GRADE 2

Mathematics

Teacher Toolkit:
CAPS Planner and Tracker

2019 TERM 4

Contents

About the Planner and Tracker

The curriculum and assessment planner and tracker is a tool to support teachers in several ways by:

- Providing a plan of what should be taught each day of the term based on the daily lesson plans. By following the programme in the tracker and the lesson plans, you will be sure to cover the curriculum in the allocated time, and to complete the formal assessment programme.
- Enabling you to track your progress through the curriculum during the term. By noting the date when each lesson is completed, you can see whether or not you are 'on track'. If you are not, you can strategise with your head of department and peers on how to ensure that all the work for the term is completed. You should file your completed tracker at the end of each term.
- Encouraging you to reflect on what worked well in your lessons, and where your work could be strengthened. This kind of reflection can support continuous improvement in teaching practice.

A suggested mark record sheet is located at the back of this tracker

The sheet has columns in which you can record the marks for the assessments provided in the lesson plans. You can copy this sheet and add your learners' names in the left hand column. The record sheet will help you when you have to enter marks into SA SAMS. If the 'out of" marks for the assessment activities you have used are not the same as those shown in SA SAMS, these can be changed in SA SAMS. The weightings and levels are done automatically in SA SAMS.

It is important to note that:

The first term is not always the same length. If the term in which you are using the lesson plans and tracker is longer or shorter than 11 weeks, you will need to adjust the pace at which you work to complete the work in the time available, or make another plan to stay on track.

The following components are provided in the columns of the planner and tracker tables for each week:

1. Day (Monday to Friday)
2. Lesson Plan number (The numbered lesson from the lesson plans)
3. Lesson objective (The work to be covered in the lesson)
4. Lesson resources (The resources you need to prepare for the lesson)
5. Date completed (this needs to be filled in each day).

You can make the learning and teaching of maths more effective by remembering a few simple DOs and DON'Ts

DO	DON'T
Teach with a SMILE	
Give learners enough time to think/even struggle and discover something on their own and to keep quiet while they are thinking/working individually.	Explain everything.
Plan the lesson with enough time to let learners deepen their own thinking. Be patient!	Rush learners into saying/doing something by saying 'quick, quick, quick'.
Share a variety of answers/thinking with all the learners and let them compare, think and explain which ones are OK/not OK and why. Discuss important errors so that everyone can learn from them.	Erase/remove incorrect answers.
Ask learners 'why did you think so', either if their answer is correct or not correct.	Say 'No', 'Wrong', 'Next', 'Right', 'Yes', 'Correct', etc. immediately after learners give the answer.
Assist learners to discover why and where she/he made a mistake. Use other learners as well to explain why something is not correct.	
	Answer the phone.

Weekly reflection

The tracker gives you space to reflect on your Mathematics lessons. You can share this reflection with your HOD and discuss things that worked or did not go so well in your lesson. Together with your HOD, you can think of ways of improving on the daily work that the learners in your class are doing. When you reflect you could think about things such as:

- Was your preparation for the lesson adequate? For instance, did you have all the necessary resources? Had you thought through the content so that you understood it fully and could therefore teach it effectively?
- Did the purpose of the lesson succeed? For instance, did the learners reach a good understanding of the key concepts for the day? Could they use the language expected from them? Could they write what was expected from them?
- Did the learners cope with the work set for the day? For instance, did they finish the classwork? Was their classwork done adequately? Did you assign the homework?

Briefly write down your reflection weekly, following the prompts in the tracker.

- *What went well?*
- *What did not go well?*
- *What did the learners find difficult or easy to understand or do?*
- *What will you do to support or extend learners?*
- *Did you complete all the work set for the week?*
- *If not, how will you get back on track?*
- *What will you change next time? Why?*

The reflection should be based on the daily lessons you have taught each week. It will provide you with a record for the next time you implement the same lesson. It also forms the basis for collegial conversations with your head of department and your peers.

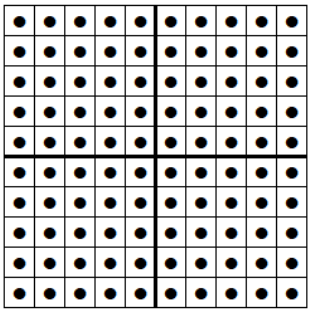
Reflect on this as you prepare lessons that follow the CPA approach

Learners need to make the move from concrete to abstract – but this does not happen suddenly or on one move. They may need to go backwards and forwards between representations in the CPA method many times until they have fully achieved abstraction. That is why in your lessons you will continue to provide concrete and pictorial representations – but as soon as a learner shows he/she can work abstractly, you should not hold them back, allow them to do so. When they need the support of concrete/pictorial, offer it to them again.

TMU summary of maths teaching approaches

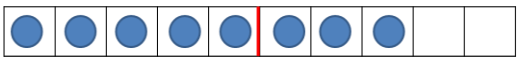
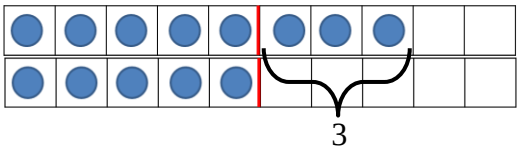
CPA APPROACH

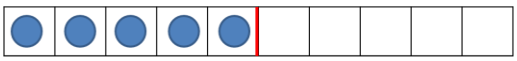
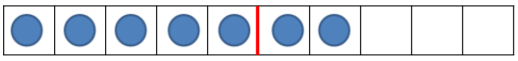
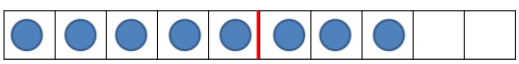
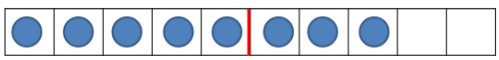
The Concrete-Pictorial-Abstract (CPA) approach helps learners develop the concepts of numbers. The CPA approach uses several different representations for concepts of numbers 1, 10 and 100. For, instance, a number '5' can be represented by 5 bottle tops (concrete objects), 5 circles (pictorial representations and a number symbol '5' (abstract). The following table shows the materials used in the TMU lesson plans. It is important to connect one representation to the other representations.

Number symbols	100	10	1
Number names	hundred	ten	one
Base ten kit (manipulatives)			
Simplified pictorials (drawing)			

In the CPA approach, the following methods are of great importance.

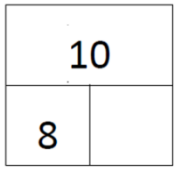
a. Pre-number concepts by a ten frame (Grade 1)
Ten frames can make all critical activities easier and clearer. (CAPS P93 English version)

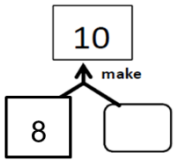
- Matching (one-to-one correspondence)
- Sorting 
- Comparing 

- Ordering
  5 
  7 
  8 
- Subitising  

All the following problems are based on the same concept. Manipulating concrete objects in a ten frame helps learners to visualise the concept.

8 + ☐ = 10, 10 – 8 = ☐, 8 + 2 = ☐



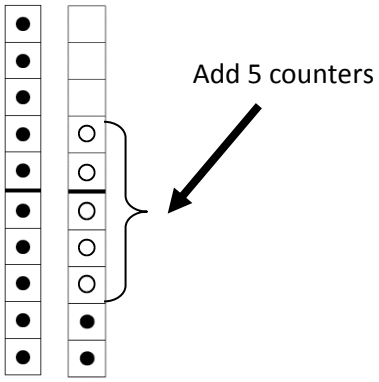


b. Make-a-ten method (Grade 1)

'Make-a-ten' method assists learners in shifting methods from counting to using the base-ten number system. The idea of number bonds 2 to 9 and subitising are critical for using the make-a-ten method. 'Make-a-ten' helps learners to develop the concept of place value.

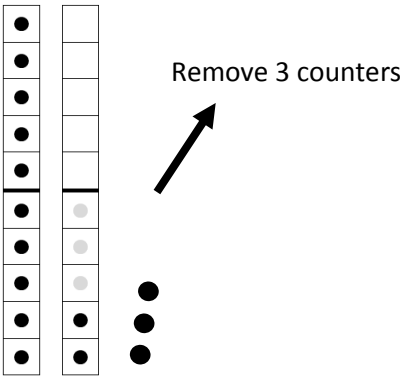
- Addition without carrying and subtraction without borrowing. There is no change in the tens place.

1) 12 + 5



10 and 7 make 17.

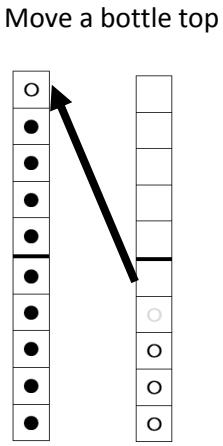
2) 15 – 3



10 and 2 make 12.

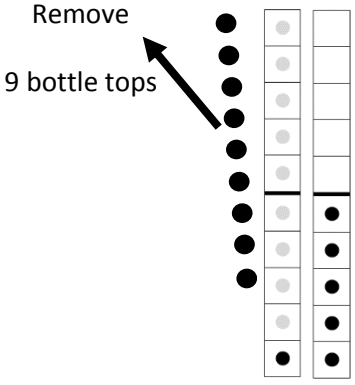
- Addition with carrying and subtraction with borrowing.

3) 9 + 4

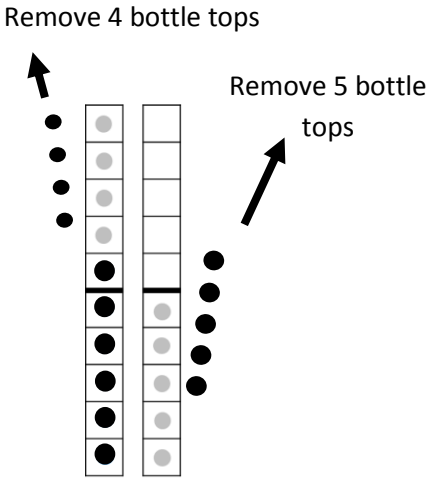


10 and 3 make 13.

4) 15 – 9



1 and 5 make 6.



5 and 1 is 6.

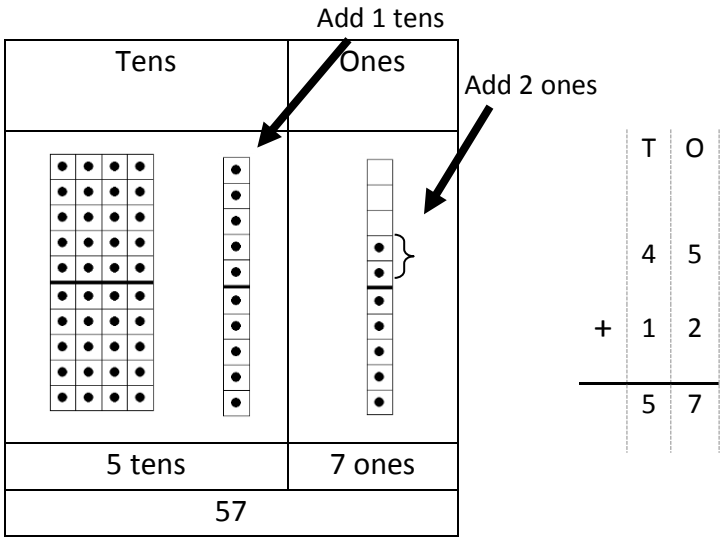
c. Column method by base ten kits [concrete objects] (Grade 2, 3)
It is critical to show the connection between the place value table and the column method.

In Grade 2 and 3, learners use base ten kits on a place value table.

1) 45 + 12

Step 1. Add bottle tops in each place.

Use base ten kits →



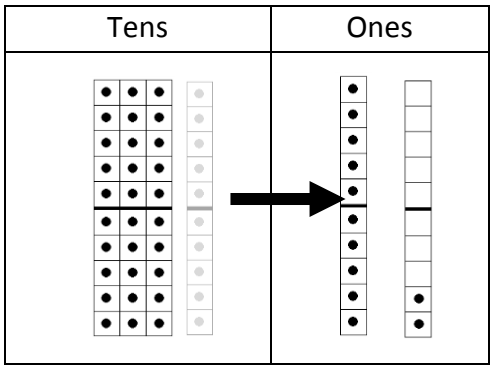
Step 2. Write numbers in each place.

Step 3. Write the answer.

2) 42 – 19

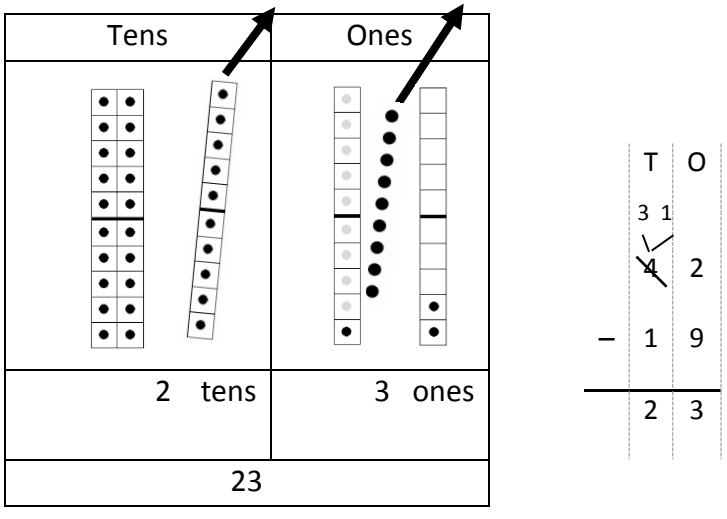
Step 1. Exchange 1 ten to 10 ones.

Use base ten kits →



Step 2. Remove bottle tops from each place.

Use base ten kits →



Step 3. Write numbers in each place.

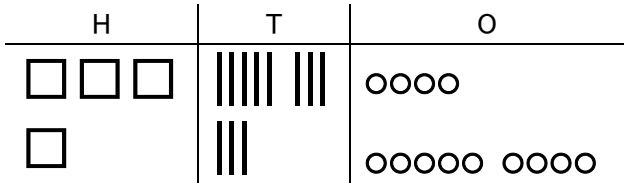
Step 4. Write the answer.

d. Column method by simplified pictorials [pictorial representation] (Grade 3)

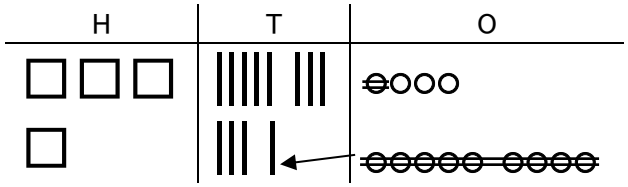
In Grade 3, learners use simplified pictorials. In the following diagrams, all the steps can be drawn in one diagram. Let learners make a group of five to show numbers 6 to 10 by organising pictorials as follows.

1) 384 + 139

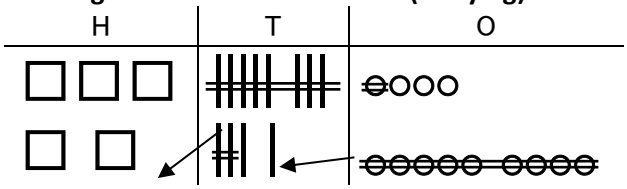
Step 1. Draw 384 and 139 vertically.



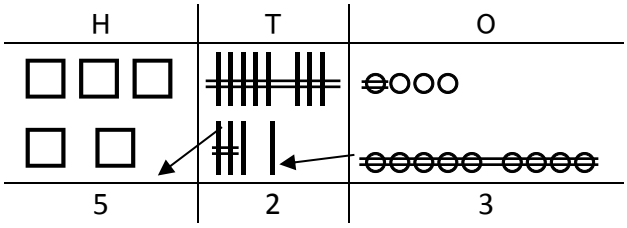
Step 2. Since 4 + 9 in the ones place exceeds 10, exchange 10 ones into 1 ten (carrying).



Step 3. Since 8 + 4 in the tens place exceeds 10, exchange 10 tens into 1 hundred (carrying).



Step 4. Write the answer.

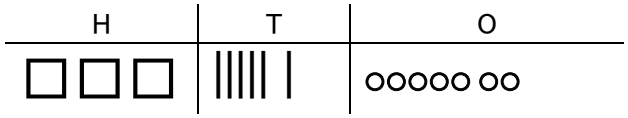


The answer is 523.

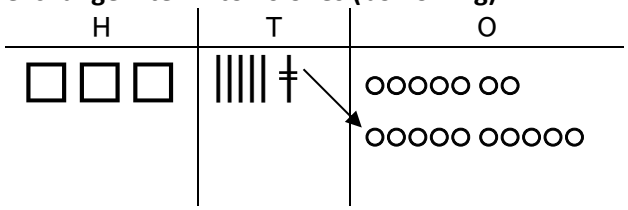
	H	T	O
	1	1	
	3	8	4
+	1	3	9
	5	2	3

2) 367 – 78

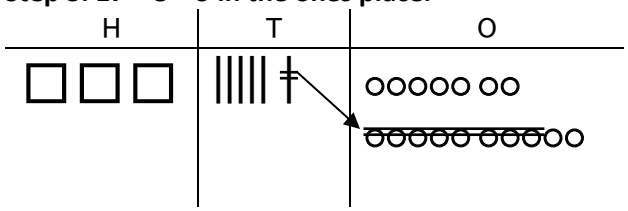
Step 1. Draw 367.



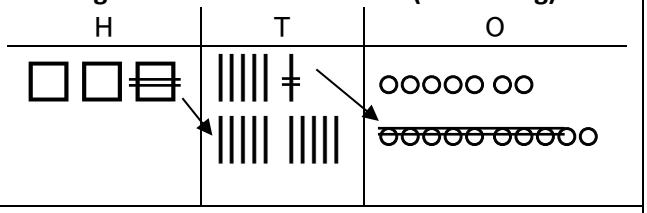
Step 2. Since we can't do 7 – 8 in the ones place, exchange 1 ten into 10 ones (borrowing).



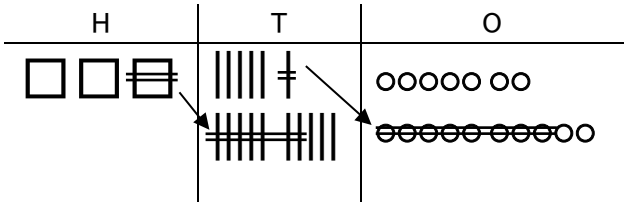
Step 3. 17 – 8 = 9 in the ones place.



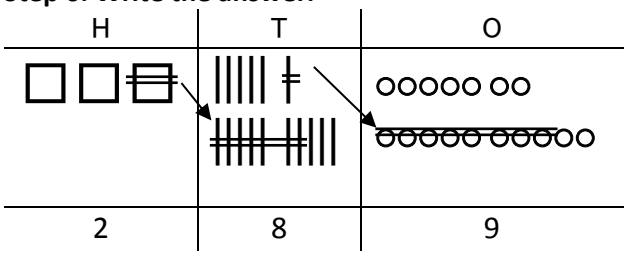
Step 4. Since we can't do 5 – 7 in the tens place, exchange 1 hundred into 10 tens (borrowing).



Step 5. 15 – 7 = 8 in the tens place.



Step 6. Write the answer.



The answer is 289.

	H	T	O
	2 1	5 1	
	~~3~~	~~6~~	7
–		7	8
	2	8	9

e. Column method [abstract representation] (Grade 2, 3)

In grade 2, learners are expected to write the column method using two rows as follows. Each row shows the number place of ones and tens. In grade 3, learners can write in one row.

Grade 2

1) 45 + 12

	T	O	
	4	5	
+	1	2	
		7	O: 5 + 2 = 7
	5	0	T: 40 + 10 = 50
	3	9	

2) 42 – 19

	T	O	
	3 1		
	~~4~~	2	
–	1	9	
		3	O: 12 – 9 = 3
	2	0	T: 30 – 10 = 20
	2	3	

Grade 3

3) 26 + 38

	T	O
	1	
	2	6
+	3	8
	6	4

4) 81 – 47

	T	O
	7 1	
	~~8~~	1
–	4	7
	3	4

5) 384 + 139

	H	T	O
	1	1	
	3	8	4
+	1	3	9
	5	2	3

6) 367 – 78

	H	T	O
	2 1	5 1	
	~~3~~	~~6~~	7
–		7	8
	2	8	9

PROBLEM SOLVING

a. Problem solving in general

1. Present a problem (e.g. a number sentence) to learners.
2. Let learners work on it individually.
3. (Work in pairs or groups of less than 4). * This step can be skipped sometimes.
4. Ask several learners to give their answers.
5. Discuss the answers that are presented and find the correct one. Discuss errors as well.
6. Let learners correct their work in their classwork books if necessary.

b. Word problem solving with manipulatives or diagram

4 steps to solve word problem

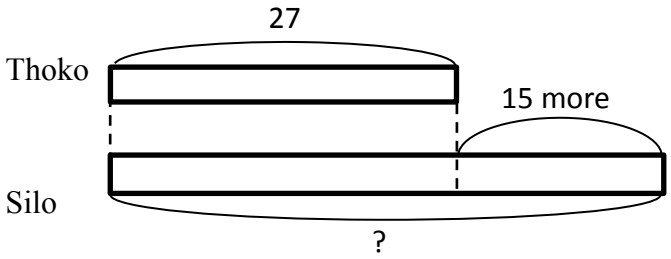
Step 1. Understand the problem.

1. Write the word problem on the chalkboard
2. Read the problem.
3. Let learners read the problem until they read it fluently.
4. Underline the number.
5. Underline the question with a wavy line.
6. Let learners reproduce the story with manipulatives or diagrams.

Thoko has 27 sweets.

Silo has 15 more than Thoko.

How many sweets does Silo have?



Step 2. Devise a plan.

1. Determine the operation.
2. Write number sentence.

Step 3. Carry out the plan.

1. Find the answer of the number sentence.

Step 4. Look back.

1. Compare the learners' solutions.
2. Do the corrections.
3. Let learners record all the work.

Week 1

Day	LP	Lesson objective	Lesson Resources	Date completed
Mon	1	Revise the 2- 5 times tables.	Array diagram (see *Printable Resources*), demo array diagram (teacher), multiplication cards (× 2, × 3, × 4 and × 5) (see Term 3 *Printable Resources*).	
Tue	2	Revise the 2- 5 times tables.	Bottle tops.	
Wed	3	Find patterns in the multiplication table.	Multiplication table (see *Printable Resources*), demo multiplication table (teacher), multiplication cards (see Term 3 *Printable Resources*), 2 pieces of paper.	
Thur	4	Investigate multiplication.	Multiplication table (see *Printable Resources*), multiplication cards (see Term 3 *Printable Resources*), array diagram (see *Printable Resources*), demo multiplication table and array diagram (teacher).	
Fri	5	Assessment	Assessment activity in teacher's resources.	

Reflection

Think about and make a note of: *What went well? What did not go well? What did the learners find difficult or easy to understand or do? What will you do to support or extend learners? Did you complete all the work set for the week? If not, how will you get back on track?*

What will you change next time? Why?

HOD _____ Date _____

Week 2

Day	LP	Lesson objective	Lesson Resources	Date completed
Mon	6	Develop an understanding of the commutative law of multiplication.	Array diagram (see *Printable Resources*), multiplication table (see *Printable Resources*), demo array diagram and multiplication table (teacher), multiplication cards (see Term 3 *Printable Resources*).	
Tue	7	Develop an understanding of the distributive law.	Multiplication table (see *Printable Resources*).	
Wed	8	Revise multiplication.	Bottle tops.	
Thur	9	Assessment	Assessment activity in teacher's resources.	
Fri	10	Understand how to read and represent numbers up to 999 (hundreds).	At least 257 bottle tops in a container, base ten kit (see *Printable Resources*), place value table (see *Printable Resources*).	

Reflection

Think about and make a note of: *What went well? What did not go well? What did the learners find difficult or easy to understand or do? What will you do to support or extend learners? Did you complete all the work set for the week? If not, how will you get back on track?*

What will you change next time? Why?

HOD _____ Date _____

Week 3

Day	LP	Lesson objective	Lesson Resources	Date completed
Mon	11	Understand how to read and represent numbers up to 999 (hundreds).	1000 number board (see *Printable Resources*), base ten kit (see *Printable Resources*), flard cards (see *Printable Resources*).	
Tue	12	Represent 3-digit numbers where either the tens or ones are zero. (e.g. 206, 350) - part of reading and writing number symbols up to 999.	1000 number board (see *Printable Resources*), base ten kit (see *Printable Resources*), place value table (see *Printable Resources*).	
Wed	13	Expanded notation of numbers up to 999.	1000 number board (see *Printable Resources*), place value table (see *Printable Resources*), flard cards (see *Printable Resources*).	
Thur	14	Assessment	Assessment activity in teacher's resources.	
Fri	15	Understand how many tens make up a number.	Base ten kit (see *Printable Resources*), 1000 number board (see *Printable Resources*).	

Reflection

Think about and make a note of: *What went well? What did not go well? What did the learners find difficult or easy to understand or do? What will you do to support or extend learners? Did you complete all the work set for the week? If not, how will you get back on track?*

What will you change next time? Why?

HOD _____ Date _____

Week 4

Day	LP	Lesson objective	Lesson Resources	Date completed
Mon	16	Order (sequence) numbers up to 999.	1000 number board (see *Printable Resources*).	
Tue	17	Compare and order numbers to 999.	1000 number board (see *Printable Resources*), base ten kit (see *Printable Resources).*	
Wed	18	Assessment	Assessment activity in teacher's resources.	
Thur	19	Recognise and identify the South African coins (10c, 20c, 50c, R1, R2, R5) and bank notes (R10, R20, R50).	Money cut-outs (coins and notes) (see *Printable Resources*).	
Fri	20	Solve money problems involving totals and change in cents up to 90c or rands up to R99.	Money cut-outs (coins and notes) (see *Printable Resources*).	

Reflection

Think about and make a note of: *What went well? What did not go well? What did the learners find difficult or easy to understand or do? What will you do to support or extend learners? Did you complete all the work set for the week? If not, how will you get back on track?*

What will you change next time? Why?

HOD _____ Date _____

Week 5

Day	LP	Lesson objective	Lesson Resources	Date completed
Mon	21	Assessment	Assessment activity in teacher's resources.	
Tue	22	Describe, sort and compare 3-D objects (balls and boxes) in terms of size, objects that roll and objects that slide.	A range of balls, books, boxes, marbles (all different sizes & colours), pictures of boxes, balls and bricks from old magazines/advertisements for cutting out pictures (collect).	
Wed	23	Build 3-D objects from materials (experiment with ball and box shapes).	A range of cardboard boxes, building blocks, books, small balls, empty matchboxes (collect beforehand, asking learners to bring too).	
Thur	24	To identify and describe geometric and everyday objects that look like cylinders, spheres and prisms.	Ball-shaped objects, box-shaped objects, cylinder-shaped objects that you have collected.	
Fri	25	Recognise, name and work with 3-D objects in the classroom and in pictures, e.g. ball shapes (spheres), box shapes (prisms) and cylinders.	3-D objects, magazines/newspapers/advertisements, toilet roll inners.	

Reflection

Think about and make a note of: *What went well? What did not go well? What did the learners find difficult or easy to understand or do? What will you do to support or extend learners? Did you complete all the work set for the week? If not, how will you get back on track?*

What will you change next time? Why?

HOD _____ Date _____

Week 6

Day	LP	Lesson objective	Lesson Resources	Date completed
Mon	26	Recognise, describe, sort and compare 3-D objects (cylinders, spheres and prisms).	Different sized spheres, prisms and cylinders, old magazines/newspapers/adverts.	
Tue	27	Assessment	Assessment activity in teacher's resources.	
Wed	28	Solve and explain solutions to practical problems that involve equal sharing and grouping up to 20.	Bottle tops.	
Thur	29	Solve and explain solutions to practical problems that involve equal sharing and grouping up to 20 with answers that may include remainders.	Bottle tops.	
Fri	30	Match different views of the same everyday object.	Cool drink can, other objects to use for views, e.g. pencil case, cup, lunch box, etc.	

Reflection

Think about and make a note of: *What went well? What did not go well? What did the learners find difficult or easy to understand or do? What will you do to support or extend learners? Did you complete all the work set for the week? If not, how will you get back on track?*

What will you change next time? Why?

HOD _____ Date _____

Week 7

Day	LP	Lesson objective	Lesson Resources	Date completed
Mon	31	Assessment	Assessment activity in teacher's resources.	
Tue	32	Collect, present and analyse data in a pictograph.	n/a	
Wed	33	Collect, organise, present and answer questions about data using a pictograph.	n/a	
Thur	34	Represent and analyse data in a pictograph with one-to-one correspondence.	n/a	
Fri	35	Solve problems using data (tallies and pictographs).	n/a	

Reflection

Think about and make a note of: *What went well? What did not go well? What did the learners find difficult or easy to understand or do? What will you do to support or extend learners? Did you complete all the work set for the week? If not, how will you get back on track?*

What will you change next time? Why?

HOD _____ Date _____

Week 8

Day	LP	Lesson objective	Lesson Resources	Date completed
Mon	36	Interpret data from tally tables and pictographs.	n/a	
Tue	37	Assessment	Assessment activity in teacher's resources.	
Wed	38	Revise number sequences, comparing and ordering numbers.	n/a	
Thur	39	Revise addition and subtraction with carrying and borrowing.	Base ten kit.	
Fri	40	Revise multiplication.	Array diagram (see *Printable Resources- Term 3*), demo array diagram (teacher), 1 to 5 demo multiplication table (teacher), and multiplication cards (× 2, × 3, × 4 and × 5) (see *Printable Resources- Term 3*).	

Reflection

Think about and make a note of: *What went well? What did not go well? What did the learners find difficult or easy to understand or do? What will you do to support or extend learners? Did you complete all the work set for the week? If not, how will you get back on track?*

What will you change next time? Why?

HOD _____ Date _____

Term 4 Assessment

The assessment for the term is designed into the lesson plans. Oral, practical and written assessment activities sequenced into the plans and located in the numbered lesson sequence.

The assessment that will be found in the lesson plans is the following:

1. Week 1 - Lesson 5
    a. Written: Multiplication (10 marks)

2. Week 2 - Lesson 9
    a. Written: Multiplication and word problems (15 marks)

3. Week 3 - Lesson 14
    a. Written: Number concept to 999 (15 marks)

4. Week 4 - Lesson 18
    a. Written: Numbers and Patterns (11 + 4 = 15 marks)
    b. Oral and Practical: Patterns (7 marks)

5. Week 5 - Lesson 21
    a. Written: Money (10 marks)

6. Week 6 - Lesson 27
    a. Written: Space and shape (3-D objects) (10 marks)
    b. Practical: Space and shape (7 marks)

7. Week 7 - Lesson 31
    a. Written: Number and Position and views (10 + 3 = 13 marks)
    b. Oral and Practical: Division – sharing and grouping (7 marks)

8. Week 8 - Lesson 37
    a. Written: Data Handling (10 marks)
    b. Oral and Practical: Data Handling (7 marks)

The mark sheet on the following page can be used to record the marks achieved by learners for the various assessment activities throughout the term and to calculate the final marks to be entered into SA SAMS for the Term 4 Assessment Task.

GRADE 2 MATHEMATICS TERM 4: Suggested formal assessment mark record sheet

TASK/TOPIC/COMPONENT	Number: Written	Number: Written	Number: Written	Number: Written	Number: Written	Number: Written	Number: Oral and Practical	**TOTAL FOR NUMBER**	Patterns: Oral and Practical	Patterns: Written	**TOTAL FOR PATTERNS**	Space and shape: Practical	Space and shape: Written	Space and shape: Oral and Practical	**TOTAL FOR SPACE AND SHAPE**	Data Handling: Written	Data Handling: Oral and Practical	**TOTAL FOR DATA HANDLING**	**Term Total**
Week	1	2	3	4	5	7	7		4	4		6	6	7		8	8		
(Out of) marks	10	15	15	11	10	10	7	78	7	4	11	7	10	3	20	10	7	17	126
LEARNER NAME AND SURNAME																			