Newsletter No. 184
May, 2002

Inside

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2002 MAV Conference

Get Your Options in now!

"Valuing Mathematics in Society", 5 & 6 December, 2002

Don't miss out on presenting an option at the 2002 MAV Conference! The closing date for receipt of option forms is Friday 10 May. If you have misplaced the application form just visit our website at:
www.mav.vic.edu.au/pd/confs/index.html
to download one. Alternatively, contact the MAV office on 03-9380 2399 for a form.

2002 Ford MTQ

Late Applications accepted!

Late applications can still be submitted for this year's Ford Maths Talent Quest. If you have any queries about the procedure please don't hesitate to contact Pauline Rogers on 03-9389 0304.

Ford MTQ - Call for Judges

Professional Development Opportunity.

Come and help judge the 2002 Ford Maths Talent Quest and get lots of ideas for MTQ and your classroom. See enclosed flyer for further details.

Full Day PDs 2002

Middle Years Maths Day - Tuesday 4 June, Traralgon

Primary Maths Day - Monday 17 June, Bendigo

This is your last chance to book for these two regional events! The Middle Years day will be particularly useful to teachers coping with mixed ability, mixed experience students in their 5-9 classrooms. The focus for the Primary day will be on teaching strategies to assist all learners, and will include open questions, games, hands-on activities, mental computation and technology. **Both programs are being repeated at metropolitan venues in term 3** (see page 8 for dates and venues).

All programs and registration forms were included in last month's Common Denominator, and can also be downloaded from our website at www.mav.vic.edu.au/pd/pd2002.htm, or contact the MAV office on 03-9380 2399 for a copy.

Education Week 2002

Free Lectures

This year the MAV is delighted to be hosting 2 FREE public lectures for Education Week:

Tuesday 21 May (7:30pm) - *The Maths of a Beautiful Mind* with Dr Marty Ross

Thursday 23 May (7:30pm) - *The Secrets of Soap Bubbles* with Dr Burkard Polster

Venue: Activity Rooms (via main entrance) Melbourne Museum, Carlton Gardens

Suitable for Year 10 students to adults. Further details on page 3. To book, contact the MAV office on (03) 9380 2399 or email office@mav.vic.edu.au **Bookings essential!**

MAV Reference Library

Come and Visit Us!

Members may not be aware that the MAV office in Brunswick has an excellent reference library for mathematics teachers and education students. We have recently completed a total reorganisation of our library, so now you can easily search and locate the book that you are looking for. The collection of over 1300 items covers all year levels, and includes many of the current maths text books, resource books, hands-on activities, past exams, supplier catalogues, an excellent selection of national and international periodicals, as well as curriculum documentation.

Feel free to visit us during office hours - the office is usually open Monday to Friday from 9.00am to 5.00pm, but it is always worth giving us a quick ring prior to coming in. Photocopying is available in the office @ 10c per A4 page.

The extensive library catalogue is now on the MAV website, so you can check out our collection before making the effort to visit. Just go to www.mav.vic.edu.au

From the President

About Numeracy (Part II)

There are similarities between good teaching in literacy and numeracy. But school mathematics embodies some quite special features which are not paralleled in literacy. These are the several quite major conceptual transitions that children need to complete in primary school mathematics.

Children who appear to be working confidently with whole numbers can experience new problems when they first meet fractions and decimals in the middle years of primary school. Similar problems arise for students when they first meet algebra (that will be a topic for later discussion). Each of these presents a conceptual transition which some children cross relatively easily, but which others find more troubling, and which are quite insurmountable for a few.

These major hurdles or transitions are not so evident in literacy, but pervade school mathematics. It is therefore a challenge for teachers to anticipate both where children are coming from and how they can be helped to grow in understanding. Why is this? There are several reasons, but perhaps one of the most important is that while students can model whole numbers using relatively simple models, modelling fractions and decimals are quite different. Of course, it is possible to cut something into three equal pieces, but that is not a model of one third. What is there, is three pieces. The fraction, one third, is embodied in the relation between one of those (equal) parts to the whole.

Moreover, some children try to transfer their whole-number understanding to fractions, with serious misconceptions resulting. Think of those children who believe that a larger denominator indicates a larger fraction. "Or is it a larger numerator?", some wonder without being sure. Equivalent fractions present other children with problems. Some children rely on one model (the ever popular circle or pie) to capture an understanding of fractions. A circular or pie model goes only so far. It needs to be supplemented with linear models. Children also need other ways of representing fractional parts of a number of discrete objects.

Decimal numbers involve a major development of the base-ten system to incorporate tenths, hundredths and so on. Some models might look 'OK', but ultimately defeat themselves. Dollar-and-cents thinking sometimes is used by students and teachers as a neat way of ordering one and two decimal place numbers. This model does not help students to think of the numbers after the decimal point as tenths and hundredths. Students who use this model often think that 3.42 and 3.4256 are really the same, that is, they can both be thought of as $3.42. "Those extra bits on the end don't matter".

Furthermore, a completely new conceptual 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. A circle or pie model of fractions does not help children readily to see this feature. A number line is able to provide a more useful way of modelling density. The dollar-and-cents model of decimals does not illustrate density as there is no amount between 3 dollars 42 cents and 3 dollars 43 cents.

Each of these conceptual transitions presents a challenge for teachers and students. Good teaching lays foundations in preparation for what is to follow. For example, simple models of and ideas about fractions can be included in early years' programs. Conceptual transitions shouldn't be hurried, or brushed aside in favour of skill training. Without conceptual understanding, procedures are easily forgotten or misapplied. Last year, I had some students at university who had forgotten how to add fractions. Their question was: "Do you add the top numbers together and the bottom numbers also?" Somehow the skills had become disconnected from understanding.

DR MAX STEPHENS
President

Common Denominator Deadlines – 2002

Receipt of copy:	Monday 24th June, 2002
Receipt of inserts:	Monday 8th July 2002
For mailing on:	Monday 15th July, 2002

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

Mornington Peninsula Schools' Numeracy Conference

Calculating Risks in a Numerate World

Featuring over 20 high profile presenters, including Di Siemon, John Gough, Helen Forgasz, Sue Gunningham, Doug Williams, and including a keynote presentation from Scott Flansberg, USA (The Human Calculator).

When: Monday 24 June, 2002, 9:00am-4:00pm

Where: Toorak College, Old Mornington Road, Mount Eliza

Cost: $95 per person, which includes lunch.

Applications close: Friday 31st May, 2002

For full program details contact Peter Wyatt or Louise Wright at Kingsley Park Primary School on 9789 0077 or at wyatt.peter.f@edumail.vic.gov.au

New MAV Resources

Solutions to 2001 Maths Exams

Prepare effectively for the 2002 VCE Mathematics Examinations by ordering your copy of the solutions to the 2001 Written Exams now. All three studies catered for. Available in either hardcopy ($30 per study or $75 for the complete package) or electronic format ($40 per study or $90 for the complete package). All prices include GST. An order form was included in last month's mailout, or you can order using the form at the back of this newsletter.

Prime Number

Some primary subscribers may not have received their copy of the March issue (Vol 17 No. 1) of Prime Number. If you did not receive your copy, please contact the MAV office on 9380 2399 so that we can send you one. Our apologies for any inconvenience this may have caused.

Free Public Lectures

The Maths of a Beautiful Mind

(Tuesday 21 May, 7:30pm, Melbourne Museum)

It is a rare event when Hollywood decides that a mathematician is the worthy subject for a movie. Such an event was the making of "A Beautiful Mind", based on the life of the brilliant mathematician John Nash. In this talk, we'll fill some of the gaps in the movie, giving a gentle introduction into the mathematics of John Nash.

The Secrets of Soap Bubbles

(Thursday 23 May, 7:30pm, Melbourne Museum)

Kids love blowing bubbles because of their beauty and because of the mess involved. Mathematicians love bubbles because of the beautiful mathematics they exhibit (and because of the mess involved). Come and discover some of the best kept secrets of bubble-maths. Learn how to blow square bubbles, bubbles in bubbles, and other tricks, even more beautiful and mathematical and messy.

To book contact the MAV office on (03) 9380 2399, email office@mav.vic.edu.au or use the PD application form on the back of this issue. **Bookings essential.**

VCE Revision Lectures 2002

Proudly supported by The Age

This year the MAV will be hosting VCE Maths Revision Lectures for Unit 3 & 4 students at six venues around Victoria:

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. Further details and a booking form are available on our website at: http://www.mav.vic.edu.au/studact/index.html, or look out for the flyer in next month's Common Denominator.

Problem of the Month

My House Number

(Suitable for Year 5-8 students)

My house number is made up of 3 digits whose sum is 15.

- If one of the digits is 5 and another is 4, what possible numbers could my house number be?
- If 2 of the digits are 4's, what possible numbers could my house number be?
- If one of the digits is a 7, what possible numbers could my house number be?
- How many 3-digit house numbers are there, which are made up of digits whose sum is 15?

This problem is taken from *1995 Primary Mathematics Challenge*, by Bruce Henry *et al.* The Primary Maths Challenge Books (1994, 1995 and 1998) are available from the MAV at a cost of 3 for $10 (inc. GST) plus postage.

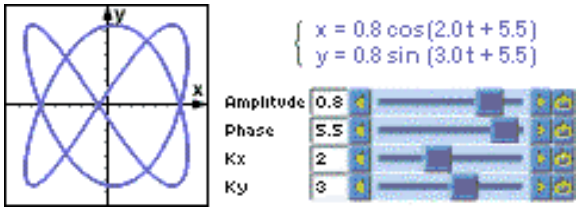
Web Reviews

MathAid

www.mathaid.com/

This is a highly interactive Java-based website for e-learning mathematics. The courses include theoretical concepts, hands-on examples featuring animated graphics and formulas, problem-solving lessons, and customizable real time tests. Topics covered include Algebra II, College Algebra, Trigonometry, and Pre-Calculus.

The site contains download materials that you can examine before you commit to the purchase of a product.



The City of Melbourne

www.melbourne.vic.gov.au/

Visit the City of Melbourne Website under the section *About Melbourne*, *Research and Statistics*, to find a wealth of statistical information on a range of topics such as:

- Capital City Index
- Environmental indicators of metropolitan Melbourne
- Melbourne city suburbs - economic and population profile

Information is downloadable in the form of a pdf of multiple pages, and there is a summary of the pdf's available on the web site. Information on the site would be suitable for both upper primary and secondary students and their teachers who are looking for statistics about the City of Melbourne.

Below is a sample of one of the tables from the information about 'Environmental indicators of metropolitan Melbourne'.

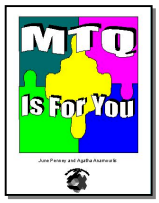
INDICATOR: Table 1. Mode of travel for all trips in metropolitan Melbourne 1995 – 1999.

Mode of travel	1995	1997	1999
Not stated	0.3%	0.0%	0.0%
Walking	24.3%	25.7%	24.0%
Bicycle	1.5%	1.2%	1.1%
Car driver	42.7%	42.5%	43.7%
Car passenger	23.3%	22.4%	23.3%
Train	2.7%	2.7%	3.0%
Tram	1.7%	1.9%	1.8%
Bus (school and other)	2.3%	2.3%	2.0%
Motorcycle	0.1%	0.1%	0.2%
Other (includes truck and taxi)	1.2%	1.2%	0.9%
Group Total	100.0%	100.0%	100.0%

Source: VATS data, provided by the Department of Infrastructure.

Ford MTQ Resources

Two resources have been developed and produced to support teachers in the MTQ, both at the primary and secondary levels.

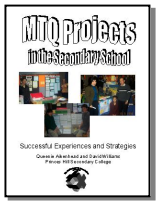


PRIMARY

MTQ Is For You

(Agatha Anamourlis & June Penney)

Hard copy: $20 inc. (GST) plus postage



SECONDARY

MTQ Projects in the Secondary School

(Queenie Aikenhead & David Williams)

Hard copy: $15 (inc. GST) plus postage

Free electronic copies (pdf) to members (please send an e-mail to mavoffice@mav.vic.edu.au)

Games Days 2002

Listed below are the schools that are running Games Days in Terms 2 and 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.

Wednesday 19 June	**Year 9 Games Day**, Blackburn High School. Contact Mike Westbrook for further information on 03-9878 4477 or via email mwe@blackburnhs.vic.edu.au Applications close Mon 3 June.
Wednesday 24 July	**Year 8 Games Day**, Penleigh and Essendon Grammar School. Contact Roger Blackman for further information on 03-9336 1855 or via email roger.blackman@pegs.vic.edu.au Applications close Friday 21 June. Application form below.
Tuesday 6 August	**Year 7 Games Day**, Scotch College. Contact Michelle Linossier for further information on 03-9810 4374 or via email michele.linossier@scotch.vic.edu.au
Friday 9 August	**Year 10 Games Day**, Methodist Ladies' College. Contact Allason McNamara for further information on 03-9274 8108 or via email mcnamaam@mlc.vic.edu.au Application form available on the MAV website at http://www.mav.vic.edu.au/studact/index.html
Friday 30 August	**Year 6 Games Day**, Genazzano FCJ College. Contact Phil Tascone for further information on 03-8862 1000 or via email tascop@gen.melb.catholic.edu.au

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SIXTH STATEWIDE GAMES DAY AT

Penleigh and Essendon Grammar School

The sixth Statewide Games Day for Year 8 students, organised by Penleigh and Essendon Grammar School in conjunction with the MAV, will be held on Wednesday 24 July, 2002, at the senior campus of Penleigh and Essendon Grammar School, in Rachelle Road, East Keilor.

Schools may nominate one or two teams of four students each, at a fee of $20 per team. The day's activities will start at 10.00am and conclude at approximately 2.30pm, and lunch will be provided. The Games Day promises to be one which is intellectually challenging, competitive and fun.

Please detach the form below and mail it, along with your entry fee, to the address shown below, by Friday 21 June, 2002.

Make cheques payable to Penleigh and Essendon Grammar School (ABN: 90 006 038 071).

Further enquiries should be made to Roger Blackman on 03-9336 1855, or fax 03-9336 3421.
E-mail: roger.blackman@pegs.vic.edu.au

MATHEMATICS GAMES DAY FOR YEAR 8 STUDENTS, 24 July 2002

Tax Invoice **ABN: 90 006 038 071**

Penleigh and Essendon Grammar School
Rachelle Road
EAST KEILOR VIC 3033

NAME OF SCHOOL: _____

ADDRESS: _____ POSTCODE:_____

PHONE: _____FAX:_____

TEACHER CONTACT: _____

NUMBER OF TEAMS: _____

Send this form with your payment to:
Mr R. Blackman, c/- Penleigh and Essendon Grammar School, PO Box 417 NIDDRIE VIC 3042, **by 21 June, 2002**

IMPORTANT: A completed copy of this form becomes a **Tax Invoice** on payment. Keep a copy of the completed form for your records. The original must be returned with your payment. Date: _____/_____/_____

Upcoming Conferences

2nd International Conference on the Teaching of Mathematics
Where: Island of Crete, Greece
When: 1-6 July, 2002
Website: http://www.math.uoc.gr/~ictm2

International Conference organised by the Mathematics Education into the 21st Century Project:
"The Humanistic Renaissance in Mathematics Education"
Where: Citta del Mare Hotel, Sicily, Italy
When: 20-25 September, 2002
Website: http://www.math.unipa.it/~grim/palermo2002

The Australian Association of Mathematics Teachers: "Mathematics ~ Making Waves"
Where: Brisbane, Australia
When: 13-17 January, 2003
Website: http://www.aamt.edu.au/2003

The 10th ICME (International Congress on Mathematical Education)
Where: Copenhagen, Denmark
When: 4-11 July, 2004
Website: http://www.icme-10.dk/

Free Workshop

Michael Serra: Patty Paper Geometry

What do hamburgers have to do with geometry? Nothing, but the translucent squares of paper used by restaurants to separate hamburger patties have a LOT to do with it.

Best selling author, and popular speaker, Michael Serra brings discovery through paper folding activities to the classroom with this exciting two hour workshop.

Patty paper is perfect for geometric investigations. You can write on the paper and see creases and traces when you fold it. It's a great way to explore geometry from a hands-on, tactile approach.

This **free** workshop is sponsored by Objective Learning Materials. Book early by telephone (03 9796 1177) fax (03 9796 1832) or email (jlawton@wgaustralia.com.au). Registration applications should be addressed to John Lawton. **Book early to avoid missing out.**

You can explore patty paper geometry with Michael Serra's book Patty Paper Geometry, which is available for sale from OLM. They even stock patty papers!

Workshop details:

Date: Tuesday 21 May

Time: 4.30 to 6.30 pm

Venue: *Cliveden,* MAV, 61 Blyth Street, Brunswick

Bookings: contact Objective Learning Materials

Important Dates 2002

19-26 May	Education Week
Tuesday 21 May	Free Patty Paper Geometry Workshop, 4:30-6:30pm (with Michael Serra), MAV, 61 Blyth Street, Brunswick. For bookings contact John Lawton (Objective Learning Materials) on 03 9796 1177 or email jlawton@wgaustralia.com.au **Places are limited - bookings essential.**
Tuesday 21 May	Free Public Lecture - *The Maths of a Beautiful Mind*, Melbourne Museum, Carlton, 7:30-9pm
Thursday 23 May	Free Public Lecture - *The Secrets of Soap Bubbles*, Melbourne Museum, Carlton, 7:30-9pm
Tuesday 4 June	Middle Years Maths Teachers' Day, La Trobe Motel & Convention Centre, Traralgon, 9:30am-3:30pm
Monday 17 June	Primary Maths Teachers' Day, La Trobe University, Bendigo, 9:00am-3:20pm
Monday 24 June	*Mornington Peninsula Schools' Numeracy Conference*, 9:00am-4:00pm, Toorak College, Mt Eliza. For information and bookings contact Peter Wyatt or Louise Wright, Kingsley Park PS, on 9789 0077 or email wyatt.peter.f@edumail.vic.gov.au
Friday 26 July	Delivery of Ford MTQ entries to State Judging Centre, Brunswick South West PS
August	Maths Month
Friday 23 August	Middle Years Maths Teachers' Day, Plenty Ranges Convention Centre, South Morang, 9:30am-3:30pm
Friday 30 August	Ford MTQ Award Ceremony, The University of Melbourne
2-8 September	National Literacy and Numeracy Week
Friday 6 September	Primary Maths Teachers' Day, Edmund Barton Centre, Moorabbin, 9:00am-3:20pm
5-6 December	MAV 39th Annual Conference, Monash University, Clayton - Have you sent your option in yet?

Professional Development 2002

Bookings are now being taken for the following professional development activities in 2002 (registration form on the back of this issue). Further workshops and their details will be published here monthly, and online at 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.

Special members offer - $100 per person for schools sending 4 or more teachers (inc. GST)

TERM 2				
Date	**Title**	**Yr Level**	**Location**	**Time**
Wed 22 May	Interactive Worksheets for 9s and 10s	9-10	Keilor	4:30-6:30pm
Wed 29 May	Interactive Worksheets for 9s and 10s	9-10	Heathmont	4:30-6:30pm
Wed 29 May	From Filing Cabinet to Classroom	9-10	Geelong	4:30-6:30pm
Mon 3 June	Open Ended Activities and Numeracy Teaching for P-6	P-6	Mildura	4:30-6:30pm
Tue 4 June	Middle Years Maths Teachers' Day	5-9	Traralgon	9:30am-3:30pm
Thur 6 June	From Filing Cabinet to Classroom	9-10	Keilor	4:30-6:30pm
Wed 12 June	From Filing Cabinet to Classroom	9-10	Heathmont	4:30-6:30pm
Wed 12 June	Classroom Strategies for Students with Learning Difficulties	9-10	Geelong	4:30-6:30pm
Mon 17 June	Primary Maths Teachers' Day	P-6	Bendigo	9:00am-3:30pm
Tue 25 June	Integrating Computers into Level 4 CSF II Maths	5-6	Swan Hill	4:30-6:30pm
Tue 25 June	Integrating Computers into Level 5 CSF II Maths	7-8	Swan Hill	4:30-6:30pm
Wed 26 June	Integrating Computers into Level 4 CSF II Maths	5-6	Shepparton	4:30-6:30pm
Wed 26 June	Integrating Computers into Level 5 CSF II Maths	7-8	Shepparton	4:30-6:30pm
TERM 3				
Date	**Title**	**Year**	**Location**	**Time**
Wed 24 July	Classroom Strategies for Students with Learning Difficulties	9-10	Heathmont	4:30-6:30pm
Thur 25 July	Classroom Strategies for Students with Learning Difficulties	9-10	Keilor	4:30-6:30pm
Wed 31 July	Activities for Focussed Teaching of Number	P-6	Hamilton	4:30-6:30pm
Wed 14 Aug	Activities for Focussed Teaching of Measurement	P-6	Hamilton	4:30-6:30pm
Fri 23 Aug	Middle Years Maths Teachers' Day	5-9	South Morang	9:30am-3:30pm
Wed 28 Aug	Activities for Focussed Teaching of Space	P-6	Hamilton	4:30-6:30pm
Fri 6 Sep	Primary Maths Teachers' Day	P-6	Moorabbin	9:00am-3:30pm
Wed 11 Sep	Activities for Focussed Teaching of Chance and Data	P-6	Hamilton	4:30-6:30pm

See over for further details.

Professional Development 2002 cont.

COST:

After School PDs (4:30-6:30pm): $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!

CHALLENGING 9'S AND 10'S SERIES (4:30-6:30pm)	Venue	Date
2. Interactive Worksheets for 9's and 10's *(Presented by Sandy Fletcher)* This hands-on workshop will enable participants to experience a range of activities, which incorporate the use of technology. This allows students to learn at their own rate, thereby helping teachers to cope with mixed ability classes. Part of this session will involve instruction on how to create your own interactive worksheets. Teachers will leave the workshop with examples of worksheets that they have created.	Oberon High School, GEELONG	Wed 15 May
	Overnewton College, KEILOR	Wed 22 May
	Heathmont Junior College, HEATHMONT	Wed 29 May
3. From Filing Cabinet to Classroom *(Presented by Pauline Rogers)* This session will concentrate on providing teachers with a wide range of ready to go activities. A smorgasbord of practical, hands-on fun activities to be used with those hard to challenge, hard to motivate year 9s and 10s. Opportunities to work through some of the activities and share ideas on enthusing students and teachers will be given.	Oberon High School, GEELONG	Wed 29 May
	Overnewton College, KEILOR	Thur 6 June
	Heathmont Junior College, HEATHMONT	Wed 12 June
4. Classroom Strategies for Students with Learning Difficulties *(Presented by Sharon Azzopardi & Laura Gregory)* This session will look at students in the middle years with mathematical learning difficulties, in view of improving their learning outcomes with a language focus. Various strategies, which can be used to make tasks accessible to all students, will be demonstrated, as well as steps on how to clarify problem solving activities. The application of mathematical investigations, using the computer as an option to structure tasks, will be outlined. This approach can be made to be adaptive in response to student learning difficulties.	Oberon High School, GEELONG	Wed 12 June
	Heathmont Junior College, HEATHMONT	Wed 24 July
	Overnewton College, KEILOR	Thur 25 July

OTHER AFTER SCHOOL EVENTS (4:30-6:30pm)	Venue	Date
Open Ended Activities and Numeracy Teaching for P-6 *(Presented by Peter Sullivan)* This session presents a range of open-ended activities, describes the ways that such activities can be used to support student learning, and outlines the contribution that such approaches can make to school and level planning, and the building of classroom learning communities. *The MAV and La Trobe University Mildura are co-hosting this professional development session.*	La Trobe University, MILDURA	Mon 3 June
Integrating Computers into Level 4 CSF II Mathematics *(Presented by John Vincent)* 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. Participants will also learn how to use the creative multi-media programme MicroWorlds, and mention will be made of other applications as time permits. 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. **To practice some of the activities please bring a laptop to the session.**	Swan Hill College, Pye Street, SWAN HILL	Tue 25 June
	Guthrie Street PS, Guthrie Street, SHEPPARTON	Wed 26 June

OTHER AFTER SCHOOL EVENTS cont. (4:30-6:30pm)	Venue	Date
Integrating Computers into Level 5 CSF II Mathematics *(Presented by Jill Vincent)* 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. **To practice some of the activities please bring a laptop to the session.**	Swan Hill College, Pye Street, SWAN HILL	Tue 25 June
	Guthrie Street PS, Guthrie Street, SHEPPARTON	Wed 26 June
Activities for Focussed Teaching of Number *(Presented by Peter Martin)* 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, • chance and data. 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 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.	The Hamilton & Alexandra College, Junior Campus, Chaucer Street, HAMILTON	Wed 31 July
Activities for Focussed Teaching of Measurement *(Presented by Peter Martin)* As above.	HAMILTON (as above)	Wed 14 Aug
Activities for Focussed Teaching of Space *(Presented by Peter Martin)* As above.	HAMILTON (as above)	Wed 28 Aug
Activities for Focussed Teaching of Chance and Data *(Presented by Peter Martin)* As above.	HAMILTON (as above)	Wed 11 Sep

Are any of the professional development topics that you are interested in not listed here? Are the venues to far away? Are the dates and times inconvenient? If so, contact Mary Walkinshaw at the MAV office with your suggestions (mwalkinshaw@mav.vic.edu.au). It only requires 15 or so attending teachers to make an afternoon workshop viable.

www.mav.vic.edu.au

Visit the MAV website to keep up to date with the latest Professional Development events in between issues of the Common Denominator. You can also access current information about all of our activities including the Ford Maths Talent Quest, VCE revision lectures, maths camps and games days, new publications/resources, and MAV scholarships and awards.

Hassle Free Professional Development

Professional Development activities specific to a school or network can also be arranged through our Hassle Free PD program. Contact the MAV office for further details. As a rough guide, one presenter for a full day PD would cost approximately $750 - $1000.

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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
	Postage and Handling inc. GST **For orders: less than $40 - $5.00, from $41 to $100 - $7.00, over $100 - $10.00.** **For overseas orders, contact the MAV office for rates.**	
	TOTAL PAYABLE INC. GST	

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)

2. Credit: ☐ Bankcard ☐ Mastercard ☐ VISA

Card Number: ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐

Signature: _____ Expiry date: _____

Cardholder's name: _____

- Purchase Order Number: _____

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)
TOTAL COST INC. GST			

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.