

Maths Talent Quest 2020

Information for Students, Teachers and Parents

The Maths Talent Quest is an excellent opportunity for students to develop their mathematics skills and engage in a rich, real life investigation. Investigations can be completed at school or as home tasks. Entries can easily be completed through an online learning platform with the opportunity collaborate online and to digitally register entries.

In 2020 we have implemented changes to ensure your students can still be involved in MTQ without requiring contact at judging and the award ceremony:

State-wide judging

- *This will be limited to two entries, per years level per school.*
- *All entries must be entered in digital format.*
- *Entries will be at a cost of \$35 for members, \$42.50 for non-members.*
- *There will be no judging at La Trobe Bundoora*
- *There will not be a State Awards Ceremony in 2020*

School based judging

- *The majority of judging should be held at a school level, organised by teachers at your school. This will be at NO cost to your school.*
- *MAV will provide participating schools with Achievement Certificates (Participation, Credit, Distinction and High Distinction) templates and guidelines to awards students appropriate grades.*

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 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. In 2020 entries will be judged and awarded certificates by their school. One entry from each category, in each year level, at each school can enter to be judged at the Mathematical Association of Victoria for State-wide judging. From this group, one entry per category will be forwarded for judging at the National Maths Talent Quest judged in September in Western Australia.

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 within 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.

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 Years 10-12 level. Children in Early Years 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.

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. 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:

<https://www.mav.vic.edu.au/Student-activities/Maths-Talent-Quest>

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
- justifying and proving
- generalising and hypothesising
- predicting
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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.

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.
- 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.

Information for teachers entering State-wide MTQ Entries:

- Two investigations from each category in each year level in each school can be entered for judging at the Mathematical Association of Victoria for State-wide judging.
- The cost will be \$35 per entry for member schools and \$42.50 for non-member schools.
- Registrations for State-wide judging close at 5pm on Friday 14 August 2020. No late registrations will be accepted.
- Refunds will only be accepted prior to Friday 14 August 2020 (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.





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- All State-wide MTQ entries must be digital and sent to to the Mathematical Association of Victoria on Thursday 20 August 2020 before 3pm.
- Schools will be notified of results and if their entries will be sent to the National Judging by Friday 28 August.
- Registration can only be completed by schools or home school parents through the MAV MTQ website <https://www.mav.vic.edu.au/Student-activities/Maths-Talent-Quest>
- Please address any questions to Jen Bowden jbowden@mav.vic.edu.au