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## 2003 Professional Experience Award

Applications are invited for the 2003 Professional Experience Award. Sponsored by the Dept of Mathematics & Statistics at The University of Melbourne, this award of \$500 can be used to support:

- Research in mathematics teaching and learning, excluding research associated with graduate or post-graduate courses;
- The preparation of classroom teaching material; conference attendance including conference registration, accommodation and travel costs;
- Any other relevant professional experience approved by the awarding panel.

You or your school must be a current member of the Association to be eligible to apply for this award. Further information is available on the MAV website at: [www.mav.vic.edu.au](http://www.mav.vic.edu.au) or from the MAV office.

Applications close on Friday 4<sup>th</sup> October, and the winner will be announced at the Annual Conference dinner on Thursday 5<sup>th</sup> December.

## VCE Revision Lectures

### Proudly supported by The Age

The MAV is pleased to be hosting VCE Maths Revision Lectures for Unit 3 & 4 students at the following locations:

**Glen Waverley:** Wednesday 25 September

**Footscray:** Thursday 26 September

**Traralgon:** Friday 27 September

**Frankston:** Monday 30 September

**Bendigo:** Tuesday 1 October

**Geelong:** Wednesday 2 October

**Bookings are essential.** For further details and a booking form contact the MAV office on 9380 2399 or visit our website at:

<http://www.mav.vic.edu.au/studact/index.html>



## 2001 VCE Solutions

Solutions are now available for the 2001 VCE Written Exams. Solutions have been prepared for all three subjects, and cost \$30 per study or

\$75 for the full set (inc. GST). They are also available in electronic format (with permission to network within the school) at a cost of \$40 per study or \$90 for the full set (inc. GST). To obtain your copies, complete the publications order form at the back of this issue.

**2002 VCE Trial Examinations will be available later in Term 3, but you can order your copy now on the enclosed order form.**

## Ford Maths Talent Quest



All entries have now been received for judging, and you may even have heard by now whether your school won any prizes! Please remember that collection day for all non-winning entries is Monday 5<sup>th</sup> August.

A selection of the winning entries will be displayed at Scienceworks Museum in Spotswood from 5 to 21 August.

All winning entries will then be on display at the Conference Plaza Centre, The University of Melbourne for the week 25-30 August. During this week you can also take part in the Maths Trail around the University (please note this is the same trail as last year). The trail is suitable for upper primary and lower secondary students. If you want to take part in the trail or visit the display (which is open on Sunday 25 Aug, 10am-4pm, and Monday 26 and Wednesday 28 Aug, 9am-5pm), it is essential that you book through the MAV office. Just call Marianne Reimann on 9380 2399.

The quest will conclude with the awards ceremony at 1:30pm, Friday 30<sup>th</sup> August, at Wilson Hall, The University of Melbourne. Our special guest presenter on the day will be Monash University's resident mathematical juggler, origami expert and bubble-master, Dr Burkard Polster.

## Free Public Lectures

**Tue 27 Aug** - *Shadows from the Fourth Dimension*, with Dr Burkard Polster, Melbourne Museum, 7:30pm

**Sat 14 Sep** - *The Joy of Gambling*, with Dr Marty Ross, The Royal Society of Victoria, 2:00pm

Contact the MAV office or visit our website for further details. **Bookings essential!**

# From the President

## *About Numeracy (Part III)*

While attending the 25<sup>th</sup> conference of the Mathematics Research Group of Australasia (MERGA) held last month in Auckland, I had several opportunities to talk to school and university people who are involved in the New Zealand Numeracy Task Force. This major national initiative is similar to what is currently underway in Victoria and in other Australian States and Territories to provide professional development for teachers to support the teaching and learning of mathematics. Like its Australian counterparts, the New Zealand program has a clear focus on looking at what children know through the use of a range of assessment methods including interviews, small-group tasks and written tasks.

I was impressed by the range of resources, which are being used to implement this program in primary and junior secondary classrooms throughout the country. This is a huge challenge. It is also clear that moving from the early primary years to upper primary and junior secondary requires several important changes of focus. As I remarked in a previous editorial, the introduction of fractions and decimals in the middle years of primary schools presents quite different challenges for children whose prior learning has been focused almost exclusively on whole numbers. That is a major, but not the only, part of the challenge.

Some children try to transfer their whole-number understanding to fractions, with serious misconceptions resulting. Some believe, for example, that the size of the fraction can be worked out simply by looking at the size of the numerator or denominator. Decimal numbers involve a major development of the base-ten system to incorporate tenths, hundredths and so on. A key feature of fractions and decimals is that of *density*. In whole-number thinking, there is, for example, only one number that comes between 7 and 9. And between 7 and 8, there is no in-between number. By contrast, between any two fractions or decimals there is no limit to how many numbers are in between (CD, May 2002, No. 184).

There is a further important development as children need to move from thinking of a fraction in the context of 'making' or 'taking' a fractional part of something, to thinking about a fraction as a number in its own right. In some recent interviews with upper primary and junior secondary students, Cath Pearn and I showed children

a number line marked with 0, 1, 2, and asked them where they would place the number three-fifths on the number line. We were careful to refer to the *number* three-fifths. Some marked it between 0 and 1, but only roughly, saying that it had to be less than 1. Others said that, since three-fifths was just over one half, it should be placed between one-half and 1 but closer to the half. However, there were a few children who thought that they were being asked to find three-fifths of the number line.

Working with fractions, decimals and percentages is a fundamental shift away from additive or part-whole thinking, and almost always requires students to engage in multiplicative thinking. When asked to find three-quarters of 12, students often reason as follows. "I know that one quarter of twelve is 3. So three-quarters will be 9". Asked how they know 3 is a quarter of twelve, students often respond by saying that twelve is four times 3. Multiplicative thinking is involved in both steps. An example of weak multiplicative thinking is as follows. With a number line marked *only* with 0 and  $\frac{2}{3}$ , Cath Pearn and I asked students if they could tell us where the number 2 would be. Some students replied by first locating 1 by marking it a little more than  $\frac{2}{3}$ , basically by guesswork, and then estimating where 2 would be. Contrast this latter approach with much clearer multiplicative thinking, that we were delighted to see among students in Year 6 and 7, when they said something like, "I can work out exactly where 1 is by halving the length represented by  $\frac{2}{3}$  and then adding that ( $\frac{1}{3}$ ) to the two-thirds to get 1, and then doubling to get 2". Very clear multiplicative thinking was shown by one student who said, "If I took three times the length from 0 to  $\frac{2}{3}$  that would be exactly 2".

The recently completed Middle Years Numeracy Research Project, led by Di Siemon and her team at RMIT University, identified multiplicative thinking and working with rational numbers as major sources of difficulty for significant numbers of students in the middle years. I'm looking forward to hearing from New Zealand colleagues on how they are tackling these issues. Two issues are: the extent to which we can identify key points in the development of multiplicative thinking and rational number thinking beyond the early years, and how effectively we can assess students' performance against the framework.

**DR MAX STEPHENS**  
President

## Problem of the Month

### Cats and Venn Diagrams

(Suitable for Year 10-12 students)

In my house there are many cats:

- Seven of the cats won't eat fish.
- Six of them won't eat liver.
- Five of them won't eat chicken.
- Four of them eat neither fish nor liver.
- Three of them eat neither fish nor chicken.
- Two of them eat neither liver nor chicken.
- One of them eats neither fish, liver, nor chicken.
- None of them eat all three foods.

How many cats have I got?

This problem is taken from *Micro Puzzles* by J. J. Clessa, published by Pan Books 1983.

### Last Month's Solution

For last month's solution visit:

<http://nrich.maths.org/mathsf/journal/jun98/prob1.html>

## MAV Research Scholarship

Applications are now sought for the MAV 2003 Research Scholarships. Two scholarships are available for the research component of a Masters or Doctor of Education degree OR towards a research degree (Masters or PhD) are being offered by the MAV for studies in the year 2003. The scholarships are each worth \$1500.

- For the research component (minor thesis) of a Masters degree, or
- For the research component of the Doctor of Education degree, or
- For a research degree, Masters or Ph.D

Applicants MUST be individual members of the MAV or work in schools/institutions with institutional membership. The research topic must be in the field of mathematics education. Any relevant research topic will be considered by the selection panel. Further details and an application form are on the MAV website at: <http://www.mav.vic.edu.au/pd/index.html#awards>

Applications close Friday 4 October, 2002.

## Web Reviews

### Mathematics Task Centre



<http://www.blackdouglas.com.au/taskcentre>

The site was created to celebrate the **10th Anniversary** of the Mathematics Task Centre Project, which is a professional development initiative of Curriculum Corporation. Over 2,000 schools worldwide have supported the project at some level during this time.

On the site you will find:

- News
- Contacts
- Web Sites
- Products
- Documents
- Photographs
- School Visits

This site is worth a look if you are interested in Maths Task Centres, how they operate, ideas and comments from people.

The MAV also has 'The Task Centre Book' available for \$38.50 (inc GST) for members and \$43.95 (inc GST) for non-members (+p&h).

### Math Comics Page

[www.csun.edu/~hcmth014/comics.html](http://www.csun.edu/~hcmth014/comics.html)

This is a site for all of those who enjoy the lighter side of mathematics. It is a collection of math related comics and cartoons. They are sorted by title of comic strip, e.g. Peanuts, Dilbert, and then via math content, e.g. fractions.

Suitable for all year levels and especially teachers!! A great way to start the term.



## Using I.C.T. in Numeracy



A professional development program designed to assist teachers in using computers as complimentary tools for mathematical learning and teaching (CSFII Levels 1 to 4).

Schools will be provided with an **extensive electronic library (on CD)** of stationery and template documents (in MS Word, PowerPoint and Excel, and Kid Pix applications) within an organised curriculum based directory. (**CSFII Mathematics strands and substrands referenced**).

This library of organised files and documents can be a foundation for a primary school community to reference, and add to, in order to develop a rich electronic mathematics resource.

The **mathematical** capabilities of software programs (MS Word, PowerPoint and Excel, Kid Pix, etc.) will be investigated and explored.

**Internet mathematics resources** will also be recommended and explored.

**Mark P Hennessy - Education Consultant**  
**P.O. Box 630, Richmond 3121 Victoria**

**For fee schedule, bookings or enquiries**

Phone: (03) 9898 0662

Email: [mphennes@deakin.edu.au](mailto:mphennes@deakin.edu.au)

## Professional Officer Position

The Mathematical Association of Victoria is seeking a Professional Officer to further develop our services to primary schools, and to coordinate the Association's Publications and Student Activities programs, commencing in January 2003. The successful applicant will have primary teaching experience and related qualifications in mathematics, and will demonstrate a high level of organisational, administrative and interpersonal skills, with excellent attention to detail. The ability to work to strict deadlines in a busy office environment is essential. For further information and position descriptions, visit the MAV website at [www.mav.vic.edu.au](http://www.mav.vic.edu.au). Applications close on Friday 16<sup>th</sup> August, 2002.

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### *Common Denominator Deadlines – 2002*

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Receipt of copy: Monday 12<sup>th</sup> August, 2002

Receipt of inserts: Monday 26<sup>th</sup> August, 2002

For mailing on: Monday 2<sup>nd</sup> Sept, 2002

*Products and services advertised and opinions expressed are not necessarily those of the Editor or the MAV.*

## **Diagnostic Topic Tests 2000 Edition**

**Maths Methods – Units 1, 2, 3 & 4**

**Further Maths – Units 3 & 4**

**Specialist Maths – Units 3 & 4**

*Diagnostic Topic Tests*

- have been specifically written for the currently accredited VCE Mathematics courses.
- allow teachers to monitor and identify students' strengths and weaknesses throughout the year.
- contain fully-worked solutions with diagnostic comments and mark allocation.
- provide questions which develop skills and competencies appropriate to each topic.
- include approaches to answering questions.
- identify concepts being tested.
- identify rules and formulas to be applied.
- offer advice and hints on effective examination techniques.

*Also available for Biology, Chemistry, Physics & Accounting.*

## **Trial Examinations 2002**

**Maths Methods – Units 1, 2, 3 & 4**

**Further Maths – Units 3 & 4**

**Specialist Maths – Units 3 & 4**

- Exams for Units 1 & 2 are ideally suited to be used by teachers for their final testing of students.
- Exams for Units 3 & 4 allow teachers to prepare their students for the style and difficulty of the final exams.

*Also available for Biology, Chemistry, Physics, Psychology, English, Accounting, Business Management, Economics and Legal Studies.*

## **Smartstudy® Titles Now Available!**

**Smartstudy Maths Methods for Exam 1**

**Smartstudy Maths Methods for Exam 2**

**Smartstudy Specialist Maths for Exam 1**

**Smartstudy Specialist Maths for Exam 2**

- Each book contains a comprehensive set of exam questions by topic along with 3 complete practice exams.
- Call NEAP for discount pricing of class sets.

*Also available for Biology, Chemistry and Physics.*

**For further information or to be placed on the NEAP teacher mailing list, contact:**

**National Educational Advancement Programs (NEAP) Pty Ltd**

**58 Pelham Street Carlton Victoria 3053 Tel 03 9663 2523 Fax 03 9663 7182 Web Site [www.neap.com.au](http://www.neap.com.au)**

Have the time  
of your life...

## Become a Monash Engineer

Monash Engineering's prestigious Faculty of Engineering presents an exciting range of study options designed to place you at the cutting edge of future technological innovation. Monash is acknowledged as a world leader in teaching and research and our graduate success rate proves it. Combine this with industry links throughout the world, and a large number of scholarships and an d Monash is definitely the right choice.

The Bachelor of Engineering at Monash is a degree that opens up a great many career opportunities and features a common first year program and the choice of studying at one of four campuses. This provides flexibility and the perfect foundation on which to build your degree in any one of eight industry relevant disciplines. Entry to a Monash engineering degree has a single maths and single science prerequisite. All Monash engineering degrees are accredited by the Institution of Engineers, Australia, giving graduates the opportunity to practise as professional engineers virtually anywhere in the world.

Disciplines include chemical, civil, electrical & computer systems, industrial engineering & engineering management, materials, mechanical and mechatronics engineering. Separate programs in computer systems engineering, telecommunications engineering and environmental engineering are also available. Monash engineering offers double degrees, in various combinations, including the exciting aerospace engineering qualification, made possible by combining qualification as a mechanical engineer with aerospace technology, and biomedical engineering via a double degree with science.

For more information, contact the Faculty of Engineering, Monash University, Wellington Road, Clayton 3800, Victoria, Australia . Telephone +61 3 9905 3403, Fax +61 3 9905 3409. Check out our web site [www.eng.monash.edu.au](http://www.eng.monash.edu.au) or email us on [eng.info@eng.monash.edu.au](mailto:eng.info@eng.monash.edu.au)

# Games Days 2002

Listed below are the schools that are running Games Days in Term 3. If you are planning to host one and would like the MAV to promote it or provide any advice/assistance, contact Pauline Rogers at the MAV on 9389 0304.

- Tuesday 20 August      **Year 7 Games Day**, Scotch College. **This Games Day is now Full.**  
Friday 30 August      **Year 6 Games Day**, Genazzano FCJ College. **This Games Day is now Full.**  
Tuesday 10 September      **Year 5 Girls Games Day**, Matthew Flinders Girls SC, Geelong. Contact Faye Smith for further information on 03-5221 8288 or via email [smith.faye.l@edumail.vic.gov.au](mailto:smith.faye.l@edumail.vic.gov.au) Application form below and on the MAV website

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## MATTHEW FLINDERS GIRLS SECONDARY COLLEGE

Presents

### *A Maths/Science Games Day For Grade Five Girls*

Date: Tuesday 10 September, 2002

Time: 9.30 am – 2.45 pm

You are invited to bring one or two teams of four grade five girls to compete in our Maths/Science Games Day.

Teams will participate in mathematical games employing logic and strategies, mathematical problem solving and scientific 'hands-on' problem solving activities. Games and activities will be selected to challenge and extend students.

Lunch will be provided for all team members and a supervising teacher or parent.

A \$20 entry fee is required for each team entered. (ABN – 67240446589 GST included)

**Upon payment this application will become a Tax Invoice/Receipt. Please complete the entry form below, photocopy and return the copy with a cheque covering the entry fees to MFGSC, PO Box 1285, Geelong, 3220, by Friday 23 August.**

The school is located on the corner of Myers Street and La Trobe Terrace, Geelong. You will be sent further information about the program on receipt of your entry.

Please contact Faye Smith if you require further information.

Phone : (03) 52218288      Fax: (03) 52215926

Email: [smith.faye.l@edumail.vic.gov.au](mailto:smith.faye.l@edumail.vic.gov.au)

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### Year 5 Girls Maths/Science Games Day at Matthew Flinders Girls Secondary College

**\* Tax Invoice (ABN: 67 240 446 589)**

Faye Smith  
Matthew Flinders Girls Secondary College  
PO Box 1285  
Geelong, Vic 3220

Important: A completed copy of this form becomes a **\* Tax Invoice** on payment. Keep a copy of the completed form for your records.  
Date: \_\_\_/\_\_\_/\_\_\_

Name of School \_\_\_\_\_

Number of teams entered \_\_\_\_\_ Entry fee enclosed (inc. GST) \_\_\_\_\_

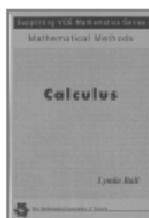
Contact person \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_ Email \_\_\_\_\_

# What's happening in Maths Month - August, 2002

Tuesday 6 <sup>th</sup>	<b>Imaginary Numbers and the Magic They Do.</b> Free public lecture with Dr Marty Ross at the Melbourne Museum - bookings are essential. Call the MAV office on 9380 2399.
Tuesday 13 <sup>th</sup>	<b>Discovering Numeracy Online</b> , MAV "Cliveden", Brunswick. Further Info p. 9.
Wednesday 14 <sup>th</sup>	<b>Activities for Focussed Teaching of Measurement</b> , The Hamilton & Alexandra College, Hamilton. Further info p. 11.
Thursday 15 <sup>th</sup>	<b>Integrating Computers into Level 4 CSF II Maths</b> , Kew Primary School. Further Info p. 9.
Wednesday 21 <sup>st</sup>	<b>CAS Technology Full Day Series</b> , Chaffey Secondary College, Mildura. Further info p. 10.
Friday 23 <sup>rd</sup>	<b>Middle Years (5-9) Maths Teachers' Day</b> , South Morang. For further info visit our website at <a href="http://www.mav.vic.edu.au/pd/index.html">www.mav.vic.edu.au/pd/index.html</a>
Mon 5 <sup>th</sup> to Wed 21 <sup>st</sup>	<b>Ford Maths Talent Quest, Display of selection of winning entries</b> , Scienceworks Museum, Spotswood.
Mon 26 <sup>th</sup> & Wed 28 <sup>th</sup>	<b>Ford Maths Talent Quest, Display of winning entries</b> , Plaza Conference Centre, The University of Melbourne - bookings essential! Call the MAV office on 9380 2399.
Wednesday 28 <sup>th</sup>	<b>Activities for Focussed Teaching of Space</b> , The Hamilton & Alexandra College, Hamilton. Further info p. 11.
Thursday 29 <sup>th</sup>	<b>Integrating Computers into Level 5 CSF II Maths</b> , Kew High School. Further Info p. 9.
Friday 30 <sup>th</sup>	<b>Ford Maths Talent Quest Award Ceremony</b> , Wilson Hall, The University of Melbourne.

## Supporting VCE Mathematics Series



Written by a team of highly experienced teachers and authors, this series is designed to provide support for teachers for a variety of topic areas in the VCE Maths courses. The booklets contain teaching notes, suggested activities and ways of implementing the materials.

All of the booklets have a strong focus on the use of graphics calculators, and technology, where applicable.

### Titles include:

- **#141 Mathematical Methods: Hypergeometric Distributions**  
Suitable for Mathematical Methods Units 3 and 4  
by *John Dowsey* (17 pages)

- **#142 Mathematical Methods: Calculus**  
Suitable for Mathematical Methods 3 and 4  
by *Lynda Ball* (22 pages)
- **#143 General Mathematics: Algebra and Logic**  
Suitable for area of study 4 - Algebra of the Year 11 General Maths course  
by *Antje Leigh-Lancaster* (19 pages)
- **#144 General Mathematics: Non-linear Relations and Equations**  
Suitable for area of study 4 - Algebra of the Year 11 General Maths course  
by *Sean Mangan* (25 pages)
- **#145 Specialist Mathematics Teaching Notes**  
Suitable for Specialist Maths Units 3 and 4  
by *Michael Evans and Antje Leigh-Lancaster* (25 pages)
- **#146 VCE Mathematics, Level 6 CSF: Geometry Using Technology - Cabri II**  
Has applications to General Maths, Further Maths, Mathematical Units 1 - 4 and Specialist Maths  
by *Jill Vincent* (35 pages)

**\$10.00 per booklet or \$40.00 for the whole set (inc GST) + postage & handling**

# Professional Development 2002

Bookings are now being taken for the following professional development activities in 2002 (registration form on the back of this issue). Workshops and their details are also online at [www.mav.vic.edu.au](http://www.mav.vic.edu.au)

## COST:

**After School PDs:** \$40 per session for members; \$50 for non-members (inc. GST).

**Special members offer - make 4 bookings for any combination of after school sessions and only pay for 3!**

**Full Day PDs:** \$120 per day for members; \$150 for non-members (inc. GST). Includes lunch.

**Technology Series/Tours:** Members: \$30 1 session, \$50 2 sessions, \$70 3 sessions per person (inc. GST). Non-members \$40 1 session, \$70 2 sessions, \$100 3 sessions per person (inc. GST).

Date	Title	Year	Location	Time
Tue 13 Aug	Discovering Numeracy Online	10-12 & TAFE	Brunswick	5:00-7:00pm
Wed 14 Aug	Activities for Focussed Teaching of Measurement	P-4	Hamilton	4:30-6:30pm
Thur 15 Aug	Integrating Computers into Level 4 CSF II Maths	5-6	Kew	4:30-6:30pm
Wed 21 Aug	<b>CAS Technology Series Mildura</b> <ul style="list-style-type: none"> <li>• Introductory Workshop for the TI-89/92+/Voyage 200</li> <li>• Symbolic Maths Guide on the TI-92+</li> <li>• Dynamic Geometry on the TI-92+</li> </ul>	10-12	Mildura	9:30-11:00am 11:30am-1:00pm 2:00-3:30pm
Fri 23 Aug	Middle Years Maths (5-9) Teachers' Day	5-9	South Morang (nth metro region)	9:30am-3:30pm
Wed 28 Aug	Activities for Focussed Teaching of Space	P-4	Hamilton	4:30-6:30pm
Thur 29 Aug	Integrating Computers into Level 5 CSF II Maths	7-8	Kew East	4:30-6:30pm
Tue 3 Sep	Integrating Computers into Level 4 CSF II Maths	5-6	Geelong	4:30-6:30pm
Tue 3 Sep	Integrating Computers into Level 5 CSF II Maths	7-8	Geelong	4:30-6:30pm
Mon 9 Sep	<b>Geelong Technology Tour with TI</b> <ol style="list-style-type: none"> <li>1. Intermediate Workshop for the TI-82/83/83+</li> <li>2. Introductory Workshop for the TI-89/92+/Voyage 200</li> </ol>	10-12	Geelong	4:30-6:15pm 7:00-8:30pm
Tue 10 Sep	<b>Warrnambool Technology Tour with TI</b> <ol style="list-style-type: none"> <li>1. Intermediate Workshop for the TI-82/83/83+</li> <li>2. Dynamic Geometry on the TI-92+</li> </ol>	10-12	Warrnambool	4:30-6:15pm 7:00-8:30pm
Wed 11 Sep	<b>Hamilton Technology Tour with TI</b> <ol style="list-style-type: none"> <li>1. Intermediate Workshop for the TI-82/83/83+</li> <li>2. Advanced Workshop for the TI-83+</li> </ol>	10-12	Hamilton	4:30-6:15pm 7:00-8:30pm
Wed 11 Sep	Activities for Focussed Teaching of Chance & Data	P-4	Hamilton	4:30-6:30pm
Thur 12 Sep	<b>Ballarat Technology Tour with TI</b> <ol style="list-style-type: none"> <li>1. Intermediate Workshop for the TI-82/83/83+</li> <li>2. Advanced Workshop for the TI-83+</li> </ol>	10-12	Ballarat	4:30-6:15pm 7:00-8:30pm
Mon 16 Sep	<b>Drouin Technology Tour with TI</b> <ol style="list-style-type: none"> <li>1. Intermediate Workshop for the TI-82/83/83+</li> <li>2. Advanced Workshop for the TI-83+</li> </ol>	10-12	Drouin	4:30-6:15pm 7:00-8:30pm
Tue 17 Sep	<b>Leongatha Technology Tour with TI</b> <ol style="list-style-type: none"> <li>1. Intermediate Workshop for the TI-82/83/83+</li> <li>2. Advanced Workshop for the TI-83+</li> </ol>	10-12	Leongatha	4:30-6:15pm 7:00-8:30pm
Wed 18 Sep	<b>Maffra Technology Tour with TI</b> <ol style="list-style-type: none"> <li>1. Intermediate Workshop for the TI-82/83/83+</li> <li>2. Introductory Workshop for the TI-89/92+/Voyage 200</li> </ol>	10-12	Maffra	4:30-6:15pm 7:00-8:30pm
Thur 19 Sep	<b>Bairnsdale Technology Tour with TI</b> <ol style="list-style-type: none"> <li>1. Intermediate Workshop for the TI-82/83/83+</li> <li>2. Introductory Workshop for the TI-89/92+/Voyage 200</li> </ol>	10-12	Bairnsdale	4:30-6:15pm 7:00-8:30pm

See over for further details.

# Professional Development 2002 cont.

## COST:

**After School PDs:** \$40 per session for members; \$50 for non-members (inc. GST).

Special members offer - make 4 bookings for any combination of after school sessions and only pay for 3!

AFTER SCHOOL EVENTS	Venue	Date & Time
<p><b>Integrating Computers into Level 4 (Year 5 &amp; 6) CSF II Mathematics</b> (Presented by John Vincent)</p> <p>This session will introduce participants to the ways MSWord and Excel (or equivalent word processors/spreadsheets) can be used in many creative ways in the mathematics curriculum, not just those mandated by the CSF. We will work with the CSF strands of Chance and Data, Shape and Space and Number to construct useable teaching units integrating the technology with the curriculum so that small groups can use the material in the numeracy block. <b>These sessions will be run in a computer lab.</b></p>	<p>Kew PS, Peel Street, KEW</p>	<p>Thur 15 Aug 4:30-6:30pm</p>
	<p>Grovedale SC, Wingarra Drive, GROVEDALE</p>	<p>Tue 3 Sep 4:30-6:30pm</p>
<p><b>Integrating Computers into Level 5 (Year 7 &amp; 8) CSF II Mathematics</b> (Presented by Jill Vincent)</p> <p>This workshop session will introduce participants to the dynamic geometry software, Cabri Geometry II, and show how it can be used in Years 7 and 8. The software may be used with pre-prepared files to demonstrate relevant geometry or may be used in an open-ended manner, where students can explore, discover relationships and, with teacher guidance, develop explanations for their discoveries. The session will also include some examples of the use of spreadsheets at Years 7 and 8, and a glimpse of how the software MicroWorlds can be used to enhance understanding and enrich the learning of mathematics at this level. <b>These sessions will be run in a computer lab.</b></p>	<p>Kew High School, Burke Road, KEW EAST</p>	<p>Thur 29 Aug 4:30-6:30pm</p>
	<p>Grovedale SC, Wingarra Drive, GROVEDALE</p>	<p>Tue 3 Sep 4:30-6:30pm</p>
<p><b>Discovering Numeracy Online</b> (Presented by Dave Tout &amp; Penny Halliday)</p> <p>Over recent years, much money and resources have been put into online resource development, often at the expense of print based or even multimedia based resources. There has been a rush to develop websites. Not all have been successful. However, there have been a number of sites that have attempted to be innovative and still cater for the needs of learners and that utilise the benefits of learning online and the WWW.</p> <p>This presentation will visit a range of numeracy or maths sites developed in the adult education sector (including Victoria's TAFE Virtual Campus) that are seen to be useful for teaching numeracy. It will also briefly consider the advantages and disadvantages to using online resources, compared to both print based and other multimedia products.</p>	<p>"Cliveden" MAV Office, 61 Blyth Street, BRUNSWICK</p>	<p>Tue 13 Aug 5-7pm</p>
<p><b>Activities for Focussed Teaching of Measurement</b> (Presented by Peter Martin)</p> <p>Considerable focus has been placed upon open-ended questions and activities as part of the early years strategies for primary teachers. This series of four sessions has been primarily designed for early years teachers and will provide activities for focussed teaching of Number, Measurement, Space, and Chance &amp; Data.</p> <p>Each session will explore one of these topics in turn with respect to the effective use of open-ended questions and creative group work as a means of enhancing teaching in these areas. Participants will be expected to engage in a range of activities, designed to explore and develop strategies for use in the classroom.</p>	<p>The Hamilton &amp; Alexandra College, Junior Campus, Chaucer Street, HAMILTON</p>	<p>Wed 14 Aug 4:30-6:30pm</p>
<p><b>Activities for Focussed Teaching of Space</b> (Presented by Peter Martin)</p> <p>See above for session description.</p>	<p>HAMILTON</p>	<p>Wed 28 Aug 4:30-6:30pm</p>
<p><b>Activities for Focussed Teaching of Chance and Data</b> (Presented by Peter Martin)</p> <p>See above for session description.</p>	<p>HAMILTON</p>	<p>Wed 11 Sep 4:30-6:30pm</p>

# Professional Development 2002 cont.

## CAS Technology Full Day (Mildura) & Technology Tour Series



**\*Proudly Supported by Texas Instruments**

**COST:** Members: 1 session \$30, 2 sessions \$50, 3 sessions \$70 per person (inc. GST). Non-members 1 session \$40, 2 sessions \$70, 3 sessions \$100 per person (inc. GST).

The MAV, in conjunction with Texas Instruments, is hosting a CAS Technology day in Mildura, and a series of technology tours around Western and Eastern Victoria in Term 3. The East and West tour venues are Geelong, Warrnambool, Hamilton, Ballarat, Drouin, Leongatha, Maffra and Bairnsdale. The following topics will be presented by TI's Peter Fox. Topics vary from venue to venue (see PD listing on page 9 for the topics at your venue).

- **Introductory Workshop for the TI-89/92+/Voyage200**

This workshop will focus on the introduction of computer algebra systems (CAS). It assumes that teachers have used a graphing calculator such as the TI-82/83/83+ range. It does NOT assume any knowledge of the TI-89/92+/Voyage200. Teachers do not need to be taking CAS methods to benefit from this workshop. It is relevant to all VCE mathematics teachers. The workshop will focus on using a CAS to perform the following operations: substitute a value into a variable, solve an expression for a given variable, solve an equation for a given value, define a function, factorise a function, graph a function, the y = editor, and basic Calculus

- **Intermediate Workshop for the TI-82/83/83+**

This workshop is suitable for teachers that have been using the TI-82/83/83+ for a number of years and wish to extend their knowledge of the graphical calculator. It is assumed that teachers in this workshop have used the calculator to draw basic graphs and have used some of the menu items available on the calculator. *Many* of the calculator operations dealt with in this workshop are appropriate mainly to VCE mathematics teachers. Topics will include: Graphing techniques, using the CBR™ with the calculator, using calculator programs, and using the probability distributions on the TI-83(+)

- **Advanced Session for the TI-83+**

This workshop is designed for experienced users of the graphical calculator. Some of the session details require an TI-83(+) calculator to be used. (*These can be supplied upon request.*) A personal computer or notebook computer would be of some benefit for this session. (*Note: An IBM R30 Notebook computer will not work in this session.*) Topics will include: Using TI-Connect software to link a graphical calculator to a P.C., transferring data P.C. ↔ Calculator, writing basic programs for the TI-82/83/83+, and working with applications (APPS) such as Start-up\*, Logic Ladder\*, Probability Simulation\*, Inequality, and Transformations. (*\*Free*)

- **Dynamic Geometry on the TI-92+**

The TI-92+ can be used to run either Cabri Geometry or Geometer's Sketchpad. Although a computer will give a more user-friendly environment to work with, the calculator adds genuine portability and access to Dynamic Geometry. Topics will include: Introduction to & examples of, drawing a triangle in Cabri, drawing parabolas, and finding the circumcentre of a triangle.

**Participants need to indicate on their PD application form which calculator they have or which one they would like Texas Instruments to supply.**

Full session details and a booking form for the Technology Tours are included on a flyer with this mailout. Details and application forms for all PDs can also be found on the MAV website at [www.mav.vic.edu.au/pd/index.html](http://www.mav.vic.edu.au/pd/index.html)

# MAV Publications Order Form

# TAX INVOICE

To order any of the publications advertised in this newsletter, fill out the details below and return this form with your payment to the MAV at 61 Blyth Street, Brunswick, Vic, 3056 or by fax on (03) 9389 0399.

Contact Name: \_\_\_\_\_

School: \_\_\_\_\_

Address: \_\_\_\_\_ Post Code: \_\_\_\_\_

Telephone Number: (\_\_\_\_) \_\_\_\_\_ Fax Number:(\_\_\_\_) \_\_\_\_\_

**Please supply:**

Qty	Title	Total
<b>Postage and Handling inc. GST</b> <b>For orders: less than \$40 - \$5.00, from \$41 to \$100 - \$7.00, over \$100 - \$10.00.</b> <b>For overseas orders, contact the MAV office for rates.</b>		
<b>TOTAL PAYABLE INC. GST</b>		

**Method of Payment**

Please note: orders will not be processed until we have received full payment or you have quoted your school's purchase order number below.

1. Cheque: I enclose my cheque/ money order for \$\_\_\_\_\_ (made payable to the MAV)

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The Mathematical Association of Victoria - ABN 34 004 892 755  
 61 Blyth Street  
 BRUNSWICK VIC 3056

# Professional Development Application Form

## TAX INVOICE

School: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_  
Postcode: \_\_\_\_\_

Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_

Principal's Endorsement (if required): \_\_\_\_\_

MAV Membership:  Institutional  Individual  Non-member

JCSAN Member:  If member, name of Association: \_\_\_\_\_

Please reserve places for the following:

Date	Title of Session	Name of Attendees	Cost (inc. GST)
<b>TOTAL COST INC. GST</b>			

### Method of Payment:

I enclose a cheque/money order/purchase order for \$ \_\_\_\_\_ (made payable to MAV)

Purchase Order No. \_\_\_\_\_

OR

Please charge \$ \_\_\_\_\_ to my:  Bankcard  Mastercard  VISA card

Card Number:

Name on card: \_\_\_\_\_

Expiry Date: \_\_\_\_\_ Signature: \_\_\_\_\_

Please return this form to:

The Mathematical Association of Victoria (ABN 34 004 892 755)

Cliveden, 61 Blyth Street, BRUNSWICK VIC 3056, Tel. 9380 2399, Fax. 9389 0399

### ACKNOWLEDGEMENT LETTERS

Letters of acknowledgement are only sent out to attendees for full day professional development sessions. Those people attending after school professional development sessions will only be notified if a place is not available.

### CANCELLATION:

If you are unable to attend a session that you have booked into, refunds will not be issued if you cancel your booking less than 48 hours prior to the session. Bookings are transferrable to another person.