



**ANNUAL NATIONAL ASSESSMENT 2013
ASSESSMENT GUIDELINES
MATHEMATICS
GRADE 4**

INTRODUCTION

The 2013 cycle of Annual National Assessment (ANA 2013) will be administered in all public and designated¹ independent schools from 10 to 13 September 2013. During this period all learners in Grades 4-6 will write nationally set tests in Language and Mathematics. The results will be used to report progress related to achieving the goals set in the *Action Plan 2014, Towards Schooling 2025*.

The ANA tests will be written during the third school term and, therefore, the Department of Basic Education (DBE) has developed Assessment Guideline documents for each grade and subject (Language and Mathematics) outlining the minimum curriculum content that must be covered by all learners prior to the writing of the test. The Assessment Guidelines define the scope of work that will be covered in the test for each grade and subject.

INTERMEDIATE PHASE

In Grades 4-6, the tests will cover work that is prescribed for the first three-quarters of the school year. The Assessment Guidelines are arranged in three columns: Content Area; Concepts and Skills; and Content to be assessed.

It is important to note that the ANA 2013 Assessment Guidelines do not imply that the delimited scope is all that must be taught and learnt during the school year. Instead, the Assessment Guidelines provide the minimum curriculum requirements that must be covered by the end of the third school quarter.

Teachers are expected to use these Assessment Guidelines together with the other resources for their teaching and assessment programmes.

¹ "Designated" independent schools are those that will apply and register either their Grade 3 or Grade 6 learners to participate in ANA for purposes of securing State subsidy.

Content area	Concepts and skills To test whether the learner is able to ...	Content Area Assessed
NUMBERS, OPERATIONS AND RELATIONSHIPS	Number range for counting, ordering, comparing and representing, and place value of digits • count forwards and backwards in 2s, 3s, 5s, 10s, 25s, 50s, 100s between 0 and at least 10 000 • order, compare and represent numbers to at least 4-digit numbers • recognise the place value of digits in whole numbers to at least 4-digit numbers • round off to the nearest 10, 100, 1 000	Counting forwards and backwards Representing 4-digit numbers Recognising place value Rounding Off
	Number range for calculations • add and subtract whole numbers of at least 4 digits • multiply at least whole 2-digit by 2-digit numbers • divide at least whole 3-digit by 1-digit numbers	Addition of whole numbers Addition of whole numbers Multiplication of whole numbers Division of whole numbers

	Calculation techniques • use a range of techniques to perform and check written and mental calculations of whole numbers including - estimation - building up and breaking down numbers - rounding off and compensating - doubling and halving - using a number line - using addition and subtraction as inverse operations - using multiplication and division as inverse operations	
	Number range for multiples and factors • Multiples of 1-digit numbers to at least 100	Multiples and factors
	Properties of whole numbers • recognise and use the commutative, associative and distributive properties with whole numbers	Properties of whole numbers

	Solving problems • Solve problems in contexts involving whole numbers, including: - financial contexts - measurement contexts • Solve problems involving whole numbers	Solves problems in context
	Describing and ordering fractions: • Compare and order common fractions with different denominators (halves, thirds, quarters, fifths, sixths, sevenths, eighths) • Describe and compare common fractions in diagram form	Compare and order common fractions
	Calculations with fractions: • Addition of common fractions with the same denominators • Recognise, describe and use the equivalent forms of division and fractions	Addition of fractions Recognise, describe and use the equivalent forms of division and fractions
	Equivalent forms: • Recognise and use the equivalent forms of common fractions (fractions in which one denominator is a multiple of another)	Equivalent forms with denominators which are multiples of each other

PATTERNS, FUNCTIONS AND ALGEBRA	Numeric patterns Investigate and extend patterns - Investigate and extend numeric patterns looking for relationships or rules of patterns: - sequences involving a constant difference or ratio - Describe observed relationships or rules in learner's own words	Investigate and extend numeric patterns
	Geometric patterns Investigate and extend patterns - Investigate and extend geometric patterns looking for relationships or rules of patterns - represented in physical or diagram form - sequences not limited to a constant difference or ratio - Describe observed relationships or rules in learner's own words	Investigate and extend geometric patterns
	Input and output values Determine input values, output values and rules for the patterns and relationships using flow diagrams	Determining input and output values

	Equivalent forms • Determine equivalent forms of different descriptions of the same relationship or rule represented: - verbally - in a flow diagram - by a number sentence	Determining the equivalent forms
	Number sentences (Introduction to Algebra) • Write number sentences to describe problem situations • Solve and complete number sentences by: - inspection - trial and improvement	Completing number sentences
SPACE AND SHAPE	Properties of 2-D shapes Range of shapes • Recognise, visualise and name 2-D shapes in the environment and also geometric settings focusing on: - regular and irregular polygons: triangles, squares, rectangles, other quadrilaterals, pentagons, hexagons - circles	Recognise and name 2-D shapes

	Properties of 3-D objects Range of objects • Recognize, visualize and name 3-D objects in the environment and also geometric settings focusing on: - rectangular prisms - spheres - cylinders - pyramids	Recognise and name 3-D objects
	Characteristics of objects • Describe, sort and compare 3-D objects in terms of: - shapes of faces - flat and curved surfaces	Describe, sort and compare 3-D objects
	Symmetry • Recognise, draw and describe line(s) of symmetry in 2-D shapes	Symmetry
	Position and views • Match different views of everyday objects • Identify everyday objects from different views	Viewing of objects

MEASUREMENT	Calculations and problem-solving involving length • Solve problems in contexts involving length • Conversions include converting between: - millimetres (mm) and centimetres (cm) - centimetres (cm) and metres (m)	Problem-solving involving length
	Calculations and problem solving involving capacity/volume include: • Problems in contexts involving capacity/volume	Problem solving involving capacity
	Reading time and time instruments • Read, tell and write time in 12-hour and 24-hour formats on both analogue and digital instrument in: - hours - minutes - seconds • Instruments include clocks and watches	Read, tell and write time

	Reading calendars Calculations and problem solving time include: • Problems in contexts involving time • Calculation of the number of days between any two dates within the same or consecutive years • Calculation of time intervals where time is given in minutes or hours only	Reading calendars and problem solving
DATA HANDLING	Collecting and organising data • Collect data using tally marks and tables for recording	Organising data tally tables
	Representing data Draw a variety of graphs to display and interpret data including: • pictographs (one-to-one correspondence between data and representation)	Representing data using graphs
	Analysing data Analyse data by answering questions related to data categories	Analysing and interpreting data