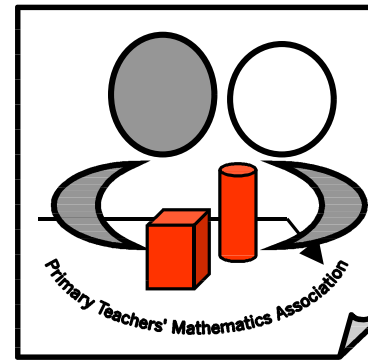


PRIMARY TEACHERS' MATHEMATICS
ASSOCIATION

NEWSLETTER

No. V

Spring 2004



New PTMA Committee

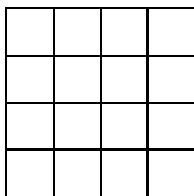
Welcome to the first PTMA newsletter of the year. This year, the Committee is being chaired jointly by Thérèse Dooley and Patsy Stafford. An interesting line up of workshops is planned as well as new editions of the newsletter. The committee would welcome new members to join. All that is required is that you are interested in the teaching of mathematics at primary school level and that you can attend the meetings (usually held about once a month). If you are interested please e-mail Patsy Stafford at pstafford@froebel.ie

DATES FOR YOUR DIARY

DATE	TOPIC	TIME	VENUE
Tuesday, March 23 rd	Fraction Frenzy	7:30 – 9:00 pm	Froebel College of Education, Sion Hill, Blackrock
Tuesday, April 27 th	Marvellous Measures	7:30 – 9:00 pm	St. Patrick's College, Drumcondra

Competition (Last Issue)

September's competition was won by Sixth Class, Mercy Primary School, Birr, Co. Offaly. Teacher: Miss Teehan. They correctly noticed that there are 30 squares in this figure.



1 = 4x4
4 = 3x3
9 = 2x2
16 = 1x1.

Thanks to everyone who entered the competition. The winning class will receive a €25 book token.

Competition (Current Issue)

This month's competition is open only to PTMA members who have paid up for 2004.

The challenge is to submit a Mathematics problem solving activity and solution that is suitable for primary school children.

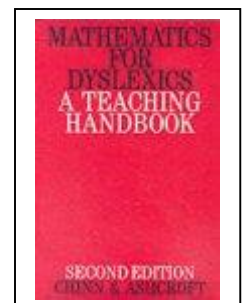
The winning problem will be posted on the website (www.primarymaths.ie) and the winner will receive a copy of Maths Circus Act 1 software (see review below) generously donated by DISCOVERY (<http://www.discovery.ie>).

To enter the competition please send the entry by e-mail to primarymaths@ireland.com to reach us no later than 5pm on Friday, March 26th, 2004.

REFERENCE BOOKS FOR MATHEMATICS

A committee member of the PTMA is subscribed to a mathematics mailing list where the following problem was recently posted: *Could anyone advise as to what reference books I should buy which would help me to understand difficulties with Maths and to plan programmes of Learning Support in Maths?*

One book that immediately comes to mind is Mathematics for Dyslexics by Chinn and Ashcroft. If any readers have found other books or resources useful in this regard please let us know and we can include the information in the next newsletter.



Adding or Multiplying – Which is Stronger?

Last week, the numbers were having an argument over which operation was the stronger, adding or multiplying.

One said that adding was stronger: “It’s obvious”, he said, “just look: $1+1 > 1 \times 1$ ”.

However, Two disagreed: she said, “They’re both the same, since $2+2 = 2 \times 2$ ”.

“But”, said Three (always butting in), “ $3+3 < 3 \times 3$. Clearly multiplying is the stronger!”

Now the argument took another turn, when Four, who wasn’t so full of herself as the other numbers, pointed out, “Well $4 + 1\frac{1}{3} = 4 \times 1\frac{1}{3}$. I bet that any number can show that adding is just as strong as multiplying.”

Five, always liking a good puzzle, thought for a while, and said, “Yep! I can do it. Adding and multiplying are just as strong as each other. But I’m not going to tell you all why. You’ll have to figure out for yourselves!”

What was Five’s explanation of the problem?

What might the other numbers have said?

e-mail: maurice.oreilly@spd.dcu.ie

© Maurice O’Reilly

February, 2004



New Committee

The committee of the Primary Teachers’ Mathematics Association for 2004 is the following:

Chairpersons:

Thérèse Dooley and Patsy Stafford (joint)

Secretary:

Mairéad Ryan

Treasurer:

Dolores Corcoran

Membership:

Heather Egan,
Maurice O’Reilly
Florence Gavin

Newsletter:

Seán Delaney

Mathematical Advisor: Seán Close

Our **webmaster** is Carmel Burns.

If you are interested in becoming more active in the Association please write to Patsy Stafford: pstafford@froebel.ie

Computer Software Review

Maths Circus Acts 2 and 3

Age: 5-11

Platform: Macintosh and PC

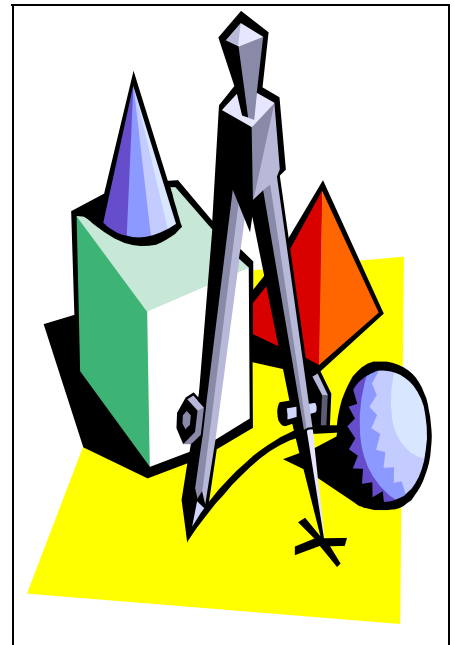
Price: Single user €52.28, site licence €129.56

Publisher: 4mation

Supplier: Diskovery www.diskovery.ie

There are twelve puzzles in each “Act”. Act 1 has five levels of difficulty ranging from very simple to very challenging - even for teachers and parents! The other two have 10 levels. Instructions are very simple and the pupil can click to hear them, so no reading skills are required. The problems range widely in type, involving spatial awareness, perceiving patterns, numeracy, logic, sequencing, problem solving and manipulating a number of variables to solve the puzzles. Individual progress is recorded – up to 200 students per computer.

Each package includes reproducible worksheets and off computer teaching ideas for all age groups. Not only is Maths Circus my favourite maths software, my pupils regard it as a big treat to use it. © Heather Egan



The Calculator in the Classroom

By Thérèse Dooley © 2004

The 1999 curriculum allows for the use of calculators as a tool for the teaching and learning of mathematics from fourth to sixth classes. While some teachers welcome this development, others are concerned that the introduction of this device will cause a diminution of students' mathematical thinking and basic computational skills. It is reassuring, therefore, that research has shown that calculator usage in the classroom does not lead to a deterioration in basic paper and pencil skills and that it can enhance children's problem solving abilities.

But the calculator can do more than alleviate the drudgery of complex calculations. Below are calculator activities that can be used in the classroom to develop understandings of number patterns, negative numbers, place-value and decimal numbers. Ideas are also given on how some of the exercises might be supported by written records and on how they might be extended to provide for individual difference in the classroom.

Constant Function

This is one of the most useful functions of the calculator. It is sometimes performed by the = button. For example, on pressing the key sequence $2 + 3 = = =$, the sequence 5, 8, 11 will be generated.

Extension: Pressing the key sequence $3 - 2 = = = =$ might lead to a discussion on the use of negative numbers in our environment.

Skip Counting

This activity should help students to develop an understanding of number patterns and also the relationship between multiplication and repeated addition. Students must first be familiar with the way in which the constant function works on their calculator.

Try these:

$$0 + 2 = = = = \quad 0 + 3 = = = = \quad 4 + 7 = = = = \quad 1 \times 2 = = = =$$

In order to stimulate mathematical thinking, students should first predict the number patterns and then check their sequence with that found on the calculator. If students record the number patterns found on pressing a sequence such as $0 + 7 = = =$, they may discern links with multiplication facts.

Extension: Students guess how many times = must be pressed to reach a certain number, e.g., in the sequence $0 + 5 =$, how many times must = be pressed to reach 35? Again students should be encouraged to guess before checking

Space Invaders

The following activities develop and reinforce understanding of place-value

Space Invaders 1: A multi-digit number is entered into the calculator. These digits are 'aliens'. They are wiped out one at a time by subtracting to zero.

Space Invaders 2: The same as above except that the digits must be wiped out in ascending order.

Space Invaders 3: The same as Space Invaders 1 except that digits are wiped out by addition, not subtraction

Space Invaders 4: The same as Space Invaders 1 except that decimals are used.

How Space Invaders 2 might be recorded

Number entered: 9276

<i>Digit</i>	<i>Operation</i>	<i>Number in display</i>
2	- 200	9076
6	-6	9070
7	-70	9000
9	-9000	0

Thérèse Dooley is a lecturer in Mathematics Education in St. Patrick's College, Drumcondra.

Email: therese.dooley@spd.dcu.ie

Report on October Conference

Professor Deborah Ball from the University of Michigan was the keynote speaker at the third conference of the Primary Teachers' Mathematics Association in October 2003. A former primary teacher herself she tackled the topic of how to teach mathematics in a creative way while 'covering the curriculum.' One of the teaching strategies that she uses is to pose some questions to the children such as: is 1 a prime number? Is 0 odd or even? Is a square a rectangle? What do you notice about the sum of an odd and an even number? She then encourages the children to discuss the topic using what mathematics they know to justify their points. She encourages the children to compose 'conjectures' if they think that they have discovered a rule but they cannot prove it. (The word 'conjecture' means an inference, theory or prediction based on guesswork). The teacher takes a background role while the children discuss the issues. One member who was at the conference writes: "Professor Ball challenged me to have students make more use of their own conjectures in the course of developing number concepts and strategies. Her advocacy of a curricular approach that layers rather than sequences would certainly seem to be conducive to discussion and activity based learning." (M. McG, Co. Roscommon.)



Reader's Problem

One of our readers posed this problem:

'I am having great difficulty explaining the following problem to a senior pupil and would appreciate four or five suggestions on how it might be attacked:

One and a half kilos of sugar cost 60c, how much for one kilo?'

We would suggest that you give this problem to groups of students in the classroom and ask them to share their solution methods with the rest of the class. Here are some methods they might suggest:

a)

$1\frac{1}{2}$ kg costs 60 c

3 kg costs 120c

so 1 kg costs 40c

b)

$1\frac{1}{2}$ kg costs 60 c

$\frac{1}{2}$ kg costs 20c

so 1 kg costs 40c

c) Trial and error:

Estimate	<u>1kg</u>	<u>$\frac{1}{2}$kg</u>	<u>1 $\frac{1}{2}$ kg</u>
	30c	15c	45c
	36c	18c	54c
	40c	20c	60c

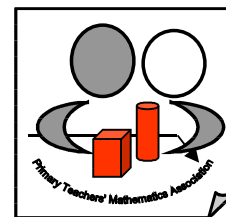
d)

1.5kg costs 60c

15kg costs €6.00

1 kg costs 40c

PRIMARY TEACHERS MATHEMATICS ASSOCIATION 2004 (MEMBERSHIP)



NAME (Block Letters):	
SCHOOL NAME AND ADDRESS:	

CORRESPONDENCE ADDRESS: (If different to the address above)	

PHONE NUMBER	Home:	School:	Mobile:
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E-MAIL ADDRESS	Home:	School:
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CLASS TAUGHT: (or category of teacher- e.g. learning support, principal)	
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I WOULD LIKE TO RECEIVE THE NEWSLETTER BY E-MAIL AT MY HOME SCHOOL E-MAIL ADDRESS

I WOULD LIKE TO RECEIVE THE NEWSLETTER BY REGULAR POST AT MY HOME SCHOOL ADDRESS

PLEASE TICK WHICH OF THE FOLLOWING YOU REQUIRE:

			WRITE AMOUNT HERE:
<input type="checkbox"/>	Individual Membership for 2004	€15	€
<input type="checkbox"/>	Institutional Membership for 2004	€50	€

TOTAL AMOUNT ENCLOSED: (Please cross the cheque and make it payable to the "Primary Teachers' Mathematics Association")	€
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SIGNATURE:	DATE:
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PLEASE RETURN THE FORM AND APPROPRIATE PAYMENT TO: *Thérèse Dooley, Primary Teachers Mathematics Association, St.Patrick's College, Drumcondra, Dublin 9*

