# **GRADE 3**

# **Mathematics**

Teacher Toolkit: CAPS Planner and Tracker

**2019 TERM 3** 

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## **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	Explain everything.
and discover something on their own and to keep	
quiet while they are thinking/working individually.	
Plan the lesson with enough time to let learners	Rush learners into saying/doing something by saying
deepen their own thinking. Be patient!	'quick, quick'.
Share a variety of answers/thinking with all the	Erase/remove incorrect answers.
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.	
Ask learners 'why did you think so', either if their	
answer is correct or not correct.	Say 'No', 'Wrong', 'Next', 'Right', 'Yes', 'Correct',
Assist learners to discover why and where she/he	etc. immediately after learners give the answer.
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)			0

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

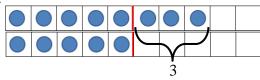
## a. Pre-number concepts by a ten frame (Grade 1)

Ten frames can make all critical activities easier and clearer. (CAPS P93 English version)

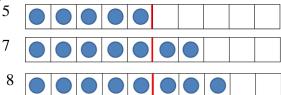
- Matching (one-to-one correspondence)
- Sorting



Comparing



• Ordering



Subitising





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

 $8 + \square = 10$ ,

 $10-8=\square$ 

8 + 2 =  $\square$ 







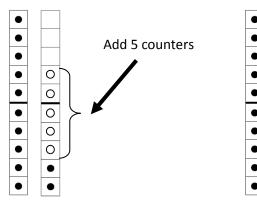
## **b.** Make-a-ten method (Grade 1)

'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.

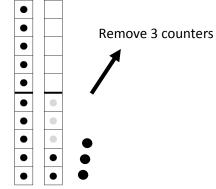
• Addition without carrying and subtraction without borrowing. There is no change in the tens place.

1) 12 + 5





10 and 7 make 17.



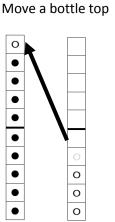
10 and 2 make 12.

• Addition with carrying and subtraction with borrowing.

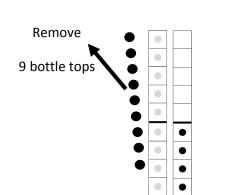
3)9+4



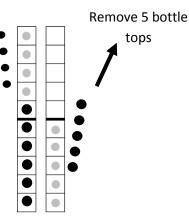
Remove 4 bottle tops



10 and 3 make 13.



1 and 5 make 6.

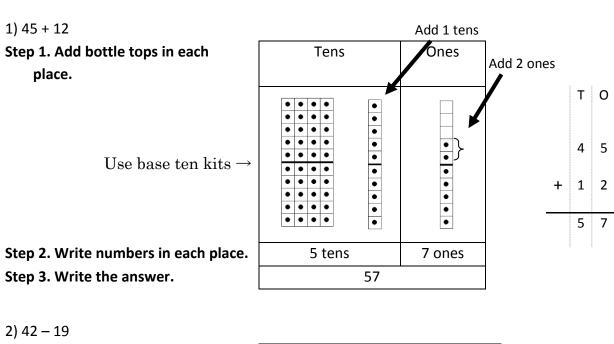


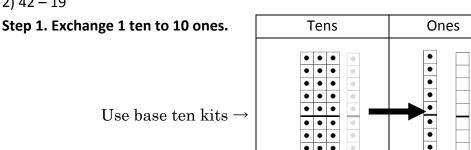
5 and 1 is 6.

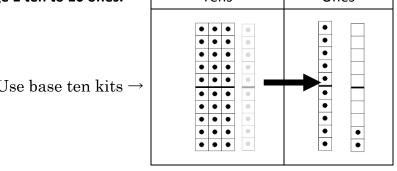
## Column method by base ten kits [concrete objects] (Grade 2, 3)

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.

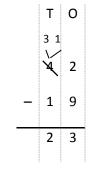






23

Remove 1 ten Remove 9 ones Step 2. Remove bottle tops from Tens Ones each place. • • Use base ten kits  $\rightarrow$ • Step 3. Write numbers in each place. tens 3 ones



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.

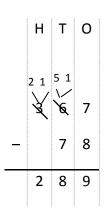
1) 384 + 139

Step 1. Draw 38	4 and 139 ve	ertically.	Step 3. Since 8 + 4 in the tens place exceeds 10,
	i		exchange 10 tens into 1 hundred (carrying).
H	Т	0	H T O
		0000	□□□
	III	00000 0000	
Step 2. Since 4 - exchange 10 on		es place exceeds 10, (carrying).	Step 4. Write the answer.
Н	Т	0	н т о
		<del>0</del> 000	
		<del>00000 0000</del>	
			5 2 3 The answer is 523.

	Н	Т	0
	1	1	
		8	
+		3	9
	5	2	3

## 2) 367 – 78

Step 1. Draw 36	7.		•		7 in the tens place, ens (borrowing).
н	Т	О	H	T	O
		0000000		‡ \	0000000
		'	`	<b>*</b>	<del>00000 000</del> 00
Step 2. Since we exchange 1 ten		· 8 in the ones place,	Step 5. 15 – 7 =	8 in the tens p	place.
H	T	O	Н	Т	О
	† \	0000000		‡ \	0000000
	)	00000 00000	`	<del>`       </del>     `	<del>00000 000</del> 00
Step 3. 17 – 8 =	9 in the ones	place.	Step 6. Write th	e answer.	
H	Т	0	H	Т	0
	<del> </del>	0000000		<u> </u>	0000000
	,	<del>00000 000</del> 00		<del>         </del>	<del>00000 000</del> 00
	I	l	2	8	9
			The answer is 2	289.	1



## 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

$$2)42 - 19$$

	l		
	4	5	
+	1	2	
		7	

2

1 9

3

$$0:5+2=7$$

$$0: 12 - 9 = 3$$

## **Grade 3**

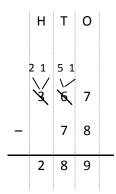
3 9

$$4)81 - 47$$

	1	
	1	
	2	
+	3	8
	6	4

	Т	0
	7 1 \ \ \ 4	
_	4	7
	3	4

	Н	Т	0
	1	1	
	3	8	4
+		3	O 4 9
	5		3



#### 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 diagram4 steps to solve word problem

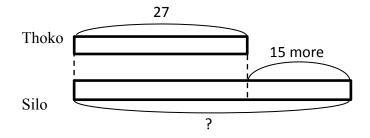
#### Step 1. Understand the problem.

- 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.

Day	LP	Lesson objective	Lesson Resources	Date completed
Mon	1	Revise multiplication up to $5 \times 5$ .	Array diagram (see <i>Printable Resources</i> ), enlarged array diagram (teacher), multiplication cards (see <i>Printable Resources</i> ).	
Tue	2	Revise multiplication tables up to $10 \times 10$ .	Multiplication table (see <i>Printable Resources</i> ), enlarged multiplication table (teacher), multiplication cards (see <i>Printable Resources</i> ).	
Wed	3	Recognise the difference between grouping and sharing.	Bottle tops, multiplication cards (see <i>Printable Resources</i> ).	
Thur	4	Introduce the concept of division and how to write division number sentences.	Bottle tops.	
Fri	5	Consolidation of work done this week.	Learner Activity Book.	
	t or ea	sy to understand or do? What will you et for the week? If not, how will you ge	What did not go well? What did the lear do to support or extend learners? Did yo	•
	t or ea		do to support or extend learners? Did ye	-
all the	t or ea work s		do to support or extend learners? Did ye	•

Day	LP	Lesson objective	Lesson Resources	Date completed
Mon	6	Assessment	Assessment activity in teacher's resources.	
Tue	7	Reinforce the concept of sharing division and how to use known multiplication facts to do division.	Bottle tops.	
Wed	8	Reinforce the concept of grouping division and how to use known multiplication facts to do division.	Bottle tops.	
Thur	9	Reinforce the concept of division (sharing and grouping) using known multiplication facts to do division.	Bottle tops.	
Fri	10	Consolidation of work done this week.	Learner Activity Book.	
Reflect	ion			<b>'</b>
all the	work s	et for the week? If not, how will you get	. DUCK OIT LIUCK!	
all the	work s	et for the week? If not, now will you get	BUCK OIT THUCK!	
		change next time? Why?	DUCK OIT THUCK!	
			DUCK OIT THUCK!	
			JUCK OII TI UCK!	

	LP	Lesson objective	Lesson Resources	Date completed
Mon	11	Assessment	Assessment activity in teacher's resources.	
Tue	12	Reinforce the concept of division	Bottle tops.	
Wed	13	(sharing and grouping). Introduce division of zero.	n/a	
Thur	14	Create stories for division.	n/a	
Fri	15	Consolidation of work done this week.	Learner Activity Book.	
	about a	and make a note of: What went well? sy to understand or do? What will you		-
all the	work s	et for the week? If not, how will you ge	et back on track?	
What	will you	change next time? Why?		
What	will you	ı change next time? Why?		
What	will you	change next time? Why?		
What	will you	ı change next time? Why?		
What	will you	change next time? Why?		
What	will you	change next time? Why?		
What	will you	ı change next time? Why?		
What	will you	ı change next time? Why?		
What	will you	change next time? Why?		

Day	LP	Lesson objective	Lesson Resources	Date completed
Mon	16	Solve division problems by finding the appropriate multiples.	Bottle tops.	Completed
Tue	17	Assessment	Assessment activity in teacher's resources.	
Wed	18	Identify the relationship between sharing and fractions.	Paper strips (learners), large paper strip (teacher).	
Thur	19	Develop an understanding of fractions and their representations.	Paper strips (learners), large paper strip (teacher).	
Fri	20	Consolidation of work done this week.	Learner Activity Book.	
What	will you	change next time? Why?		
HOD_		Date		

Day	LP	Lesson objective	Lesson Resources	Date completed					
Mon	21	Differentiate between unitary and non-unitary fractions.	strip (teacher).						
Tue	22	Develop an understanding of the relationship between unitary fractions and wholes.	Paper strips (learners), large paper strip (teacher).						
Wed	23	Assessment	Assessment activity in teacher's resources.						
Thur	24	Represent fractions using a number line.	n/a						
Fri	25	Consolidation of work done this week.	Learner Activity Book.						
What	will you	change next time? Why?							

Day	LP	Lesson objective	Lesson Resources	Date completed	
Mon	26	Compare fractions using a number line.	Paper strips (learners), large paper strip (teacher).		
Tue	27	Solve a variety of addition problems using fractions with the same denominator.	Paper strips (learners), large paper strip (teacher).		
Wed	28	Solve a variety of subtraction problems using fractions with the same denominator.  Paper strips (learners), large paper strip (teacher).			
Thur	29	Solve sharing problems leading to fractions.	n/a		
Fri	30	Consolidation of work done this week.	Learner Activity Book.		
What	will you	ı change next time? Why?			

Day	LP	Lesson objective	Lesson Resources	Date completed
Mon	31	Assessment	Assessment activity in teacher's resources.	
Tue	32	Revise metres as the standard unit of measurement for length.	Metre stick, 1 m lengths of string (learners).	
Wed	33	Estimate, measure and record lengths in centimetres using a ruler.	Ruler, cardboard strips cut out in exact measurements of 1 cm to 10 cm (make this for the lesson).	
Thur	34	Solve addition and subtraction problems involving units of length.	Rulers, labelled pieces of string cut to various lengths, scrap paper.	
Fri	35	Consolidation of work done this week.	Learner Activity Book.	
What	will you	ı change next time? Why?		
What	will you	I change next time? Why?		

Day	LP	Lesson objective	Lesson Resources	Date completed
Mon	36	Investigate and measure the distance around 2-D shapes (perimeter).	Cut-outs of rectangles, squares and circles (one set per group), string, matchboxes (one per group).	
Tue	37	Investigate the area of a surface using tiling.	Squares template (see <i>Printable Resources</i> ).	
Wed	38	Assessment	Assessment activity in teacher's resources.	
Thur	39	Gain familiarity with the South African coins and bank notes (recognise, identify and work with monetary values).	Products for shop (e.g. empty containers such as cereal boxes, cool drink cans, tins, washing powder boxes, plastic milk bottles, etc. OR pictures of these from supermarket fliers). Money cutouts (coins and notes) (see <i>Printable Resources</i> ).	
Fri	40	Consolidation of work done this week.	Learner Activity Book.	
difficu	lt or ea	and make a note of: What went well? W sy to understand or do? What will you d et for the week? If not, how will you get	o to support or extend learners? Did y	-
difficu	about a	sy to understand or do? What will you d	o to support or extend learners? Did y	-
difficu all the	about a lt or ea work s	sy to understand or do? What will you d	o to support or extend learners? Did y	-

Week	9						
Day	LP	Lesson objective	Lesson Resources	Date completed			
Mon	41	Solve word problems involving South African money.	Money cut-outs (coins and notes) (see <i>Printable Resources</i> ).				
Tue	42	Solve word problems involving South African money.	Money cut-outs (coins and notes) (see <i>Printable Resources</i> ).				
Wed	43	Assessment	Assessment activity in teacher's resources.				
Thur	44	Revise grams as a standard unit measurement for mass.	resources.  Kitchen scale, 100 g baking powder, 250 g biscuits and 500 g flour (or any other products of the same mass).				
Fri	45	Consolidation of work done this week.	Learner Activity Book.				
difficult	t or eas	nd make a note of: What went well? We to understand or do? What will you do not for the week? If not, how will you get change next time? Why?	lo to support or extend learners? Did y	-			
HOD_		Date					

Day	LP	Lesson objective	Lesson Resources	Date completed	
Mon	46	Measure, compare, order and record mass using grams and kilograms.	Bathroom scale, kitchen scale, objects that can be used to determine mass, e.g. 2 × 500 g flour, 1 kg flour, brick, 2 L water		
Tue	47	Estimate, measure and record mass in kilograms.	bottles, etc.  Bathroom scale, kitchen scale, objects that can be used to determine mass, e.g. 1 kg flour, brick, 2 L water bottles, etc.		
Wed	48	Solve addition and subtraction problems involving units of mass.	Products with a variety of different masses. (e.g. 1 kg flour, 250 g sugar, 2 kg Iwisa, etc.).		
Thur	49	Assessment	Assessment activity in teacher's resources.		
Fri	50	Consolidation of work done this week.	Learner Activity Book.		
difficul	t or ea	and make a note of: What went well? Wesy to understand or do? What will you a et for the week? If not, how will you get		-	
difficul	t or ea	sy to understand or do? What will you a	lo to support or extend learners? Did y	-	
difficul all the	t or ea	sy to understand or do? What will you a	lo to support or extend learners? Did y	-	

## **Term 3 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 2 Lesson 6
  - a. Written: Division (16 marks)
- 2. Week 3 Lesson 11
  - a. Written: Division (17 marks)
  - b. Oral and practical: Division (7 marks)
- 3. Week 4 Lesson 17
  - a. Written: Division (22 marks)
- 4. Week 5 Lesson 23
  - a. Written: Fractions concept (17 marks)
  - b. Oral: Fractions (7 marks)
- 5. Week 7 Lesson 31
  - a. Written: Fractions operations (18 marks)
- 6. Week 8 Lesson 38
  - a. Written: Measurement Length (13 marks)
  - b. Practical: Measurement Length (7 marks)
- 7. Week 9 Lesson 43
  - a. Written: Number: Money (14 marks)
- 8. Week 10 Lesson 49
  - a. Written: Measurement Mass (15 marks)
  - b. Oral and practical: Measurement Mass (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 3 Assessment Task.

	s z	<pre></pre>	할 Ζ	≤ Z		할 Ζ	<pre>&lt; z</pre>	≶ Z	Z	<b>\$ 7</b>	₽ ⋜	<b>\$ 7</b>	₽Z	<b>→</b> ⋜ ⋨	ⅎ
TASK/TOPIC/COMPONENT	Number: Written	Number: Written	Number: Oral and Practical	Number: Written	Number: Written	Number: Oral and Practical	Number: Written	Number: Written	TOTAL FOR NUMBER	Measurement: Written	Measurement: Practical	Measurement: Written	Measurement: Practical	TOTAL FOR MEASUREMEN T	Term Total
Week	2	3	3	4	5	5	7	9		8	8	10	10		
(Out of) marks	16	17	7	22	17	7	18	14	118	13	7	14	7	41	159
LEARNER NAME AND SURNAME															