6	\$180	\$225
7	\$210	\$262.50
8	\$240	\$300



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### Delivery of MTQ Entries:

All entries must be delivered or posted to the MTQ state judging centre at The Odeon, La Trobe University, Kingsbury Drive, Bundoora on Wednesday 23 August 2017 between 9am and 5pm. All entries hand delivered or couriered, must be received within these times.

If delivering entries by post, please address to:

MAV MTQ State Judging Centre  
C/O Jacqui Diamond  
La Trobe University  
Bundoora  
Victoria 3086

Every component of each entry must be clearly labelled with the official barcoded MTQ entry sticker which will be posted to you after registration closes on Friday 28 July 2017. The total dimensions of the entry (including all components) should not be larger than 70cm in any dimension. Food items will **not** be accepted. Failure to comply with these requirements will lead to **instant disqualification**.

**PLEASE NOTE: Whilst great care is taken when handling entries, The Mathematical Association of Victoria cannot accept responsibility for loss or damage to entries.**

### Notification of Results:

Schools will be notified by email of winning entries between Monday 4 September and Friday 8 September 2017. The judge's decision is final and no correspondence will be entered into.

All entries (excluding High Distinction) must be collected from the state judging centre between Wednesday 30 August (after 12pm) and Thursday 31 August (before 2pm). Entries sent by post can be returned by post on request and at the school's cost. Entries that are not collected by designated times will be discarded unless prior arrangements have been made with the MTQ Coordinators.

### Viewing the winning entries:

After the state judging is complete, a display of the winning entries will be available for viewing at The Odeon, La Trobe University, Bundoora Campus on Wednesday 30 August, 9am – 12pm.



### Prizes Awarded:

A template for a Certificate of Participation will be placed on the MAV website at [www.mav.vic.edu.au/activities/student-activities/maths-talent-quest.html](http://www.mav.vic.edu.au/activities/student-activities/maths-talent-quest.html) with instructions on how to print for the students participating at the school level.

State level prizes are awarded to individual, group and class entries in the following categories:

- **High Distinction** – Gift voucher and certificate
- **Distinction** – Gift voucher and certificate
- **Credit** - Certificate
- **Encouragement** – Certificate

The judges reserve the right not to award any prizes if the standard of entries is not sufficiently high. The judge's decision is final and no correspondence will be entered into.

The top entries from each level will be judged and if considered to be of a sufficiently high standard will be forwarded for judging in The National Maths Talent Quest.

### MTQ Awards Ceremony:

The awards ceremony will be held after the National Maths Talent Quest judging. High Distinction, Distinction and National Award winners will be presented with their prizes at the Victorian Awards Ceremony on Thursday 19 October 2017.

### Hints to get you started:

- Discuss the benefits of students entering the Maths Talent Quest.
- Consider contacting other teachers and schools involved in previous MTQ years.
- Show MTQ PowerPoint to staff which is available at [www.mav.vic.edu.au/activities/student-activities/maths-talent-quest.html](http://www.mav.vic.edu.au/activities/student-activities/maths-talent-quest.html)
- Discuss the MTQ process at the school level or with a team of interested teachers at a teaching team level.
- Include MTQ in the Mathematics Curriculum. Example: Curriculum focus, parent involvement, alternative assessment opportunities.
- Appoint an MTQ Coordinator for your school.
- Start working with classes early.
- Recruit staff teams to assist with school and state judging as part of their Professional Learning and to gain ideas for future classroom activities.
- Consider involving one entire year level in the MTQ and allocate some class time to projects.
- Class teachers can give students ideas and inspiration for project preparation.
- Initiate brainstorming with the students and teachers across the school.
- Excursions to various places can initiate valuable ideas for a practical project.
- Investigation of the mathematical content in a hobby or sport could also be encouraged.
- At all times, consideration must be given to the mathematical content, originality and presentation of entries.





## Judging entries

MTQ entries are to be judged in three stages:

### 1. School Judging

The MTQ School Coordinator is required to gather a group of teachers within the school to judge and select the entries to be sent to the state judging centre. A maximum of 8 entries from each year level that best meet the state judging criteria (found at <https://www.mav.vic.edu.au/student-activities/maths-talent-quest.html>) can be selected and then entered into the state competition.

### 2. State Judging

Occurs from the 24 – 29 August 2017 at the state judging centre at La Trobe University, Bundoora. Teachers from various schools and other invited MAV personnel conduct judging.

The State Judging Rubric can be found at the MAV website. During the assessment of each entry, the judges will score according to the criteria in the state judging rubric. Please refer to this and the document in evaluating your students' work. Each student should have a copy of this before they begin their Maths Talent Quest project.

### 3. National Judging

Occurs in September 2017 at The Mathematical Association of Victoria, Brunswick. Entries into the national level are selected by state organisations or The MAV.

**It is compulsory for each metropolitan school to provide a minimum of two hours judging. Any classroom teacher is eligible to judge, however they will not be required to judge their own school**