

The Association for Mathematics Education of South Africa



24th Annual National Congress 25 – 29 June 2018

UNIVERSITY OF THE
FREE STATE
UNIVERSITEIT VAN DIE
VRYSTAAT
YUNIVESITHI YA
FREISTATA



UFS
UV

**Main Campus, Bloemfontein,
Free State**

FIRST ANNOUNCEMENT AND CALL FOR PAPERS

You are invited to the 24nd Annual National Congress of the Association for Mathematics Education of South Africa (AMESA) and to submit contributions around the theme:

Culture meets culture: mathematics in and around us

VENUE

University of the Free State (Main Campus)
Bloemfontein
South Africa

DATE

25 – 29 June 2018

CONGRESS THEME

Culture meets culture, mathematics in and around us

Mathematics is and will remain an important subject in South Africa as well as the world. Experiencing success in Mathematics is likely to result in learners choosing careers in the sciences, health sciences, engineering, commerce or other key professions.

For learners to achieve success in Mathematics, it is vital that our mathematics teachers are qualified in the subject and are able to deliver quality lessons to learners. These quality lessons will make learning more meaningful, relevant and appropriate. In seeing Mathematics as part of our everyday life, as part of our culture, we hope to restore the joy of doing mathematics across all grades, by making Mathematics more accessible, and in this way improve learner performance.

For far too long in South Africa, Mathematics as a school subject has been a sifter rather than an enabler. It sifted learners out of the scarce careers that our country so desperately needs. The introduction of Mathematical Literacy has, unwittingly, aggravated this problem. Mathematical Literacy was introduced to give learners, who would not normally take up Mathematics in Grade 10, the opportunity of leaving Grade 12 with some basic or elementary mathematical knowledge to enable them to function effectively as a citizen in the 21st century. Unfortunately the focus, in reality, is for schools to improve their overall pass rates, rather than having quality passes.

The Congress 2018 theme calls on all AMESA members and mathematics teachers to refocus efforts in classrooms with quality teaching and learning. Mathematics must be alive and be part of our everyday life.

PROGRAMME

Congress participants include an exciting combination of 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 24 June, 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 of presentation will be used:

- **Long papers** (40 minute presentation plus 20 minute discussion)
 - **Short papers** (20 minute presentation plus 10 minute discussion)
 - **“How I teach”** papers (20 minute presentation plus 10 minute discussion)
 - **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.)
 - **Workshops** 1 or 2 hours hands-on activities.
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

Internet facilities

Note:

The Congress 2018 Final Announcement and Registration Form will be distributed in March/April 2018 and will contain full details about the programme, costs, transport, etc.

CONTACT DETAILS

Please send all communication about *administrative matters* to:

The AMESA Congress Secretary

Nombulelo Mandindi
PO Box 54
2050 WITS

Tel: 011 484 8917
Cell: 082 390 7088
Fax: 086 406 3591
Email: congress2018@amesa.org.za

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

The Academic Coordinator

Karen Junquira
Private Bag X20513
9300 Bloemfontein

Cell: 082 809 9062
Email: karenfs@amesa.org.za

Congress Director

Annari Milne
Bloemfontein

Tel: 051 404 4917
Cell: 083 444 7963
Fax: 063 635 7718
Email: annari@amesa.org.za

Congress Deputy-Director

Sello Motsoane
Bloemfontein

Tel: 051 448 0439
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Email: sello@amesa.org.za

Congress website

See the congress website for updated relevant information:

<http://www.amesa.org.za/AMESA2018/>

THE LOCAL ORGANISING COMMITTEE (LOC)

Members of the Local Organising Committee (LOC) come from a variety of backgrounds and includes teachers, subject advisors, administrators and mathematics educators.

Members of the LOC

Annari Milne; Sello Motsoane; Martin Tshabalala; William Mohapi; Tsidi Moathlodi; Fusi Rantene; Abram Leeuw; Karen Janquira; Thandi Makalali; Tello Theletsane; Sandile Mdlalose; Annet Mulder; Moliehi Mafoyane; Khausu Pheko; M Nkopane; EP Mpana; Betty Mofokeng

THE NATIONAL ORGANISATION COMMITTEE (NOC)

The AMESA National Organising Committee (NOC) is a Council sub-committee involved in national congress tasks and supporting the LOC.

Members of the NOC

Vasuthavan Govender (Chair); Busisiwe Goba (Vice-chair); Manare Setati (Finances); Nombulelo Mandindi and Gary Powell (Congress secretariat)

Free State and Bloemfontein

The Free State is a province of South Africa. Its capital is Bloemfontein in the greater Manguang Metropolitan municipality. The Orange Free State was proclaimed on 17 February 1854 and on 27 April 1994 it was renamed Free State. The province is the traditional home of the Sotho people. This region is the birthplace of many prominent people: JRR Tolkien (author of The Lord of the Rings); Mtobi Mapika; Selby Msimang; International cricketers Allan Donald, Hansie Cronje, World Champions such as Zola Budd, Ryk Neethling, Wayne van Niekerk, Zain Bhika (singer-songwriter), Zackie Achmat, John Dube, John Kani (actor), Mbongeni Ngema (playwright) and many more.

Bloemfontein, where the 2018 Congress is taking place, is serviced by air, road and rail transport.

- Air transport: Bram Fischer International Airport provides scheduled flights to, and from.
- Road transport: National routes (N1, N6, N8). These routes connect Bloemfontein with various towns and cities in South Africa.

Bloemfontein is a major South African city, housing some 2.5 million inhabitants. It was founded in 1846. Bloemfontein is having the seat of the Supreme Court of Appeal. The rich heritage of Bloemfontein is reflected in the many buildings of historical importance found throughout the city – as well as the museums of Bloemfontein; which makes this such an important city in the history of South Africa.

University of the Free State

The University of the Free State is a multi-campus (Bloemfontein Main Campus; South Campus; QwaQwa Campus) public university in Bloemfontein that was established in 1904. The UFS is having about 38 000 full-time students, reflecting a rich diversity of cultures.

The university draws international students from all over the world. Its annual enrolment includes approximately 2000 international students, from 53 different countries.

UFS is a comprehensive university offering professional and vocational training. The motto of the university is: *In truth is the light of wisdom.*



CALL FOR PAPERS

You are invited to propose one or more contributions to the academic programme. Please note, that in order 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 12) must be submitted with your proposal to the Academic Coordinator by 9 March 2018.

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 March and April 2018.

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* or a similar accredited reviewed journal.

If you qualify and are willing, please fill in the *Reviewer Form* (page 13) and send it to the Academic Coordinator by 16 February 2018.

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 would 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

Reviewer Information	16 February 2018
Submission of full presentation proposal manuscripts	9 March
Notification of proposal review results	20 April
Application for financial support	by 30 March
<i>Early registration at a reduced fee</i>	24 April
<i>Normal registration at normal fee</i>	25 April to 26 May
<i>Late registration at an increased fee</i>	after 26 May
Cancellation of any costs	by 31 May
Equipment requests for presenters	1 June

Start planning for Congress 2018
We look forward to seeing you in Bloemfontein!

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 content** These could include content in 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 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 may choose not to have their accepted long papers published in the AMESA 2018 Congress Proceedings, to keep open the possibility to submit it to a journal. Note that authors must still submit the full manuscript for review, but if they choose to exclude their long paper from the Proceedings, they must then submit an extended abstract of 2-4 pages of the paper and this extended abstract will then be published 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 and may include the following:

- 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 content:** For details on this type of presentation, refer to number 2 under 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 analyses. 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 these sources.

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.* The Academic Committee of Congress 2018 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 Academic Committee will review the proposals for Poster Presentations. If your proposal is accepted, the Academic 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 Congress paper Proceedings. It will be included in the CD-ROM Proceedings, and copies of the activities will only be duplicated 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** (maximum 2 pages)
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 two pages have been copied directly from another source.

Reviewing: The Academic 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 and 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 (word document) to the Academic Coordinator by 9 March 2018, 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.

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, please state the TYPE of research:

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

Focus THEMES for presentation:

1. Indigenous Knowledge Systems	15. Reasoning, proof and proving in mathematics education
2. Financial Mathematics	16. Problem solving and modelling in mathematics education
3. Mathematical Literacy	17. Functions and graphs
4. Teaching and learning of geometry	18. Numeracy
5. Teaching and learning of probability	19. Classroom practice
6. Teaching and learning of algebra	20. Geometric and spatial reasoning
7. Teaching and learning of calculus	21. Measurement: Focusing on primary education
8. Teaching and learning of patterns and sequences	22. Mathematics Education in a multilingual and multicultural context
9. Teaching and learning of fractions	23. Mathematics curriculum development
10. Motivation, beliefs and attitudes towards mathematics and its teaching	24. Assessment in Mathematics Education
11. Mathematical knowledge for teaching	25. Mathematics Education at secondary level and access to tertiary education
12. Mathematics in context	26. In-service education; professional development of teachers
13. Enhancing learner understanding of mathematical concepts	27. Other suitable focus themes not covered here (please state in your presentation proposal form)
14. The use of technology in the teaching and learning of mathematics	



The Academic Coordinator
 Karen Junquira
 AMESA Free State
 Private Bag X20513
 Bloemfontein
 9300

Cell: 082 809 9062
 Email: karenfs@amesa.org.za

PRESENTATION PROPOSAL FORM

Completed this form for every presentation proposal and submit to the Academic Coordinator.

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

DEADLINE: 9 March 2018

PLEASE TYPE OR HAND-WRITE BY USING ONLY CAPITAL LETTERS

Type of Presentation (mark one): Long paper <input type="checkbox"/> Short paper <input type="checkbox"/> How I teach <input type="checkbox"/> Poster <input type="checkbox"/> Workshop (1 h) <input type="checkbox"/> Workshop (2 h) <input type="checkbox"/>	
Title of Presentation:	
Author(s):	
Presenting Author(s):	
Contact Details: <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 11): Focus THEMES (mark at most three numbers from 1 – 27): ____ ____ ____ Educational LEVEL (from 1 – 5): ____ TYPE of Research if applicable (from 1 – 6): ____	
Only for Long Papers: Publish my paper in AMESA 2015 Proceedings? YES: <input type="checkbox"/> NO: <input type="checkbox"/>	



Karen Junquira
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9300

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REVIEWER FORM

Please complete the 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: 16 February 2018

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

PLEASE TYPE OR HAND – WRITE BY USING CAPITAL LETTERS

Contact Details:

Name:

Institution:

Postal Address:

City:

Postal Code:

Telephone no:

Cell no:

Fax no:

E-mail

Complete to assist the Programme Committee to match you to appropriate submissions

Presentation categories (choose relevant numbers from the Table on page 11):

Please choose at most four **Focus THEMES** (numbers 1 – 27):

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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Please choose your preferred **Educational LEVELS** (numbers 1 – 5):

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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Please choose your preferred **TYPE of Research** (numbers 1 – 6):

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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Abram Leeuw
AMESA Free State
Private Bag X20513
Bloemfontein
9300

E:mail: abram@amesa.org.za

Note: Preferably please use the electronic form on the congress website.

Application for financial support: AMESA 2018 CONGRESS

DEADLINE: 30 March 2018

I, , would like to apply for financial support to attend AMESA Congress 2018.

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 2018 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.



Pearson

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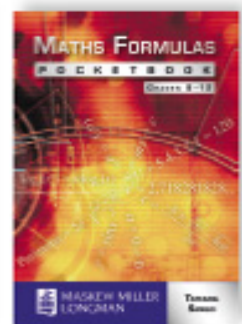
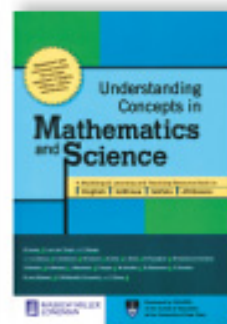
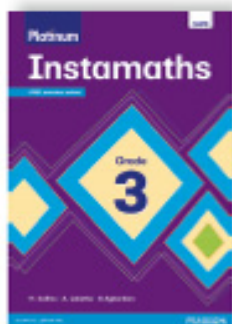


Illustration by Lucy Vigrass

We know you're always looking for new ways to enhance your lessons and challenge your learners. That's why we created **Classroom Solutions** where you can access **FREE** teaching tools.

Explore our Mathematics resources

This year we're rewarding members with exclusive discounts and special offers on a selection of our supplementary resources from Pearson, Maskew Miller Longman and Heinemann.



Register for FREE at classroomsolutions.co.za



Contact us

T: 021 532 6008

E: pearsonza.enquiries@pearson.com

Learn more at <http://schools.pearson.co.za>