Study & Master

Mathematics

CAPS

Teacher's Guide

Grade 2

Gaynor Cozens • Cheryl Ann Thomas

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Contents

Part 1 Introduction

The *National Curriculum and Assessment Policy Statements* (January 2011) replace the *National Curriculum Statements Grades R–9* (2002) and the *National Curriculum Statements Grades 10–12* (2004). The *Curriculum and Assessment Policy Statement (CAPS) for Foundation Phase Mathematics (Grades R–3)* comes into effect in January 2012, and replaces the Subject Statements, Learning Programme Guidelines and Subject Assessment Guidelines that were used before then.

The instructional time for subjects in the Foundation Phase is given in the table below.

Table 1: Instructional time for Foundation Phase subjects

Subject	Time allocation per week (hours)
Languages (FAL and HL)	10 (11)
Mathematics	7
Life skills:	6 (7)
• Beginning knowledge	1 (2)
• Creative arts	2
• Physical education	2
• Personal and social well-being	1

The mathematics curriculum: aims and skills

The aims of the national curriculum for Mathematics, as set out in the CAPS, are to develop the following qualities in learners:
- a critical awareness of how mathematical relationships are used in social, environmental, cultural and economic relations;
- confidence and competence to deal with any mathematical situation without being hindered by a fear of mathematics;
- a spirit of curiosity and a love for mathematics;
- an appreciation for the beauty and elegance of mathematics;
- recognition that mathematics is a creative part of human activity;
- deep understanding of concepts needed to make sense of mathematics;
- acquisition of specific knowledge and skills necessary for:
  - ❑ the application of mathematics to physical, social and mathematical problems;
  - ❑ the study of related subject matter (e.g. other subjects)
  - ❑ the further study of mathematics.

The CAPS lists the following specific skills that learners must acquire to develop their essential mathematical skills:
- correct use of the language of mathematics;
- number vocabulary, number concept and calculation and application skills;
- ability to listen, communicate, think, reason logically and apply the mathematical knowledge gained;

- ability to investigate, analyse, represent and interpret information;
- ability to pose and solve problems;
- awareness of the important role that mathematics plays in real-life situations, including the personal development of the learner.

Problem-solving and mathematics

This *Study and Master Mathematics* course aims to encourage learner-centred and activity-based learning through problem-solving, an approach which should be applied throughout the course.

Problem-solving is one of the unique features of learning and teaching mathematics. Learners should be able to:
- make sense of problems;
- analyse, synthesise (create), determine and execute solution strategies;
- validate (confirm) and interpret the solutions appropriate to the context.

You should realise that problem-solving does not necessarily imply solving word problems. Word problems could be examples of extending problems that test knowledge involving the use and validation of learned techniques.

In a problem-solving situation, it may be highly unlikely that learners have had previous instruction on how to tackle the problems they are facing. Learners should invent their own solution strategies using different problem-solving procedures. There are no readymade recipes or blueprints for searching for and finding problem-solving solutions.

Solutions and strategies are not as obvious in problem-solving situations as they are in word problems. In word problems it is easy to identify which operations to apply to solve the problem. Problem-solving is not a topic that can be learned. It is a process in which learners can explore situations by applying different skills. Learners construct new meaning by building on previous knowledge and experiences in an active, cooperative environment.

Learners do not learn problem-solving techniques by memorising rules or consulting checklists. You should raise consistent awareness of the different techniques suitable for different problem-solving situations. You could give the problem as a homework task, group activity or introduction to new concepts (knowledge), or deal with it in an oral or written situation that applies to all learners without gender or culture bias.

Keep in mind that it is important to acknowledge that people are fundamentally different, and experience problem situations differently. Expect learners to apply a wide range of different methods and ideas in the problem-solving process. Monitor learner groups carefully and encourage discussions and arguments while questioning learners about their progress.

Have a class discussion on making mistakes, working well together, useful steps to keep in mind during the lesson, and enjoyment as an important part of mathematics activity. Discuss each aspect and ask learners questions like: How do you feel when you have made a mistake? Why do you feel this way? Explain, for example, what it means to work towards a common goal.

Inclusivity in the mathematics classroom

The ultimate aim of an inclusive school is to contribute towards the development of an inclusive society, where diversity is respected and used as a tool for building a stronger community.

Inclusive education is a process whereby barriers to successful learning are identified and then removed for every learner. This starts at the school level, where the physical environment should be designed to accommodate learners who are differently-abled, where the school principal, the staff and the parents/guardians work together to create a good school ethos and where specialised equipment and/or personnel are provided for the differently-abled learners.

Highlight on a day-to-day basis the aspects of mathematics that encourage cooperative learning and respect for diversity.

Plan activities on an individual, pair or group basis so that you can meet the different needs of learners.

Homogeneous groups or pairs (in which all the learners have more or less the same level of skill and knowledge) are appropriate when the purpose of the group is to assist learners who have a common special educational need. Use homogeneous groups to cope with differentiated learning, for example when learners who have completed a class activity are given an individual or group extension activity while you work with the rest of the class; or for a group that needs more intensive input from you to understand and complete an activity. The intention is not for these groups to be fixed groups, but that learners move to different groups according to their needs and progress.

Heterogeneous groups have a number of advantages. These groups consist of learners with diverse backgrounds, gender, language and ability. Heterogeneous groups expose learners to new ideas, generate more discussion, and allow explanations to be given and received more frequently, which increases understanding. Peer-tutoring, where two learners with different skills are paired, can be a mutually enriching experience.

Content areas in Foundation Phase Mathematics

Mathematics in the Foundation Phase covers five content areas:
- Numbers, operations and relationships
- Patterns, functions and algebra
- Space and Shape (Geometry)
- Measurement
- Data handling

Each content area contributes towards the acquisition of specific skills. The table in the CAPS document (under "Documents" at the back of this file) shows the general focus of the content areas in the Mathematics curriculum for all phases, as well as the specific content focus for the Foundation Phase.

Each content area is divided into topics. All the content areas must be taught every term – see the Weekly teaching schedule below.

Please note

In *Study & Master Mathematics* Grade 1–3 the activities within each content area are set out in such a way that concepts and skills are scaffolded and developed progressively, allowing educators to determine progression and speed for the various ability level groups in the class.

Weekly teaching schedule

Term 1

Week	Topic	Content Area/ Module	Activity	LB page
1	Orientation and Baseline assessment During this time select a few appropriate activities from Grade 1 books and do revision and consolidation of Grade 1 work. During the teaching and execution of these activities the educator should move around amongst the learners to observe and record the ability levels the learners are at.			
2	• Count forwards and backwards in ones from any number between 0 and 100 • Know and read number symbols 0 to 50 • Place value: Know what each digit represents • Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 20 • Time: know days of week	1 1 1 1 4	1 9 18 70 5	4 12 21 73 122

3	• Count forwards and backwards
	  – in ones from any number between 0 and 100
	  – in fives from any multiple of 5 between 0 and 100
	• Know and read number symbols 0 to 50
	• Order whole numbers from smallest to biggest, and biggest to smallest
	• Place value: know what each digit represents
	• Time: know months of year
		
		1
		1
		1
		1
		1
		4
			
			1
			6
			9
			3
			18
			6
				
				4
				9
				12
				6
				21
				123

Term 1				
Week	Topic	Content Area/ Module	Activity	LB page

4	• Count forwards and backwards
	   – in ones from any number between 0 and 100
	   – in tens from any multiple of 10 between 0 and 100
	• Write number symbols 0 – 50
	• Compare whole numbers using smaller than, greater than, more than, less than and is equal to
	• Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 20
	• 2-D shapes: describe, sort and compare
	• Data handling
		1
		1
		1
		
		1
		
		1
		3
		5
			1
			7
			9
			
			8
			
			70
			4
			1
				4
				10
				12
				
				11
				
				73
				99
				138

5	• Count forwards and backwards – in ones from any number between 0 and 100 • Order whole numbers from smallest to biggest, and biggest to smallest • Decompose 2-digit numbers into multiples of tens and units/ones (TU) • Copy simple patterns using physical objects	1 1 1 2	1 3 19 7	4 6 22 92

6	• Count forwards and backwards
	   – in ones from any number between 0 and 100
	   – fives from any multiple of 5 between 0 and 100
	• Compare whole numbers using smaller than, greater than, more than, less than and is equal to
	• Copy simple patterns using physical objects
		1
		1
		
		1
		2
			4
			6
			
			8
			7
				7
				9
				
				11
				92

7	• Count forwards and backwards in ones from any number between 0 and 100 • Order whole numbers from smallest to biggest, and biggest to smallest • Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 20 • Measurement: length	1 1 1 4	4 3 31, 71 17	7 6 34, 74 134

8	• Count forwards and backwards
	   – in ones from any number between 0 and 100
	   – in tens from any multiple of 10 between 0 and 100
	• Compare whole numbers using smaller than, greater than, more than, less than and is equal to
	• Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 20
	• Repeated addition leading to multiplication
	• Measurement: length
		1
		1
		
		1
		
		1
		1
		4
			4
			7
			
			8
			
			71
			47
			18
				7
				10
				
				11
				
				74
				50
				135

9	• Count forwards and backwards in ones from any number between 0 and 100 • Decompose 2-digit numbers into multiples of tens and units/ones (TU) • Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 20 • Copy simple patterns using physical objects	1 1 1 2	4 19 39 7	7 22 42 92

10	• Count forwards and backwards
	   – in ones from any number between 0 and 100
	   – in tens from any multiple of 10 between 0 and 100
	• Position objects in a line from first to tenth or first to last, e.g. first, second, third ... tenth (ordinal numbers)
	• Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 20
	• Solve money problems involving totals and change in cents up to 50c or rands to R20
		1
		1
		
		1
		
		1
		
		1
			4
			7
			
			14
			
			41
			
			29
				7
				10
				
				17
				
				44
				
				32

Term 2

Week	Topic	Content Area/ Module	Activity	LB page
1	• Count forwards and backwards in ones from any number between 0 and 150	1	1, 2	4, 5
	• Know and read number symbols 0 to 150	1	10	13
	• Compare whole numbers using smaller than, greater than, more than, less than and is equal to	1	12	15
	• Place value: know what each digit represents	1	22	25
	• Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 20	1	32	35
	• Copy and complete number patterns	2	4	89
2	• Count forwards and backwards in ones from any number between 0 and 150	1	1, 2	4, 5
	• Know and read number symbols 0 to 150	1	11	14
	• Compare whole numbers using smaller than, greater than, more than, less than and is equal to	1	13	15
	• Decompose 2-digit numbers into multiple of tens and ones (TU)	1	25	28
	• Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 50	1	34	37
	• Shape and space: direction	3	19	115
3	• Count forwards and backwards			
	– in ones from any number between 0 and 150	1	1, 2	4, 5
	– in hundreds	1	5	8
	• Describe, compare, order numbers: order whole numbers	1	15	18
	• Number bonds	1	23	26
	• Solve word problems in context and explain own solution to problems involving addition and subtraction	1	38	41
	• Shape and space: symmetry	3	10	105
4	• Count forwards and backwards in ones from any number between 0 and 150	1	1, 2, 4	4, 5, 7
	• Compare whole numbers using smaller than, greater than, more than, less than and is equal to	1	9	12
	• Solve word problems in context and explain own solution to problems involving addition and subtraction	1	40	43
	• Measurement: time	4	1	118
5	• Count forwards and backwards in ones from any number between 0 and 150	1	1,2,4	4, 5, 7
	• Solve word problems in context and explain own solution to problems involving addition and subtraction	1	42	45
	• Repeated addition leading to multiplication	1	48	51
	• Measurement: time	4	7	124

Term 2				
Week	Topic	Content Area/ Module	Activity	LB page

6	• Count forwards and backwards
	  – in ones from any number between 0 and 150
	  – in fives from any multiple of 5 between 0 and 100
	• Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary fractions, e.g. ½, ¼, ⅕, etc.
	• Solve money problems involving totals and change in cents up to 50c or rands to R50
	• Measurement: mass
		1
		1
		
		1
		
		1
		4
			4
			6
			
			16
			
			30
			13
				7
				9
				
				19
				
				33
				130

7	• Count forwards and backwards in ones from any number between 0 and 100 • Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary fractions, e.g. ½, ¼, ⅕, etc. • Solve word problems in context and explain own solution to problems involving addition and subtraction • Data handling	1 1 1 5	4 17 36 2	7 20 39 139
8	• Count forwards and backwards in ones from any number between 0 and 150 • Solve word problems in context and explain own solution to problems involving addition and subtraction • Halving of numbers • Data handling	1 1 1 5	4 43 57 3	7 46 60 140
9	• Count forwards and backwards in ones from any number between 0 and 150 • Decompose 2-digit numbers into multiples of tens and units/ones (TU) • Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 20 • Patterns: number lines • Measurement: mass	1 1 1 2 4	4 76 70, 71 3 14	7 79 73, 74 88 131
10	• Count forwards and backwards in ones from any number between 0 and 150 • Decompose 2-digit numbers into multiples of tens and units/ones (TU) • Solve word problems in context and explain own solution to problems involving addition and subtraction • Halving of numbers • Solve money problems involving totals and change in cents up to 50c or rands to R50 • 2-D Shapes • Measurement: problem solving • Calendar Work	1 1 1 1 1 3 4 4	4 26 27, 28 60 65 9 19 12	7 29 30, 31 63 68 104 136 129

Term 3				
Week	Topic	Content Area/ Module	Activity	LB page
1	• Count forwards and backwards • Place value • Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 50 • Patterns: copy, extend and describe patterns • Shape and space: position and view • Measurement: tell time	1 1 1 2 3 4	1, 2 19 35 1 13 2	4, 5 22 38 86 108 119
2	• Count forwards and backwards • Place value • Number bonds • Solve word problems in context and explain own solution to problems involving addition and subtraction • Repeated addition leading to multiplication • Shape and space – position and view	1 1 1 1 1 3	1, 2 21 72 20, 44 49 14	4, 5 24 75 23, 47 52 109
3	• Count forwards and backwards • Place value • Repeated addition leading to multiplication • Patterns: copy, extend and describe patterns • Shape and space: recognise and name 3-D objects • Direction	1 1 1 2 3 3	1, 2 24 50 6 1 20	4, 5 27 53 91 96 116
4	• Count forwards and backwards • Repeated addition leading to multiplication • Calculations: equal sharing (division) • Patterns: copy, extend and describe a number sequence • Shape and space – describe, sort and compare 3-D objects	1 1 1 2 3	1, 2, 4 51 58 10 2	4, 5, 7 54 61 95 97
5	• Count forwards and backwards • Solve money problems • Repeated addition leading to multiplication • Features of shapes: sorted according to straight/round edges • Measurement: calculate length of time	1 1 1 3 4	1, 2, 4 69 53 6 8	4, 5, 7 72 56 101 125
6	• Count forwards and backwards in ones from any number between 0 and 180 • Doubling and halving of numbers • Calculations: equal sharing (division) • Measurement: telling time • Measurement: calculate length of time	1 1 1 4 4	4 61 59 3, 4 10	7 64 62 120, 121 127
7	• Count forwards and backwards • Doubling and halving of numbers • Problem solving: equal sharing • Shape and space: direction	1 1 1 3	4 77 55, 62 21	7 80 58, 65 117

Term 3

Week	Topic	Content Area/ Module	Activity	LB page
8	• Count forwards and backwards	1	4	7
	• Solve word problems in context and explain own solutions to problems involving addition and subtraction	1	63	66
	• Solve money problems	1	64	67
	• Measurement: capacity	4	15	132
	• Data handling	5	4	141
9	• Count forwards and backwards	1	4	7
	• Number bonds	1	73	76
	• Solve word problems in context and explain own solution to problems involving addition and subtraction	1	66	69
	• Measurement: calculate length of time	4	9	126
	• Data handling	5	5	142
10	• Count forwards and backwards	1	4	7
	• Solve money problems	1	68	71
	• Patterns: copy, extend and explain a number sequence	2	10	95
	• Symmetry	3	12	107
	• Data handling	5	6	143

Term 4

Week	Topic	Content Area/ Module	Activity	LB page
1	• Count forwards and backwards	1	1, 2, 4	4, 5, 7
	• Place value	1	25	28
	• Solve word problems in context and explain own solution to problems involving addition and subtraction	1	79	82
	• Shape and space: sort 3-D objects	3	3	98
	• Revision exercise: number bonds	1	74	77
2	• Count forwards and backwards	1	1, 2	4, 5
	• Place value	1	33	36
	• Solve word problems in context and explain own solution to problems involving addition and subtraction	1	80	83
	• Shape and space: features of objects	3	5	100
	• Shape and space: direction	3	21	117
	• Revision exercise: number bonds	1	75	78

Term 4				
Week	Topic	Content Area/ Module	Activity	LB page
3	• Count forwards and backwards • Solve word problems in context and explain own solution to problems involving addition and subtraction • Repeated addition leading to multiplication • Shape and space: features of objects Measurement: calendar work Revision exercise	1 1 1 3 4 1	1, 2 37 81 7 11 78	4, 5 40 84 102 128 81
4	• Count forwards and backwards • Solve word problems in context and explain own solution to problems involving addition and subtraction • Repeated addition leading to multiplication • Shape and space: build with 2-D shapes • Data handling	1 1 1 3 5	1, 2, 4 45 82 8 7	4, 5, 7 48 85 103 144
5	• Count forwards and backwards • Solve word problems in context and explain own solution to problems involving addition and subtraction • Patterns: copy, extend and describe patterns • Patterns: creating geometric patterns • Measurement: capacity	1 1 2 2 4	1, 2, 4 46 2 9 16	4, 5, 7 49 87 94 133
6	• Count forwards and backwards • Repeated addition leading to multiplication • Problem solving: working with money • Patterns: copy, extend and describe number patterns • Shape and space: symmetry	1 1 1 2 3	1, 2, 4 52 67 5 11	4, 5, 7 55 70 90 106
7	• Count forwards and backwards • Problem solving: repeated addition leading to multiplication • Patterns: copy, extend and describe geometric patterns • Shape and space: position and view • Data handling	1 1 2 3 5	1, 2, 4 54 8 15, 16 8	4, 5, 7 57 93 110, 111 145
8	• Count forwards and backwards • Problem solving: equal sharing • Patterns: copy, extend and describe patterns in nature • Shape and space: position and direction	1 1 2 3	1, 2, 4 56 9 17, 18	4, 5, 7 59 94 112, 113
9	• Count forwards and backwards • Solve word problems in context and explain own solution to problems involving addition/subtraction/equal sharing • Patterns: copy, extends and describes number patterns • Measurement: time – problem solving • Data handling	1 1 2 4 5	1, 2, 4 57 10 20 9	4, 5, 7 60 95 116 146
10	• It is advisable to use the final week of the term to consolidate, revise, remediate and extend concepts and skills learnt during the course of the term and earlier in the year. • Also do final oral, practical and written assessment of learners in need of more attention.			

The Weekly teaching schedule shows how the content areas can be spread and revisited throughout the year. You may choose to sequence and pace the topics in each content area differently from the way the teaching schedule does this. If you do, it is important to bear in mind the relative weighting and notional hours of the content areas when you plan your teaching schedule for each topic.

Weighting of content areas

Mathematics content areas are weighted for two purposes: *firstly* the weighting gives guidance on the amount of time needed to adequately cover the content in each content area; *secondly* the weighting gives teachers guidance on the spread of content in the examination (especially in the end-of-year summative assessment).

The weighting of the content is not the same for each grade in the Foundation Phase. The table below shows the different weightings, per grade.

Table 2: Weighting of content areas in Foundation Phase Mathematics

Content area	Weighting of content areas		
	Grade 1	Grade 2	Grade 3
Numbers, operations and relationships*	65%	60%	58%
Patterns, functions and algebra	10%	10%	10%
Space and shape (geometry)	11%	13%	13%
Measurement	9%	12%	14%
Data handling (statistics)	5%	5%	5%
	100%	100%	100%

* In Grades 1–3, Numbers, operations and relationships are the main focus of mathematics. By the end of the Foundation Phase learners need to have a secure number sense and operational fluency that they can take with them into the next phase. The aim is for learners to be competent and confident with numbers and calculations. For this reason the notional time allocated to the Numbers, operations and relationships content area has been increased. Most of the work on patterns in the Patterns, functions and algebra content area should focus on Number patterns, to further consolidate learners' ability to work with numbers. The section 'Allocation of teaching time' in Part 2 below gives more information about how your teaching time should be organised to cover all the content areas in the course of the year.

Progression in content areas across the Foundation Phase

In the Foundation Phase Mathematics curriculum, links are created between the learners' experience gained in their pre-school and home life, and the more abstract mathematics they will encounter in later grades. In Grades 1–3 they should have many mathematical experiences that give them opportunities to "do, talk and record" their mathematical thinking. Suggestions for planning and organising these types of classroom mathematical experiences are given in Part 2 of this *Teacher's Guide*.

Learners develop their skills and knowledge in each content area in a careful progression from Grade R to Grade 3. The **Phase overview** gives an overview of this progression for the whole Foundation Phase.

Phase overview

Numbers, operations and relationships • Number concept development

Count with whole numbers

Mod	Topics	Term 1	Term 2	Term 3	Term 4
1	Count objects	Count concrete objects	Count out objects reliably to 20	Count out objects reliably to 40	Count out objects reliably to 50
			Give a reasonable estimate of a number of objects that can be checked by counting.	Give a reasonable estimate of a number of objects that can be checked by counting.	Give a reasonable estimate of a number of objects that can be checked by counting.
1	Count forwards and backwards	Count forwards and backwards in: • ones from any number between 1 and 20	Count forwards and backwards in • ones from any number between 0 - 50 Count forwards in • tens from any multiple of 10 between 0 and 50 • fives from any multiple of 5 between 0 and 50 • twos from any multiple of 2 between 0 and 20	Count forwards and backwards in • ones from any number between 0 – 80 Count forwards in • tens from any multiple of 10 between 0 and 80 • fives from any multiple of 5 between 0 and 80 • twos from any multiple of 2 between 0 and 80	Count forwards and backwards in • ones from any number between 0-100 Count forwards in • tens from any multiple of 10 between 0 and 100 • fives from any multiple of 5 between 0 and 100 • twos from any multiple of 2 between 0 and 100

Represent whole numbers

	Content	Term 1	Term 2	Term 3	Term 4
1	Number symbols and number names	**Know and read numbers** • Know and read number symbols 0 to 20 • Write number symbols 0-5 • Know and read number names 0-5 • Write number names 0-5	**Know and read numbers** • Know and read number symbols 0 to 50 • Write number symbols 0-10 • Know and read number names 0-10 • Write number names 0-10	**Know and read numbers** • Know and read number symbols 0 to 80 • Write number symbols 0-20 • Know and read number names 0-10 • Write number names 0-10	**Know and read numbers** • Know and read number symbols 0 to 100 • Write number symbols 0-20 • Know and read number names 0-10 • Write number name 0-10

Order and compare whole numbers

		Term 1	Term 2	Term 3	Term 4
1	Describe, compare, order numbers	Order and compare objects. • Compare collection of objects according to many, few; most, least; more than, less than; the same as, just as many as, different	Order and compare objects. • Compare collection of objects according to many, few; most, least more than, less than; the same as, just as many as, different	Order and compare objects. • Compare collection of objects according to many, few; most, least more than, less than; the same as, just as many as, different	Order and compare objects. • Compare collection of objects according to many, few; most, least; more than, less than; the same as, just as many as, different
		• Order collection of objects from most to least and least to most. • Range up to 5 objects	• Order collection of objects from most to least and least to most. • Range up to 10 objects	• Order collection of objects from most to least and least to most. • Range up to 15 objects	• Order collection of objects from most to least and least to most. • Range up to 20 objects
		Order and compare numbers to 5	Order and compare numbers to 10	Order and compare numbers to 15	Order and compare numbers to 20

Describe, compare, order numbers *(continued)*	Order numbers: • from smallest to greatest and greatest to smallest • number line 1–5 Describe order using language e.g. • before, after, in the middle/ between	Order numbers: • from smallest to greatest and greatest to smallest • before, after, in the middle/ between • using the number line 0–50	Order numbers: • from smallest to greatest and greatest to smallest • before, after, in the middle/ between • using the number line 0–80	Order numbers: • from smallest to greatest and greatest to smallest • before, after, in the middle/ between • using the number line 0–100
	Compare whole numbers using language e.g. • according to smaller than, greater than/more than less than • number range up to 5	Compare whole numbers according to smaller than, greater than/more than, less than, is equal to • one- to one correspondence • number range up to 10	Compare whole numbers according to smaller than, greater than, more than, less than, is equal to • one-to-one correspondence • number range up to 15	Compare whole numbers according to smaller than, greater than, more than, less than, is equal to • one-to-one correspondence • number range up to 20
	Use ordinal numbers to show order, place or position • Position objects in a line from first to tenth or first to last e.g. first, second third, last. (ordinal numbers)	Use ordinal numbers to show order, place or position • Position objects in a line from first to tenth or first to last e.g. first, second, third, fourth, fifth, last (ordinal numbers)	Use ordinal numbers to show order, place or position • Position objects in a line from first to tenth or first to last e.g. first, second, third ... tenth, last (ordinal numbers)	Use ordinal numbers to show order, place or position • Position objects in a line from first to tenth or first to last e.g. first, second, third ... tenth, last (ordinal numbers)
	Ordinal aspect of numbers in the range first to fifth	Ordinal aspect of numbers in the range first to tenth	Ordinal aspect of numbers in the range first to tenth	Ordinal aspect of numbers in the range first to tenth
Place value				
1 Place value			Recognise the place value of at least 2- digit numbers to 15 • Partition 2 digits numbers into tens and ones to 80 e.g. 12 is 10 and 2	Recognise the place value of at least 2- digit numbers to 20 • Partition 2 digits numbers into tens and ones to 99 e.g. 19 is 10 and 9
Solve number problems				
1 Problem solving techniques	Use the following techniques when solving problems and explain solutions to problems: • concrete apparatus e.g. counters • pictures to draw the story sum • number lines	Use the following techniques when solving problems and explain solutions to problems: • concrete apparatus e.g. counters • pictures to draw the story sum • building up and breaking down numbers • doubling and halving • number lines	Use the following techniques when solving problems and explain solutions to problems: • concrete apparatus e.g. counters • pictures to draw the story sum • building up and breaking down numbers • doubling and halving • number lines	Use the following techniques when solving problems and explain solutions to problems: • concrete apparatus e.g. counters • pictures to draw the story sum • building up and breaking down numbers • doubling and halving • number lines • shares strategies with peers

1	Addition, subtraction	Practically solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 5	Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 10	Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 15	Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 20.
1	Repeated addition leading to multiplication		Solve word problems in context and explains own solution to problems involving repeated addition with answers up to 10	Solve word problems in context and explains own solution to problems involving repeated addition with answers up to 15	Solve word problems in context and explains own solution to problems involving repeated addition with answers up to 20
1	Grouping and sharing leading to division	Solve and explain solutions to practical problems involving equal sharing and grouping with whole numbers up to 5 and with answers that can include remainders	Solve and explain solutions to practical problems involving equal sharing and grouping with whole numbers up to 10 and with answers that can include remainders	Solve and explain solutions to practical problems involving equal sharing and grouping with whole numbers up to 15 and with answers that can include remainders	Solve and explain solutions to practical problems involving equal sharing and grouping with whole numbers up to 20 and with answers that can include remainders
1	Money		Recognise and identify the SA currency • coins 5c, 10c, 20, 50c, R1, R2	Recognise and identify the SA currency • coins 5c, 10c, 20, 50c, R1, R2	Recognises and identify the SA currency • coins 5c, 10c, 20, 50c, R1, R2 • notes R10 and R20
			Solve money problems involving totals and change to R10 and in cents up to 20c cents	Solve money problems involving totals and change to R20 and in cents up to 20c cents	• notes R10 and R20 Solve money problems involving totals and change in cents up to 50c or rands to R20
Calculations					
1	Methods or strategies	Use the following techniques when performing calculations: • number lines supported by concrete apparatus e.g. counting beads	Use the following techniques when performing calculations: • building up and breaking down numbers • doubling and halving	Use the following techniques when performing calculations: • building up and breaking down numbers • doubling and halving	Use the following techniques when performing calculations: • building up and breaking down numbers • doubling and halving
1	Addition and subtraction	Number range: 0 -5 • Addition up to 5 • Subtract from 5 • Practise number bonds to 5	Number range: 0 -10 • add up to 10 • subtract from 10 • use appropriate symbols (+, −, =, ×) • practice number bonds to 7	Number range: 0-15 • add to 15 • subtract from 15 • use appropriate symbols (+, −, =, ×) • practice number bonds to 9	Number range: 0 -20 • add to 20 • subtract from 20 • use appropriate symbols (+, −, ×) • practice number bonds to 10
1	Repeated addition leading to multiplication		Repeated addition (i.e. the same number) to 10 • use appropriate symbols (+, −, =, ×)	Repeated addition (i.e. the same number) to 10 • use appropriate symbols (+, −, =, ×)	Repeated addition (i.e. the same number) to 20 • use appropriate symbols (+, −, =, ×)

	Term 1	Term 2	Term 3	Term 4
1 Mental strategies for doing calculations	Number concept: range • Order a given set of selected numbers. • Compare numbers to 10 and say which is more or less. • Know which number is 1 more or 1 less than a given number. • Know which number is 2 more or 2 less than a given number.	Number concept: range 10 • Order a given set of selected numbers. • Compare numbers to 10 and say which is more or less. • Know which number is 1 more or1 less than a given number. • Know which number is 2 more or 2 less than a given number.	Number concept: range 15 • Order a given set of selected numbers. • Compare numbers to and say which is more or less. • Know which number is 1 more or 1 less than a given number. • Know which number is 2 more or 2 less than a given number.	Number concept: range 20 • Order a given set of selected numbers. • Compare numbers to 100 and say which is more or less. • Know which number is 1 more or 1 less than a given number. • Know which number is 2 more or 2 less than a given number. • Know which number is 10 more or 10 less than a given number.
			Rapidly recall: • number bonds to 5 • recall addition and subtraction facts to 5	Rapidly recall: • number bonds to 10 • recall addition and subtraction facts to 10
			Use calculation strategies to add and subtract efficiently: • put the larger number first in order to count on or count back • number line • doubling and halving • building up and breaking down	Use calculation strategies to add and subtract efficiently: • put the larger number first in order to count on or count back • number line • doubling and halving • Building up and breaking down

Patterns, functions and algebra				
2 Number patterns	Copy, extend and describe simple number sequences to at least 20	Copy, extend and describe simple number sequences to at least 50	Copy, extend and describe simple number sequences to at least 80	Copy, extend and describe simple number sequences to at least 100
	Sequences should show counting forwards and backwards in: • ones from any number between 1 and 20	Sequences should show counting forwards and backwards in: • Oones from any number between 1 and 50 • tens from any multiple of 10 between 0 and 50 • fives from any multiple of 5 between 0 and 50 • twos from any multiple of 2 between 0 and 20	Sequences should show counting forwards and backwards in: • ones from any number between 1 and 80 • tens from any multiple of 10 between 0 and 80 • fives from any multiple of 5 between 0 and 80 • twos from any multiple of 2 between 0 and 80	Sequences should show counting forwards and backwards in: • ones from any number between 1 and 100 • tens from any multiple of 10 between 0 and 100 • fives from any multiple of 5 between 0 and 100 • twos from any multiple of 2 between 0 and 100
			Create own number patterns	

#	Topic	Term 1	Term 2	Term 3	Term 4
2	Geometric patterns	Copy and extend simple patterns using • physical objects • drawings (e.g. using colours and shapes) **Range of patterns** Simple repeating patterns **Suggested sequencing of activities** Start with copying and extending patterns using physical objects. Once learners are comfortable with using a crayon or pencil to start copying and extending patterns by drawing them.	Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Range of patterns** Simple repeating patterns Create own geometric patterns • with physical objects • by drawings lines, shapes or objects	Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Range of patterns** Simple repeating patterns Create own geometric patterns • with physical objects • by drawings lines, shapes or objects	Patterns all around us Identify, describe in words and copy geometric patterns • in nature • from everyday life • from our cultural heritage

Shape and space

#	Topic	Term 1	Term 2	Term 3	Term 4
3	Position, orientation and views	**Language of position** Describe the position of one object in relation to another e.g. on top of , in front of , behind, left, right, up, down, next to **Position and directions** Follow directions to move around the classroom Follow instructions to place one object in relation to another e.g. put the pencil inside the box		**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • colour • objects that roll • objects that slide	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • colour • objects that roll • objects that slide **Position and views** • Match different views of the same everyday object

		Suggested focus sequencing of work for Term 1	**Suggested focus and sequencing of activities for Term 3**	**Suggested focus and sequencing of work for Term 4**
	Position, orientation and views *(continued)*	Language of position should be introduced through practical activities that involve learners in physical movement. This can be consolidated through written recording like drawing colouring or matching drawings with words. Learners should first learn some language of position and then apply this knowledge when following directions. Directions should be done through practical activities in which learners move themselves or objects according to instructions.	Learners work with balls and objects shaped like balls, and various oxes and other objects shaped like rectangular prisms or cubes. Learners investigate which of the objects can roll, which slide, which can be stacked. Learners identify and describe geometric and everyday objects by saying whether are shaped like a ball or they are shaped like a box. Work is consolidated through written exercises.	Work on position and direction can be consolidated through written recording like drawing, colouring or matching drawings with words. Any new language of position should be introduced through practical activities that involve learners in physical movement. Directions should be done through practical activities in which learners move themselves or objects according to instructions
3	3-D objects	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • colour **Focussed activities** • Observe and build given 3-D objects using concrete materials such as building blocks, recycling, construction kits	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • colour • objects that roll • objects that slide	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • colour • objects that roll • objects that slide

		Suggested focus and sequencing of activities for Term 1	Suggested focus and sequencing of activities for Term 3	Suggested focus for Term 4
	3-D objects *(continued)*	Learners start with free play with various 3-D objects and building things of their own choice using building blocks, construction kits or recycling. This can be done in independent time. Learners then copy of model of something the teacher provides. This can be done in independent time. Learners compare the size of similar objects e.g. order balls according to size and use the language of size to describe objects. Learners talk about the colours of objects and then sort objects according to colour. Learners identify and describe geometric and everyday objects by saying whether are shaped like a ball or they are shaped like a box. Work is consolidated through written exercise.	Learners work with balls and objects shaped like balls, and various boxes and other objects shaped like rectangular prisms or cubes. Learners investigate which of the objects can roll, which slide, which can be stacked. Learners identify and describe geometric and everyday objects by saying whether are shaped like a ball or they are shaped like a box. Work is consolidated through written exercises.	Work is consolidated through written exercises.
3	2-D shapes	**Range of shapes** Recognise and name 2-D shapes • circles • triangles • squares	**Range of shapes** Recognise and name 2-D shapes • circles • triangles • squares	**Range of shapes** Recognise and name 2-D shapes • circles • triangles • squares
		Features of shapes Describe, sort and compare 2-D shapes in terms of: • size • colour • straight sides • round sides	**Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • colour • straight sides • round sides	**Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • colour • straight sides • round sides

	Suggested focus and sequencing of activities for Term 2	Suggested focus and sequencing of activities for Term 4
2-D shapes (*continued*)	Learners start with free play with various shapes including making pictures with cutout geometric shapes. This can be done in independent time. This can also be done during Life Skills lessons.	Learners work circles and squares of different sizes, and triangles with different shapes. They sort them according to whether they have straight or round sides.
	Learners copy of picture made up of geometric shapes. This can be done in independent time. This can also be done during Life Skills lessons.	Learners sort and group shapes according to whether they are triangles, squares, rectangles or circles.
	Learners compare the size of similar objects e.g. order squares from smallest to biggest and use the language of size to describe shapes.	Work is consolidated through written exercises
	Learners talk about the colours of shapes and then sort shapes according to colour.	
	Learners work with circles and squares of different sizes, and triangles with different shapes. They sort them according to whether they have straight or round sides.	
	Learners sort and groups shapes according to whether they are triangles, squares, rectangles or circles.	
	Work is consolidated through written exercises	
3 Symmetry	• Recognise symmetry in own body • Recognise and draw line of symmetry in 2-D geometrical and non-geometrical shape	• Recognise and draw line of symmetry in 2-D geometrical and non-geometrical shapes

			Suggested focus of activities for Term 3	Suggested focus of activities for Term 4
	Symmetry (continued)		• Learners should look for lines of symmetry in concrete objects and pictures. • Written exercises should not only be draw in the other half but include examples where learners draw in the line of symmetry.	Written exercises should include examples where the line of symmetry is not a vertical line.
Measurement				
4	Time	**Passing of time** Talk about passing of time • Order regular events from their own lives.	**Passing of time** Talk about passing of time • Order regular events from their own lives.	**Passing of time** Talk about passing of time • Order regular events from their own lives.
		• Compare lengths of time using language e.g. longer, shorter, faster, slower • Sequence events using language such as yesterday, today, tomorrow	• Compare lengths of time using language e.g. longer, shorter, faster, slower • Sequence events using language such as yesterday, today, tomorrow	• Compare lengths of time using language e.g. longer, shorter, faster, slower • Sequence events using language such as yesterday, today, tomorrow
		Telling the time • Describe when something happens using language e.g. morning, afternoon, night, early, late • Knows days of week • Knows months of year • Place birthdays on a calendar	**Telling the time** • Describe when something happens using language e.g. morning, afternoon, night, early, late • Knows days of week • Knows months of year • Place birthdays on a calendar	**Telling the time** • Describe when something happens using language e.g. morning, afternoon, night, early, late • Knows days of week • Knows months of year • Place birthdays on a calendar
		Place weather recording on calendar	Place weather recording on calendar	Place weather recording on calendar
4	Length	**Informal measuring** • Compare and order the length, height or width of two or more objects by placing them next to each other • Use language to talk about the comparison e.g. longer, shorter, taller, wider • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters	**Informal measuring** • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters	

4	Mass	**Informal measuring** • Estimate, measure, compare, order and record mass using a balance and non-standard measures and e.g. blocks, bricks • Use language to talk about the comparison e.g. light, heavy, lighter, heavier	**Informal measuring** • Estimate, measure, compare, order and record mass using non-standard measures and a balance e.g. blocks, bricks • Use language to talk about the comparison e.g. light, heavy, lighter, heavier
4	Capacity/ volume	**Informal measuring** • Compare and order the amount of liquid (volume) in two containers placed next to each other. Learners check by pouring into a third container if necessary. • Compare and order the amount of liquid that two containers can hold if filled (capacity) • Use language to talk about the comparison e.g. more than, less than, full, empty • Estimate, measure, compare, order and record the capacity of containers by using non-standard measures e.g. spoons and cups	
Data handling			
5	Collect and sort objects	Collect and organise objects Collect and sort everyday physical objects	Collect and organise objects Collect and sort everyday physical objects
	Represent sorted collection of objects	Represent sorted collection of objects Draw a picture of collected objects	Represent sorted collection of objects Draw a picture of collected objects

	Discuss and report on sorted collection of objects	Discuss and report on sorted collection of objects • Give reasons for how collection was sorted • Answer questions about how the sorting was done (process) • what the sorted collection looks like (product) • Describe the collection and drawing • Explain how the collection was sorted	Discuss and report on sorted collection of objects • Give reasons for how collection was sorted • Answer questions about • how the sorting was done (process) • what the sorted collection looks like (product) • Describe the collection and drawing • Explain how the collection was sorted	
5	Collect and organise data		**Recommended** Whole data cycle to make class pictograph Collect and organise data Collect data about the class or school to answer question posed by the teacher	
	Represent data		**Represent data** Represent data in pictograph	
	Analyse and Interpret data		Analyse and interpret data Answer questions about data in pictograph	Analyse data from representations provided. **Recommended** • At least 2 pictographs

Numbers, operations and relationships • Number concept development — Grade 2

Count with whole numbers

Mod	Topics	Term 1	Term 2	Term 3	Term 4
1	Count objects	Count to at least 100 everyday objects reliably. Give a reasonable estimate of a number of objects that can be checked by counting.	Count to at least 150 everyday objects reliably. Give a reasonable estimate of a number of objects that can be checked by counting.	Count to at least 180 everyday objects reliably. Give a reasonable estimate of a number of objects that can be checked by counting.	Count to at least 200 everyday objects reliably. Give a reasonable estimate of a number of objects that can be checked by counting.
1	Count forwards and backwards	Counts forwards and backwards in: • ones from any number between 0 and 100 • tens from any multiple of 10 between 0 and 100 • fives from any multiple of 5 between 0 and 100 • twos from any multiple of 2 between 0 and 100	Counts forwards and backwards in: • ones from any number between 0 and 150 • tens from any multiple of 10 between 0 and 150 • fives from any multiple of 5 between 0 and 150 • twos from any multiple of 2 between 0 and 150 • threes and fours from any multiple of 3 and 4 between 0 and 150	Counts forwards and backwards in: • ones from any number between 0 and 180 • tens from any multiple of 10 between 0 and 180 • fives from any multiple of 5 between 0 and 180 • twos from any multiple of 2 between 0 and 180 • threes and fours from any multiple of 3 and 4 between 0 and 180	Count forwards and backwards in: • ones, from any number between 0 and 200 • tens from any multiple between 0 and 200 • fives from any multiple of 5 between 0 and 200 • twos from any multiple of 2 between 0 and 200 • threes from any multiple of 3 between 0 and 200 • fours from any multiple of 4 between 0 and 200

Content		Term 1	Term 2	Term 3	Term 4

Represent whole numbers

Mod	Topics	Term 1	Term 2	Term 3	Term 4
1	Number symbols and number names	Know and read numbers • Know and read number symbols 0 to 50 • Write number symbols 0-50 • Know and reads number names 0-25 • Write number names 0-25	Know and read numbers • Know and read number symbols 0 to 150 • Write number symbols 0-150 • Know and reads number names 0-50 • Write number names 0-50	Know and read numbers • Know and read number symbols 0 to 180 • Write number symbols 0-180 • Know and reads number names 0-75 • Write number names 0-75	Know and read numbers • Know and read number symbols 0 to 200 • Write number symbols 0-200 • Know and reads number names 0-100 • Write number names 0-100

Order and compare whole numbers

Mod	Topics	Term 1	Term 2	Term 3	Term 4
1	Describe, compare, order numbers	Order and compare numbers to 25 • Order whole numbers from smallest to biggest, and biggest to smallest • Compare whole numbers using smaller than, greater than, more than, less than and is equal to.	Order and compare numbers to 50 • Order whole numbers from smallest to biggest, and biggest to smallest • Compare whole numbers using smaller than, greater than, more than, less than and is equal to.	Order and compare numbers to 50 • Order whole numbers from smallest to biggest, and biggest to smallest • Compare whole numbers using smaller than, greater than, more than, less than and is equal to.	Order and compare numbers to 99 • Order whole numbers from smallest to biggest, and biggest to smallest • Compare whole numbers up to 99 using smaller than, greater than, more than, less than and is equal to.

No.	Topic	Term 1	Term 2	Term 3	Term 4
1	Describe, compare, order numbers *(continued)*	Use ordinal numbers to show order, place or position • Position objects in a line from first to tenth or first to last e.g. first, second, third ... tenth (ordinal numbers)	Use ordinal numbers to show order, place or position • Position objects in a line from first to fifteenth or first to last e.g. first, second, third ... tenth (ordinal numbers)	Use ordinal numbers to show order, place or position • Position objects in a line from first to fifteenth or first to last e.g. first, second, third ... tenth (ordinal numbers)	Use ordinal numbers to show order, place or position • Position objects in a line from first to fifteenth or first to last e.g. first, second, third ... tenth (ordinal numbers)
Place value					
1	Place value	Recognise the place value at least 2-digit of numbers to 25 • Know what each digit represents • Decompose 2-digit numbers into multiples of tens and units/ones(TU) • Identify and state the value of each digit	Recognise the place value of at least 2-digit numbers to 50 • Know what each digit represents • Decompose 2-digit numbers into multiple of tens and ones(TU) • Identify and state the value of each digit	Recognise the place value of at least 2-digit numbers to 75 • Know what each digit represents • Decompose 2-digit numbers into multiple of tens and ones (TU) • Identify and state the value of each digit	Recognise the place value of at least 2-digit numbers to 99 • Know what each digit represents • Decompose 2-digit numbers into multiple of tens and ones (TU) • Identify and state the value of each digit
Solve number problems					
1	Problem solving techniques	Use the following techniques when solving problems and explain solutions to problems: • drawings or concrete apparatus e.g. counters • building up and breaking down of numbers • doubling and halving • number lines	Use the following techniques when solving problem and explain solutions to problems: • drawings or concrete apparatus e.g. counters • building up and breaking down of numbers • doubling and halving • number lines	Use the following techniques when solving problem and explain solutions to problems: • drawings or concrete apparatus e.g. counters • building up and breaking down of numbers • doubling and halving • number lines	Use the following techniques when solving problem and explain solutions to problems: • drawings or concrete apparatus e.g. counters • building up and breaking down of numbers • doubling and halving • number lines
1	Addition, subtraction	Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 20.	Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 50.	Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 75.	Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 100.
1	Repeated addition leading to multiplication	Solves and explain solutions to practical problems that involve equal sharing and grouping up to 20 with answers that can include remainders.	Solves and explain solutions to practical problems that involve equal sharing and grouping up to 50 with answers that can include remainders.	Solves and explain solutions to practical problems that involve equal sharing and grouping up to 75 with answers that can include remainders.	Solves and explain solutions to practical problems that involve equal sharing and grouping up to 100 with answers that can include remainders.
1	Sharing leading to fractions		Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary fractions e.g. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$ etc.	Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary fractions e.g. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$ etc.	Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary fractions e.g. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$ etc.

		Term 1	Term 2	Term 3	Term 4
1	Money	• Recognise and identify the South African coins (5c, 10c, 20c, 50c, R1, R2, R5, and bank notes. R10, R20, R50 • Solve money problems involving totals and change in cents up to 50c or rands to R20	• Recognise and identify the South African coins (5c, 10c, 20c, 50c, R1, R2, R5, and bank notes. R10, R20, R50 • Solve money problems involving totals and change in cents up to 50c or rands to R50	• Recognise and identify the South African coins (5c, 10c, 20c, 50c, R1, R2, R5, and bank notes. R10, R20, R50 • Solve money problems involving totals and change in cents up to 50c or rands to R75	• Recognise and identify the South African coins (5c, 10c, 20c, 50c, R1, R2, R5, and bank notes. R10, R20, R50 • Solve money problems involving totals and change in cents up to 50c or rands to R100

Calculations

		Term 1	Term 2	Term 3	Term 4
1	Techniques (methods or strategies)	Use the following techniques when performing calculations: • Drawings or concrete apparatus e.g. counters • Building up and breaking down numbers • Doubling and halving • Number lines	Use the following techniques when performing calculations: • Drawings or concrete apparatus e.g. counters • Building up and breaking down numbers • Doubling and halving • Number lines	Use the following techniques when performing calculations: • Drawings or concrete apparatus e.g. counters • Building up and breaking down numbers • Doubling and halving • Number lines	Use the following techniques when performing calculations: • Drawings or concrete apparatus e.g. counters • Building up and breaking down numbers • Doubling and halving • Number lines
1	Addition and subtraction	• Add to 20 • Subtract from 20 • Use appropriate symbols (+, −, =, ×) • Practice number bonds to 10	• Add to 50 • Subtract from 50 • Use appropriate symbols (+, −, =, ×) • Practice number bonds to 10	• Add to 75 • Subtract from 75 • Use appropriate symbols (+, −, =, ×) • Practice number bonds to 10	• Add to 100 • Subtract from 100 • Use appropriate symbols (+, −, =, ×) • Practice number bonds to 10
1	Repeated addition leading to multiplication	• Add the same number repeatedly to 20 • Multiply numbers 1 to 10 by , 2, 5, 3 and 4 • Use appropriate symbols (+, −, =, ×)	• Multiply numbers 1 to 10 by 2, 5, up to 50 • Use appropriate symbols (+, −, =, ×)	• Multiply numbers 1 to 10 by 2, 5, 4 up to 50 • Use appropriate symbols (+, −, =, ×)	• Multiply numbers 1 to 10 by 1, 2, 5, 3 and 4 up to 50 • Use appropriate symbols (+, −, =, ×)

#	Topic				
1	Mental strategies for doing calculations	**Number concept: range 25** • Order a given set of selected numbers. • Compare numbers to 100 and say which is more or less • Know which number is 1 more or 1 less than a given number • Know which number is 2 more or 2 less than a given number • Know which number is 10 more or 10 less than a given number	**Number concept: range 25** • Order a given set of selected numbers. • Compare numbers to 100 and say which is more or less • Know which number is 1 more or 1 less than a given number • Know which number is 2 more or 2 less than a given number • Know which number is 10 more or 10 less than a given number	**Number concept: range 99** • Order a given set of selected numbers. • Compare numbers to 200 and say which is more or less • Know which number is 1 more or 1 less than a given number • Know which number is 2 more or 2 less than a given number • Know which number is 3 more or 3 less than a given number. • Know which number is 4 more or 4 less t than a given number • Know which number is 5 more or 5 less than a given number • Know which number is 10 more or 10 less than a given number.	**Number concept: range 99** • Order a given set of selected numbers. • Compare numbers to 200 and say which is more or less • Know which number is 1 more or 1 less than a given number • Know which number is 2 more or 2 less than a given number • Know which number is 3 more or 3 less than a given number. • Know which number is 4 more or 4 less t than a given number • Know which number is 5 more or 5 less than a given number • Know which number is 10 more or 10 less than a given number.
		Rapidly recall: • Recall addition and Subtraction facts to 10	**Rapidly recall:** • Recall addition and Subtraction facts to 10	**Rapidly recall:** • Recall addition and subtraction facts to 15 • Add or subtract multiples of 10 from 0 to 50	**Rapidly recall:** • Recall addition and subtraction facts to 20 • Add or subtract multiples of 10 from 0 to 100
		Mental strategies Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Mental number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction	**Mental strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Mental number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction	**Mental strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Use the relationship between addition and subtraction • Number line • Doubling and halving • Building up and breaking down	**Mental strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Use the relationship between addition and subtraction • Number line • Doubling and halving • Building up and breaking down
1	Fractions	• Use and name fractions in familiar contexts including halves, quarters, thirds and fifths. • Recognise fractions in diagrammatic form • Write fractions as 1 half, 2 thirds	• Use and name fractions in familiar contexts including halves, quarters, thirds and fifths. • Recognise fractions in diagrammatic form • Write fractions as 1 half, 2 thirds	• Use and name fractions in familiar contexts including halves, quarters, thirds and fifths. • Recognise fractions in diagrammatic form • Write fractions as 1 half, 2 thirds	• Use and name fractions in familiar contexts including halves, quarters, thirds and fifths. • Recognise fractions in diagrammatic form • Write fractions as 1 half, 2 thirds

Shape and space

	Topic	Term 1	Term 2	Term 3/4
3	Position, orientation and views	**Language of position** Describe the position of one object in relation to another e.g. on top of, in front of, behind, left, right, up, down, next to Position and views • Match different views of the same everyday object **Position and directions** Follow directions to move around the classroom	**Position and views** • Match different views of the same everyday object **Position and directions** Follow directions to move around the classroom	**Position and views** • Match different views of the same everyday object **Position and directions** Follow directions to move around the classroom
3	3D objects	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes, (spheres) • box shapes (prisms) **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • objects that roll • objects that slide **Focussed activities** • Observe and build given 3D objects using concrete materials such as cut-out 2D shapes, building blocks, recycling, construction kits, other 3D geometric objects Suggested focus and sequencing of activities for Term 1 Learners copy of model of something the teacher provides. Models or constructions can be made using building blocks, recycling, construction kits, other 3D geometric objects, cut-out 2D shapes. This can be done in independent time.	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes, (spheres) • box shapes (prisms) • cylinders **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • objects that roll • objects that slide Suggested focus and sequencing of activities for Term 2 Learners work with • balls and objects shaped like balls, • cylinders and objects shaped like cylinders • various boxes and other objects shaped like rectangular prisms or cubes.	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes, (spheres) • box shapes (prisms) • cylinders **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • objects that roll • objects that slide Suggested focus or Term 4

Topic	Term 1	Term 2	Term 3	Term 4
3D objects *(continued)*	Learners compare and describe the size of similar objects e.g. stack boxes from biggest to smallest Learners work with • balls and objects shaped like balls, • various boxes and other objects shaped like rectangular prisms or cubes. Learners investigate which of the objects can roll, which slide, which can be stacked. Learners identify and describe geometric and everyday objects by saying whether are shaped like a ball, shaped like a box, shaped like a cylinder. Work is consolidated through written exercises	Learners compare and describe the size of similar objects e.g. stack boxes from biggest to smallest Learners work with • balls and objects shaped like balls, • various boxes and other objects shaped like rectangular prisms or cubes. Learners investigate which of the objects can roll, which slide, which can be stacked. Learners identify and describe geometric and everyday objects by saying whether are shaped like a ball, shaped like a box, shaped like a cylinder. Work is consolidated through written exercises	Learners investigate which of the objects can roll, which slide, which can be stacked. Learners identify and describe geometric and everyday objects by saying whether are shaped like a ball, shaped like a box, shaped like a cylinder. Work is consolidated through written exercises	Learners investigate which of the objects can roll, which slide, which can be stacked. Learners identify and describe geometric and everyday objects by saying whether are shaped like a ball, shaped like a box, shaped like a cylinder. Work is consolidated through written exercises
3 **2-D shapes**	**Range of shapes** Recognise and name 2D shapes • circles • triangles • squares • rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • colour • shape • straight sides • round sides **Suggested focus and sequencing of activities for Term 1** Learners start with free play with various shapes including making pictures with cut-out geometric shapes. This can be done in independent time. This can also be done during Life Skills lessons.	**Range of shapes** Recognise and name 2D shapes • circles • triangles • squares • rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • colour • shape • straight sides • round sides	**Range of shapes** Recognise and name 2D shapes • circles • triangles • squares • rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • colour • shape • straight sides • round sides **Suggested focus and sequencing of activities for Term 3** Learners work circles and squares of different sizes, and triangles and rectangles with different shapes. They sort them according to whether they have straight or round sides.	**Range of shapes** Recognise and name 2D shapes • circles • triangles • squares • rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • colour • shape • straight sides • round sides **Suggested focus and sequencing of activities for Term 4** Learners work circles and squares of different sizes, and triangles and rectangles with different shapes. They sort them according to whether they have straight or round sides.

2-D shapes (continued)	Learners copy of picture made up of geometric shapes. This can be done in independent time. This can also be done during Life Skills lessons. Learners compare the size of similar shapes e.g. order rectangles from smallest to biggest and use the language of size to describe shapes.				
		Learners talk about the colours of shapes and then sort shapes according to colour. Learners work circles and squares of different sizes, and triangles and rectangles with different shapes. They sort them according to whether they have straight or round sides.			
			Learners sort and groups shapes according to whether they are triangles, squares, rectangles or circles. Work is consolidated through written exercises	Learners sort and groups shapes according to whether they are triangles, squares, rectangles or circles Work is consolidated through written exercises	
3	Symmetry			Recognise and draw line of symmetry in 2-D geometrical and non-geometrical shapes	Recognise and draw line of symmetry in 2-D geometrical and non-geometrical shapes
				Suggested focus of activities for Term 2 Learners should look for lines of symmetry in concrete objects and pictures Written exercises should include examples where the line of symmetry is not a vertical line	**Suggested focus of activities for Term 2** Learners should look for lines of symmetry in concrete objects and pictures Written exercises should include examples where the line of symmetry is not a vertical line
Measurement					
4	Time			Telling the time • Knows days of week • Knows months of year • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in hours on analogue clocks	Telling the time • Knows days of week • Knows months of year • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in hours on analogue clocks	Tell 12-hour time in hours, half hours and quarter hours on analogue clocks

4	Time (continued)	Calculate lengths of time and passing of time • Use clocks to calculate lengths of time in hours or half hours	Calculate lengths of time and passing of time • Use calendars to calculate and describe lengths of time in days or weeks • Use clocks to calculate lengths of time in hours or half hours	
4	Length	**Informal measuring** • Estimate, measure, compare, order and record length using non standard measures e.g. hand spans, paces, pencil lengths, counters • Describe the length of objects by counting and stating how many informal units long it is • Use language to talk about the comparison e.g. longer, shorter, taller, wider		**Introducing formal measuring** Estimate, measure, compare, order and record length using metres (either metre sticks or metre long lengths of string) as the standard unit of length
		Introducing formal measuring Estimate, measure, order and record length using metres (either metre sticks or metre long lengths of string) as the standard unit of length.		
4	Mass		**Informal measuring** • Estimate, measure, compare, order and record mass using a balance and non standard measures e.g. blocks, bricks etc • Use language to talk about the comparison e.g. light, heavy, lighter, heavier	

		Introducing formal measuring Learners do written tasks to consolidate the following, including reading pictures of • products with mass written on them, • pictures of mass on bathroom scales where the needle points to a numbered gradation line.
Mass *(continued)*	Introducing formal measuring • Compare, order and record the mass of commercially packaged objects which have their mass stated in kilograms e.g. 2 kilograms of rice and 1 kilogram of flour • Where bathroom scales are available, learners can measure their own mass in kilograms using a bathroom scale.	
	The expectation is that learners only read to the nearest numbered gradation line. They describe their mass as almost/nearly/close to/a bit more than/more or less/ or exactly the number (of kilograms) they read off the mass meter.	
4	Capacity/ volume	Informal measuring Estimate, measure, compare, order and record the amount the capacity of containers (i.e. the amount the container can hold if filled) by using non-standard measures e.g. spoons and cups Describe the capacity of the container by counting and stating how many of the informal units it takes to fill the container e.g. The bottle has the capacity of 4 cups.

Topic		
Capacity/ volume *(continued)*	**Introducing formal measuring** • Estimate, measure, compare, order and record the capacity of objects by measuring in litres using o using bottles with a capacity of 1 litre o a measuring jug which has numbered calibration lines in litres • Compare, order and record the capacity of commercially packages objects whose capacity is stated in litres e.g. 2 litres of milk, 1 litre of cool drink, 5 litres of paint	**Introducing formal measuring** Learners do written tasks to consolidate the following, including reading pictures of • products with their capacity written on them in order to sequence in order • pictures of jugs where the volume is near to a numbered 1 litre or 2 litre gradation line. The expectation is that learners only read to the nearest numbered gradation line. Describe their volume as almost/nearly/close to/a bit more than/more or less/or exactly the number (of litres) they read off the jug
Data handling		
5 Collect and organise data	Recommended: Whole data cycle to make class pictograph	Recommended: Make individual pictographs from data provided in either picture form or table.
Represent data	**Collect and organise data** Collect data about the class or school to answer question posed by the teacher **Represent data** Represent data in pictograph	**Collect and organise data** Collect data about the class or school to answer question posed by the teacher **Represent data** Represent data in pictograph
Analyse and interpret data	**Analyse and interpret data** Answer questions about data in pictograph Analyse data from representations provided. Recommended: • At least 1 pictograph	**Analyse and interpret data** Answer questions about data in pictograph Analyse data from representations provided. Recommended to • At least 1 pictograph

Numbers, operations and relationships • Number concept development

Count with whole numbers

Mod	Topics	Term 1	Term 2	Term 3	Term 4
1	Count objects	Count to at least 200 everyday objects reliably.	Count to at least 500 everyday objects reliably.	Count to at least 750 everyday objects reliably.	Count to at least 1 000 everyday objects reliably.
		Give a reasonable estimate of a number of objects that can be checked by counting.	Give a reasonable estimate of a number of objects that can be checked by counting.	Give a reasonable estimate of a number of objects that can be checked by counting.	Give a reasonable estimate of a number of objects that can be checked by counting.
1	Count forwards and backwards	Count forwards and backwards in: • the intervals specified in grade 2 with increased number ranges • 100s to at least 500	Count forwards and backwards in: • the intervals specified in grade 2 with increased number ranges • 50s, 100s to at least 1 000	Count forwards and backwards in: • the intervals specified in grade 2 with increased number ranges • 20s, 25s, 50s, 100s to at least 1 000	Count forwards and backwards in: • the intervals specified in grade 2 with increased number ranges • 20s, 25s, 50s, 100s to at least 1 000

Represent whole numbers

Content		Term 1	Term 2	Term 3	Term 4
1	Number symbols and number names	**Know and read numbers** • Know and read number symbols 0 to 500 • Writes number symbols 0-500 • Knows and reads number names 0-250 • Writes number names 0-100	**Know and read numbers** • Know and read number symbols 0 to 1 000 • Writes number symbols 0–1 000 • Knows and reads number names 0-250 • Writes number names 0-250	**Know and read numbers** • Know and read number symbols 0 to 1 000 • Writes number symbols 0–1 000 • Knows and reads number names 0-500 • Writes number names 0-500	**Know and read numbers** • Know and read number symbols 0 to 1 000 • Writes number symbols 0–1 000 • Knows and reads number names 0-1 000 • Writes number names 0-1 000

Order and compare whole numbers

		Term 1	Term 2	Term 3	Term 4
1	Describe, compare, order numbers	Order and compare numbers to 99 • Order whole numbers up to 99 from smallest to biggest, and biggest to smallest • Compare whole numbers up to 99 using smaller than, greater than, more than, less than and is equal to.	Order and compare numbers to 500 • Order whole numbers up to 500 from smallest to biggest, and biggest to smallest • Compare whole numbers up to 500 using smaller than, greater than, more than, less than and is equal to.	Order and compare numbers to 750 • Order whole numbers up to 750 from smallest to biggest, and biggest to smallest • Compare whole numbers up to 750 using smaller than, greater than, more than, less than and is equal to.	Order and compare numbers to 999 • Order whole numbers up to 999 from smallest to biggest, and biggest to smallest • Compare whole numbers up to 999 using smaller than, greater than, more than, less than and is equal to.
		Use ordinal numbers to show order, place or position • Use, read and write ordinal numbers, including abbreviated form up to 31.	Use ordinal numbers to show order, place or position • Use, read and write ordinal numbers, including abbreviated form up to 31.	Use ordinal numbers to show order, place or position • Use, read and write ordinal numbers, including abbreviated form up to 31.	

Place value

1	Place value				

1	Problem solving techniques	Recognise the place value of numbers to 99 • Know what each digit represents • Decompose 2-digit numbers up to 99 into multiples of tens and ones (TU). • Identify and state the value of each digit	Recognise the place value of numbers to 500 • Know what each digit represents • Decompose 3-digit numbers up to 500 into multiples of hundreds, tens and ones (HTU). • Identify and state the value of each digit	Recognise the place value of numbers to 750 • Know what each digit represents • Decompose 3-digit numbers up to 750 into multiples of hundreds, tens and ones (HTU). • Identify and state the value of each digit	Recognise the place value of numbers to 999 • Know what each digit represents • Decompose 3-digit numbers up to 999 into multiple of hundreds, tens and ones (HTU) • Identify and state the value of each digit
1	Addition, subtraction	Use the following techniques when solving problem: • building up and breaking down numbers • doubling and halving • number lines	Use the following techniques when solving problem: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens	Use the following techniques when solving problem: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens	Use the following techniques when solving problems up to 999 and explain solutions to problems: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens
1	Repeated addition leading to multiplication	Solve number problems in context and explain own solution to problems involving multiplication with answers up to 50.	Solve number problems in context and explain own solution to problems involving multiplication with answers up to 75.	Solve number problems in context and explain own solution to problems involving multiplication with answers up to 75.	Solve number problems in context and explain own solution to problems involving multiplication with answers up to 100.
1	Grouping and sharing leading to division	Solve and explain solutions to practical problems that involve equal sharing and grouping up to 50 with answers that can include remainders	Solve and explain solutions to practical problems that involve equal sharing and grouping up to 75 with answers that can include remainders	Solve and explain solutions to practical problems that involve equal sharing and grouping up to 75 with answers that can include remainders	Solve and explain solutions to practical problems that involve equal sharing and grouping up to 100 with answers that can include remainder
1	Sharing leading to fractions	Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary and non-unitary fractions e.g. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$, etc.	Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary and non-unitary fractions e.g. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$, etc.	Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary and non-unitary fractions e.g. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$, etc.	Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary and non-unitary fractions e.g. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$, etc.
1	Money	• Recognise and identify the South African coins and bank notes • Solve money problems involving totals and change in rands or cents.	• Recognise and identify the South African coins and bank notes • Solve money problems involving totals and change in rands or cents.	• Recognise and identify the South African coins and bank notes • Solve money problems involving totals and change in rands or cents. • Convert between rands and cents.	• Recognise and identify the South African coins and bank notes • Solve money problems involving totals and change in rands or cents. • Convert between rands and cents.

#	Technique				
1	Techniques (methods or strategies)	Use the following techniques when performing calculations: • building up and breaking down numbers • doubling and halving • number lines	Use the following techniques when performing calculations: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens	Use the following techniques when performing calculations: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens	Use the following techniques when performing calculations: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens
1	Addition and subtraction	• Add up to 99 • Subtract from 99 • Use appropriate symbols (+, −, =, ×) • Practice number bonds to 20	• Add up to 400 • Subtract from 400 • Use appropriate symbols (+, −, =, ×) • Practice number bonds to 30	• Add up to 800 • Subtract from 800 • Use appropriate symbols (+, −, =, ×) • Practice number bonds to 30	• Add up to 999 • Subtract from 999 • Use appropriate symbols (+, −, =, ×) • Practice number bonds to 30
1	Repeated addition leading to multiplication	• Multiply numbers 1 to 10 by 2, 5, 10 • Use appropriate symbols (+, =, ×)	• Multiply numbers 1 to 10 by 2, 4, 5, 10 • Use appropriate symbols (+, =, ×)	• Multiply numbers 1 to 10 by 2, 3, 4, 5, 10 • Use appropriate symbols (+, =, ×)	• Multiply numbers 1 to 10 by 2, 3, 4, 5, 10 • Use appropriate symbols (+, =, ×)
1	Division	• Divide numbers to 50 by 2, 5, 10 • Use appropriate symbols (÷, =, ×)	• Divide numbers to 50 by 2, 4, 5, 10, 4 • Use appropriate symbols (÷, =, ×)	• Divide numbers to 99 by 2, 4, 5, 10, 3 • Use appropriate symbols (÷, =, ×)	• Divide numbers to 99 by 2, 3, 4, 5, 10 • Use appropriate symbols (÷, =, ×)
1	Mental strategies for doing calculations	Number concept: range 200 • Order a given set of selected numbers. Range -200 • Compare numbers to 200 and say which is more or less • Know which number is 1 more or 1 less to numbers. Range – till 200 • Know which number is 2 more or 2 less to numbers. Range – till 200 • Know which number is 3 more or 3 less to numbers. Range – till 200 • Know which number is 4 more or 4 less to numbers. Range – till 200 • Know which number is 5 more or less to numbers. Range – till 200 • Know which number is 10 more or less to numbers. Range – till 200	Number concept: range 500 • Order a given set of selected numbers. Range -500 • Compare numbers to 500 and say which is more or less • Know which number is 1 more or 1 less to numbers. Range – till 500 • Know which number is 2 more or 2 less to numbers. Range – till 500 • Know which number is 3 more or 3 less to numbers. Range – till 500 • Know which number is 4 more or 4 less to numbers. Range – till 500 • Know which number is 5 more or less to certain numbers. Range – till 500 • Know which number is 10 more or less to numbers. Range – till 500	Number concept: range 750 • Order a given set of selected numbers. • Compare numbers to 200 and say which is more or less • Know which number is 1 more or 1 less than a given number • Know which number is 2 more or 2 less than a given number • Know which number is 3 more or 3 less than a given number • Know which number is 4 more or 4 less than a given number • Know which number is 5 more or 5 less than a given number • Know which number is 10 more or less than a given number	Number concept: range 999 • Order a given set of selected numbers. • Compare numbers to 1 000 and say which is more or less than a given number • Know which number is 1 more or 1 less than a given number • Know which number is 2 more or 2 less than a given number • Know which number is 3 more or 3 less than a given number • Know which number is 4 more or 4 less than a given number • Know which number is 5 more or 5 less than a given number • Know which number is 10 more or 10 less than a given number

	Mental strategies for doing calculations *(continued)*	Rapidly recall: • Recall addition and subtraction facts to 20 • Add or subtract multiples of 10 from 0 to 100 **Mental strategies** Use calculation strategies: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction	Rapidly recall: • Recall addition and subtraction facts to 20 • Add or subtract multiples of 10 from 0 to 100 **Mental strategies** Use the following calculation strategies: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction	Rapidly recall: • Recall addition and subtraction facts to 20 • Add or subtract multiples of 10 from 0 to 100 **Mental strategies** Use the following calculation strategies: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction • Use the relationship between multiplication and division	Rapidly recall: • Recall addition and subtraction facts to 20 • Add or subtract multiples of 10 from 0 to 100 • multiplication and division facts for the: – two times table up to 2×10 – ten times table up to 10×10 **Mental strategies** Use the following calculation strategies • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction • Use the relationship between multiplication and division
1	Fractions	• Use and name fractions in familiar contexts including halves, quarters, thirds, fifths, • Recognise fractions in diagrammatic form • Write fractions as 1 half, 1 third	• Use and name fractions in familiar contexts including halves, quarters, eighths, thirds, sixths, fifths • Recognise fractions in diagrammatic form • Write fractions as 1 half, 1 third	• Use and name fractions in familiar contexts including halves, quarters, eighths, thirds, sixths, fifths, • Recognise fractions in diagrammatic form • Begin to recognise that two halves or three thirds make one whole and that one half and two quarters are equivalent • Write fractions as 1 half, 1 third	• Use and name fractions in familiar contexts including halves, quarters, eighths, thirds, sixths, fifths, • Recognise fractions in diagrammatic form • Begin to recognise that two halves or three thirds make one whole and that one half and two quarters are equivalent
Patterns, functions and algebra					
2	Number patterns	Copy, extend and describe Copy, extend and describe simple number sequences to at least 100	Copy, extend and describe Copy, extend and describe simple number sequences to at least 150	Copy, extend and describe Copy, extend and describe simple number sequences to at least 180	Copy, extend and describe Copy, extend and describe simple number sequences to at least 1 000

Number patterns (continued)	Sequences should show counting forwards and backwards in: • the intervals specified in grade 2 with increased number ranges • 100s to at least 500	Sequences should show counting forwards and backwards in: • the intervals specified in grade 2 with increased number ranges • 50s, 100s to at least 1 000	Sequences should show counting forwards and backwards in: • the intervals specified in grade 2 with increased number ranges • 20s, 25s, 50s, 100s to at least 1 000	Sequences should show counting forwards and backwards in: • the intervals specified in grade 2 with increased number ranges • 20s,25s, 50s,100s to at least 1 000
		Create own number patterns	Create own number patterns	Create own number patterns • the intervals specified in grade 2 with increased number ranges • 20s,25s, 50s,100s to at least 1 000
				Patterns all around us Identify, describe in words and copy geometric patterns • in nature • from everyday life • from our cultural heritage
2 Geometric Patterns	Copy, extend and describe Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects	Copy, extend and describe Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects	Copy, extend and describe Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects	
	Range of patterns Simple repeating patterns	**Range of patterns** *Simple repeating patterns* Patterns in which the number of shapes in each stage changes in a predictable way i.e. regular increasing patterns	**Range of patterns** Patterns in which the number of shapes changes in each stage in a predictable way i.e. regular increasing patterns	
	Create own geometric patterns • with physical objects • by drawings lines, shapes or objects	Create own geometric patterns • with physical objects • by drawings lines, shapes or objects	Create own geometric patterns • with physical objects • by drawings lines, shapes or objects	
Shape and space				
3 Position, orientation and views		**Position and views** • Match different views of the same everyday object • Name an everyday object when shown an unusual view of it	**Position and views** • Reads, interpret and draw informal maps, or top views of a collection of objects. • Find objects on maps	
		Position and directions Follow directions to move around the classroom, and school. Give directions to move around the classroom and school	**Position and directions** Follow directions from one place to another on an informal map	

3	3D objects			
		Range of objects Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) • cylinders	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) • cylinders	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) • cylinders
		Features of objects Describe, sort and compare 3-D objects in terms of: • 2D shapes that make up the faces of 3D objects • flat or curved surfaces	**Features of objects** Describe, sort and compare 3-D objects in terms of: • 2D shapes that make up the faces of 3D objects • flat or curved surfaces	**Features of objects** Describe, sort and compare 3-D objects in terms of: • 2D shapes that make up the faces of 3D objects • flat or curved surfaces
		Focussed activities • Observe and build given 3D objects using concrete materials such as cutout 2D shapes, clay, toothpicks, straws, other 3D geometric objects	**Focussed activities** • Observe and build given 3D objects using concrete materials such as cutout 2D shapes, clay, toothpicks, straws, other 3D geometric objects	
		Suggested focus and sequencing of activities for Term 2 Learners work with spheres, prisms and cylinders as they did in Grade 2. They name them and group them. Learners focus on the kind of surfaces on each type of object. They distinguish surfaces according to whether they are curved or flat. Learners use cut-out cardboard squares to make a box. Then learners talk about the flat surfaces on prisms and cylinders and describe them according to whether they are circular, square or rectangular	**Suggested focus and sequencing of activities for Term 3** Learners work with spheres, prisms, cylinders, pyramids and cones. Learners focus on the kind of surfaces on each type of object. They distinguish surfaces according to whether they are curved or flat. Then learners talk about the flat surfaces on prisms and cylinders and describe them according to whether they are circular, square, rectangular or triangular. Learner name and group the geometric objects above. Learners use toothpicks, straws, or rolled paper to make a pyramid.	**Suggested focus and sequencing of activities for Term 4**
		Work is consolidated through written exercises	Work is consolidated through written exercises	Work is consolidated through written exercises

3	2-D shapes	**Range of shapes** • circles • triangles • squares • rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • shape • straight sides • round sides **Suggested focus of activities for Term 1** Learners name them and group shapes Learners focus on the kind of sides that each shape has They distinguish shapes by talking about whether their sides are round or straight Draw circles, squares, rectangles and triangles Work is consolidated through written exercises	**Range of shapes** • circles • triangles • squares • rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • shape • straight sides • round sides **Suggested focus of activities for Term 3** Learners name and group shapes Learners focus on the kind of sides that each shape has They distinguish shapes by talking about whether their sides are round or straight Draw circles, squares, rectangles and triangles Work is consolidated through written exercises
3	Symmetry	• Determine line of symmetry through paper folding and reflection Suggested focus of Term 2 Paper folding activities that develop an understanding of symmetry include: • activities in which wet paint is placed on the page before folding • activities in which paper is cut or torn from the fold line These activities can be done both in the Maths lesson and the Life Skills lessons	• Recognise and draw line of symmetry in 2-D geometrical and nongeometrical shapes Suggested focus of Term 4 Written exercises should include examples where • the line of symmetry is not a vertical line • there is more than one line of symmetry in the shape or object

Measurement					
4	**Time**	Telling the time • Read dates on calendars • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar	Telling the time • Read dates on calendars • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar	Telling the time • Read dates on calendars • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar	Telling the time • Read dates on calendars • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar
		Tell 12-hour time in • hours • half hours • quarter hours • minutes on analogue clocks and digital clocks and other digital instruments that show time e.g. cell phones	Tell 12-hour time in • hours • half hours • quarter hours • minutes on analogue clocks and digital clocks and other digital instruments that show time e.g. cell phones	Tell 12-hour time in • hours • half hours • quarter hours • minutes on analogue clocks and digital clocks and other digital instruments that show time e.g. cell phones	Tell 12-hour time in • hours • half hours • quarter hours • minutes on analogue clocks and digital clocks and other digital instruments that show time e.g. cell phones
		Calculate lengths of time and passing of time	Calculate lengths of time and passing of time	Calculate lengths of time and passing of time	Calculate lengths of time and passing of time
		Use calendars to calculate and describe lengths of time in days or weeks or months including	Use calendars to calculate and describe lengths of time in days or weeks or months including • converting between days and weeks • converting between weeks and month	Use calendars to calculate and describe lengths of time in days or weeks or months including • converting between days and weeks • converting between weeks and months	Use calendars to calculate and describe lengths of time in days or weeks or months including • converting between days and weeks • converting between weeks and months
		• Use clocks to calculate lengths of time in hours or half hours	Use clocks to calculate lengths of time in hours, half hours and quarter hours	Use clocks to calculate lengths of time in hours, half hours and quarter hours	Use clocks to calculate lengths of time in hours, half hours and quarter hours
4	**Length**	**Informal measuring** • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters • Describe the length of objects by counting and stating how many informal units long it is • Use language to talk about the comparison e.g. longer, shorter, taller, wider			

	Length (continued)	**Introducing formal measuring** • Estimate, measure, order and record length using metres (either metre sticks or metre lengths of string) as the standard unit of length. • Estimate and measure lengths in centimetres using a ruler. No conversions between metres and centimetres required	**Introducing formal measuring** • Estimate, measure, compare, order and record length using metres (either metre sticks or metre lengths of string) as the standard unit of length. • Estimate, measure and record lengths in centimetres using a ruler.
4	Mass	Informal measuring • Estimate, measure, compare, order and record mass using a balance and non-standard measures e.g. blocks, bricks etc • Use language to talk about the comparison e.g. light, heavy, lighter, heavier	
		Introducing formal measuring • Compare, order and record the mass of commercially packaged objects which have their mass stated in kilograms e.g. 2 kilograms of rice and 1 kilogram of flour or in grams e.g. 500 grams of salt • Where bathroom scales are available, learners can measure their own mass in kilograms using a bathroom scale.	Introducing formal measuring Learners do written tasks to consolidate the following, including reading pictures of • products with mass written on them, • pictures of mass on bathroom scales where the needle points to a numbered gradation lines
		The expectation is that learners only read to the nearest numbered gradation line. They describe their mass as almost/nearly/close to/a bit more than/more or less/or exactly the number (of kilograms) they read off the mass meter. • Where balancing scales with mass pieces calibrated in grams are available, learners can measure mass or different objects. No conversions between grams and kilograms required	

| 4 | Capacity/ volume | **Informal measuring**
• Estimate and measure, compare and order the amount the capacity of containers (i.e. the amount the container can hold if filled) by using non-standard measures e.g. spoons and cups
• Describe the capacity of the container by counting and stating how many of the informal units it takes to fill the container e.g. The bottle has the capacity of 4 cups.

Introducing formal measuring
Estimate, measure, compare, order and record the capacity of objects by measuring in litres, half litres and quarter litres
• using bottles with a capacity of 1 litre, or containers whose capacity is stated in millilitres e.g. cool drink cans
• measuring jugs in which numbered calibration lines show litres, half litres and quarter litres
• measuring jugs which have numbered calibration lines for millilitres. Learners are not expected to read volumes at unnumbered calibration lines
• measuring cups and teaspoons which indicate their capacity
• compare, order and record the capacity of commercially packages objects whose capacity is stated in litres e.g. 2 litres of milk, 1 litre of cool drink, 5 litres of paint or in millilitres e.g. 500 ml of milk, 340 millilitres of cool drink, 750 millilitres of oil
• know that a standard cup is 250 millilitres
• know that a teaspoon is 5 millilitres | **Introducing formal measuring**
Learners do written tasks to consolidate the following, including reading pictures of
• products with their capacity written on them in order to sequence in order
• pictures of jugs where the volume is near to a numbered 1 litre or 2 litre gradation line or half litres or quarter litre
• pictures of jugs where the volume is near to a numbered millilitres gradation line The expectation is that learners only read to the nearest numbered gradation line. The describe their volume as almost / nearly/ close to/ a bit more than/ more or less/ or exactly the number (of litres) they read off the jug |

#	Topic				
4	Capacity/volume *(continued)*	No conversions between millilitres and litres required			No conversions between millilitres and litres required
4	Perimeter			Investigate the distance around 2D shapes and 3D objects using string	
4	Area				Investigate the area using tiling
Data handling					
5	Collect and organise data	**Recommended:** Whole data cycle to make bar graph Collect and organise data Collect data about the class or school to answer question posed by the teacher. Use tallies to record data in categories provided.		**Recommended:** Re-organise data provided in a list or tally or table into a bar graph Collect and organise data Collect data about the class or school to answer question posed by the teacher	
	Represent data	Represent data in • table • bar graph		Represent data in bar	
	Analyse and Interpret data	Analyse and interpret data Answer questions about data in bar	Analyse data from representations provided. Recommended • at least 1 pictograph • at least 1 table	Analyse and interpret data Answer questions about data in bar	Analyse data from representations provided. Recommended • at least 1 pictograph • at least 1 table

Part 2   Planning

Planning and organising your mathematics teaching

The *Teacher's Guide* is an essential component of this series. It gives clear instructions on how to teach the concepts the learners need to master in Grade 2. It also provides guidance on how to use the *Learner's Book* and *Workbook* so that learners can practise the concepts learnt.

Use this *Teacher's Guide* as a starting point and then refer to the *Learner's Book* and *Workbook* when the *Teacher's Guide* instructs you to do so. For the *Workbook* activities the learners should write their answers in the *Workbook*. Provide the learners with sheets of paper or exercise books to complete their activities for the *Learner's Book*.

In the *Teacher's Guide* a section is dedicated to each concept the learners have to grasp. At the beginning of the content area (called "Modules" in the *Learner's Book*) you will see the topics you are dealing with.

Allocation of teaching time

The CAPS allocates teaching time for mathematics as follows:
- 10 weeks per term for 4 terms, with 7 hours for mathematics per week: $10 \times 4 \times 7 = 280$ hours per year
- 5 lessons per week for 10 weeks each term
- 1 lesson per day of 1 hour 24 minutes
- Allow one week at the start of each term for orientation and consolidation, to help children who have forgotten a lot of the content during the holidays.
- Allow a further week at the beginning of each term to consolidate concepts and knowledge that will be a baseline for the next phase of teaching and learning during the term.
- This leaves 4 terms of 8 weeks each with 5 lessons per week: $4 \times 8 \times 5 = 160$ lessons.
- In the Foundation Phase about 3 lessons every week should be focused on Numbers, operations and relationships. The remaining 2 lessons can be used to focus on other content areas. Shape and space and Measurement will need more time than Data handling and Number patterns.

Resources in the classroom

Besides the resources listed for each unit, you will need to have these items in your classroom at all times:
- number charts from 1–100 and 101–200
- vertical and horizontal number lines
- a counting frame
- counters of the same colour and kind
- counters of different colours
- counting objects such as stones, blocks, beads, buttons, bottle tops, pegs and sticks, ice-cream sticks, shells

- number symbol cards (1, 2, 3, and so on)
- number name cards (one, two, three, and so on)
- ordinal number cards (first, second, third, and so on)
- value cards
- a set of Flard cards (expanding cards)
- building blocks
- modelling clay
- chalk
- crayons
- koki pens
- pencils
- paper
- newspapers
- magazines
- scissors
- glue
- Prestik
- sticky tape
- drawing pins
- rulers
- tape measures
- a balance scale
- thermometers
- analogue clocks
- old and new calendars
- measuring jugs
- height charts
- boxes and containers of different shapes and sizes
- spheres, balls, cones, cylinders and pyramids
- squares, rectangles, circles and different triangles, all of different sizes
- other quadrilaterals, also pentagons and hexagons
- empty containers, including bottles (plastic)
- match boxes
- empty toilet rolls
- egg boxes or trays
- string, wool, rope
- paint
- dice
- playing cards,
- mathematical games such as Ludo, dominoes, puzzles, tangrams, snakes and ladders
- climbing and balancing equipment
- play money (notes and coins)
- a play-shop with items that can be bought and sold.

Under the heading **Learning experiences** you will find a step-by-step breakdown suggesting what you should do to teach the concepts relating to each topic. Once the learners have understood the concepts, they can practise and reinforce what they have learnt by doing the activities in their *Learner's Books* and the worksheets in the *Workbooks*.

Organising the daily mathematics period

According to the CAPS, 'all the time allocated to mathematics on a single day should be considered as one period'. The daily mathematics period should include all of the following:

Whole class activity

- Mental mathematics
- Consolidation of concepts
- Classroom management (allocation of independent activities, etc.)

Small group teaching

- Counting
- Concept development (oral and practical activities)
- Problem-solving (oral and practical activities)
- Written recording of mathematical thinking
- Developing calculating strategies (oral and practical activities)

Independent work

- Learners practise and consolidate concepts developed in whole class and small group activities.

More details about these different aspects of daily classroom activity are given in the CAPS under **Documents** in this file.

Counting activities

Learners need to understand mathematics and therefore they need to experience it and make sense of it through their own thinking and doing activity. A learner's understanding of numbers is the basis of his or her understanding of mathematics. Counting should therefore always be the starting point in mathematics, as it forms part of an essential process in the development of an understanding of number. Involve the learners **daily** in counting activities and encourage them to count as far as they can. At the same time, allow the learners to develop at their own pace and at their own level. Learners can do their daily counting activities individually, in pairs, in groups or as a class.

Learners need to go through different stages of progression to develop their understanding of number. Guide them to progress from one level of counting to the next. These levels are:
- Counting all numbers: The learners count all the numbers. When they add numbers they will start counting from 1 every time.
- Counting on: The learners count on from a given number. When adding numbers they will start counting from the given number and continue. For example, if the learners add 7 + 3 they will start counting from 7 and then count 8, 9, 10.
- Decomposing numbers: The learners break down numbers and develop their understanding of the value of numbers.

They will know the number components (parts) of a number and therefore they will not have to count. For example, 4 and 3 are number components of 7.

In Grade 2 the learners should do counting activities every day. As part of these daily counting activities they should identify the numbers on the number chart or number lines and write the number symbols and the number names. Here are a few suggestions for activities:

Count concrete objects such as stones, blocks, beads, buttons, bottle tops, plastic bottle rings, pegs, sticks, match sticks, books, pencils, crayons, tables, chairs, windows, bricks, eyes, ears, feet, legs, hands, toes and fingers.
- Count counters.
- Count things in pictures, magazines, books and newspapers.
- Count from 0–10.
- Count from 0–15.
- Count from 0–20.
- Count from 0–50.
- Count in ones from 0–80.
- Count in tens from 0–100.
- Count forwards.
- Count backwards.
- Count even numbers.
- Count odd numbers.
- Count from given numbers.
- Count in twos.
- Count in fives.

When doing counting activities make use of the number chart, number lines or a counting frame. Counting is not about memorising or chanting numbers, but about understanding numbers. The learners need to touch or move concrete objects when counting, or point to the numbers on the number chart or number lines.

Mental mathematics

The CAPS states that mental mathematics plays a very important role in the mathematics curriculum. Learners must know and be able to recall number bonds and multiplication table facts, as listed in the CAPS content area and topic tables for each grade at the back of this *Teacher's Guide*. They must also use this skill in a range of skip counting and 'chain' calculation activities. Mental mathematics is an important part of the Counting and number concept sections relating to Number and patterns, and is also sometimes used in Measurement and Data handling activities.

When doing mental mathematics, it is important never to force the learners to do mental calculations that they cannot manage. They should have writing materials and/or counters available to help them with the calculations, if they can't do them entirely by mental methods.

A teaching strategy that builds conceptual and social skills

The learning experiences in this course are designed for group work, pair work, individual work and for the whole class to do together. This cultivates an ethos of cooperation and working together. Letting learners work together is a very useful and successful teaching strategy. It helps the learners develop social skills such as cooperating in teams, taking turns, showing respect and responsibility, as well as listening and communicating effectively through interactive learning.

Helping learners overcome barriers to learning mathematics

Learners who experience barriers to learning mathematics should be given many opportunities for activity-based learning, to help them overcome their barriers at the pace that works for them. They should be given more time to do practical examples, using concrete objects and practical experiences, than other learners. Moving too soon to abstract work may make these learners feel frustrated, and lead to them losing any mathematical understanding and skills they have developed.

When organising daily classroom activities, allow more time for these learners to complete tasks, use their own strategies to develop their thinking skills, and do assessment activities. You may also need to reduce the number of activities you give to these learners, without leaving out any of the concepts and skills that need to be introduced and consolidated.

Suggested structure for a mathematics period

The flow diagram on the next page presents a possible structure for a mathematics period. As suggested earlier, do counting activities with the learners daily. Learners can do these activities individually, in pairs, in groups or as a class. After the counting activities, do mat work to teach concepts (knowledge) and skills. You can do mat work with groups of four, six or eight learners, and the groups can be mixed groups or ability groups. The concepts taught in these learning experiences will cover topics in Content areas 1 to 5.

Keep in mind that you do not necessarily have to cover a whole topic on any single day. It might take your learners much longer to grasp a concept in that topic, and you can spread the learning experiences for the topic over a few days.

Suggested flow for the mathematics period
Time allocation: Grade 2

±15 minutes → **DAILY**

Counting
Mental mathematics ◀ Whole class
Pairs
Groups
Individuals

Patterns: Numbers
Shapes ◀

±10 minutes → Whole class instruction/activity

±1 hour → Concepts
Knowledge
Skills
Values
Remedial ▶ On the mat ◀ Groups of 4, 6 or 8
Ability groups
Mixed groups

±5 minutes → Tidy up
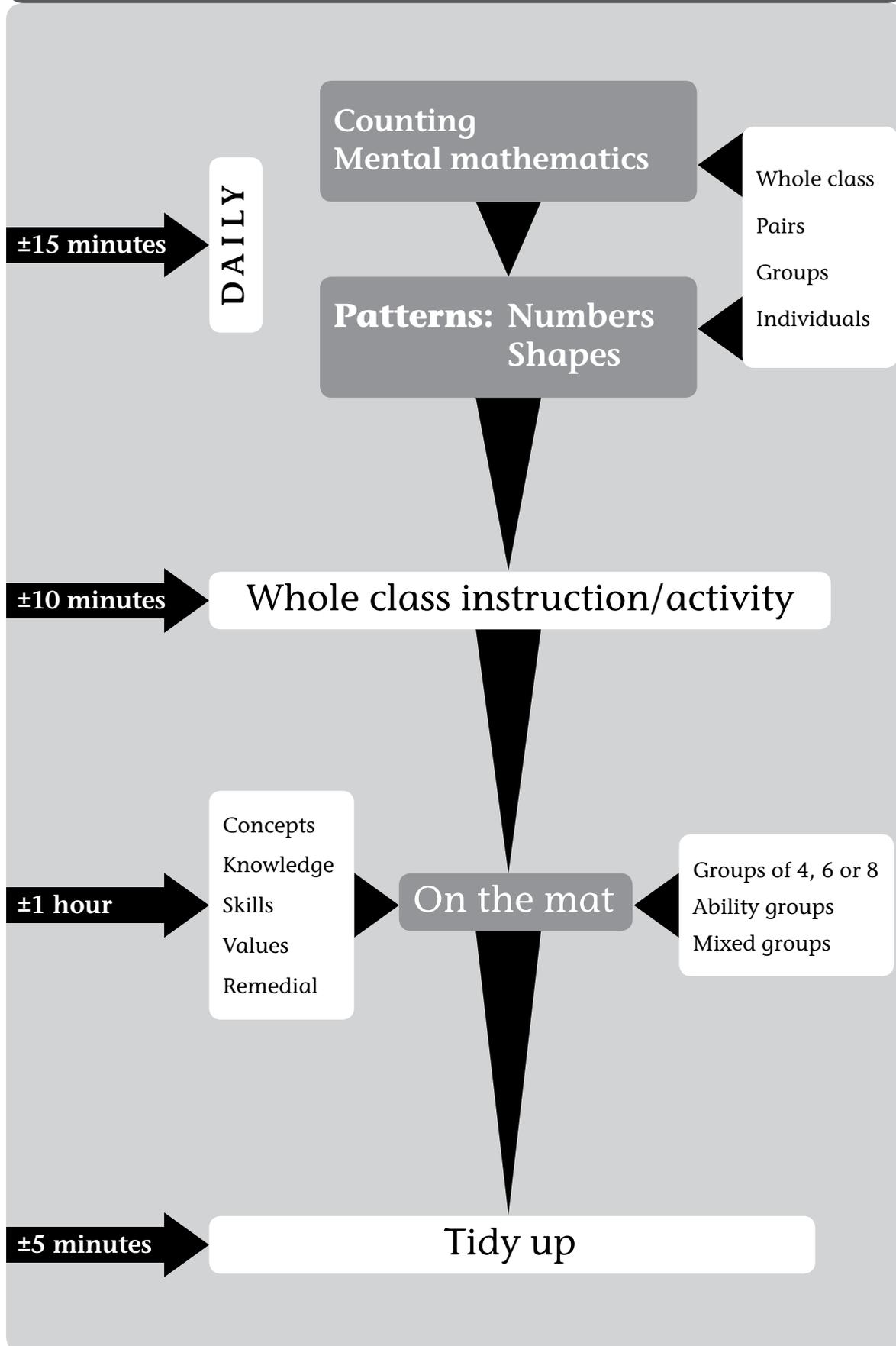
Assessment

The purpose of assessment is to inform you, the learners and their parents or guardians about their performance. Assessment also serves as a tool for you to reflect on and analyse your own teaching practice, as this impacts on the learners' performance. You can use your assessment to see whether you need to provide more opportunities for some or all of the learners to develop a particular skill or master a concept in a given topic.

You should develop a well planned process to identify, record and interpret the performance of your learners throughout the year, using both informal and formal assessment methods. Keep a record of the learners' performance on assessment sheets, and summarise this information on a report form or card to give the learners and their parents or guardians at certain times of the year. You may photocopy the various assessment sheets provided in this *Teacher's Guide* to use in your classroom.

Assessment methods

You can use various methods to assess the learners' progress during the year. Any assessment method involves four steps:
- generate and collect evidence of learners' achievement;
- evaluate this evidence;
- record your findings;
- use this information to understand learners' development and help them improve the process of learning, and also to improve your teaching.

Before you undertake any assessment of learners' work, decide on a set of criteria or standards for what they should be able to understand and do, and base your assessment on these criteria. It is important that you give the learners clear instructions on what you expect of them, so that they can complete the assessment tasks correctly and honestly. Once an assessment task has been completed, discuss your assessment with the learners and give them feedback to help them increase their ability to do the task successfully.

In the Foundation Phase assessment is a continuous process. In the course of the year, your continuous assessment plan should include informal and formal assessment. These are some of the methods you can use:

- **Observation** is your main assessment method for informal **and** formal assessment. Try to observe a few learners at a time. Select an observation sheet from the photocopiable assessment sheets in this *Teacher's Guide* and record your observations for these learners. For informal assessment purposes you should also keep an observation book in which you record notes on each learner's achievement in daily activities. For formal assessment, you will use checklists and rubrics to write down your observations while learners are performing set tasks.

- **Performance-based assessment** consists of tasks in which learners must create, produce or demonstrate something. You need to assess both the process learners use to complete the task, and the end product they produce.
- **Written work** to be assessed can include worksheets and tests. A test is a written task completed individually by learners within a set time span. Tests should consist of questions and tasks similar to those that learners have already done in class, with the support of the teacher and other learners. A test should not include new types of questions or tasks that learners have not encountered before.
  - Standardisation exercises provided to schools should not be used as tests in Grades 1 and 2, as they are not intended to assess individual learners; rather, their purpose is to help teachers reflect on their own teaching practice.
  - Written assessments on their own don't provide the teacher with enough information to understand why learners are making errors. These tests should therefore always be used together with observation and other informal assessment methods (such as interviews with learners) to find out what learners are thinking when they do a mathematics activity.
    You should practise continuous assessment by monitoring **all** the written work done by learners. All written work should be kept as evidence of learners' progress, and to identify their needs.

Further details are given below about informal and formal assessment methods specified in the CAPS.

Informal assessment

Informal assessment is done on a daily basis, as learners work on their learning activities. It should not be seen as a separate activity from learning and teaching.

Due to the fact that learners assimilate content at a varied pace makes it important that the educator continuously record informal assessments as learners interact with the content.

You can do this assessment by observing the learners as they work, by asking them to demonstrate a particular skill, or by talking to a learner about his or her thinking during an activity. Learners can also assess each other's skills and understanding as they do a shared activity. This encourages them to reflect on their own performance and recognise where they need help.

The information you gather in this informal assessment need not be recorded, unless you find this useful. The results of this assessment are not counted for promotion purposes.

Formal assessment

Formal assessment consists of the tasks that you mark and formally record during the year for progression and certification purposes. These tasks are subject to moderation, to ensure that they maintain the appropriate quality and standards. Formal assessment provides you with a systematic way to evaluate how well the learners are progressing.

There are no examinations in the Foundation Phase. All formal assessment tasks are conducted using continuous assessment methods.

Examples of formal assessment tasks are: tests, practical tasks, projects, oral presentations, demonstrations, etc. At regular intervals the educator should conduct a formal assessment from extracts of the content that has been taught to and practiced by the learners.

Assessing learners who experience barriers to learning

Learners who experience barriers to learning should be given opportunities to demonstrate their competence in ways that suit their needs. You may have to consider using some or all of the following methods when assessing these learners:
  - Allow these learners to use concrete apparatus for a longer time than other learners in the class.
  - Break up assessment tasks (especially written tasks) into smaller sections for learners who have difficulty concentrating for long periods, or give them short breaks during the task.
  - Learners who are easily distracted may need to do their assessment tasks in a separate venue.
  - Use a variety of assessment methods, as some learners may not be able to demonstrate what they can do using certain types of assessment. For example, a learner may be able to explain a concept orally but have difficulty writing it down.
  - In the Foundation Phase the inability to read should not prevent learners from demonstrating their mathematical competence.

Reporting learners' performance

Reporting is the process of communicating learners' performance to the learners themselves, and to parents and guardians, schools and other stakeholders. You can use report cards, parent meetings, school visitation days, parent-teacher conferences, phone calls, letters and other appropriate methods to make your reports.

Records of learner performance should provide evidence of the learner's conceptual progression within a grade and her/his readiness to progress to the next grade.

Formal assessment is reported in all grades using percentages.

The table below sets out the national codes and descriptors to be used for recording and reporting levels of competence in the Foundation Phase. You should also use comments to describe learners' performance, as appropriate.

Table 5: Codes and descriptors for recording and reporting in Grades R–3

Achievement level	Achievement description	Marks (%)
7	Outstanding achievement	80–100
6	Meritorious achievement	70–79
5	Substantial achievement	60–69
4	Adequate achievement	50–59
3	Moderate achievement	40–49
2	Elementary achievement	30–39
1	Not achieved	0–29

Photocopiable sheets

Teacher assessment

Task		
Date	**Learners**	**Observations**

You may photocopy this sheet for use with *Study & Master Mathematics* Grade 2 Learner's Book and Workbook.

Teacher assessment

Learner:	
Date	**Observations and comments**

You may photocopy this sheet for use with *Study & Master Mathematics* Grade 2 Learner's Book and Workbook.

Teacher assessment

Task:					
Learners	exceptional competence	progress is fast	progress is consistent	progress is slow	unable to do task

You may photocopy this sheet for use with *Study & Master Mathematics* Grade 2 Learner's Book and Workbook.

Parent/guardian assessment

		yes	no
Date:			
I am assessing the work of:			
	Please tick (✓)	**yes**	**no**
He/she struggled.			
He/she understood what to do.			
He/she could work on his/her own.			
He/she needed my help.			
He/she completed the task.			
Any other comments:			

Signature:

You may photocopy this sheet for use with *Study & Master Mathematics* Grade 2 Learner's Book and Workbook.

Parent/guardian assessment

Date:
I am assessing the work of:
Comments:
Signature:

You may photocopy this sheet for use with *Study & Master Mathematics* Grade 2 Learner's Book and Workbook.

Part 3 Lesson-by-lesson

Content area/Module 1
Numbers, operations and relationships

1 Counting

Learning experiences

Lesson focus

- Do counting with the learners as a whole class or with small groups on a mat. Use a variety of concrete objects and counters, such as buttons, sticks, stones, and so on.
- Vary the daily counting:
  - Count from number charts or the number line and identify the numbers.
  - Count forwards or backwards in ones, tens
  - Count forwards or backwards from a given number
  - Skip-count in multiples
  - Count odd or even numbers
  - Count objects
  - Count objects in a picture
  - Count four people or five animals from a magazine
  - Draw ten balls and five bats
  - Heap up counters and count in groups, e.g. in twos, fives, tens, fifteens.
- Do one counting exercise each day. Refer to the Counting term planning schedule to see how the learners should progress in the number range.

Give the learners practice in **counting** by doing:
Learner's Book: Module 1, Activities 1–8
Workbook: Worksheets 1–3

Skills

counting, reading, matching and recognising

Resources

number chart; number line; counters; concrete objects such as sticks or buttons; crayons; pencils; paper

Concepts

counting

Vocabulary

count, forwards, backwards, more, less, before, after, between

2 Number names and symbols

Starting off

Do a variety of counting activities with the class.

Choose a pattern activity from Module 2 for the learners to do.

Skills

counting, writing, reading, matching and recognising

Resources

number chart; number line; counters; concrete objects such as sticks or buttons; envelopes or small packets or boxes with number symbol and number name cards ranging from 20–100; crayons; pencils; paper

Concepts

number

Vocabulary

number names from 34 to 100, more, less, before, after

Lesson focus

- The learners work in pairs on a mat.
- Ask the learners to compare numbers. For example, ask: Which number is more than . . . ? Which number is less than . . . ? Which number is bigger than . . . ? Which number is smaller than . . . ? Which number is between . . . and . . . ? Which number comes before . . . ? Which number comes after . . . ? Let the learners identify the numbers on the number chart each time.
- The focus in this lesson is on larger numbers and their number names. Revise the concepts of **more** and **less** from Grade 1.
- Give each pair of learners an envelope with number symbol and number name cards in it. The numbers should be in groups of ten and range from 20–30, 30–40, 40–50, 50–60, 60–70, 70–80, 80–90 and 90–100.
- The pairs read the number symbols and the number names and match them. They must put the cards in sequence, and then write the number symbols and the number names in the correct order.
- The learners put the cards back into the envelopes and swap with another pair. They follow the same procedure with the second set of number symbols and name cards.

Give the learners practice in **number symbols** and **number names** by doing:
Learner's Book: Module 1, Activities 9–11
Workbook: Worksheets 4–5

- Learners will not be able to complete all these activities in one lesson. They can complete some tasks for homework or during group work in the next lesson. Discuss the instructions for each activity with the learners so that they understand what to do.

3 Comparing and ordering

Learning experiences
- Set up four work areas beforehand.

Lesson focus

Work area 1
- Prepare a set of **greater than** and **less than** symbol cards, a set of number symbol cards and a set of number name cards for each work area.
- Place each group of cards face down in this order: number, symbol and number name.
- Learners take turns to choose a card from each group, read it aloud and state if it is *true* or *false*, for example: 145 < eighty is false.

Work area 2
- Prepare a set of **before** and **after** cards, a set of number symbol cards (with an order range of e.g. 320 to 340), a set of number name cards and sheets of paper with **before**, **after** and **between** written on them.
- Place the cards face down in their sets.
- Learners take turns to choose a card from each group of cards and place them in the correct column on the **before**, **after** and **between** sheets.
- Let the learners move the cards around until they have the correct answer.

Work area 3
- Prepare a set of number cards and these instruction cards:
  ‣ Arrange from the biggest to the smallest
  ‣ Arrange from the highest to the lowest
  ‣ Arrange from the smallest to the biggest
  ‣ Arrange from the lowest to the highest
- The group chooses one instruction card at a time and arranges the numbers accordingly.
- They repeat the activity for all the instruction cards.

Work area 4
- Prepare a set of **more** and **less** cards (i.e. 10 more, 20 more, 50 more, 100 less, 40 less, 30 less), a set of number cards and sheets to write on.
- The learners choose a number card and a **more** and **less** card. They write their answers on the sheet provided.
- The group discusses the answer and then passes the sheet to the next learner.
- The learners continue until all the number cards have been done.
- Make four groups of four learners to work in the work areas.

- Allow each group 15 minutes at the most at each work area. Give each group a turn at all the work areas.
- Move around the groups and give help where necessary.
- The remainder of the class do activities from the *Learner's Book* and *Workbook*.
- Make sure that each learner has a turn at each work area.

Give the learners practice in **comparing and ordering numbers** by doing:
Learner's Book: Module 1, Activities 12–15
Workbook: Worksheets 6–7 and 22–24

4 Fractions

Starting off

Do a variety of counting activities with the class.

Choose a pattern activity from Module 2 for the learners to do.

Skills

identifying, problem-solving, explaining, drawing, communicating

Resources

number chart; number line; number cards; counters; concrete objects; bread; fruit; plastic knives; cut-out cardboard or paper shapes (see page 111) envelopes or packets; crayons; pencils; paper; scissors

Concepts

halves, quarters, equal

Vocabulary

half, quarter

Learning experiences

Lesson focus

- Divide the learners into pairs and give each pair a slice of bread, fruit or a sheet of paper. Ask them to talk about how they could share the object so that each one has an equal piece. Give them time to discuss the problem and to decide what should be done and how.
- Make sure the learners understand that two halves are equal parts of a whole and should therefore be the same size. If one piece is bigger or smaller, it is not a half; it is just a piece.
- Let each pair cut their slice of bread, fruit or paper in half using a plastic knife. Point out that they now each have half a slice of bread. Ask them how many halves they have in total, and whether they are the same size. Ask learners: How many halves do you get from one whole?
- Then ask the learners how many halves they would get from five slices of bread. Encourage them to work out the solution with their partners.
- Give each learner an envelope with cut-out shapes (see photocopiable page 111 at the back of this book). They take out one shape and halve it by folding it in half. Show the learners how to fold and then unfold the shape. Ask them how many halves they see. They colour in one half of the shape. Write the fraction on the board.
- The learners take another shape and halve it by first folding it, and then drawing a line down the fold, and finally cutting the shape in half.
- Ask them how many halves they have, and how they know that each piece is a half. Encourage the learners to give their own explanations. Make sure they understand that both parts are equal. Let them colour one half of the shape blue and the other half yellow.
- Ask the learners how many halves they would get from two circles and from four circles. Learners who do not know the answer should work it out practically.
- Give the learners two sheets of paper. They fold one sheet in half, unfold it and draw a line down the fold. Ask them how many halves they have. They cut the sheet in half so that they have two halves.
- Ask the learners to fold the other sheet of paper in half as they did for the first. They then fold the half in half again. Let them unfold the paper and draw a line on the new fold. Ask them how many parts they see, and whether they are equal.
- Say that each part is called a **quarter**. Write the fraction on the board. Say that it means one equal part of four parts. Ask the learners to count the number of quarters they have. They write the fraction on each quarter. Then ask them to colour in a quarter red and two quarters green. Ask how

many quarters they have coloured in, and what fraction is not coloured in. Let them cut out their quarters.

- Ask how many quarters fit into a half, how many quarters fit into a whole, and how many halves fit into a whole. They do this practically using their cut-out halves, quarters and whole shapes.
- Divide the learners into pairs. Give each pair a set of counters. One learner in each pair takes four counters and gives half of them to a partner. Ask how many counters they each have. Point out that half of 4 is 2. They repeat the activity a number of times using different numbers of counters.

Give the learners practice with **fractions** by doing:
Learner's Book: Module 1, Activities 16–17
Workbook: Worksheets 8–14

5 Place value

Learning experiences

Lesson focus

- The learners work in groups on a mat. Ask them to take ten sticks each. Explain that they are going to exchange their ten loose sticks for one whole ten. Show them how to tie an elastic band around the ten loose sticks to make one whole ten. Explain that they now have 1 ten. Show the number card 10 and point to the one (meaning one 10) and to the zero (meaning no or zero ones).
- The learners work in pairs. Ask how many tens each pair has. Explain that two tens are equal to 20, meaning two tens and zero ones. Show the number card 20.
- Let learners repeat the activity by having one learner join each pair until the group has nine tens. Put down the number card each time.
- Ask the learners to choose any number between 10 and 20. Encourage them to think carefully about how many tens and how many ones there are in the number they have chosen. Give them time to do this before asking individual learners to explain their numbers.
- Use the number cards to help the learners, for example, 15 is one ten and five ones, or 10 + 5. Show the number cards 10 and 5, and put the 5 over the 0.
- Ask the learners to choose any number between 10 and 99. They use the sticks and the number cards to explain and write out the number, for example:

10 + 5
1 ten + 5 ones → 15   43 ← 40 + 3
4 tens + 3 ones

Give the learners practice in **place value** by doing:
Learner's Book: Module 1, Activities 18–28
Workbook: Worksheets 15–21

6 Problem-solving

Learning experiences

Lesson focus

- The learners work in groups of four on a mat. Give each group a problem written on a card or a large sheet of paper. For example:
  Nina has 15 cents. Anne gives her 9 cents more. How many cents does Nina have altogether?
  Xoli has 50 cents. He buys an orange for 25 cents. How much money does he have left?
- The groups read their problem at least once (two or three learners in each group could take turns to read the problem aloud) and then discuss it. They need to interpret the problem and understand what it is about.
- Encourage each learner to draw a picture of their own interpretation and understanding of the problem.
- Group members then take turns to explain how they think the problem can be solved – that is, what operation they will use and how they will do the problem.
- Ask them to estimate the answer and to write it down.
- Learners then work out the problem on paper using their own methods. They describe how they reached their solutions. Group members check each other's solutions to make sure they are correct.
- Encourage the learners to compare their answers to the estimated answer and talk about the different methods that were used by the learners in their group.
- Repeat the activity with more problems.
- It is important for the learners to: (1) read the problem, (2) draw a picture of their interpretation and understanding of the problem, (3) solve the problem using their methods, (4) explain how they came to their solutions, and (5) check their solutions to the problem, as well as the solutions of their peers. Expose learners to different kinds of problems.
- Do problem-solving activities daily to give the learners enough opportunity to develop their problem-solving and reasoning skills. Try to give the learners one word problem to solve each day. Introduce different types of problems gradually to prevent confusion and a dislike or fear of word problems.
- If the learners can't read well or struggle to understand and interpret story sums, help them by integrating reading in the Mathematics lessons. Write out the word problem on a large sheet of newsprint and put it up in the classroom. Select specific vocabulary from the word problem (for example, **altogether**, **each**, **same**, **share**, **sweets**, **marbles**, **bananas**, **names**) and make flashcards. Teach these words to the learners. Put them up in the classroom for the learners to read at any time during the day. Use these same words to formulate more word problems, and slowly introduce new words.

- Encourage the learners to write their own word problems too. Let them look at pictures and talk about what they think is happening. Help them to write appropriate words to label items in pictures. Ask each learner to write a word problem based on a picture. They should use the labels to help them.
- Let the learners read their problems aloud to their groups. The learners work out the problems on paper, using their own methods. Ask them to describe to their groups how they reached their solutions. Group members should check each other's solutions to make sure they are correct. If there is time, let the learners swap and solve each other's word problems.
- Repeat the activity using other pictures.

Give the learners practice in **problem-solving** by doing:
Learner's Book: Module 1, Activities 29, 30, 38, 41, 53, 54, 62–69
Workbook: Worksheets 25, 26, 37, 38, 39, 43 and 48

7 Calculations

Learning experiences

Lesson focus

Addition

- Divide the learners into pairs and give each pair a set of the cards you prepared for this lesson. Your cards should look like this:

15 + 8	23
Front	*Back*

- Ask the learners to shuffle the cards. One learner in each pair then takes a card and shows it to the partner. The partner works out the answer in their head. If the partner answers correctly the card goes back into the deck, and if they answer incorrectly they keep the card.
- Learners take turns to show a card and work out the answer. At the end of the game each learner takes the cards they answered incorrectly and works out the correct answers using counters and objects. Ask them to draw and write out the problem.
- Divide learners into groups of four and give each group two or three dice. Ask them to take turns to throw the dice and add the numbers. The learner throwing the dice works out the answer in their head. The other three learners check to confirm if the answer is correct. If the answer is incorrect, another learner in the group can answer.
- You could use wooden blocks to make your own dice and write the numbers with a koki pen.
- The learners remain in groups of four. Give each learner five blank cards and ask them to write a one-digit number on each card. Then ask them to place all the cards face down in the middle of the group. The learners take turns to pick up any two cards. The learner who picks up the cards should add the two numbers in their head.
  If the answer is correct they keep the cards and if incorrect another learner in the group can give the correct answer and keep the cards. At the end of the game the learner with the most cards wins.
- You could add another set of blank cards on which the learners write two-digit numbers. Combine both sets of cards, shuffle them, and then place them face down and start the game over.
- Give the learners plenty practice with adding small numbers before moving on to bigger numbers. It is difficult to count out concrete objects for bigger numbers, so allow the learners to work out the answer in the way they are

Starting off

Do a variety of counting activities with the class.

Choose a pattern activity from Module 2 for the learners to do.

Skills

counting, recognising, calculating, problem-solving, estimating, communicating, explaining, reading, reasoning, logical thinking, critical

Resources

number chart; number line; number cards; counters; concrete objects; crayons; pencils; paper

Concepts

addition

Vocabulary

calculation, calculate, add, equals, solve, solution, estimate, check

most comfortable. Allow them to use paper, place value cards, and so on, to help them. For example:

84 + 11 = 95

8 + 1 and 4 + 1

Give the learners practice with **addition** by doing:
Learner's Book: Module 1, Activities 31−37
Workbook: Worksheets 27−33

Learning experiences

Lesson focus

Subtraction

- Prepare flashcards for the words **take away**, **minus** and **subtraction** and for the subtraction sign (−) and the addition sign (+).
- Ensure that each learner has a few counters, for example, stones, buttons, matchsticks or bottle tops.
- Ask each learner to count 20 counters and place them in front of them in a straight line. They point to each counter and count aloud. Now ask the learners to count eight counters and to keep them in their hands. They then count the remaining counters on the desk. Ask the learners to check their partner's counters. Ask learners to explain what they think was done with the counters? Explain that they had 20 counters on the table, they took eight away by keeping them in their hands and had 12 left on the desk. Now show the flashcards with the words **subtraction**, **take away** and **minus** one at a time, allowing the learners to read the words after you. Explain to the learners that they have now done a subtraction problem. Show the learners the flashcard with the subtraction sign. Explain that this is the sign we use for subtraction problems. Show the learners the flashcard with the addition sign on it and see if they can identify it. Place the two flashcards next to each other and ask the learners to explain the difference (for example, one is a cross and the other is a straight line).
- Draw the problem on the board and write the number sentence below it:

  ● ● ● ● ● ● ● ● ● ● ● ● ○ ○ ○ ○ ○ ○ ○ ○

  20 − 8 = 12
- Point to the number sentence and read it aloud. Remind the learners what the equals sign (=) means. Ask learners to read the problem aloud. Do a few more examples with learners using their counters. Let learners check each other's counters. Now draw and write each number sentence, and then ask the learners to read each part as you point to it.
- Ask learners to work in pairs. They combine their 20 counters and put them in a line in front of them. Ask them to point to each counter and count aloud. Ask the learners to construct a problem with their counters on the board.

Starting off

Do a variety of counting activities with the class.

Choose a pattern activity from Module 2 for the learners to do.

Skills

problem-solving, explaining, calculating, communicating, working with numbers

Resources

number chart; number line; number cards; concrete objects; flashcards; crayons; pencils; paper

Concepts

subtraction

Vocabulary

subtract, minus, take away, equals, solve, solution, calculate, difference, check

- Draw and write the number sentence for all the counters: 20 + 20 = 40
- Ask the learners to read the problem aloud. Get one learner in each pair to take back their counters. Ask learners to explain what has happened. Guide the learners towards their answer. First, they add their 20 counters together to make 40 (addition sum) and then take away 20 from 40 to get 20 (subtraction problem). Ask one pair of learners to draw the problem on the board.

●●●●●●●●●●●●●●●●●●●●
●●●●●●●●●●●●●●●●●●●●
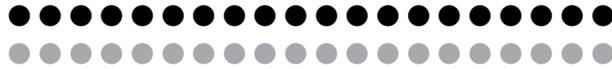
- The learners write the number sentence 40 – 20 = 20.

Give the learners practice in **subtraction** by doing:
Learner's Book: Module 1, Activities 39–40, 70–75
Workbook: Worksheets 34–36

Learning experiences

Lesson focus

Multiplication

- To teach the concept of grouping/equal amounts, select eight learners to stand in front of the class in a straight line, shoulder to shoulder and facing the class. Point at them one at a time and ask the seated learners to count aloud the number of standing learners. Ask the standing learners to arrange themselves into four equal groups.
- Ask the seated learners to think of and discuss a solution among themselves, but not to help the standing learners. If they do not find the correct solution, ask the learners to repeat the original instruction. Give the seated learners an opportunity to give suggestions. Emphasise the four groups, so start with four learners in separate areas. Then ask the four remaining learners to hold the hand of one of the other four learners. Guide the learners to understand that we can only work with what we are given. That is why we started with four separate groups and then added to them in equal parts. Ask learners what the number was, how many groups there are and how many in each group.

●●●●●●●●
●● ●● ●● ●●
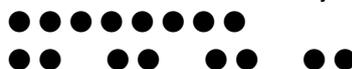
- Get different learners to repeat the exercise. Help any learners who have difficulty with the concept. Explain that **equal** means **the same as**. When they seem familiar with the concept, ask the standing learners to arrange themselves into two equal groups. Allow the seated learners to give opinions and suggestions. Guide the learners by arranging the standing learners into two groups of four. Ask learners what number you used, how many groups there are and how many in each group.

●●●●●●●●
●●●● ●●●●

Starting off

Do a variety of counting activities with the class.

Choose a pattern activity from Module 2 for the learners to do.

Skills

problem-solving, logical thinking, explaining, calculating, cooperating in a group

Resources

number chart; number line; number cards; counters; concrete objects; crayons; pencils; paper; flashcards

Concepts

grouping

Vocabulary

group, same, equal amounts, divide

- Take the learners outside and divide them into teams of 10. Ask the teams to discuss the solution within the team before rearranging themselves. Ask the learners to get into two equal groups. There should be a few extra learners who do not fit into any team; keep them as your assistants and checkers. Make sure that the teams are grouped into two groups of five. Ask learners what number they used, how many groups there are and how many in each group.

  ●●●●●●●●●●
  ●●●●● ●●●●●
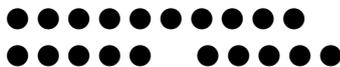
- Go back inside and ask each learner to count six counters and to place them in a row in front of them. Ask the partners to check that they have the correct number of counters. Ask learners to make three equal groups. Get partners to verify each other's work. There should be three groups of two; circulate, help and guide where required. Ask learners what number they used, how many groups there are and how many in each group.

- Explain that if we count the groups of two, we get six. Write the number problem 2 + 2 + 2 = 6 on the board. Tell the learners to read it aloud. Once again, ask learners what number was used, how many groups there are and how many in each group. Draw this example on the board. Get the learners to write the example in their exercise books:

  ●●●●●●
  ●● ●● ●●
  2 + 2 + 2 = 6
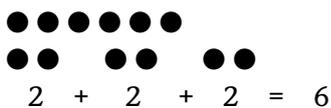
- Explain that we can do this activity with 3s, 4s, 5s, and so on. Repeat the activity with different numbers to give learners plenty practice at this skill.

- Work with small groups to identify any confusion or misconception that the learners may have on the grouping concept.

Give the learners practice in **multiplication** by doing:
Learner's Book: Module 1, Activities 47–52
Workbook: Worksheets 37–40

Note: Multiplication and division go hand in hand. It is important for the learners to master these operations. Make sure the learners understand multiplication well so that they can master division.

Learning experiences

Lesson focus

Dividing equally

- Divide the learners into groups. Give each group a container and a set of counters.
- To teach the concept of dividing equally (equal amounts/groups of equal amounts), ask each learner to take, say, 20 counters. It does not matter if they have the wrong number

Skills

*counting,
identifying,
drawing,
explaining,
cooperating in
a group*

Resources

*number chart;
number line;
counters; concrete
objects; crayons;
pencils; paper*

Concepts

dividing, sharing

Vocabulary

*equal, equally,
share, divide*

of counters the first time. If they do, repeat the instruction and explain that each learner in the group must have the same number of counters (20). Give them time to regroup and recount their counters.
- Ask the learners to divide their 20 counters into five equal piles. Explain that each pile must have the same number of counters.
- Ask the learners how many counters they have in each pile (4).
- Explain that we can say: 20 divided by 5 equals 4. Then say: 'We can write it like this: 20 ÷ 5 = 4.'
- Ask the learners to draw the 20 counters, then the five equal piles and then to write out the problem and the answer. Their sums may look like this:

$$20 \div 5 = 4$$

- The learners also need to be able to identify that $4 \times 5 = 20$.
- The learners must understand that division is the opposite of multiplication.
- Ask the learners to take 20 counters and divide them equally into four piles. Let them tell you how many counters in each pile. Let them say the problem and the answer.
- They now draw the whole, the equal parts and then write the problem with the answer.
- Say to the learners: 'We can also write out the dividing problem like this:'

$$5 \overline{\smash{)}20}^{\,4}$$

- Repeat the activity with more numbers to divide equally. Ask the learners to put out the counters, then to draw and write the problems with the answers.
- Encourage the learners to explain how they did their problems and got their answers.
- Give the learners division problems to work out in the same way. You could write the word problems on cards and give each group a card to solve, after which they can explain how they found their answer.
- Make sure the learners understand the process well before working with bigger numbers that need to be broken down.

Give the learners practice in **dividing equally** by doing:
Learner's Book: Module 1, Activities 55–59
Workbook: Worksheets 41–48

8 Doubling and halving

Learning experiences

Lesson focus

Starting off

Do a variety of counting activities with the class.

Choose a pattern activity from Module 2 for the learners to do.

Skills

identifying, problem-solving, explaining, drawing, counting, communicating, cooperating with others

Resources

number chart; number line; number cards; counters; concrete objects; containers such as margarine tubs; crayons; pencils; paper

Concepts

double, half of

Vocabulary

double, half of, halve

- Divide the learners into pairs and give each pair counters in a container. One learner in each pair takes out a few counters and says how many they have taken out. The second learner takes out the same number of counters.
- Point out that each pair of learners has two numbers that are exactly the same. Tell the learners that when we have two numbers that are exactly the same, we say the number is double. Write the word **double** on the board. Explain that **double** means **two of the same number**, or **the same number times two**. Ask the pairs to work out the total of their two numbers.
- The learners complete this word sentence for their number of counters:
  Double . . . is . . . .
- Each pair of learners now takes out 15 counters and then doubles the number of counters. Explain that double 15 is 30. This is the same as 15 + 15 = 30, or 15 × 2 = 30. The learners draw the number of counters they took out and write the word sentence (double 15 is 30) and the number sentences 15 + 15 = 30 and 15 × 2 = 30.
- The learners take more counters to double their number. They draw and write the new problem. They must be able to identify the pattern and recognise that doubling is adding the same number or multiplying it by 2.
- Learners can also practise doubling with dice. They take turns to throw the dice and double the number.
- While developing the concept of doubling, the learners need to practise **halving**. Halving is taking away the same number. For example, tell the learners to take out 10 counters, and then to halve the number. They should take away five counters. Ask them what half of 10 is. Let the learners draw a picture. Then show them how to write 'half of 10 is 5'.
- The learners repeat the halving activity with numbers of their choice. They should be able to double a number and halve it.

Give the learners practice in **doubling and halving numbers** by doing:
Learner's Book: Module 1, Activities 60–61
Workbook: Worksheets 49–51

Contents area/Module 2
Patterns, functions and algebra

In this module we have set out activities for you to choose from. The pattern activities provided in the *Learner's Book* and *Workbook* are not meant to be done in isolation, but as a part of the Mathematics lessons.

Patterns provide a means for developing manipulation skills. They also teach learners how to investigate, sequence and analyse to help them make sense of a situation. Patterns enable the learners to see relationships and use mathematical language to communicate those relationships. Working with patterns also sets a basis for generalising, drawing conclusions and for problem-solving. These are all important processes in mathematics.

In this module you will be given step-by-step guidelines on how to teach the concepts covered in this module.

1 Number patterns

Learning experiences

Lesson focus

Copy, extend and describe number patterns

- Put out number cards to form a simple number pattern.

2	4	6	8	10

or

- Ask the learners to identify the patterns.
- Let them talk about the two patterns – what is different, what is the same.
- Ask them to copy the pattern onto a sheet of paper.
- Repeat the process by doing more number patterns.
- Next put out only the start of a number pattern.

1	3	5				

or

- Ask the learners to identify the pattern by looking at given numbers at the beginning of the pattern.
- Let them talk about the pattern and describe it.
- Ask them to complete and extend the pattern.
- Let them do the patterns on a sheet of paper.

Skills

describing, identifying, recognising, sequencing, creating, drawing, copying, interpreting, analysing, observing, explaining, thinking

Resources

number chart; number line; number cards; counters; concrete objects; beads; blocks; cut-out shapes from the back of this book (pages 111–113); sticks; matches; crayons; pencils; paper; scissors

Create own number patterns

- Have the learners work in groups on a mat. Ask them to use their number cards and the counters to create their own patterns.
- Encourage them to put out the cards or counters in building their own patterns.
- Have them look at the different patterns and describe each pattern to the group.
- Let them draw or write their own patterns on a sheet of paper.

Create own patterns

- Divide the learners into pairs. Give each pair a variety of objects and ask them to create their own patterns. Encourage them to talk about and describe their patterns as they create them.
- Let the learners draw their patterns and colour them in.

Give the learners practice with **patterns** by doing:
Learner's Book: Module 2, Activities 3–5, 10
Workbook: Worksheets 54–56

2 Geometric patterns

Learning experiences

Lesson focus

- Arrange beads or shapes into a specific pattern. Make sure all the learners can see the pattern.
- Give each learner a selection of beads or shapes similar to the ones you used. Ask them to copy your pattern by arranging their beads or shapes in the same way you did.
- Encourage them to talk about the pattern and to discuss the colours, the shapes, the objects, the sizes and the flow of the pattern. Ask them to describe how they arranged the pattern, in other words, the sequence.
- Let the learners draw the pattern on a sheet of paper and colour it in.
- Learners should always first copy patterns practically, using concrete objects.
- Arrange beads, shapes, blocks or matchsticks to start a pattern that has a specific sequence, but leave the pattern incomplete. Make sure all the learners can see the pattern.
- Work with the class as a whole. Encourage the learners to talk about the pattern's sequence by asking questions like:
  What shape is first in the sequence?
  What shape comes next?
  What colour does the pattern begin with?
- Now ask a few learners to complete the pattern you started.
- Encourage them to talk about and describe the pattern as they are building.
- Once they have built a few repetitions of your pattern, the learners draw the completed pattern and colour it in.

Patterns all around us

- The learners work in groups.
- Take the learners outside and ask them to find a leaf or a flower petal.
- When the learners are back in the classroom, divide them into groups of four.
- Ask each learner to examine their leaf or petal carefully and to take note of the pattern, shape, colour, size and the texture.
- Now ask the learners to show and describe their leaves and flower petals to their group.
- Each learner has a turn.
- Explain that they will be making leaf patterns or flower patterns.
- Tell them to put their leaf/flower petal flat on a sheet of paper and then to place another sheet of paper over it.
- Show learners how to colour the top sheet of paper lightly with a crayon until the pattern of the leaf/flower petal underneath starts showing through.

- Encourage the learners to talk about their leaf patterns and to compare them to real ones.
- Display their work in the classroom.

Give the learners practice with **patterns** by doing:
Learner's Book: Module 2, Activities 1–2 and 6–9
Workbook: Worksheets 52–53 and 57–59

Contents area/Module 3
Shape and space

Each of the following units gives you step-by-step guidelines on how to teach the concepts covered in this module.

1 Describing position

Learning experiences

Lesson focus

- Divide the learners into pairs and give each pair one or two objects. Ask one learner in each pair to place the object in a specific position. The other learner must describe the object's position. Learners should take turns to place the object and to describe its position. For example, the shoe is **on top of** the desk, or the book is **behind** the cupboard.
- Now ask one learner in each pair to tell their partner to move to a specific position in the classroom. For example: Stand behind the door. Sit on the chair. Stand next to the cupboard. After following the instruction, the partner must describe their position. Learners should take turns to give and follow instructions.

Give the learners practice in **describing position** by doing:
Learner's Book: Module 3, Activities 16–18
Workbook: Worksheets 70–72

2 Position and view

Starting off

Do a variety of counting activities with the class.

Choose a pattern activity from Module 2 for the learners to do.

Skills

observing, describing, drawing, labelling, cooperating with others, taking turns

Resources

number chart; number line; number cards; counters; concrete objects; a variety of 3-D objects, for example, washing powder boxes, cool drink cans, books; crayons; pencils; paper

Concepts

recognising 3-D objects and position

Vocabulary

in front, behind, on top, bottom, under, left, right, side

Learning experiences

Lesson focus

- Divide the learners into pairs. Ask each pair to choose an object.
- Ask the learners in each pair to take turns to look at and draw their object from different positions. For example, they draw what they see when they view the object from the **top**, the **bottom**, the **side**, the **front**, from **behind**, the **left** and the **right**. Each time they should describe what they see to their partners. If there is time, the learners could do this with more than one object.

Give the learners practice in **position and views** by doing:
Learner's Book: Module 3, Activities 13−15
Workbook: Worksheets 68−69

3 Position and directions

Learning experiences

Lesson focus

- Play the game *Hide and seek*.
- Select one object which will be used as the hidden object.
- Ask one learner to leave the classroom and wait outside the door.
- The rest of the class remains and sees where the object will be hidden. Everyone should know the position of the object as they will be giving directions to the learner who is to find it.
- Call the learner to come inside.
- Tell the learner to listen to the directions and to find the hidden object.
- The other learners have turns to give directions to help the learner find the hidden object.
- Once the hidden object is found, that learner describes the position where the object was found.
- Another option would be to blindfold the learner and then to help him or her find the object with directions on where to move.
- When giving directions, the learners should use words such as left, right, turn right, turn left, walk straight ahead, opposite, backwards, forwards.

Give the learners practice in **directions** by doing:
Learner's Book: Module 3, Activities 19–21

4 3-D objects

Learning experiences

Lesson focus

- Divide the learners into groups of four or six and give each group 3-D objects.
- Ask each learner to name the shapes of their objects and to describe the, e.g. *This is a ball. It is a sphere, it is round*, and so on. Let them describe the shapes in their own languages.
- Hold up one of the objects and explain that it is called a 3-D (three-dimensional) object, because it has height, depth and width.
- Point to each feature as you mention it.
- Ask the learners to put the box-like objects (the prisms) together, the ball-like objects (the spheres) togher and the cylinders together. They have three piles.
- Use flashcards with the words *prism*, *sphere*, *cylinder*.
- Ask the learners to find prisms, spheres and cylinders in the classroom and outside, as well as in magazines.

Give the learners practice in **identifying and recognising 3-D objects** by doing:
Learner's Book: Module 3, Activities 1–3
Workbook: Worksheets 60–61

Starting off

Do a variety of counting activities with the class.

Choose a pattern activity from Module 2 for the learners to do.

Skills

identifying, recognising, describing, comparing, drawing, matching, taking responsibility, taking turns, cooperating in a group

Resources

number chart; number line; number cards; concrete objects; a variety of boxes of different shapes and sizes; containers such as jars, cans or icecream tubs; magazines; crayons; pencils; paper; cardboard; scissors; glue

Concepts

3-D objects

Vocabulary

3-D, prism, sphere, cylinder

5 Sorting 3-D objects

Learning experiences

Lesson focus

- Let the learners work in groups on a mat. Give each group different 3-D objects. Use the photocopiable sheets at the back of this book if you need to.
- Ask the learners to compare the objects and to sort them into sizes, for example, all the small objects into a set, all the big objects into a set. The groups will probably sort their objects differently.
- Then give each group an opportunity to describe to the class how they sorted their objects.
- Once they have all reported back, ask the learners to draw their sorted sets.
- Ask the groups to investigate which objects can roll and which objects can slide, and to sort them into two groups – objects that roll and objects that slide.
- Help the learners describe the objects by asking them questions like: Why do you think this object rolls? Why do you think this object can't roll? Why do you think this object slides?
  Encourage them to give their opinions.
- Ask the learners to draw the objects that roll and the objects that slide.
- Give each group a few old magazines. Ask them to look at the pictures and to identify and discuss objects that roll and/or slide, as well as shapes and objects that have round and/or straight edges. Let them cut out the pictures to make a poster.

Give the learners practice in **identifying features** by doing:
Learner's Book: Module 3, Activities 5–6
Workbook: Worksheets 64–65

6 Constructions with 3-D objects

Starting off

Do a variety of counting activities with the class.

Choose a pattern activity from Module 2 for the learners to do.

Skills

observing, building, describing, drawing

Resources

blocks; interlocking blocks; concrete objects; prisms of different sizes; cylinders of different sizes; cellotape; string; wool; Prestik; paper; scissors

Concepts

3-D objects

Vocabulary

3-D construction

Learning experiences

Lesson focus

- Let the learners work in groups on the mats.
- Give each group the equipment they will need to construct something three-dimensional.
- Explain that they need to construct something specific such as an animal, a house or a vehicle.
- Once they have completed their constructions, ask each group to describe to the class what they used, for example, how many cylinders.
- Then ask the learners to draw an picture of their construction.

7 2-D shapes

Learning experiences

Lesson focus

Identify 2-D shapes

- Have a variety of cylinders, prisms and spheres in the classroom.
- Let the learners work in small groups.
- Each group has each of the 3-D objects on the mat.
- Give each learner a sheet of paper.
- Ask the learners to trace around the open edge of the cylinder, and to trace around a variety of prisms.
- Refresh their memory by reminder them that the shapes on their sheets of paper are 2-D shapes.
- Ask them to identify the 2-D shapes.
- Have the names circle, rectangle, square and triangle on flashcards to put on the board as you mention the shapes.
- Let the learners identify 2-D shapes in magazines.

Build with 2-D shapes

- Divide the learners into pairs. Give each pair a number of triangles, rectangles, squares and circles, as well as cards with instructions on them for the learners to follow, for example: Use triangles to make a square. Use rectangles to make a square. Use squares to make a rectangle. Draw or trace around each new shape you have made.
- Ask the pairs to read and carry out the instructions on their cards.
- Once they have all completed the activity, ask a few pairs to tell the class what they did and to describe how many and what shapes they used to create the new shapes.
- Draw animals and other objects that the learners can make using cardboard shapes. Give each learner a card. Ask them to use shapes to build whatever they see on the cards.
- Let them describe the constructions in the group.

Give the learners practice in **2-D shapes** by doing:
Learner's Book: Module 3, Activities 4 and 7−9
Workbook: Worksheets 62−63 and 66

8 Symmetry

Starting off

Do a variety of counting activities with the class.

Choose a pattern activity from Module 2 for the learners to do.

Skills

cutting, drawing, describing, recognising

Resources

number chart; number line; number cards; counters; concrete objects; a mirror; crayons; pencils; paper; scissors

Concepts

symmetry

Vocabulary

symmetry, symmetrical, line of symmetry

Learning experiences

Lesson focus

- Give each learner a sheet of paper. Ask them to fold the sheet in half and to cut out shapes or patterns on the fold. Then let them unfold the sheet to see the design they have made.
- Explain that the folded line is the **line of symmetry**. Encourage the learners to look at their designs and to talk about what is on the left of their symmetry line and what is on the right of their symmetry line.
- Now ask the learners to fold their sheet of paper into quarters and to cut shapes or patterns on the new folded line. Then let them unfold the sheet to see the new design they have made. They should see that the left and right sides are symmetrical, i.e. one side is a reflection of the other side.
- Give each learner a new sheet of paper. Ask them to fold the sheet in half, unfold it again and draw a shape on the left of the fold (symmetry line). Then let them draw the matching part on the right side of the symmetry line.
- Ask learners to look for symmetrical objects in the school yard or at home. They can then talk about these objects to a partner or someone at home.

Give the learners practice with **symmetry** by doing:
Learner's Book: Module 3, Activities 10−12
Workbook: Worksheet 67

Content area/Module 4
Measurement

1 Days, weeks and months

Learning experiences

Lesson focus

- Revise the days of the week.
- Let the learners cut out letters from old magazines to build the names of the days of the week. They paste the names on paper in order.
- The learners do the same for the months of the year.
- Ask the learners to read aloud the names of the days of the week and the months of the year.
- Ask the learners to tell you when their birthdays are.
- Let the learners discuss what they do during weekends.

Give the learners practice in **days, weeks and months** by doing:
Learner's Book: Module 4, Activities 5–9 and 20
Workbook: Worksheets 75–76

2 Calendars

Lesson focus

- Divide the learners into pairs or small groups. Give each pair or group a current calendar. Ask them to point to the names of the months and to read them aloud.
- Draw the learners' attention to the details on a calendar by asking questions about a specific month. For example: How many days are there in January? How many weeks are there in January? On what day does the 1st of January fall? What day is the 31st of January? Ask the questions one by one, and give the learners time to work out and discuss the answers with their partners.
- Now ask the learners if there are any special days in January. Explain that special days are days that the whole nation celebrates, such as public holidays; or days that people from particular cultures and religions celebrate, such as Jewish or Muslim religious holidays; or days that are special to individuals, such as birthdays and anniversaries.
- Let the learners find and discuss all the special days in the rest of the year. (Research all the special days so that you can explain them in more detail to the learners. For example, 16 June, Youth Day, commemorates the sacrifices made by the youth of South Africa.) These days will also be discussed in detail in the Life skills lessons at the appropriate time.
- Then let the learners ask their partners questions about the calendar. Learners should take turns to ask and answer questions. Move around the classroom while they are working, and encourage and assist where necessary.
- On another day, divide the learners into pairs and give each pair a current calendar.
- Ask questions about the calendar to draw the learners' attention to the concept of time (days, weeks and months). For example: How many months are there from June to January? Turn to the month we are currently in. How many months from now to Christmas? School closes for the holidays on . . . ? How many weeks from now to the end of term? How many days to the weekend? Ask the questions one by one, and give the learners time to work out and discuss the answers with their partners.
- Then let the learners use their calendars to ask their partners questions about time. Learners should take turns to ask and answer questions.

Give the learners practice with **using calendars** by doing:
Learner's Book: Module 4, Activities 10–12

3 Measuring time

Learning experiences

Lesson focus

- Draw a large circle on the board. Point to the top of the circle and say **top**. Repeat with **left**, **right** and **bottom**.
- Now give the learners paper plates to make clock faces.
- Point to the top of the circle you have drawn on the board. Ask the learners to write the number 12 in the same place on their plates. After checking that they have written the number in the correct place, ask them to write a 6 at the bottom of the plate, opposite the 12. They then write a 3 on the right-hand side and a 9 on the left-hand side, opposite the 3.
- Explain that they are making the face of a clock without the hands. Ask them to fill in the remaining numbers. Move around checking and correcting the learners where necessary.
- Now give each learner a long strip of cardboard, a short strip of cardboard, and a thumbtack or pin. Show them how to pin the two cardboard strips to the centre of the paper plate clock.
- Before the learners practise telling the time, quickly revise the terms **o'clock**, **quarter to**, **quarter past** and **half past**.
- Then call out a time and ask the learners to move the hands on their paper clocks to the appropriate positions. Once they have done this, draw the hands in the correct positions on your clock on the board. Ask the learners to check if the hands of their clocks are in the correct positions.
- Learners need plenty practice in moving the hands of their clocks and telling the time.
- While the learners are completing this activity, take those who are struggling to a mat and reinforce the concepts.

Give the learners practice in **measuring time** by doing:
Learner's Book: Module 4, Activities 1−4
Workbook: Worksheets 73−74, and 77

Starting off

Do a variety of counting activities with the class.

Choose a pattern activity from Module 2 for the learners to do.

Skills

counting, counting in fives, reading time

Resources

number chart; number line; number cards; counters; concrete objects; a paper plate; cardboard strips; thumbtacks; straight pins; crayons; pencils; paper

Concepts

time

Vocabulary

time, digital, analogue, opposite

4 Measuring mass

Learning experiences

Lesson focus

- Display a few containers in the classroom. Ask questions such as: Do you see any numbers printed on the containers? What are these? What do the letters in each measurement stand for?
- Write the abbreviations and the full words for all the units of measurement on the board.
  For example, g = gram, kg = kilogram.
- Call out different masses one at a time.
  For example, 250 g and 5 kg.
  Ask the learners to check if they have containers with that measurement.
- Divide the learners into groups and give each group a variety of containers. Ask them to place their containers in ascending order from the smallest mass to the largest mass.
- Let the groups draw their containers and record the units of measurement.
- Show the learners how to use a bathroom scale, a kitchen scale and a balancing scale.
  Work with a small group of learners on a mat and show the learners these three different scales.
  Ask the learners to select the scale they would use to measure their mass. Allow the learners to explain their choices.
  Ask the learners to select something in the classroom that they would weigh using one of the other scales. Once again, allow them to explain their choices.
  Now give the group an opportunity to weigh different objects in the classroom, for example, the board duster.
  Show them how to read the measurement. Then ask them to measure the mass of a school bag.

Give the learners practice in **measuring mass** by doing:
Learner's Book: Module 4, Activities 13–14
Workbook: Worksheet 78

5 Measuring capacity

Learning experiences

Lesson focus

- Display a few containers in the classroom. Draw the learners' attention to the measurements on the containers. Ask questions such as: What do these measurements show? What do the numbers indicate? What do the letters stand for?
- Write the abbreviations and the full words for the units of measurement on the board. For example: ml = millilitre.
- Divide the learners into groups of about eight and give each group a variety of containers. Ask them to arrange their containers in order, from the one that should hold the smallest quantity to the one that should hold the largest quantity.
- Take the groups outside and give each group a teaspoon, a cup, a 500-ml container, a 2-litre container and a container with water.
- Ask the learners to measure how many teaspoons of water will fill the cup, and how many 500-ml containers of water will fill the 2-litre container. Each group should choose one learner to record the results.
- Once the learners have completed the activity, ask them to give you feedback on their results, using spoons and cups as units of measurement.

Give the learners practice in **measuring capacity** by doing:
Learner's Book: Module 4, Activities 15–16
Workbook: Worksheet 79

6 Measuring length

Learning experiences

Lesson focus

Handspans

- Explain to the learners that in the old days there were no rulers and tape measures, so people had to work out other ways to measure objects. Ask the learners to suggest ways in which we can measure without instruments.
- Show the learners how to measure using handspans. (A handspan is from the tip of the little finger to the tip of the thumb when the hand is extended.)
- Now ask the learners to estimate the height of their desks in handspans. Once they have done this, let them measure the height in handspans and compare the difference between the estimate and the actual measurement.
- Divide the learners into pairs and let them practise measuring different objects in the classroom using handspans.

Give the learners practice in **measuring with handspans** by doing:
Learner's Book: Activity 18
Workbook: Worksheets 80–81

Foot lengths

- Show the learners how to measure using their feet. Demonstrate by placing one foot in front of the other, heel to toe, and counting as you take each step.
- Let the learners work with their partners to practise measuring using their feet. They could measure the length of the classroom or the distance from their desks to the classroom door.
- Introduce the learners to **paces** or **steps** as another informal form of measurement. Paces are the normal-sized steps people take when they walk. Demonstrate by pacing from one side of the classroom to the other, counting as you take each step.
- Let the learners practise outside by measuring the number of paces they take from the classroom to the school gate.
- The learners will probably get different answers when they measure in this way. Explain that handspans, feet and paces are not accurate forms of measurement. These measurements will differ from learner to learner, depending on hand-size, foot-size and the length of their steps.

Give the learners practice in **measuring with foot lengths** by doing:
Learner's Book: Module 4, Activities 17 and 19
Workbook: Worksheet 82

Content area/Module 5
Data handling

Learning experiences

Do the activities one at a time over a few lessons. Discuss the content, questions and topics of the activities in groups or as a class. Ensure that the learners understand the information they are dealing with. Give them short, clear instructions before they start the activities.

We have described the **Learning experiences** under **Concepts and skills**.

1   Concepts and skills

Lesson focus

Sorting

- The learners work in small groups on a mat. Give them a variety of objects. Explain to the learners that the objects in front of them are mixed up.
  Ask the learners to sort the objects into groups that belong together.
  Explain that after they have finished sorting or grouping the objects, they can name the groups. Let the learners name the groups and explain why they chose a particular name.

Data

- Explain to the learners that all the information they have in front of them (the sorted groups) is called data. Tell them that data is another word for information.
  We collect data when we gather information.
  Tell the learners that we can collect data by asking questions, looking in books, magazines, newspapers and by looking around us.
  Explain to the learners that in the previous lessons they sorted their data into specific groups and named the groups according to specific characteristics.

Recording

- Explain that we can write down or record data. Show the learners how we can record data in different ways. We can use pictures, ticks, strokes, crosses, dots or colours to represent data.
  Show the learners that each symbol that we record represents one item, for example: we can write a ✓ to represent 1 child.

Starting off

Do a variety of counting activities with the class.

Choose a pattern activity from Module 2 for the learners to do.

Skills

observing, sorting, classifying, counting, questioning, answering questions, recording, interpreting, reasoning, discussing

Resources

number chart; counters; concrete objects; crayons; pencils; paper; flashcards

Concepts

sorting, recording, data

Vocabulary

sorting, recording, data

Reading and interpreting data

- Explain to the learners that it is important to read all the data they have in front of them.
  When they look at data and read the information, they need to understand what it is and what it says. The data will inspire the learners to think of questions as they will want to know more about the data.
  They will ask 'why?' and 'why not?' questions. Learners must be able to read and interpret data so they can answer questions about the data or to make decisions about it. Choose one activity in the *Learner's Book* to do as a class exercise so the learners can practise reading and interpreting data.

Give the learners practice in **collecting, sorting, representing and interpreting data** by doing:
Learner's Book: Module 5, Activities 1–9
Workbook: Worksheets 83–86

Part 4 Teaching aids: photocopiable sheets

Number symbol cards

10	100
20	200
30	300
40	400
50	500

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Number symbol cards

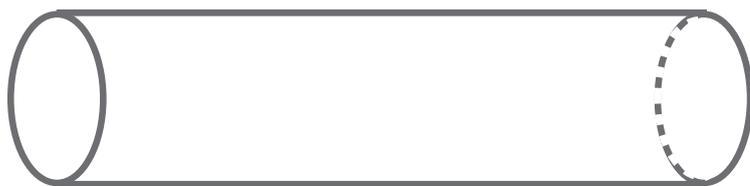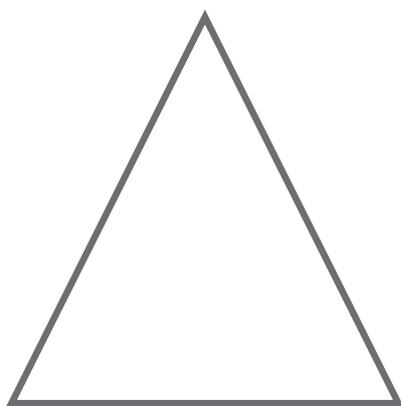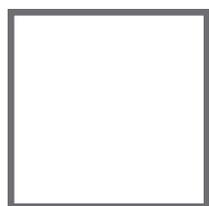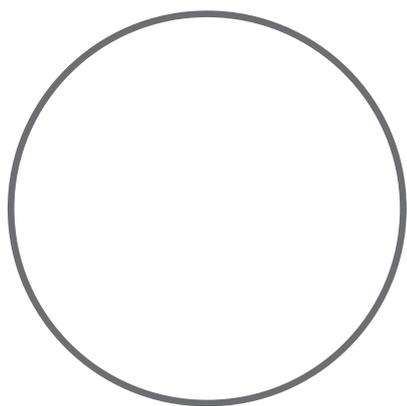|	
60	600
70	700
80	800
90	900

1 2 3 4 5

You may photocopy this sheet for use with *Study & Master Mathematics* Grade 2 Learner's Book and Workbook.

Number symbol cards

6	7	8	9

Flashcards

Sunday	1st
Monday	2nd
Tuesday	3rd
Wednesday	4th

Flashcards

Thursday	5th
Friday	6th
Saturday	7th
8th	9th
10th	11th
12th	

Flashcards

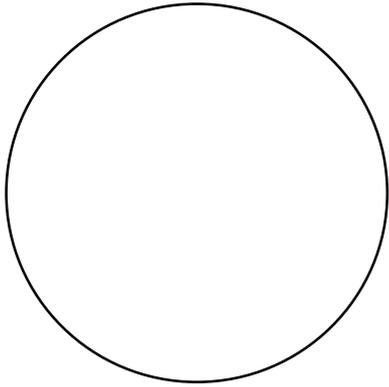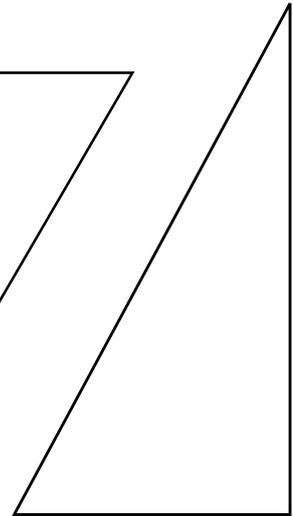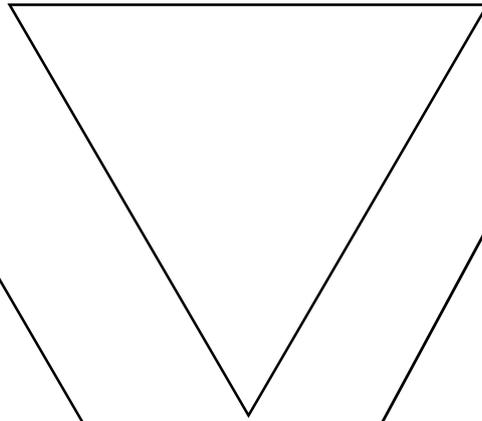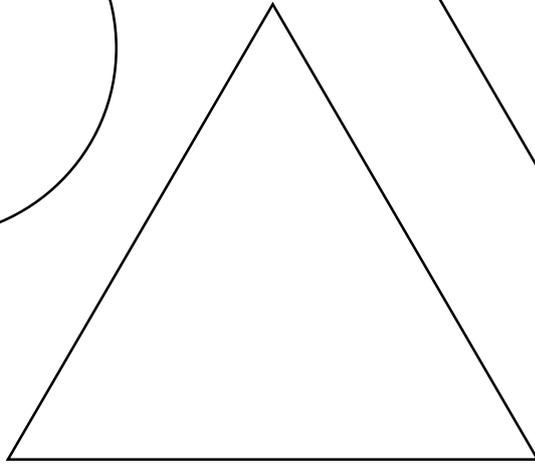|	
first	second
third	fourth
fifth	sixth
seventh	eighth
ninth	tenth
eleventh	twelfth

You may photocopy this sheet for use with *Study & Master Mathematics* Grade 2 Learner's Book and Workbook.

Number chart

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

Number chart

121	122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150
151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170
171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190
191	192	193	194	195	196	197	198	199	200
201	202	203	204	205	206	207	208	209	210
211	212	213	214	215	216	217	218	219	220
221	222	223	224	225	226	227	228	229	230
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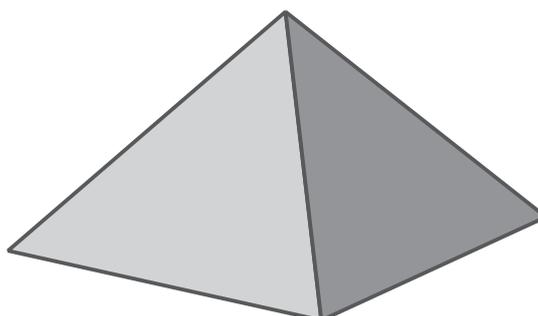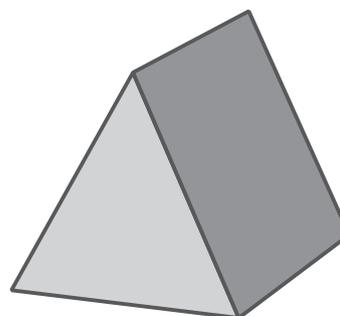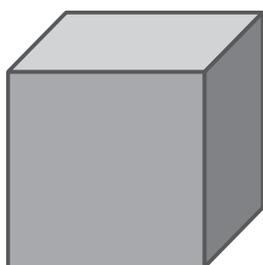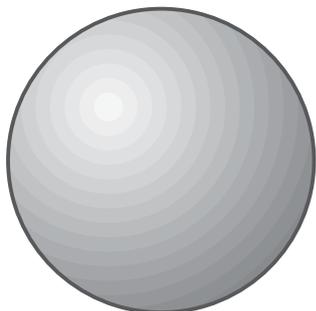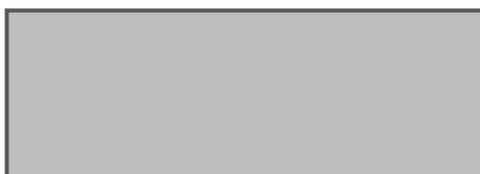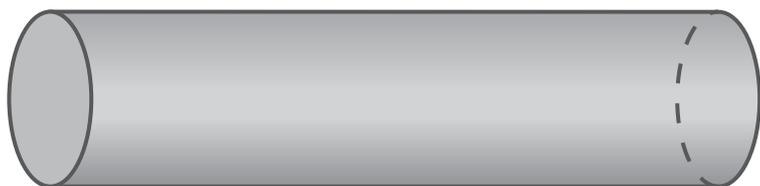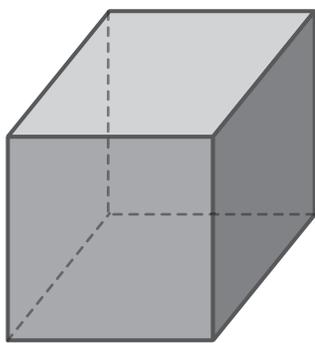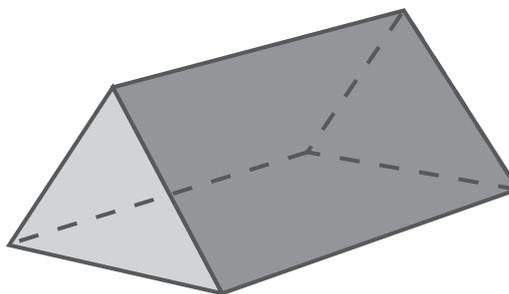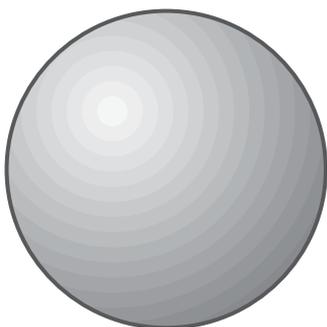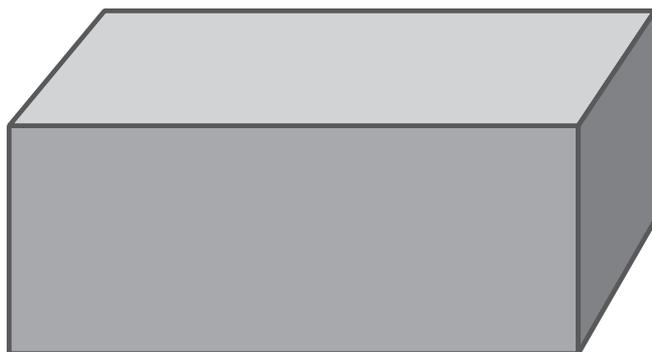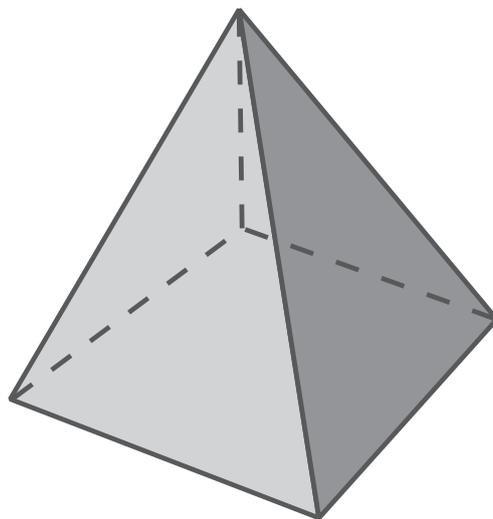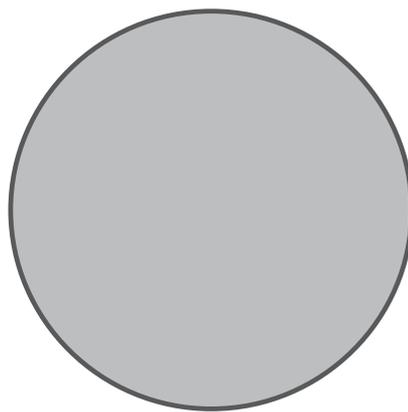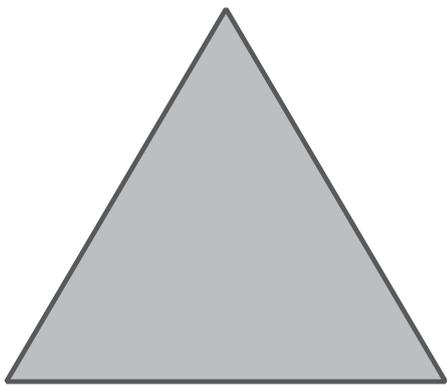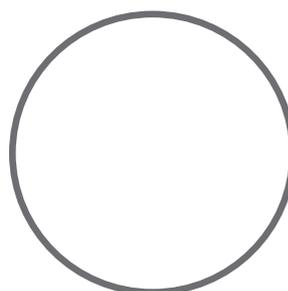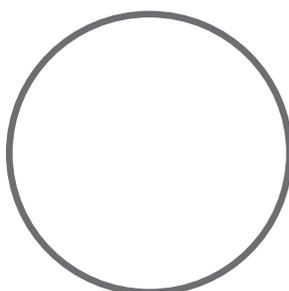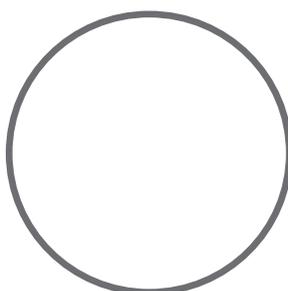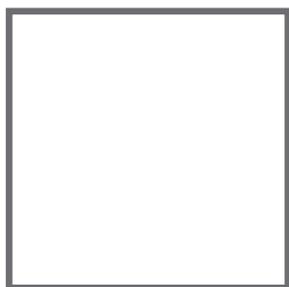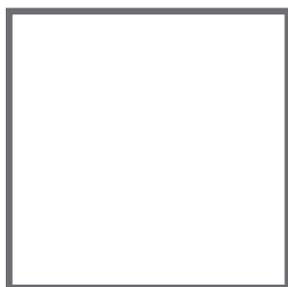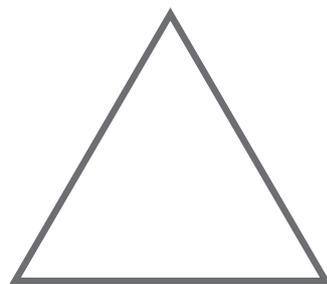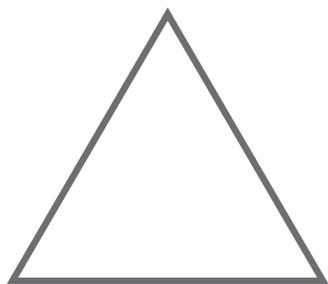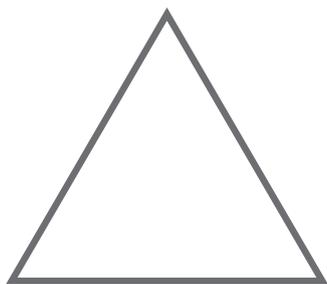
Shapes

Shapes

Shapes

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110 **Study & Master Mathematics Grade 2** • Teaching aids: photocopiable sheets
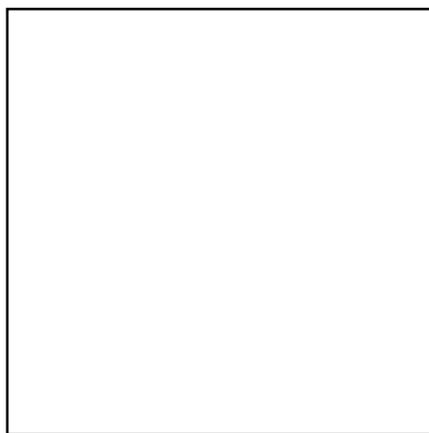
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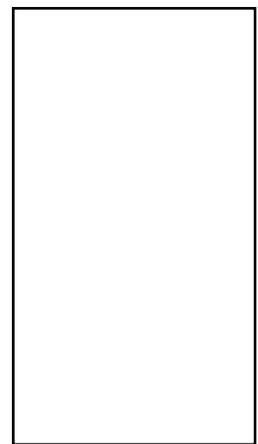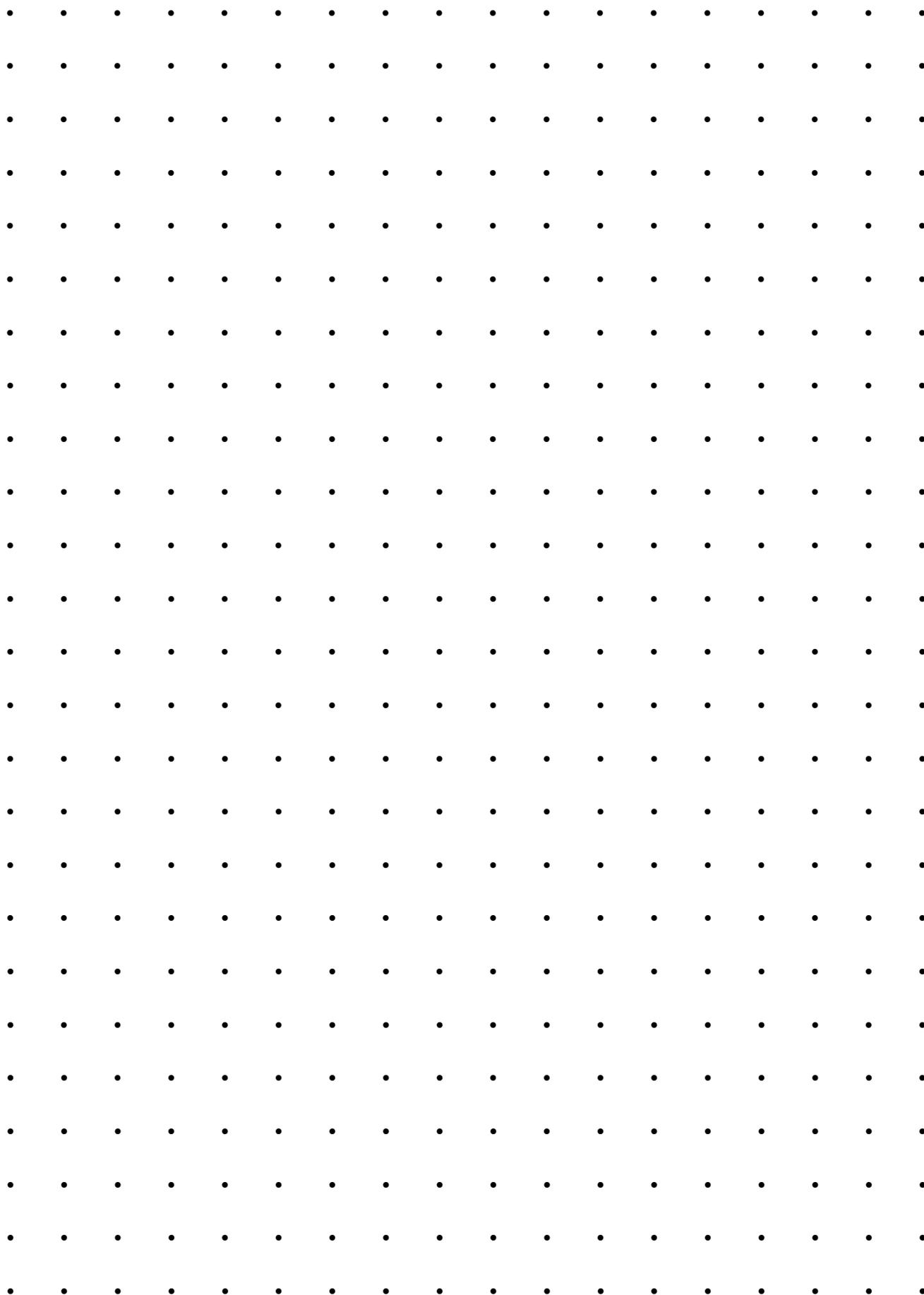# 2-D shapes

circle

triangles

rectangle
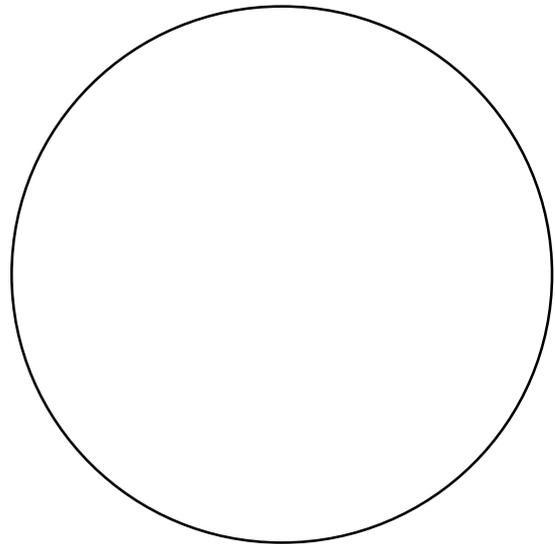
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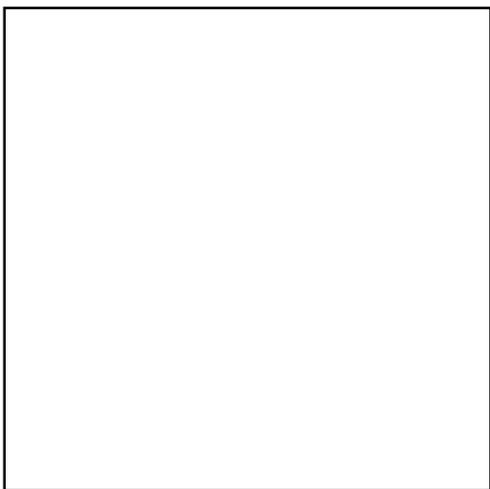
square

square
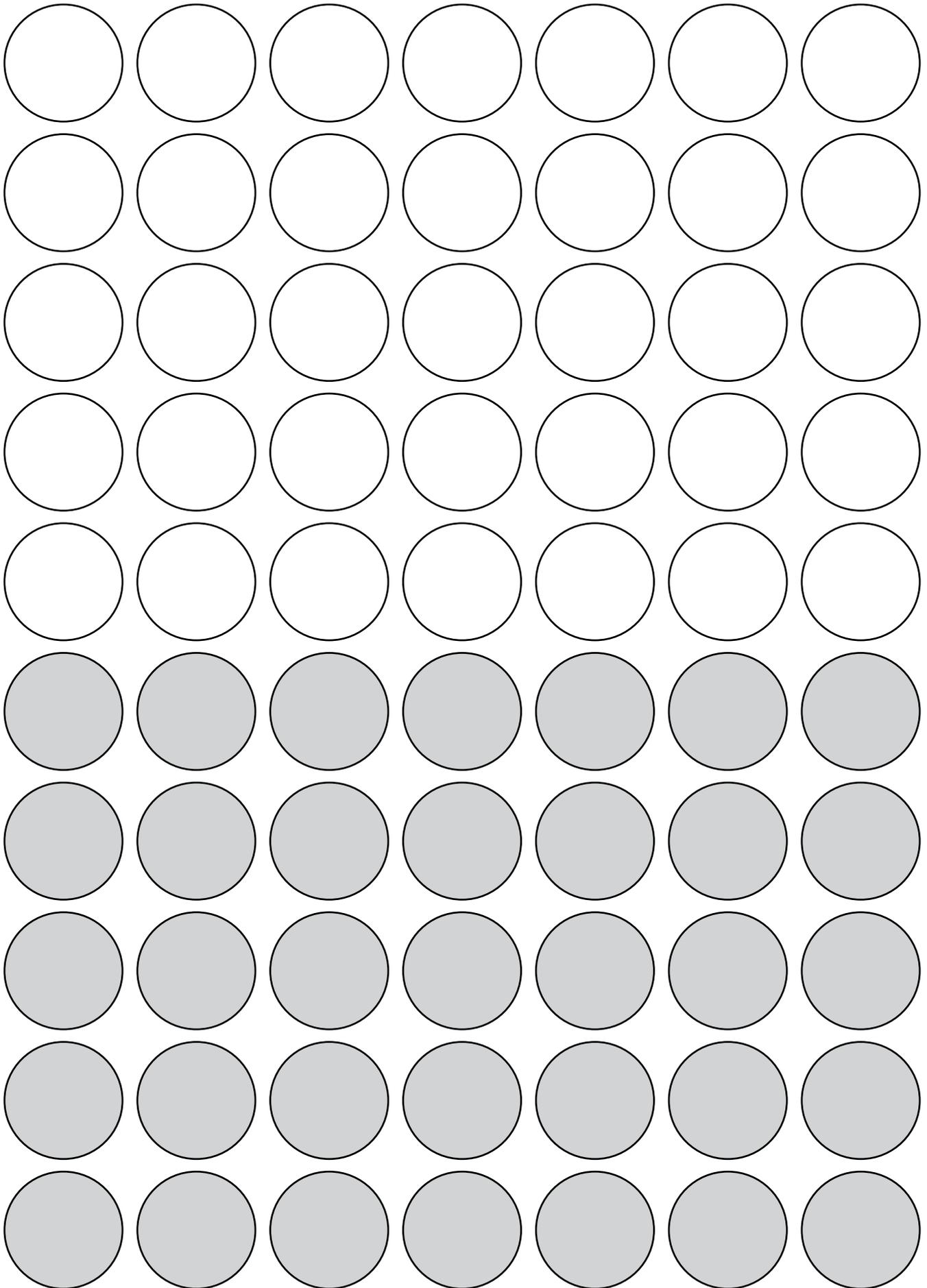
rectangle

Dotted paper

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Squared paper
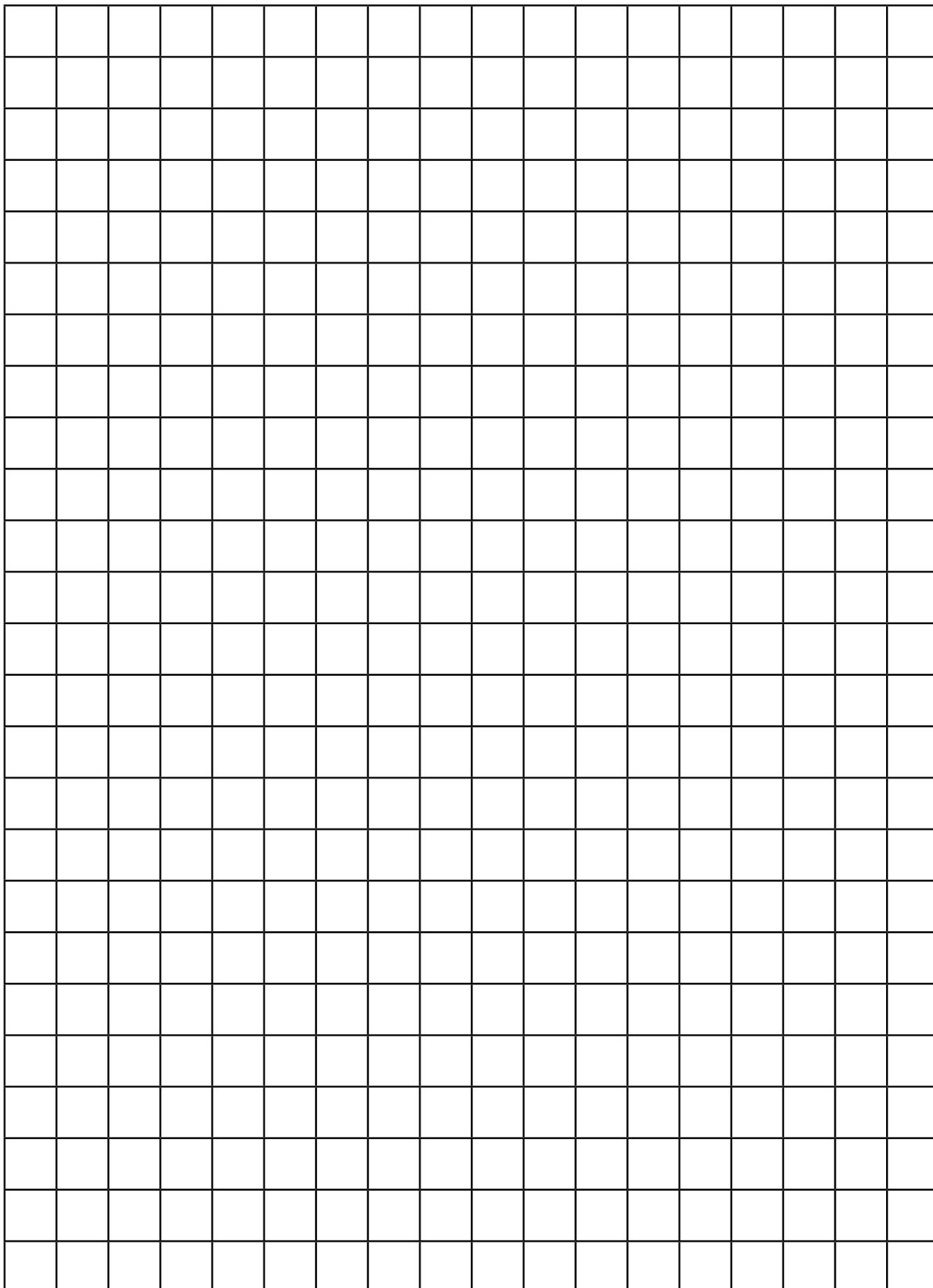
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Counters

You may photocopy this sheet for use with *Study & Master Mathematics* Grade 2 Learner's Book and Workbook.

Money

Part 5 Documents

Add your own documents and notes, for example the CAPS document for Foundation Phase Mathematics, here.

Study & Master

Mathematics

Grade 2

Study & Master Mathematics has been specially developed by an experienced author team for the Curriculum and Assessment Policy Statement (CAPS). This new and easy-to-use course not only helps learners to master essential content and skills in the subject, but gives them the best possible foundation on which to build their Mathematics knowledge.

Study & Master Mathematics Grade 2 is made up of these core components:

The comprehensive Learner's Book provides:
- graded activities that develop learners' skills and understanding in each of the content areas specified by the CAPS document
- examples and activities based on learners' own experiences.

The substantial Workbook provides:
- ample worksheets to consolidate the activities dealt with in the Learner's Book
- activities to enhance fine motor skills.

The innovative Teacher's Guide includes:
- additional classroom activities to introduce and consolidate work done in the Learner's Book and Workbook
- teaching tips and support for all the activities in the learner material
- guidance on whole class activities, small group teaching and independent work
- photocopiable record sheets and templates.