

# The Association for Mathematics Education of South Africa



**20<sup>th</sup> Annual National Congress**  
**7 - 11 July 2014**

**Diamantveld High School**  
**and**  
**Kimberley Boys' High School**

**Kimberley**  
**Northern Cape**

**FIRST ANNOUNCEMENT AND CALL FOR PAPERS**

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You are invited to the 20<sup>th</sup> Annual National Congress of the Association for Mathematics Education of South Africa (AMESA) and to submit contributions around the theme

## ***Demystifying Mathematics***

### **VENUE**

Diamandveld High School and Kimberley Boys' High School  
Memorial Road  
Kimberley  
Northern Cape

### **DATE**

7 – 11 July 2014

### **CONGRESS THEME**

#### **Demystifying Mathematics**

The challenge we face when working with learners of all ages is to make our subject interesting, even exciting and fun. So why do teachers the world over have a problem with getting learners to enjoy their mathematics class? Along with science, it is deemed to be difficult and the knock on effect of these 'turned-off' children jeopardises our ability to overcome the multitude of engineering and scientific challenges we face that will ensure that future life on earth continues in a safe and prosperous manner. Mathematics has been the poor relation in the STEM (science, technology, engineering and mathematics) quartet, yet it is the subject that offers entry into a huge range of diverse careers.

Human beings have all kinds of irrational fears and anxieties about everyday objects and situations that include spiders and snakes, heights and enclosed spaces, aeroplanes, needles and of course, mathematics! Mathematics anxiety may be very common, just going by the number of adults who freely admit to hating mathematics or being bad at it. This dislike of mathematics may be a real phobia that probably begins at a very early age. But we know mathematics is not difficult. It is however often explained in ways that are difficult to understand and learners often wonder what is the practical application of the topic we have just done? It may help if we can bring mathematics to life and show where the topic is used outside the classroom.

If this approach is taken we will make this 'difficult' subject more enjoyable and therefore a learner's whole educational experience more positive from an early age.

## PROGRAMME

Congress participants include an exciting combination of leading mathematics teachers, materials and technology developers, national and international researchers, and government advisers, presenting on policy directions and research findings, and sharing teaching ideas and materials.

The programme will include:

1. **Pre-congress workshops** (Sunday 6 July, 14:00-17:00).
2. **Plenary addresses** by invited speakers, including overseas speakers.
3. **Panel discussions** on various issues in Mathematics Education.
4. **Parallel sessions** presented by participants, in the following areas: Foundation Phase, Intermediate Phase, Senior Phase, FET Phase, and Teacher Education.

The following formats will be used:

- o **Long papers** (40 minute presentation plus 20 minute discussion)
  - o **Short papers** (20 minute presentation plus 10 minute discussion)
  - o **"How I Teach"** papers (20 minute presentation plus 10 minute discussion)
  - o **Posters** (Exhibited on a 1,2 m x 1,8 m board, for the duration of the conference. Authors should be available at certain hours for discussion.)
  - o **Workshops** (1 or 2 hours)
5. **Activity Centre:** Hands-on practical mathematics activities for participants.
  6. **Maths Market:** Promotion of their products by commercial vendors.
  7. **AMESA Curriculum Phase Committees discussions**
  8. **AMESA Special Interest Group meetings**
  9. **AMESA Annual General Meeting**

## OTHER FEATURES OF CONGRESS

Social events  
Excursions  
Daily congress competitions  
Transport  
Congress bags  
Memorabilia  
Internet facilities

21<sup>st</sup> celebration of AMESA

*Note: The Final Announcement and Registration Form will be distributed in February 2014 and will contain full details about the programme, costs, transport, etc.*

## CONTACT DETAILS

Please send all communication about *administrative matters* to:

### The Congress Secretary

Nombulelo Mandindi  
AMESA  
P.O. Box 54  
2050 WITS

Tel: 011 484 8917  
Fax: 086 402 1228  
Email: [congress2014@amesa.org.za](mailto:congress2014@amesa.org.za)

### Congress Director

Lawrence van Heerden  
6 Skakel Street  
Rhodesdene  
8301 Kimberley

Tel & Fax: 053 861 1187 (H)  
Cell: 072 124 6830  
E-mail: [lawrence@amesa.org.za](mailto:lawrence@amesa.org.za)

Please send all communication about the *academic programme* to:

### The Academic Coordinator

Mandisa Lebitso  
22 Louw Road  
Heuwelsig  
8301 Kimberley

Tel: 053 861 5430 (H) / 053 830 7642 (W)  
Cell: 082 521 9828  
Fax: 086 547 8428  
Email: [mandisa@amesa.org.za](mailto:mandisa@amesa.org.za)

### Congress Co-Director

Nina Scheepers  
Diamantveld High School  
Private Bag X6061  
8300 Kimberley

Tel: 053 833 1528 (W)  
Fax: 086 402 2760  
E-mail: [nina@amesa.org.za](mailto:nina@amesa.org.za)

### Congress website

See the congress website for updated relevant information:  
<http://www.amesa.org.za/AMESA2014/index.htm>

## The Northern Cape Province

The Northern Cape is a land of many diverse cultures, of frontier history and brave missionaries. It also has countless challenges for the adrenaline junkies, hikers, hunters and 4x4 adventurers. It has impressive parks with endless game and some of the most unique flora in the world.

Much of life and adventure is dependent on the sweeping tide of the Orange River, a 2 000 km stretch of natural magnificence dubbed the !Garib (great river) by the Khoisan. With constant ribbons of green along its banks that contrast with the arid surrounds, at some places it can be a 6 km-wide, impassable torrent and at others scarcely a stream.

The Kalahari Desert can be likened to a colossal sweeping river of another kind. Its' red shifting sands that once rippled and moved are now mostly stable and home to hundreds of diverse species of flora and fauna.

A place of vastness and silence, the Kgalagadi Transfrontier Park (bigger than many countries) extends across much of the Kalahari. Every now and again the unmistakable cry of African fish eagle rings out, or the gut-wrenching roar of a black maned Kalahari Lion carries across the landscape.

The openness continues to the vast koppie-strewn plains of the Karoo and Namakwa where hardy succulents complement sweet grasses and the clean, clear air is bedecked with stars at night.

Photographers, writers and orators fail to adequately communicate the experience. After watching springbok prong through the veld, hundreds of wildebeest migrating, a wild cat stalking its prey and shooting stars sprinting across the sky, you will realize that this is a destination that you can't just read about or just drive through, but a destination that you have to participate in. So come and experience the Northern Cape...

Source: <http://experiencenortherncape.com>

## Diamantveld High School

Diamantveld High School, Kimberley was founded in 1935 and first housed in the buildings of the former Kimberley Teachers' College. Five years later the school acquired its present buildings and raised its flag. The school is a proudly Afrikaans-medium, co-educational high school with a Christian character and ethos.



The school has since its inception gained prestige with achievements in numerous fields both nationally and internationally. Numerous pupils have excelled in the NCS examinations. In 2012 the school was awarded the best science school (third year running) as well as the top mathematics school in the Northern Cape. The school offers a variety of sports namely rugby, cricket, athletics, netball, hockey, tennis, golf, chess and football. It is one of the strongest sporting schools in the Northern Cape and has produced a number of Springbok / Protea players. The school's athletes have won the Top 20 athletic event nine times in the past 13 years. It has also twice hosted the Wildeklaar Super Schools tournament, a tournament endorsed by SA Rugby and SA Netball which showcases skill and class.

Code of honor: we work and play: disciplined, but not inflexible; with confidence, but not confident; with enthusiasm, but not brutally; tactically, but without cheating; to win, but not at all cost; to turn each possibility into a reality.

## Kimberley Boys' High School

The school opened as the public undenominational schools in 1887 and moved into the Lanyon Terrace buildings in 1888. These buildings now house the Kimberley Teachers' Centre. The present KHS buildings were designed by architect D.W. Greatbach and were occupied in 1914.



The school catered for both primary and secondary education until Kimberley Boys' Junior School was opened in 1970. KBJs then amalgamated with Belgravia Junior School for girls in 1977 to form Kimberley Junior School. Between 1974 and 1976 extensive modernisation took place in the school when the Science Labs and Woodwork Rooms were added.

We at Kimberley Boys' High School sanction the belief in a balanced, all-round, non-discriminatory education, based on the fundamental traditions of our school and hold the provision of such education as our highest goal. Our primary concern is to respect each learner as an individual who has the right to express himself and exercise his options within a disciplined framework of care and understanding. In striving to achieve our goal, we will promote and foster academic excellence, self-development, adaptability, loyalty and pride, social conscience, respect for the dignity and rights of others.

Source: <http://kbhs.co.za/>

## Local Organising Committee (LOC)

Members of the AMESA LOC come from a variety of backgrounds and include teachers and subject advisors:

Lawrence van Heerden  
Nina Scheepers  
Mandisa Lebitso  
Anne Mclean  
Rebecca Maduo  
Peter Manzana  
Debbie Langford  
Mosadi Kruger  
Patricia Whitten  
Gwen Pharasi  
Floyd Leshoro

Vincent Botha  
Lawrence Blanckenberg  
Peace Mojaki  
A Boachie Yiadom  
Anthony Mpsi  
Bronwen Muller  
Olga Mancwe  
André van Zyl  
Magmoeda Jacobs  
Nyebe Mohale

## CALL FOR PAPERS

You are invited to propose one or more contributions to the academic programme. Please note that to ensure a high standard of presentations and broad based participation:

- We will accept no more than two inputs per presenter.
- We will not accept any presentation for the programme unless a full transcript or workshop outline has been submitted for reviewing.
- We will adhere to the due dates for submission as this ensures time for useful and relevant reviews of submissions.

To help you in planning and writing your proposal, we include overleaf technical guidelines for preparing a paper. An electronic styles template is available on the congress website.

The Presentation Proposal Form (page 11) must be submitted with your proposal to the Academic Coordinator by 20 February 2014.

## CALL FOR REVIEWERS

In order to have a sufficient number of reviewers for submitted papers, we invite AMESA members to volunteer to help with reviewing papers. This review process should take place during February, March and April 2013.

You can serve as reviewer if you are a current AMESA member and have presented a reviewed paper (a long or short paper) at previous AMESA congresses, or have published in *Pythagoras*.

If you qualify and are willing, please fill in the Reviewer Form (page 13) and send it to the Academic Coordinator by 31 January 2014.

## MATHS MARKET

Publishers, entrepreneurs and NGOs are invited to present and promote their commercial products in a special session in the programme called a *Maths Market* presentation. Research about such products may be presented as an academic paper which will be reviewed, but commercial products should not be directly promoted in academic sessions. *Maths Market* presentations are not reviewed and not published in the Congress Proceedings. Please contact the Secretariat for more details.

## IMPORTANT DATES

Offer to review papers:	31 January 2014
Submission of presentation proposal manuscripts:	20 February 2014
Notification of proposal review results:	20 April
Application for financial support:	30 April
<i>Early</i> registration at a <i>reduced fee</i> :	by 30 April
<i>Normal</i> registration at <i>normal fee</i> :	1 May to 31 May
<i>Late</i> registration at an <i>increased fee</i> :	after 31 May
Cancellation of any costs:	after 31 May
Equipment requests for presenters:	1 June
Registration open:	6 July, 10:00 – 20:00
Residences open:	6 July, 14:00
Opening ceremony:	7 July, 10:30
Closing ceremony:	11 July, 12:00

***Start planning for Congress 2014  
We look forward to seeing you in Kimberley!***

## Guidelines for submission of long papers

**Length:** 8–12 pages

Each long paper will be scheduled for a total time of 60 minutes: 40 minutes for oral presentation and 20 minutes for discussion. The following types of papers are suitable for presentation as a long paper:

- 1. Research report** This should include the following:
  - A statement about the focus of the paper or the research questions, and a motivation for the significance of the research;
  - An indication of the theoretical framework of the study reported;
  - A discussion of the related literature;
  - An indication of and justification for the methodology used;
  - Some sample data and findings and a statement of how these help to answer the research questions;
  - What your findings mean for mathematics teaching and learning or further research;
  - List of references.
  
- 2. The presentation of mathematics/mathematical literacy** These could include mathematics/mathematical literacy, relevant to the school curriculum, such as:
  - An innovative way of dealing with a section of mathematics/mathematical literacy;
  - Alternative proofs for theorems;
  - Interesting mathematics that teachers are conversant with; Mathematics/mathematical literacy that is new in the proposed curriculum;
  - List of references.
  
- 3. Theoretical, methodological or philosophical essays** These should include the following:
  - A statement about the focus of the paper and a motivation for its significance;
  - An indication of the theoretical, methodological or philosophical framework within which the focus or theme of the paper is developed;
  - Reference to related literature;
  - A clearly articulated statement of the author's position on the focus or theme;
  - What your results mean for mathematics teaching, learning or research;
  - List of references.

### Reviewing

Two reviewers, with experience in the area, will review your paper. Specifically, reviewers will be asked to comment on the following: mathematical content, theoretical framework and related literature, methodology (if appropriate), statement and discussion of results (if appropriate), clarity and relevance to the AMESA audience.

*A developmental approach to reviewing will be applied to your paper. In other words you will be given feedback by the reviewers, which you could use to improve your paper and then (if necessary) re-submit for further review and feedback.*

If your paper is not accepted in this category it will be reconsidered for submission as a short paper presentation.

**Publication of Long Papers:** Authors can choose *not* to have their accepted long papers published in the AMESA 2014 Proceedings, to keep open the possibility to submit it to a journal. If author(s) choose to exclude their long paper from the Proceedings, then they must submit an extended abstract of the paper for publication in the Proceedings.

## Guidelines for submission of short papers

**Length:** 5–8 pages

Each short paper presentation will be given a total time of 30 minutes: 20 minutes for oral presentation and 10 minutes for discussion. This kind of presentation is most suitable for work in progress.

- 1. Reflection on teaching or practice:** This is mainly for mathematics educators who would like to share their reflections on their teaching or on their participation in a developmental project or research project. For reflection on teaching you need to specify the following:
  - The grade and class size;
  - The mathematics topic taught;
  - The mathematical goals and purposes;
  - A description of the lesson;
  - What factors contributed to the success of the lesson;
  - What factors tended to hamper success and how you dealt with them.
- 2. For reflection on participation in a mathematics development project** you should specify the following:
  - The duration of the project;
  - Mathematical aspects covered by the project;
  - Practical examples of how participation in the project impacted on your teaching.
- 3. The presentation of mathematics/mathematical literacy:** These could include mathematics/mathematical literacy relevant to the school curriculum. For details on this type of presentation, see (2) of the long papers.
- 4. Proposals – research or development:** This can be a presentation of a proposal for a research or mathematics education developmental project and should include the following:
  - A description of the focus of the research project or developmental project;
  - Motivation for the study or project;
  - Some indication of the theoretical framework of the study or project;
  - Some discussion of the related literature;
  - How the study or project will be undertaken, including some justification of methodology;
  - Participants and time lines;
  - List of references.
- 5. Initial sharing of data:** This is mainly for people who have done research and are still working on their analysis. The paper should include the following:
  - A statement about the focus of the paper or the research questions, and a motivation for the significance of the research;
  - Some aspects of the theoretical framework of the study reported;
  - Some discussion of the related literature;
  - An indication of and justification for the methodology used;
  - Some sample data and initial analysis or description of data;
  - List of references.

### Reviewing

Two reviewers, with experience in the area, will review your paper. Specifically, reviewers will be asked to comment on the following: mathematical content, conceptual coherence, clarity and relevance to the AMESA audience.

*A developmental approach to reviewing will be applied to your paper. In other words you will be given feedback by the reviewers, which you could use to improve your paper and then (if necessary) re-submit for further review and feedback.*

## Guidelines for “How I teach” papers

**Length:** Minimum 1 page and a maximum of 4 pages.

### Critical information to be included:

- **Title:** A heading for your paper e.g. How to use paper folding in geometry.
- **Name:** Your Name and Surname
- **Organisation:** Where you are from e.g. the name of your school.
- **Phase:** The phase your talk is aimed at i.e. foundation, intermediate, senior, FET or tertiary.
- **Introduction:** Include here a paragraph on what your talk is about. Why you chose to talk about it. What you are going to do in the talk.
- **Content:** You might want to write one or two sentences on your experiences of using such activities in your class and some of the advantages or disadvantages of using the activities. Also provide here a brief conclusion on the talk.
- **References:** Add here any references that you might have used. In other words, if you took the activities from a textbook or from the internet, please acknowledge that.

There may be other headings you want to include (e.g. “teacher tips”) – please feel free to do so.

### Reviewing

Your paper will be reviewed. *A developmental approach to reviewing will be applied to your paper. In other words you will be given feedback by the reviewers, which you could use to improve your paper and then (if necessary) re-submit for further review and feedback.* Congress 2014 reserves the right to make minor editing changes.

## Guidelines for posters

Poster presentations are available for those whose work is more suitably communicated in a pictorial or graphical format, rather than through an oral presentation. There is no formal oral presentation associated with posters, but a time will be allotted, after sufficient display time, during which presenters will be available at their posters for informal discussion with participants.

A poster (1,2 m x 1,8 m board), can present research projects, software developments, curricula innovations, educational programmes, etc., related to Mathematics Education.

Note the following as you prepare your proposal for a poster:

- Your proposal should describe both the contents of the poster and its particular visual (pictorial or graphical) characteristics.
- Your proposal should be restricted to one page, including references and figures. If accepted, this text will be included in the Congress Proceedings.
- Type and centre the title (in capitals), author(s) names, and affiliation(s) of the author(s) in this order.

### Reviewing

The programme Committee will review the proposals for Poster Presentations. If your proposal is accepted, the Programme Committee will provide further guidance on the preparation of the actual poster itself.

## Guidelines for workshop presentations

Note that workshop write-ups and the worksheets will *not* be published in the paper Congress Proceedings. It will be included in the CD\_ROM Proceedings, and copies of the activities will be duplicated only for the workshop participants.

Your proposal should include:

1. **Motivation for running workshop.** This is for reviewing and should include:
  - **Title of the workshop**
  - **Name of presenter(s)**
  - **Institution where you are employed**
  - **Target audience:** The phase your workshop is aimed at e.g. intermediate.
  - **Duration:** There will be 1-hour or 2-hour workshop slots. Please ensure that you choose an appropriate length slot.
  - **Maximum number of participants:** You may limit the number of participants in your workshop. Workshop presenters should attempt to cater for at least 30 participants.
  - **Motivation for the workshop:** Why is the workshop important? How will it help participants?
  - **Description of content of workshop**  
What will be done in the workshop? How will the time slot be broken up?
  - **The activities and worksheets to be used in the workshop** (maximum 8 pages)
2. **An abstract describing the level, nature and content of the workshop** (200 words)  
*Note: Only this abstract will be published in the Congress Proceedings.*

### Note:

- Workshops need to be **hands-on sessions** where participants are **actively involved** in doing the activities that you provide. Usually these activities will be done in groups, consisting of 3–5 participants. There should also be ample time for discussions (approximately 25% of your time is suggested).
- If you have used ideas from other sources, it is essential that you acknowledge these sources. We will *not* accept any submissions where more than 2 pages have been copied directly from another source.

### Reviewing

The Programme Committee will review the proposals for Workshop Presentations.

## Technical guidelines for preparing manuscripts

We are endeavouring to work towards a uniform appearance for all papers in the congress proceedings. An electronic template and guidelines will be available from the congress website. Please use the template as the basis for your paper.

Please adhere to these guidelines:

- Restrict your paper to the maximum number of pages as specified for the type of presentation, including references, figures, and appendices.
- Write the paper in English.
- Type and centre the title (in capitals), author(s) name(s), and affiliation(s) of the author(s), in this order.
- Underline the name of the presenting author(s).
- Begin the paper with an abstract of up to ten lines, single-spaced, preferably in italics.
- Use a 14-point type (Times New Roman), a 16-point line space, and 6 points between paragraphs, occupying a frame of 170 mm by 247 mm. Please use exact dimensions, and fill the entire frame. Remember that the original text will be reduced in the Proceedings.
- Give references in the APA style.
- **Do not number the pages**
- E-mail the paper as an attachment to the Academic Coordinator by 20 February 2014, together with your completed Presentation Proposal Form.  
**Fax copies will not be accepted.**

## TABLE OF PRESENTATION CATEGORIES

This page is for your reference when completing the Reviewer Form or the Presentation Proposal Form.

Reviewers will receive proposals for review according to their preferred categories that they mark in their Reviewer Form.

The proposals will be sent to reviewers according to the presentation categories that authors have marked in their Presentation Proposal Form.

### Focus themes for presentation:

1. Teaching and learning of patterns, sequences and series	13. Functions and graphs
2. Measurement – focusing on primary education	14. Numeracy
3. Teaching and learning of algebra	15. Classroom practice
4. Teaching and learning of geometry	16. Motivation, beliefs and attitudes towards mathematics and its teaching
5. Teaching and learning of probability	17. Mathematics education in a multilingual and multicultural environment
6. Teaching and learning of statistics	18. Mathematics curriculum development
7. Teaching and learning of calculus	19. Mathematical knowledge for teaching
8. Reasoning, proof and proving in mathematics education	20. Assessment in mathematics education
9. Problem solving and modelling in mathematics education	21. Mathematical literacy
10. The use of technology in the teaching and learning of mathematics	22. Mathematics education at secondary level and access to tertiary level
11. Financial Mathematics	23. Mathematics in context
12. Geometrical and spatial thinking	24. In-service education, professional development of mathematics teachers

### Educational level:

1. Foundation Phase (Gr R–3)	4. Further Education & Training (Gr 10-12)
2. Intermediate Phase (Gr 4–6)	5. Teacher Education (pre- & in-service training)
3. Senior Phase (Gr 7–9)	

### In the case of research, the type of research:

1. Empirical/ Experimental	4. Ethnographic/Interpretative
2. Statistical	5. Theoretical/Philosophical
3. Case study	6. Action research



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## PRESENTATION PROPOSAL FORM

This form must be completed for every presentation proposal and submitted to the Academic Coordinator.

*Note: You may prefer to complete the electronic form on the congress website.*

**DEADLINE: 20 February 2014**

**PLEASE TYPE OR HAND-WRITE BY USING ONLY CAPITAL LETTERS**

<b>Type of Presentation</b> (mark one):	
Long paper <input type="checkbox"/>	Short paper <input type="checkbox"/>
How I teach <input type="checkbox"/>	Poster <input type="checkbox"/>
Workshop <input type="checkbox"/>	
<b>Title of Presentation:</b>	
<b>Author(s):</b>	
<b>Presenting Author(s):</b>	
<b>Contact Details:</b>	
<i>The following information should be completed only for the Presenting Author:</i>	
Postal Address:	
City:	Postal Code:
Telephone no:	Cell no:
Fax no:	E-mail:
<i>Complete to assist the Programme Committee in finding you an appropriate reviewer</i>	
Presentation categories (choose relevant numbers from the Table on page 10):	
Focus Themes (mark at most three numbers from 1 – 24 ):    ___    ___    ___	
Educational Level (from 1 – 5 ):    ___	
Type of Research if applicable (from 1 – 6):    ___	
Publish Long Paper in AMESA 2014 Proceedings?    YES: <input type="checkbox"/> NO: <input type="checkbox"/>	

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 Fax: 086 547 8428  
 Email: [mandisa@amesa.org.za](mailto:mandisa@amesa.org.za)

## REVIEWER FORM

Please complete this form if you are prepared to help review submitted papers for the congress.

To qualify as a reviewer, you must be a current AMESA member and have presented a reviewed paper (a long or short paper) at previous AMESA congresses, or have published in Pythagoras or another reviewed journal.

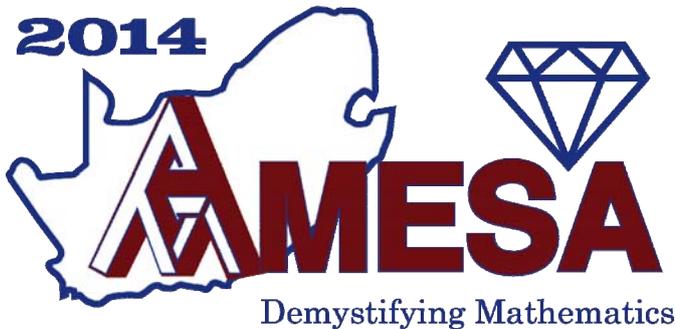
**DEADLINE: 31 January 2014**

*Note: You may prefer to complete the electronic form on the congress website.*

### PLEASE TYPE OR HAND-WRITE BY USING ONLY CAPITAL LETTERS

<b>Contact Details:</b>	
Name:	
Institution:	
Postal Address:	
City:	Postal Code:
Telephone no:	
Cell no:	
Fax no:	
E-mail	
<i>Complete to assist the Programme Committee to match you to appropriate submissions</i>	
Presentation categories (choose relevant numbers from the Table on page 10):	
Please choose at most 4 <b>Focus Themes</b> (numbers 1 – 24 ):	
<input type="text"/>	<input type="text"/>
Please choose your preferred <b>Educational Levels</b> (numbers 1 – 5):	
<input type="text"/>	<input type="text"/>
Please choose your preferred <b>Type of Research</b> (numbers 1 – 6):	
<input type="text"/>	<input type="text"/>

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Nina Scheepers  
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## Application for financial support: AMESA Congress

**Note: Closing date is 30 April 2014**

I, ....., would like to apply for financial support to attend AMESA Congress 2014.

**Surname:** .....

**First names:** .....

**Postal address:** .....

.....

**Postal code:** .....

**Institution:** .....

**Area of interest:** (Primary / Secondary / Tertiary) .....

**Tel:** (Home) ..... (Work) ..... **Fax:** .....

**E-mail:** .....

### Complete 1 and 2 below and take note of 3:

1. I am an AMESA member: YES / NO ..... Membership number: .....
2. I am able to contribute R..... of the projected R..... costs for my attendance.
3. I undertake to write an article/report on AMESA Congress 2014 which may be published in *AMESA News*.

**Signature:** ..... **Date:** .....

### Note:

- A typed ½ to 1 page motivation, as well as a detailed budget must accompany this application. The application will not be considered without a detailed budget.
- Preference for funding will be given to paid-up AMESA members who will be participating in the congress programme.

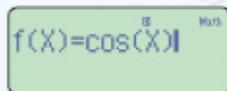
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# CASIO® FX-82ZA PLUS

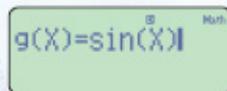
## The Learning Tool of Choice.

Developed in Collaboration with South African  
Educators for the SA Syllabus

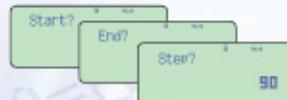
**Natural Textbook Display Scientific Calculator**  
**Now with Dual Table Function**



Formula registration



2nd formula registration



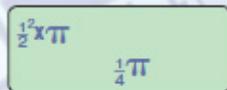
Start/End/Set up values



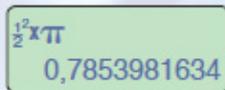
X	F(X)	G(X)
90	0	1
180	-1	0

Resultant dual table

### Plus Dual Result Function



Math result format

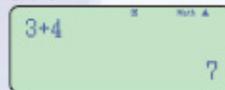


Linear result format

### Results can be expressed in standard form or decimal

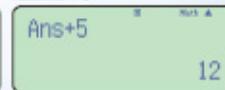
### Plus Dual Answer Key to show your previous answer

3 + 4 =



Answer = 7

Answer+5=



Answer = 12

Previous Answer = 7

Previous Answer+2=



Answer = 9

Previous Answer = 12

### Includes These Important Functions

- Previous answer key for recursive functions
- 9 memories
- Statistics – data handling and regression analysis
- Random integers for statistics
- Prime factorisation
- Time conversion calculations
- Co-ordinate transformation – enhanced by dual table function
- Selectable auto power off (10 min / 60 min)

### Plus another 246 functions

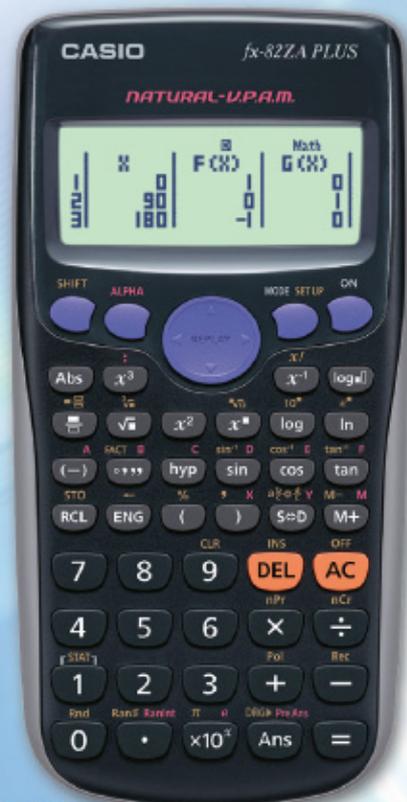


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