



basic education

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2023 ASSESSMENTS



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Basic Education
REPUBLIC OF SOUTH AFRICA



This Learning Brief was commissioned by the Department of Basic Education

and funded by Zenex and the Epoch Trusts and Optima trust.

Date of publication: August 2023

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Suggested citation:

Moloi, Q., Sibeko T., Koenig N., Sommerdyk S., and Roberts N., (2023)
Assessments Learning Brief 2023, Kelello.

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South African Primary Maths: Validated standardized tests

Purpose

To identify conceptual obstacles, and to place each child on a specific level of numeracy development.

Target Phase(s)

Foundation Phase

Target learner age-group

5-8 years

Target grade(s)

Pre-school (Marko-D0)
Grade 1 (Marko-D1)

Standardized or Class-based

Standardized

Domain(s)/Sub-domain(s) covered

Number Sense

Language(s) of assessment

Afrikaans, English, isiZulu & Sesotho

Level of use

School level

Administration modality

Individual administration

Format

Paper-based and administered orally as a one-on-one interview

Start year of use and/or duration

2013 to date

Collaborators

The Schools Development Unit of the University of Cape Town

Cost

KEY cost drivers:

License fee	Kit hire
Printing (Free online)	Training of Assessors
Technical support	Analysis and reporting

Primary articles/reports on the instrument and its use

Henning, E., Balzer, L., Ehlert, A., & Fritz, A. (2021). Development of an instrument to assess early number concept development in four South African languages. *South African Journal of Education*, 41(4)

Fritz, A., Balzer, L., Ehlert, A., Herholdt, R., & Ragpot, L. (2014). A mathematics competence test for Grade 1 children migrates from Germany to South Africa. *South African Journal of Childhood Education*, 4(2), 114-133.

Henning, E., Bezuidenhout, H., Ramasodi, R., & Simelane, F. Community of Practice for Social Systems Strengthening to Improve Child Well-being Outcomes.

Secondary articles on the instrument and its use

Fritz, A., Ehlert, A., & Balzer, L. (2013). Development of mathematical concepts as basis for an elaborated mathematical understanding. *South African Journal of Childhood Education*, 3(1), 38-67.

Bezuidenhout, H.S. (2018). Diagnostic test for number concept development during early childhood. *South African Journal of Childhood Education*, 8(1), a584. <https://doi.org/10.4102/sajce>.

Henning, E., Ehlert, A., Herholdt, R., Balzer, L., Ragpot, L., & Fritz, A. (2019). MARKO-D. Mathematics and arithmetic diagnostic instrument.

Bezuidenhout, H. S. (2022). Associations between early numeracy and mathematics-specific vocabulary. *South African Journal of Childhood Education*, 12(1).



ANNUAL NATIONAL ASSESSMENTS (ANA)

Purpose

To afford learners the opportunity to demonstrate relevant skills. To understand and assist the education system with diagnosing learner shortcomings.

Target Phase(s)

Foundation, Intermediate and Senior Phases

Target learner age-group

Target by grade not by age

Target grade(s)

Grade 1-6 and Grade 9

Standardized or Class-based

Standardized

Domain(s)/Sub-domain(s) covered

CAPS Curriculum

Language(s) of assessment

All SA official languages

Level of use

National

Administration modality

Group administration

Format

Paper-based

Start year of use and/or duration

2011 - 2014

Collaborators

Sole initiative of the Department of Basic Education

Cost

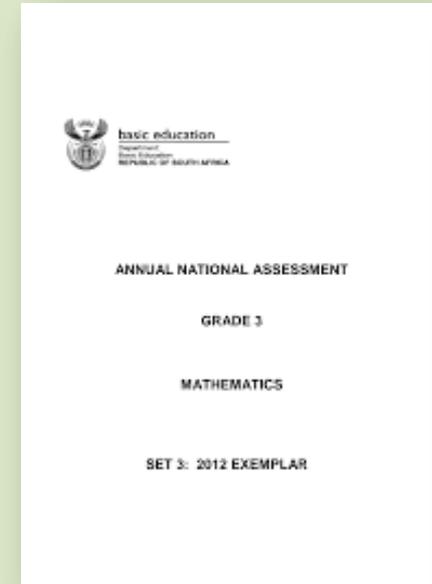
Paid by Department of Basic Education

Primary articles/reports on the instrument and its use

Department of Basic Education. (2012). Report on the Annual National Assessments of 2012: Grades 1 to 6 & 9. DOI: <https://thutong.doe.gov.za/>
Department of Basic Education. (2014). Report on the Annual National Assessments of 2014: Grades 1 to 6 & 9. DOI: <http://thutong.doe.gov.za/>

Secondary articles on the instrument and its use

SADTU. (2014). Annual National Assessment & (ANA): A SADTU perspective
Van der Berg, S. (2015). What the Annual National Assessments can tell us about learning deficits over the education system and the school career. *South African Journal of Childhood Education*, 5(2), 28-43.
Chisholm, L., & Wildeman, R. (2013). The politics of testing in South Africa. *Journal of Curriculum Studies*, 45(1), 89-100. Chapter 4 The role of assessment in Foundation Phase improvement: The Annual National Assessments and beyond *Carol Nuga Deliwe & Servaas van der Berg*.



Western Cape Education Systemic Evaluation

Purpose

The results assist schools to identify areas for improvement and the WCED to identify areas of the curriculum that require additional support.

Target Phase(s)

Foundation and Intermediate Phases

Target learner age-group

Target by grade not by age

Target grade(s)

Grade 3 & 6

Standardized or Class-based

Standardized

Domain(s)/Sub-domain(s) covered

CAPS Curriculum

Language(s) of assessment

Afrikaans, IsiXhosa and English

Level of use

Provincial

Administration modality

Group administration

Format

Paper-based

Start year of use and/or duration

2002 - 2022

Collaborators

University of Cape Town, Schools Development Unit

Cost

Free (covered by the province)

Primary articles/reports on the instrument and its use

None available

Secondary articles on the instrument and its use

Hazell, E., Spencer-Smith, G. and Roberts, N. 2019. Improving Grade R mathematics teaching in South Africa: Evidence from an impact evaluation of a province-wide intervention. *Journal of Education*, 2019 - Issue 76, Chapter 10 The conceptualisation, development, implementation, and evaluation of the Grade R Mathematics Project (R-Maths) in the Western Cape (2016–2019) *Garth Spencer-Smith, Eleanor Hazell & Cally Kuhne*



Western Cape
Government
Education

EXEMPLAR ITEMS

**MATHEMATICS
GRADE 3
(ENGLISH)**

Early Grade Mathematics Assessment Grade 1 (EGMA 1)

Purpose

Used in monitoring and evaluation of impact of interventions.

Target Phase(s)

Foundation Phase

Target learner age-group

Target by grade not by age

Target grade(s)

Grade 1

Standardized or Class-based

Standardized and school based

Domain(s)/Sub-domain(s) covered

- It assesses the foundational elements of Number (a component of Number, Operations and Relationships)
- It makes no claim to provide curriculum coverage (it does not) – even for Number, Operations and Relationships
 - It assesses learners on a range of “*foundational skills that research has shown to be predictive of future success in mathematics*”

Language(s) of assessment

All official SA languages

Level of use

National

Administration modality

Group administration

Format

Learner tablets
Paper-based

Start year of use and/or duration

2021

Collaborators

Brombacher and Associates
RTI International

Cost

KEY cost drivers:
License fee
Printing (Free download)
Training of Assessors
Kit hire
Technical support
Analysis and reporting

Primary articles/reports on the instrument and its use

Platas, L. M., Ketterlin-Gellar, L., Brombacher, A., & Sitabkhan, Y. (2014). Early grade mathematics assessment (EGMA) toolkit. *RTI International, Research Triangle Park, NC.*

Secondary articles on the instrument and its use

Moloi, Q., & Roberts, N. (2021). A validation process towards the modification of the Grade 1 Early Grade Mathematics Assessment. In Proceedings of the 26th Annual National Congress of the Association for Mathematics Education of South Africa, 14th–16th July (pp. 502–512).

Roberts & Moloi (2021) A validation process towards the modification of the grade 1 early grade mathematics assessment. AMESA long paper.

Core Early Grade Mathematics Assessment (EGMA Junior)

Purpose

Used in monitoring and evaluation of impact of interventions

Target Phase(s)

Foundation Phase

Target learner age-group

Target by grade not by age

Target grade(s)

Grade 2 & 3

Standardized or Class-based

Standardized and school based

Domain(s)/Sub-domain(s) covered

- It assesses the foundational elements of Number (a component of Number, Operations and Relationships)
- It makes no claim to provide curriculum coverage (it does not) – even for Number, Operations and Relationships
 - It assesses learners on a range of “*foundational skills that research has shown to be predictive of future success in mathematics*”

Language(s) of assessment

All official SA languages

Level of use

National

Administration modality

Group administration

Format

Learner tablets

Paper-based

Start year of use and/or duration

2016-Present

Collaborators

The development of the EGMA was led by RTI International and funded by the United States Agency for International Development (USAID) Jumpstart

Cost

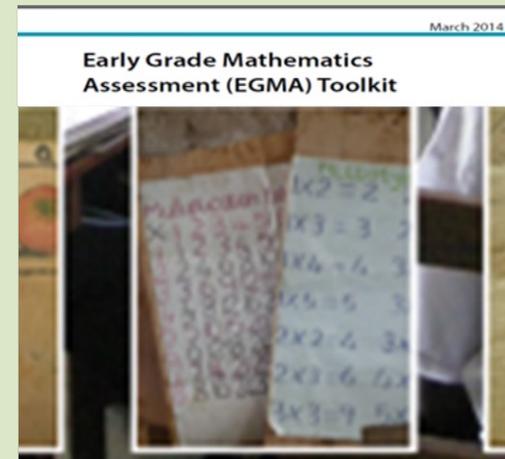
KEY cost drivers:
License fee
Printing (Free download)
Training of Assessors
Kit hire
Technical support
Analysis and reporting

Primary articles/reports on the instrument and its use

Platas, L. M., Ketterlin-Gellar, L., Brombacher, A., & Sitabkhan, Y. (2014). Early grade mathematics assessment (EGMA) toolkit. *RTI International, Research Triangle Park, NC.*

Secondary articles on the instrument and its use

Platas, L.M., Ketterlin-Geller, L.R., & Sitabkhan, Y. (2016). Using an assessment of early mathematical knowledge and skills to inform policy and practice: Examples from the early grade mathematics assessment. *International Journal of Education in Mathematics, Science and Technology*, 4(3), 163-173.
DOI:10.18404/ijemst.20881



Senior Early Grade Mathematics Assessment (EGMA Senior)

Purpose

Used in monitoring and evaluation of impact of interventions.

Target Phase(s)

Intermediate Phase

Target learner age-group

Target by grade not by age

Target grade(s)

Grade 4-7 (with plans to extend to Grade 8)

Standardized or Class-based

Standardized and school based

Domain(s)/Sub-domain(s) covered

- It assesses the foundational elements of Number (a component of Number, Operations and Relationships)
- It makes no claim to provide curriculum coverage (it does not) – even for Number, Operations and Relationships
 - It assesses learners on a range of “*foundational skills that research has shown to be predictive of future success in mathematics*”

Language(s) of assessment

English and Afrikaans

Level of use

National

Administration modality

Group administration

Format

Learner tablets
Paper-based

Start year of use and/or duration

2016 and later

Collaborators

Brombacher and Associates

Cost

KEY cost drivers:
License fee
Printing (Free download)
Training of Assessors
Kit hire
Technical support
Analysis and reporting

Primary articles/reports on the instrument and its use

Platas, L. M., Ketterlin-Gellar, L., Brombacher, A., & Sitabkhan, Y. (2014). Early grade mathematics assessment (EGMA) toolkit. *RTI International, Research Triangle Park, NC.*

Secondary articles on the instrument and its use

Reports available from Brombacher and Associates.

JET Custom Assessments

Purpose

Designed to track where learners are (grade level) in terms of the curriculum specifications.

Target Phase(s)

Foundation Phase and Intermediate Phase

Target learner age-group

Target by grade level not by age

Target grade(s)

Grade 1-6

Standardized or Class-based

Standardized and school based

Domain(s)/Sub-domain(s) covered

100% CAPS

Language(s) of assessment

English

Level of use

National

Administration modality

Group administration

Format

Learner tablets

Start year of use and/or duration

Collaborators

None

Cost

KEY cost drivers:
logistics
printing
couriering
fieldwork
marking
moderating
coding or recoding
analysis and reporting
presenting of results

Primary articles/reports on the instrument and its use

None available

Secondary articles on the instrument and its use

None available

Magic Classroom Collective

Purpose

Designed to assess primary mathematics development in the rural contexts of the Eastern Cape where IsiXhosa is the main Language of Learning and Teaching (LOLT)

Target Phase(s)

Foundation Phase

Target learner age-group

Target by grade not by age

Target grade(s)

Grade R-3

Standardized or Class-based

Standardized

Domain(s)/Sub-domain(s) covered

CAPS

Language(s) of assessment

English and IsiXhosa

Level of use

Provincial (Eastern Cape)

Administration modality

Group administration

Format

Paper-based

Start year of use and/or duration

2007 to present

Collaborators

Developed by the Nelson Mandela University in collaboration with the University of Fort Hare

Cost

KEY cost drivers:
Printing @ R??? per 1 000 copies
(To be confirmed)

Primary articles/reports on the instrument and its use

Secondary articles on the instrument and its use

Ramadiro, B., & Porteus, K. (2017). *Foundation phase matters: Language and learning in South African rural classrooms*. Magic Classroom Collective Press.
Porteus, K. (2022). Improving rural early grade mathematics: Design principles and patterns of improvement in Venkat & Roberts (Eds) *Early grade Mathematics in South Africa*, Oxford University Press.

B. Addition and Subtraction

/20



I will give you 2 minutes to complete as many addition and subtraction problems below as you can. When I say, "stop," please put your pencil down!

2-Minute Tangle

$3 + 3 =$	$10 - 4 =$	$20 - 3 =$	$5 + 5 =$
$10 - 5 =$	$6 + 6 =$	$15 + 4 =$	$21 - 2 =$
$12 + 3 =$	$8 - 4 =$	$10 + 10 =$	$4 + 13 =$
$11 - 2 =$	$18 - 1 =$	$7 + 10 =$	$16 - 15 =$

/4



Great! The rest of this assessment is not timed.
You can take your time and check your work carefully!

2. Solve by showing on the number line:



/2

Purpose

The ELOM indicates whether an Early Childhood Development (ECD) programme is effective in preparing children for Grade R and identifies areas for programmatic improvement.

Target Phase(s)

Foundation Phase

Target learner age-group

50-69 months

Target grade(s)

Grade R

Standardized or Class-based

Standardized

Domain(s)/Sub-domain(s) covered

100% CAPS

Language(s) of assessment

IsiXhosa, IsiZulu, English, Afrikaans and SeTswana

Level of use

National

Administration modality

Group administration

Format

Paper-based

Start year of use and/or duration

2016-Present

Collaborators

N/A

Cost

KEY cost drivers:
License fee
Training of Assessors
Kit hire
Technical support
Analysis and reporting

Primary articles/reports on the instrument and its use

Dawes, A., Biersteker, L., Girdwood, E., Snelling, M. and Horler, J. (2020). The Early Learning Programme Outcomes Study. Technical Report. Claremont Cape Town: Innovation Edge and Ilifa Labantwan

Dawes, A., Biersteker, L., Girdwood, E., Snelling, M.J.T.L., & Tredoux, C.G. (2020). Early Learning Outcomes Measure. Technical Manual 3rd edition. Claremont, Cape Town: The Innovation Edge.

Secondary articles on the instrument and its use

Dawes, A., Biersteker, L., Snelling, M., Horler, J., & Girdwood, E. (2021): To What Extent Can Community-based Playgroup Programmes Targeting Low-income Children Improve Learning Outcomes Prior to Entering the Reception Year in South Africa? A Quasi-experimental Field Study, *Early Education and Development*, DOI: 10.1080/10409289.2021.2005748

Anderson, K.J., Henning, T.J., Moonsamy, J.R., Scott, M., Du Plooy, C. & Dawes, A.R.L. (2021). Test-retest reliability and concurrent validity of the South African Early Learning Outcomes Measure (ELOM), *South African Journal of Childhood Education* 11(1), a881.

Dawes, A., Biersteker, L., Girdwood, E., Snelling, M.J.T.L., and Tredoux, C.G. (2018). Early Learning Assessment Innovation in South Africa: A Locally Appropriate Monitoring Tool. *Childhood Education*, 94:1, 12-16.

Purpose

To assess baseline knowledge on a particular concept.
To inform teaching that focuses on developing strategic efficiency as opposed to calculating using highly inefficient methods.

Target Phase(s)

Foundation Phase and Intermediate Phase

Target learner age-group

Target by grade not age

Target grade(s)

Grade 1 – 6 (Piloted at Grade 3 level to data)

Standardized or Class-based

Standardized and school based

Domain(s)/Sub-domain(s) covered

CAPS Aligned

Language(s) of assessment

Multilingual

Level of use

National

Administration modality

Group administration

Format

Paper-based

Materials can be found on:

<https://www.education.gov.za/MSAP2022.aspx>

Start year of use and/or duration

2011

Collaborators

Jointly funded by the FirstRand Foundation, Anglo American, Rand Merchant Bank and the Department of Science and Technology. It is administered by the National Research Foundation (Website).
Materials- developed collaboratively by the Numeracy Chairs at Wits and Rhodes Universities, the Department of Basic Education, as well as additional international and local experts.

Cost

KEY cost drivers:

Printing (free download)

Primary articles/reports on the instrument and its use

Graven, M. & Venkat, H. (2019) Piloting national diagnostic assessment for strategic calculation. *Mathematics Education Research Journal*.

Secondary articles on the instrument and its use

Askew, M., Graven, M. & Venkat, H. (2022). From what works to scaling up: Improving mental strategies in South African Grade 3 classes. In C. Fernández, S. Llinares, A. Gutiérrez, & N. Planas (Eds.), Proceedings of the 45th Conference of the International Group for the Psychology of Mathematics Education (Vol. 2, pp. 27–34). PME: Alicante, Spain.

Chapter 12 Bringing the Mental Starters Assessment project to scale in Foundation Phase: A 'building your timber' approach *Hamsa Venkat & Mellony Graven*.

Chapter 13 Lessons learned and evidence of impact: Formative assessment in an integrated reading and mathematics intervention *Anil Kanjee & Jayesh Bhana*

Mike Askew, Mellony Graven, Hamsa Venkat (2022) From what works to scaling up: Improving mental strategies in South African Grade 3 classes PME 45.

Bridging Through Tens Pre-Test 2 minutes for this page

7 + 3 = <input type="text"/>	50 + 6 = <input type="text"/>
2 + 8 = <input type="text"/>	3 + 60 = <input type="text"/>
10 = 7 + <input type="text"/>	20 - 7 = <input type="text"/>
8 less than 10 is <input type="text"/>	20 + 8 = <input type="text"/>
	What is the next multiple of 10? 48 <input type="text"/>
	100 + 27 = <input type="text"/>

Research Based Early Math Assessment (REMA)

Purpose

Diagnostic assessments measuring children's mathematical knowledge and skills along research-based developmental progressions

Target Phase(s)

Foundation Phase

Target learner age-group

3-8 years (full assessment)
Grade R only (REMA brief)

Target grade(s)

Grade R

Standardized or Class-based

Standardized

Domain(s)/Sub-domain(s) covered

100% CAPS

Language(s) of assessment

English

Level of use

International

Administration modality

Group administration

Format

Paper-based

Start year of use and/or duration

2008

Collaborators

None

Cost

Not available

Primary articles/reports on the instrument and its use

None identified

Secondary articles on the instrument and its use

Alkhadim, Ghadah & Cimetta, Adriana & Marx, Ronald & Cutshaw, Christina & Yaden, David. (2021).

Validating the Research-Based Early Math Assessment (REMA) among rural children in Southwest United States. *Studies in Educational Evaluation*. 68. 100944. 10.1016/j.stueduc.2020.100944.