PLANNER & TRACKER FOR RECOVERY ANNUAL TEACHING PLAN (ATP)

MATHEMATICS

GRADE 8 TERM 1

Helping teachers and learners to catch up with learning losses, master new content and acquire skills for the future.

2022

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CONTENTS

ABOUT THE PLANNER AND TRACKER

This 2022 Revised Recovery Curriculum and Assessment Planner and Tracker is provided by the National Education Collaboration Trust (NECT) on behalf of the Department of Basic Education (DBE)! We hope that this programme provides you with additional skills, methodologies and content knowledge that you can use to teach your learners more effectively.

WHAT IS NECT?

In 2012 our government launched the National Development Plan (NDP) to eliminate poverty and reduce inequality by the year 2030. Improving education is an important goal in the NDP which states that 90% of learners will pass Maths, Science and languages with at least 50% by 2030. This is an ambitious goal for the DBE to achieve on its own, so the NECT was established in 2015 to assist in improving education.

The NECT has successfully brought together groups of people interested in education so that we can work collaboratively to improve education. These groups include the teacher unions, businesses, religious groups, trusts, foundations and NGOs.

PURPOSE OF PLANNER AND TRACKER

1) To mediate the amendments of the trimmed and re-organised 2022 Annual Teaching Plan including School-Based Assessments for Mathematics Grade 8.
2) To ensure that meaningful teaching continues during the remaining teaching time as per the school calendar for TERM 1.
3) To assist teachers with guided pacing and sequencing of curriculum content and assessment.
4) To enable teachers to cover the core skills and knowledge in each grade within the available time.
5) To assist teachers with planning for the different forms of assessment.
6) To ensure learners are adequately prepared for the subsequent year/s in terms of skills, knowledge, attitudes and values.

PREAMBLE

It must be emphasized that 2021 mathematics content coverage by teachers were impacted by COVID-19. Schools were particularly disrupted by the fact that learners only attended school for 50% of the time and had to endure variations of the rotation system implemented in the schools. Disruption in schools has also meant disruption in different forms of assessment, so it has been hard to fully pin down exactly how much the school closures and transitions in and out of virtual learning have affected students' mathematical learning, but the evidence so far doesn't bode well.

Curriculum coverage in 2022 must be viewed and implemented in term 1, in the light of some contextual realities that includes the following:

1) 2021 was an abnormal year in terms of content coverage. Learners have progressed to a higher grade level without learning all the core skills required for that grade.
2) Some learners were not in school for most of 2020 and for most of 2021.
3) Mathematics is almost always formally learned at school. Many of our parents are often less well-equipped to help their children with mathematics, at a time when parent support can be even more crucial to student progress. This means that the burden falls directly on our teachers.

4) Broader stress and trauma related to the pandemic may worsen existing mathematics anxiety in some students, and mathematics anxiety can exacerbate students' other stress while in class.

Awareness of the above challenges and the consequent assumptions that emerge out of it, is crucial for the implementation of the Revised ATPs emphasizing the recovery of skills not yet mastered in mathematics. This Planner and Tracker is in alignment with the theme of recovery of skills not learnt and covers the following:

1) aims to ensure that the critical skills, knowledge, values and attitudes outlined in the ATPs are covered over this time period.
2) Curriculum Reorganisation and Trimming for this term purports to reduce the envisaged curriculum to manageable core content , skills, knowledge, attitudes and values to enhance deep and meaningful learning.
3) Create opportunities through adjusted ATPs to strengthen pre-knowledge, consolidation, revision, and deeper learning.
4) The Planner and Tracker clearly define the core knowledge, skills, attitude to be taught and assessed more specifically to guide and support teachers.
5) It also aligns curriculum content and assessment to the available teaching time. Entrench assessment for learning as a Pedagogical Approach to address the learning losses.
6) Be used as planning tool to inform instruction during the remaining school terms.

ADJUSTED SCHOOL CALENDAR

SCHOOL TERMS	DATES	TEACHING DAYS
Term 1	**10 January - 17 March**	**47 (10 weeks)**
Term 2	5 April – 24 June	53 (12 weeks) – 6 holidays
Term 3	19 July – 30 September	54 (11 weeks) – 2 holidays
Term 4	11 October - 14 Dec	47 (10 weeks)

NOTES:

- TEACHING APPROACH in this term assumes that ALL learners are attending schools and the Rotation system may not be implemented meaning that schools may implement normal timetable.
- NECT TERM 1 Planner and Tracker has 47 teaching and learning days of which 15 days are used for formative and summative Assessment days.
- NECT Term 1 Planner and Tracker focuses on Deep learning through assessment for learning - There is no time for assessment that does not inform the way forward. Teachers should consolidate, revise and remediate through error analysis that leads to skills mastery.

MANAGING TIME ALLOCATED IN THE TRACKER

- The tracker for each term contains details of work to be covered over 50 lessons per term, five per week for ten weeks.
- The CAPS prescribes **four and a half hours** of Mathematics per week in Grade 8.

- Each school will organise its timetable differently, so the programme of lessons is based on work in the Learner's Book and DBE workbook, which should take just about an hour per day to complete. Perhaps, at end of week 30 minutes – will be great if this is also an hour.
- You might have to divide the sessions in the programme slightly differently to accommodate the length of the lessons at your school.
- Depending on the pace at which your learners work, and how much support is needed,
- you might also have to supplement the set activities by using other resources to ensure that the full four and a half hours allocated to teaching Mathematics is used constructively.
- The breakdown of work to be done each week corresponds to the 'annual teaching plan and programme of assessment' drawn up by the Provincial Department of Education; however, the tracker gives a more detailed outline of what should be taught each day.
- This tracker is designed for a term that is 10 weeks long.
- In most weeks, one lesson is set aside – at the end of the week - for you to catch up on work not done in the previous four lessons, or to provide remedial support or enrichment.
- The formal teaching programme, the project, some revision, and the term test should be completed by the end of Week 9

REMEMBER: The teacher should employ group teaching based on principles of differentiation – cater for the needs of every learner by making sure every learner masters the fundamental skills in mathematics. The teacher is also mindful to plan well for effective assessment for learning to inform the remediation and teaching, through the skills mastery approach applied in this Planner and Tracker.

LINKS TO THE DBE WORKBOOKS

The tracker gives links to worksheets in the DBE workbooks relevant to the content described for each day. The worksheets are referred to by worksheet number and page number. These workbooks should be used in conjunction with the Learner's Book activities. You should review the suggested worksheets before each lesson and decide how best to use them – for teaching, revision, extension or consolidation, in class or for homework.

TEACHING TIME

Since there are **4 and $\frac{1}{2}$** hours allocated for Mathematics per week, the following is a suggested plan for daily lessons.

WEEK: 4 and $\frac{1}{2}$ hours	
Consolidation of Concepts – skills mastery and other New Concept – class activity	 10 min 50 min

CONTENT COVERAGE

TERM 1	Week 1 3 days	Week 2 5 days	Week 3 5 days	Week 4 5 days	Week 5 5 days	Week 6 5 days		Week 7 5 days	Week 8 5 days		Week 9 4 days		Week 10 3 days
Hours per week	2.5 hrs	4.5 hrs	4.5 hrs	4.5 hrs	4.5 hrs	4.5 hrs		4.5 hrs	4.5 hrs		3.5 hrs		3 hrs
Hours per topic	2.5 hrs.	9 hrs.		9 hrs.		2 hrs.	2.5 hrs	4.5 hrs	2 hrs	2.5 hrs	1.5 hrs.	2 hrs	3 hrs.
Topic, concepts, skills and values	REVISION OF GRADE 7 WORK	**WHOLE NUMBERS** **Calculations using whole numbers** **Revise:** • Calculations using all four operations on whole numbers, estimating and using calculators where appropriate **Calculation techniques** • Use a range of strategies to perform and check written and mental calculations with whole numbers including: - Estimation - Adding, subtracting and multiplying in columns - Long division - Rounding off and compensating - Using a calculator **Multiples and factors** **Revise:** • Prime factors of numbers to at least 3-digit whole numbers • LCM and HCF of whole numbers, by inspection or factorisation **Solving problems** **Revise**: • Solve problems involving whole numbers, including: - Comparing two or more quantities of the same kind (ratio) - Comparing two quantities of different kinds (rate) - Sharing in a given ratio where the whole is given • Extend to increasing or decreasing of a number in a given ratio		**INTEGERS** **Calculations with integers** • **Revise** - addition and subtraction with integers • Multiply and divide with integers • Perform calculations involving all four operations with integers • Perform calculations involving all four operations with numbers that involve squares, cubes, square roots and cube roots of integers **Properties of integers** • Recognise and use commutative, associative and distributive properties of addition and multiplication for integers • Recognize and use additive and multiplicative inverses for integers		**FORMAL ASSESMENT TASK** **ASSIGNMENT** • Whole numbers • Integers	**COMMON FRACTIONS** **Calculations with fractions** • Divide whole numbers and common fractions by common fractions • Calculate the squares, cubes, square roots and cube roots of common fractions • Calculate amounts if given percentage increase or decrease • Calculations and solving problems **Calculation techniques** • Use knowledge of reciprocal relationships to divide common fractions **Percentage** • Calculate amounts if given percentage increase or decrease **Solving problems** • Solve problems in contexts involving common fractions and mixed numbers, including grouping, sharing and finding fractions of whole numbers • Solve problems in contexts involving percentages •		**DECIMAL FRACTIONS** **Calculations with decimal fractions** • Multiplication of decimal fractions by decimal fractions not limited to one decimal place • Division of decimal fractions by decimal fractions • Calculate the squares, cubes, square roots and cube roots of decimal fractions **Calculation techniques** • Use knowledge of place value to estimate the number of decimal places in the result before performing calculations • Use rounding off and a calculator to check results where appropriate		**FORMAL ASSESMENT TASK** **TEST** All topics
		• Solve problems that involve whole numbers, percentages and decimal fractions in financial contexts such as:											

CORE QUESTIONS	DID ALL LEARNERS MASTER 2021 SKILLS?	NEW CONCEPTS/CONTENT

RECOMMEN-DATION	1. Implement at least two Skills Mastery (SM) formative assessments every week. 2. Consolidation of Concepts – 10 minutes – twice a week apply 5-item SM assessments. 3. Teacher – can use SM as individual, pair, small group, or whole class activity. 4. Aim – to consolidate, remediate and work towards mastery. 5. Record – monitor learners who have learning gaps in the REFLECTION section of the Tracker	NEW CONCEPTS/CONTENT

WEEKLY PLANNER AND TRACKER

RECOMMENDATION

BASELINE TERM 1: Implement DBE Diagnostic – see exemplar in Planner and Tracker – or any similar diagnostic – Based on 2021 core skills. Teachers are encouraged to use the exemplar, based on what content they have completed. Meaning teachers can select different items in the diagnostic for their purposes.

WHEN: Day 1, allow learners to complete individually and/or work with ability groups based on your classroom context. Day 2 is set aside for remediation purposes.
NUMBER OF ITEMS: Grade 8 = 15 - 20 items – depending on your context and ability groups
ITEM BANK: Items can be from previous:

1) BASELINE/READINESS assessment, 2) Assessment Resources in this TRACKER or 3) the DBE Item Bank and 4) PREPARATION: Test, Marking Guideline/s, Marksheet and apparatus.

10 – 14 January 2022

Week 1					
Lesson	**ATP Content**	**concepts, skills**	**DBE workbook**	**Resources**	**Date**
1	No Learners at School				
2	No learners at school				
3	Revision: Diagnostic	Baseline: (Revision, consolidation of Grade 7 skills)			
4	Revision: Remediation	Baseline: Remediation – error analysis			
5	WHOLE NUMBERS **Calculation techniques -** Use a range of strategies to perform and check written and mental calculations with whole numbers including: - Estimation- Adding, subtracting and multiplying in columns- Long division - Rounding off and compensating - Using a calculator	Calculate by using the algorithm for +, -, x and long division. Use commutative property to make equation equal. Apply identity element for addition and subtraction.	Bk 1 No. R1 (pp. ii & iii)		

Notes for the teacher.

1. The Baseline Assessment can be administered one-on one or to a group of at least 5 learners at a time – it is an assessment FOR learning.
2. The onus is on the teacher to prepare substantial activities for the rest of the learners while the Baseline Assessment is being administered.
3. Prepare well - study the Baseline Assessment i.e. familiarise yourself with the apparatus and templates that must be used.

Reflection	
DID ALL THE LEARNERS LEARN THE WEEKLY SKILLS? ARE THEY ABLE TO: • Calculate by using the algorithm for +, -, x and long division. • Use commutative property to make equation equal. • Apply identity element for addition and subtraction.	What will you change next time? Why? **Struggling Learners Names:** **HOD:** **Date:**

17 - 21 January 2022

Week 2					
Lesson	**ATP Content**	**concepts, skills**	**DBE workbook**	**Resources**	**Date**

6	WHOLE NUMBERS **Calculation techniques -** Use a range of strategies to perform and check written and mental calculations with whole numbers including: - Estimation- Adding, subtracting and multiplying in columns- long division - Rounding off and compensating - Using a calculator	Find multiples Find factors Find LCM Find HCF	Bk 1 No. R2 (pp. iv & v)		
7	WHOLE NUMBERS **Calculations using whole numbers Revise**: - Calculations using all four operations on whole numbers, estimating and using calculators where appropriate	List natural numbers List whole numbers List integers Draw number lines explain number system differences. Apply associative and commutative property. Apply distributive property	Bk 1 No. 1 (pp. 2 –3) No. 2a (pp. 4)		
8	WHOLE NUMBERS **Calculations using whole numbers Revise**: - Calculations using all four operations on whole numbers, estimating and using calculators where appropriate	List natural numbers List whole numbers List integers Draw number lines explain number system differences. Apply associative and commutative property. Apply distributive property	Bk 1 No. 2a (pp. 5) No. 2b (pp. 6 – 7)		
9	WHOLE NUMBERS: **Multiples and factors Revise: -**Prime factors of numbers to at least 3-digit whole numbers - LCM and HCF of whole numbers, by inspection or factorization.	Find factors and common factors. List prime factors Find HCF using tree factorization and division Find multiples determine LCM find LCM using ladder method	Bk 1 No. 3 (pp. 8 – 9)		
10	Assessment Activity: Consolidate and revise – assess learners understanding, remediate for understanding – use SM Activities				

Reflection

DID ALL THE LEARNERS LEARN THE WEEKLY SKILLS? ARE THEY ABLE TO: • Find Multiples and factors • Calculate exponents, squares, square roots, cubes, cube-roots • List natural numbers, whole numbers and integers • Draw number lines to explain number system differences. • Apply associative, commutative and distributive property • Find factors and common factors. • List prime factors • Find HCF using tree factorization and division • determine LCM • find LCM using ladder method	What will you change next time? Why? **Struggling Learners Names?** **HOD:** **Date:**

24 – 28 January 2022

Week 3					
Lesson	**ATP content**	**concepts, skills**	**DBE workbook**	**Resources**	**Date**
11	WHOLE NUMBERS: **Multiples and factors Revise: -**Prime factors of numbers to at least 3-digit whole numbers	Find factors and common factors. List prime factors	Bk 1 No. 4 (pp. 10 – 11)		

	- LCM and HCF of whole numbers, by inspection or factorization.	Find HCF using tree factorization and division Find multiples determine LCM find LCM using ladder method			
12	WHOLE NUMBERS: **Multiples and factors Revise: -**Prime factors of numbers to at least 3-digit whole numbers - LCM and HCF of whole numbers, by inspection or factorization.	Use given examples to explain factor tree and ladder method Find HCF using factorization or inspection.	Bk 1 No. 5 (pp. 12 – 13)		
13	WHOLE NUMBERS: **Solve problems** that involve whole numbers, percentages and decimal fractions in financial contexts such as:	Explain financial terms: profit, budget, loan, interest. Solve profit/loss/discount problems using decimals and percentages	Bk 1 No. R10 (pp. xxviii – xxix) No. 6 (pp. 14 – 15)		
14	WHOLE NUMBERS: **Solve problems** that involve whole numbers, percentages and decimal fractions in financial contexts such as:	Solve budget problems using decimals and percentages	Bk 1 No. 7 (pp. 16 – 17)		
15	Assessment Activity: Consolidate and revise – assess learners understanding, remediate for understanding – use SM Activities				

Reflection

DID ALL THE LEARNERS LEARN THE WEEKLY SKILLS? ARE THEY ABLE TO: • Find factors and common factors. • List prime factors • Find HCF using tree factorization and division • Find multiples • determine LCM • find LCM using ladder method • Use given examples to explain factor tree and ladder method • Find HCF using factorization or inspection. • Explain financial terms: profit, budget, loan, interest. • Solve profit/loss/discount problems using decimals and percentages • Solve budget problems using decimals and percentages	**What will you change next time? Why?** **Struggling Learners Names:** **HOD:** **DATE**

31 January – 4 February 2022

Week 4

Day	ATP Content	CAPS content, concepts, skills	DBE workbook	Resources	Date
16	INTEGERS: **Calculations with integers** Revise - addition and subtraction with integers -Multiply and divide with integers -Perform calculations involving all four operations with integers - Perform calculations involving all four operations with numbers that involve squares, cubes, square roots and cube roots of integers	Define integer Define positive/negative integer. Complete number lines. Calculate using number lines Add and subtract integers Solve equations	Bk 1 No. R4 (pp. x – xi)		
17	INTEGERS: **Calculations with integers** Revise - addition and subtraction with integers	Complete number lines. Calculate using number lines Add and subtract integers	Bk 1 No. 11 (pp. 24 – 25)		

	-Multiply and divide with integers -Perform calculations involving all four operations with integers - Perform calculations involving all four operations with numbers that involve squares, cubes, square roots and cube roots of integers	Solve equations Identify the last term in the pattern Write in ascending order.			
18	INTEGERS: **Calculations with integers** Revise - addition and subtraction with integers -Multiply and divide with integers -Perform calculations involving all four operations with integers - Perform calculations involving all four operations with numbers that involve squares, cubes, square roots and cube roots of integers	Use BODMAS to calculate solutions. Solve a variety of mixed operation problems Apply additive inverse operation. Apply reciprocal properties.	Bk 1 No. 12 (pp. 26 – 27) No. 34 (pp. 74 – 75)		
19	INTEGERS: **Properties of integers** -Recognise and use commutative, associative and distributive properties of addition and multiplication for integers - Recognize and use additive and multiplicative inverses for integers	Apply commutative property Use subtraction to check addition and vice-versa. Apply associative property Use division to check multiplication.	Bk 1 No 13 (pp. 28 – 29)		
20	Assessment Activity: Consolidate and revise – assess learners understanding, remediate for understanding – use SM Activities				

Reflection	
DID ALL THE LEARNERS LEARN THE WEEKLY SKILLS? ARE THEY ABLE TO: • Define integer • Define positive/negative integer. • Complete number lines. • Calculate using number lines • Add and subtract integers • Solve equations • Identify the last term in the pattern • Write in ascending order. • Use BODMAS to calculate solutions. • Solve a variety of mixed operation problems • Apply commutative property • Use subtraction to check addition and vice-versa. • Apply associative property • Use division to check multiplication.	What will you change next time? Why? **Struggling Learners Names**: **HOD:** **Date:**

7 – 11 February 2022

Week 5					
Day	**ATP Content**	**concepts, skills**	**DBE workbook**	**Resources**	**Date**
21	INTEGERS: **Calculations with integers** Revise - addition and subtraction with integers -Multiply and divide with integers -Perform calculations involving all four operations with integers - Perform calculations involving all four operations with numbers that involve squares, cubes, square roots and cube roots of integers	Simplify square numbers Simplify cube numbers Write in exponential form	Bk 1 No. 14 (pp. 30 – 31)		
22	INTEGERS: **Calculations with integers** Revise - addition and subtraction with integers	Square the numbers	Bk 1 No. 15 (pp. 32 – 33)		

	-Multiply and divide with integers -Perform calculations involving all four operations with integers - Perform calculations involving all four operations with numbers that involve squares, cubes, square roots and cube roots of integers	Determine squares of positive/negative numbers. Write in exponential form. Calculate square root by resolving into prime factors			
23	INTEGERS: **Calculations with integers** Revise - addition and subtraction with integers -Multiply and divide with integers -Perform calculations involving all four operations with integers - Perform calculations involving all four operations with numbers that involve squares, cubes, square roots and cube roots of integers	Given square room areas, find the sides. Calculate square roots Simplify square roots and leave in simplest root form.	Bk 1 No. 16 (pp. 34 – 35)		
24	INTEGERS: **Calculations with integers** Revise - addition and subtraction with integers -Multiply and divide with integers -Perform calculations involving all four operations with integers - Perform calculations involving all four operations with numbers that involve squares, cubes, square roots and cube roots of integers	Find cube of a number Calculate cubes of negative numbers. Write cubes of letters and numbers. Simplify cube roots of integers.	Bk 1 No. 17 (pp. 36 – 37) No. 18 (pp. 38 – 39)		
25	Assessment activity: Catch-up on work not completed; remediation of concepts which some learners have not fully understood and enrichment cards for the learners who are on track				

Reflection	
DID ALL THE LEARNERS LEARN THE WEEKLY SKILLS? ARE THEY ABLE TO: • Simplify square numbers • Simplify cube numbers • Write in exponential form • Square the numbers • Determine squares of positive/negative numbers • Calculate square root by resolving into prime factors • Given square room areas, find the sides. • Simplify square roots and leave in simplest root form. • Find cube of a number • Calculate cubes of negative numbers. • Write cubes of letters and numbers. • Simplify cube roots of integers.	What will you change next time? Why? **Struggling Learner names:** **HOD:** **Date:**

14 – 18 February 2022

Week 6					
Less	**ATP Content**	**concepts, skills**	**DBE workbook**	**Resources**	**Date**
26	Catch-up on work not completed; remediation of concepts which weaker learners have not fully understood and enrichment cards for the learners who are on track				
27	ASSESSMENT TASK ASSIGNMENT Whole numbers and integers				

28	ASSESSMENT TASK ASSIGNMENT Whole numbers and integers				
29	COMMON FRACTIONS: **Calculations with fractions -** Divide whole numbers and common fractions by common fractions -Calculate the squares, cubes, square roots and cube roots of common fractions - Calculate amounts if given percentage increase or decrease - Calculations and solving problems	Identify proper, improper, mixed fractions Convert improper to mixed Convert mixed to improper Find equivalent fractions Show fractions using diagrams. Find HCF and write in simplest form.	Bk 1 No. R5a (pp. xii – xiii)		
30	Complete and consolidate the week's assessment and work. FORMAL ASSESSMENT - ASSIGNMENT				

Reflection	
DID ALL THE LEARNERS LEARN THE WEEKLY SKILLS? ARE THEY ABLE TO: • Identify proper, improper, mixed fractions • Convert improper to mixed • Convert mixed to improper • Find equivalent fractions • Show fractions using diagrams. • Find HCF and write in simplest form.	What will you change next time? Why? **Struggling Learners Names:** **HOD:** **Date:**

21 – 25 February 2022

Week 7

Day	ATP Content	concepts, skills	DBE workbook	Resources	Date
31	COMMON FRACTIONS: **Calculations with fractions -** Divide whole numbers and common fractions by common fractions -Calculate the squares, cubes, square roots and cube roots of common fractions - Calculate amounts if given percentage increase or decrease - Calculations and solving problems	Add and multiply the same set of fractions. Calculate and simplify fractions	Bk 1 No. R5b (pp. xiv)		
32	COMMON FRACTIONS: **Calculations with fractions -** Divide whole numbers and common fractions by common fractions -Calculate the squares, cubes, square roots and cube roots of common fractions - Calculate amounts if given percentage increase or decrease - Calculations and solving problems	Add and multiply the same set of fractions. Calculate and simplify fractions	Bk 1 No. R5b (pp. xv)		
33	COMMON FRACTIONS: **Calculation techniques** - Use knowledge of reciprocal relationships to divide common fractions **Percentage** - Calculate amounts if given percentage increase or decrease	Converting fractions to decimals to percentages. Calculate percentage of numbers. Calculate % increase	Bk 1 No. R6a (pp. xvi)		

		Calculate % decrease			
34	COMMON FRACTIONS: **Calculation techniques** - Use knowledge of reciprocal relationships to divide common fractions **Percentage** - Calculate amounts if given percentage increase or decrease	Converting fractions to decimals to percentages. Calculate percentage of numbers. Calculate % increase Calculate % decrease	Bk 1 No. R6a (pp. xvii)		
35	Assessment Activity: Consolidate and revise – assess learners fraction understanding, remediate for understanding – use SM Activities				

Reflection	
DID ALL THE LEARNERS LEARN THE WEEKLY SKILLS? ARE THEY ABLE TO:. • Calculate and simplify fractions • Add and multiply the same set of fractions. • Converting fractions to decimals to percentages. • Calculate percentage of numbers. • Calculate % increase • Calculate % decrease	What will you change next time? Why? **Struggling Learners Names:**
	HOD: **Date:**

28 February – 4 March 2022

Week 8					
Day	**ATP content**	**concepts, skills**	**DBE workbook**	**Resources**	**Date**
36	COMMON FRACTIONS: **Calculation techniques** - Use knowledge of reciprocal relationships to divide common fractions **Percentage** - Calculate amounts if given percentage increase or decrease	Converting fractions to decimals to percentages. Calculate percentage of numbers. Round off to the nearest unit Round off to nearest tenth Calculate using expanding Calculate using algorithm	Bk 1 No. R6b (pp. xviii)		
37	DECIMAL FRACTIONS**: Calculations with decimal** **Fractions -** Multiplication of decimal fractions by decimal fractions not limited to one decimal place -Division of decimal fractions by decimal fractions - Calculate the squares, cubes, square roots and cube roots of decimal fraction	Calculate using expanding Calculate using algorithm	Bk 1 No. R6b (pp. xix)		
38	Consolidate and revise – assess learners fraction understanding, remediate for understanding				
39	Consolidate and revise – assess learners fraction understanding, remediate for understanding				
40	Complete and consolidate the week's assessment and work				
Reflection					

DID ALL THE LEARNERS LEARN THE WEEKLY SKILLS? ARE THEY ABLE TO: • Converting fractions to decimals to percentages. • Calculate percentage of numbers. • Round off to the nearest unit • Round off to nearest tenth • Calculate using expanding method • Calculate using algorithm	What will you change next time? Why? Struggling Learners Names: **HOD:** **Date:**

7 – 11 March 2022

Week 9					
Day	**ATP content**	**concepts, skills**	**DBE workbook**	**Resources**	**Date**
41	REVISION				
42	REVISION				
43	REVISION				
44	REVISION				
45	REVISION				
Reflection					
DID ALL THE LEARNERS LEARN THE WEEKLY SKILLS? ARE THEY ABLE TO: •	What will you change next time? Why? **HOD:** **Date:**				

14 – 17 March 2022 (Four-day week)

Week 10					
Day	**ATP content**	**concepts, skills**	**DBE workbook**	**Resources**	**Date**
46	FORMAL ASSESSMENT TASK Test All topics				
47	FORMAL ASSESSMENT TASK Test All topics				
48	FORMAL ASSESSMENT TASK Test All topics				
49	FORMAL ASSESSMENT TASK Test All topics				
50	END OF TERM				
Reflection					

Identify some skills that need revising during the next term:	What will you change next time? Why? **Struggling Learners Names:**

ASSESSMENT RATIONALE AND RESOURCES

Assessment Term Plan

The assessment term plan gives an overview of

1) how the formal and informal assessment programme fits into the weekly lesson plans.
2) How the skills mastery assessments fit into the weekly lesson plans

Note:

- There are two FORMAL Assessment tasks: 1) Assignment and 2) Test
- The Skills mastery assessments – aimed at consolidating, revising and remediating skills already covered this year - are added at the end of the document.

Written assessment tasks are to be selected and marked by teachers in appropriate lessons according to the lesson plans. Teachers may wish to group the items or use them individually.

Week	Informal Assessment (End of week) and Skills Mastery Activities (Tuesdays and Thursdays)	Formal Assessment Activities (End of week) – 2 FORMAL ASSESSMENTS: 1) Assignment 2) Test
1	Baseline Assessment	Baseline Assessment
2	**Tuesday** Skills mastery Assessment 1 **Thursday** Skills mastery Assessment 2	
3	No Informal Assessment – 4-day week **Tuesday** Skills mastery Assessment 3 **Thursday** Skills mastery Assessment 4	
4	**Tuesday** Skills mastery Assessment 5 **Thursday** Skills mastery Assessment 6	
5	**Tuesday** Skills mastery Assessment 7 **Thursday** Skills mastery Assessment 8	
6	**Tuesday** Skills mastery Assessment 9 **Thursday** Skills mastery Assessment 10	Formal Assessment 1 - Assignment

7	**Tuesday** Skills mastery Assessment 11 **Thursday** Skills mastery Assessment 12	
8	**Tuesday** Skills mastery Assessment 13 **Thursday** Skills mastery Assessment 14	
9	No Assessment – 4-day week **Tuesday** Skills mastery Assessment 15 **Thursday** Skills mastery Assessment 16	
10	**Tuesday** Skills mastery Assessment 17 **Thursday** Skills mastery Assessment 18	**FORMAL ASSESSMENT 2 – Test (All Topics)**

Exemplar Written Assessment ITEMS with marking memos.

The exemplar items can be used as a diagnostic pre-assessment, but can be used, later in the term, as a post-assessment to monitor learning.

The skills mastery items can be used as a secondary assessment, both to monitor progress in learning skills and mastery of skills. For example, the teacher can select 5 items from the first three Skills Mastery Assessments (a selection from 15 items) and use it for end of week assessments. End-of-week days have been planned for this purpose, as well as for consolidating the learning of the week's content.

- Written assessments are to be done in addition to oral and practical assessment to carry out meaningful continuous assessment throughout the term.
- You need to plan when you will do a written assessment. We suggest you do it at the end-of week.
- The questions provided in the exemplar and Skills Mastery Assessments are taken from past written assessment papers and assessments generally, that were previously in the lesson plans. We suggest you use selected items as smaller written assessment tasks. This aligns better with the curriculum objective of continuous assessment.
- There is one lesson "slot" per week that is assigned for you to catch up or consolidate the lesson plan content covered in the week's lessons. This lesson should also be used for the purpose of carrying out written assessment tasks or to complete oral or practical tasks for that week.

ITEM BANK FOR BASELINE: EXEMPLAR

INSTRUCTIONS TO LEARNERS:

1. Time: 60 minutes.
2. Answer all the questions.
3. Show all your workings.
3. No calculators.

QUESTION 1:

1.1 Arrange the following numbers from smallest to largest:
318 752; 319 052; 318 952; 309 999 (1)

1.2 Complete the number sentence to make the statement true, by filling in <, > or = :
22 101 22 110 (1)

1.3 Give three multiples of 20. (1)

1.4 Write 360 and 450 each as a product of prime factors and then find the HCF and the LCM of 360 and 450. (4)

1.5 Bongani claims that 1 is not a prime number. Is he correct? (1)

[8]

QUESTION 2:

2.1 The ratio of boys to girls at an athletics practice is 4:3.
There are 49 athletes in total at the practice.
How many boys were at the practice? (2)

2.2 The usual price of a heater is R300. There is a 30% discount on all items. How much does the heater cost after the discount? (2)

2.3 Thandi deposits R850 into a bank. The bank will pay a simple interest rate of 8% per year.
How much money will Thandi get when she withdraws all her money after five years? (2)

[6]

QUESTION 3:

Find the value of each of the following:

3.1 $11(2-3)-5\times 2\times 0$ (2)

3.2 $1-(-15)+3\times -6$ (2)

3.3 $-12\times -21+49\div -7$ (2)

3.4 $(3+12)(-5)+(3+12)-5$ (2)

[8]

QUESTION 4:

Evaluate:

4.1 $\sqrt{16+9}$ (1)

4.2 $\sqrt{-16}$ (1)

4.3 $\sqrt[3]{\frac{-64}{27}}$ (1)

4.4 $2^5x^2 \times 2^3(x^4)^2$ (2)

4.5 $(3^4 - 5^2) \div 0$ (1)

4.6 $\frac{9m^4n^2p^0}{-(0,3)^2n^2m^{10}}$ (2)

[8]

QUESTION 5:

Sipho's family has inherited $5{,}24 \times 10^6$ rand from a wealthy uncle.
How much money is this in normal notation? **[1]**

QUESTION 6:

The first three terms of a number sequence are 8; 14; 20

6.1 If the pattern continues in this manner, give the next two terms. (2)

6.2 Work out the rule for the *n-th* term in the pattern. (2)

6.3 Determine the 20th term in the pattern? (1)

6.4 Which term is the number 302 in the pattern? (2)

[7]

SOLUTIONS AND MEMORANDUM

SOLUTIONS	MARKS	COGNITIVE LEVELS
QUESTION 1:		
1.1 309 999; 318 752; 318 952; 319 050 ✓ *order*	(1)	K
1.2 22 101 < 22 110 ✓ *comparison*	(1)	K
1.3 20; 40; 60; … ✓ (any 3 correct multiples)	(1)	K
1.4 $360 = 2 \times 2 \times 2 \times 3 \times 3 \times 5$ ✓ *prime factors*	(1)	RP
$450 = 2 \times 3 \times 3 \times 5 \times 2$ ✓ *prime factors*	(1)	RP
HCF $= 2 \times 3 \times 3 \times 5 = 90$ ✓ *answer*	(1)	RP
LCM $= 2 \times 2 \times 2 \times 3 \times 3 \times 5 \times 2 = 720$ ✓ *answer*	(1)	RP
1.5 Bongani is correct ✓ *conclusion*	(1)	K
QUESTION 2:		
2.1 $4 + 3 = 7$ ✓ *addition*	(2)	CP
$\frac{4}{7} \times 49 =$ boys ✓ *answer*		
2.2 $\frac{30}{100}$ ✓ $\times 300 =$ R300 − R90 = R210 ✓ *calculation and answer*	(2)	CP
2.3 $A = P(1 + i \times n)$	(2)	CP
$A = 850(1 + 8\% \times 5)$		
$= 850\,(1 + 40\%)$		
$= 850\,(1{,}4)$ ✓ *expression*		
= R1 190 ✓ *answer*		

QUESTION 3:		
3.1 $11(2-3)-5\times 2\times 0$ $=11(-1)$ ✓ $-0=-11$ ✓ *simplification and answer*	(2)	RP
3.2 $1-(-15)+3\times -6$ $=1+15-18$ ✓ $=16-18=-2$ ✓ *simplification and answer*	(2)	RP
3.3 $-12\times -21+49\div (-7)$ $=252-7$ ✓ $=245$ ✓ *simplification and answer*	(2)	RP
3.4 $(3+12)(-5)+(3+12)-5$ $=(15)(-5)+15-5$ ✓ $=-75+15-5=-65$ ✓ *simplification and answer*	(2)	RP
QUESTION 4:		
4.1 $\sqrt{16+9}+\sqrt{25}=5$ ✓ *simplification and answer*	(1)	RP
4.2 $\sqrt{-16}$ cannot be simplified. A non-real number. ✓ *answer*	(1) (1)	K K
4.3 $\sqrt[3]{\frac{-64}{27}}=\frac{-4}{3}$ ✓ or $\frac{4}{-3}=-\frac{4}{3}$ ✓ *answer*		
4.4 $2^5x^2\times 2^3(x^4)^2$ $=2^5x^2\times 2^3x^8=2^8x^{10}$ $=256x^{10}$ ✓✓ *simplification and answer*	(2) (1)	RP K
4.5 $(3^4-5^2)\div 0$ - undefined (division by zero) ✓ *reason*	(2)	RP
4.6 $\frac{(9m^4n^2p^0)}{-(0,3)^2n^2m^{10}}=\frac{9m^4n^21}{-0,9n^2m^{10}}=-\frac{900}{0,9m^6}=-\frac{100}{m^6}$ ✓✓ *simplification and answer*		
QUESTION 5: $5,24\times 10^6$ $=5,24\times 1\ 000\ 000$ $=$ R5 240 000 ✓ *answer*	(1)	K
QUESTION 6:		
6.1 26; 32 ✓✓ *one mark for each answer*	(2)	RP
6.2 $T_n=6n+2$ ✓✓ *general term/formula*	(2)	PS
6.3 $T_{20}=6(20)+2=120+2=122$ ✓ *substitution*	(1)	CP
6.4 $6n+2=302$ ✓ *equation* $6n=300$ $n=50$ ✓ *answer*	(2)	CP

SKILLS MASTERY ASSESSMENTS

Rationale

- A Skills Mastery Assessment (SMA) is one in which there is an iterative revisiting of skills, topics, subjects or themes throughout the year.
- SMA is not simply the repetition of a topic taught. It requires the deepening of it, with each successive encounter building on the previous one.
- SMA is critical in today's educational environment, especially in mathematics, where we must consistently give our learners the opportunity to revisit and practice skills they have already learned aimed at mastery.
- The traditional practice is to incorporate consolidating, revising or reviewing, through homework, morning work, small group instruction, and even after school math classes. Through SMA we are going to continuously review skills and concepts with our students.
- It makes sense that we would continue to assess their understanding on those same skills by changing the context of the question using C-P-A-W (Concrete – Pictorial – Abstract -Worded)
- When we first teach and assess a skill, many of our students have yet to master it. By incorporating a SMA activity into your classroom, you are providing your students with the opportunity to demonstrate their growth and understanding on a regular basis.
- These regular SMAs help you see where your students are always struggling. You can use the results to guide your small group instruction and customize your lessons and activities to meet the needs of your students, not just the covering of curriculum.

Implementation

- In every lesson plan there are 10 minutes set aside for consolidation and revision, meaning one could apply SMA every day for 10 minutes, before teaching a new concept for that day.
- Each SMA is using a five-item design to ensure teachers can complete it in 10 minutes.
- As a minimum, this Planner and Tracker, recommends the use of Tuesdays and Fridays, but teachers could use every day.
- Each Tuesday and Thursday you are encouraged to take 10 minutes and give a SMA to the whole class, or groups. Learners should be able to take about 5 minutes to complete – then the teacher must remediate by addressing errors, misconceptions and misunderstandings.
- Teachers could also use the data from the SMA to help plan small group lessons for the next week.
- Teachers could also pull different students for different skills until the teacher felt confident that the learners were more confident in their responses. Then next week, repeat….new set of SMAs, similar skills being assessed, new data for small group instruction.
- These daily SMAs should be seen as a progress monitoring tool as well. This will prove to be effective in letting teachers know how their most struggling students are progressing.

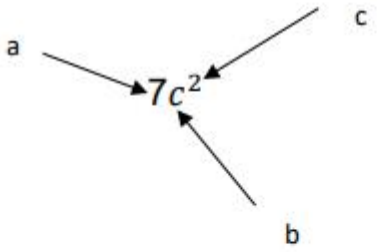
SKILLS MASTERY SKILLS PER 5 – ITEM ASSESSMENTS

SM Assessment 1	True or false – interior angles of triangle Integer properties Properties of exponents Changes in mean, median, mode and range Identify arithmetic and geometric sequences Integer addition and subtraction rules
SM Assessment 2	Rounding off Changing from words to numbers Write an integer to represent each description Calculating exponents Identify the number sentence – find the value of *x*
SM Assessment 3	Describe the pattern by giving the rule and extend it by three terms Determine the *nth* term using a table Understanding what a term/coefficient/variable is in the algebraic expression
SM Assessment 4	Measure angles using a protractor Convert between percent's, fractions and decimals Additive inverse numbers Integer addition and subtraction rules Add and subtract integers using counters
SM Assessment 5	Identify the variable and constant in a algebraic expression Write an equation from a word sum Order integers in ascending order Bigger, smaller or equal – integers Graph integers on horizontal and vertical number lines
SM Assessment 6	Exponents with decimal and fractional bases Substitute variables in an equation Calculate integers Number line
SM Assessment 7	Add and subtract decimals Substitution of a variables in a sum Find the solution to an algebraic expression Find the measurement of an angle
SM Assessment 8	Number patterns – find the tenth value in the sequence Solve an equation Prime factorisation Word sum - Divisibility rules Like terms
SM Assessment 9	Ratio Complete multiplication and division sentences with integers Compare equation and expression Find the rule of a pattern Identify properties of a polygon
SM Assessment 10	Properties of a quadrilateral Identify the type of transformation Flow diagram – algebraic expression Identify a number sentence that describes the problem shown on the number line Find the equivalence of an expression

SM Assessment 11	**Solve for x** **Identify numbers on a number line** **Properties of angles on a given diagram**
SM Assessment 12	**Substitution – in a variable** **Find the distance of the circumference of a circle** **Percentage – Calculate which percentage is the smallest** **Word sum** **Mean, median, mode and range: find the missing number**
SM Assessment 13	**Draw the number of dots in a table given the pattern number** **Adding decimals** **Flow Diagram** **What is the value of x in the sum**
SM Assessment 14	**Word problems: Multiplication** **Calculating simple interest** **Study the patterns in the geometric patterns** **Flow diagram: algebraic expression**
SM Assessment 15	**Determine the numerical values in the pattern given** **Consolidating factors of numbers** **Determine the lowest common multiple** **Calculate the HFC of two numbers using factorization** **Calculate simple interest**
SM Assessment 16	**Multiply exponents** **Calculate positive and negative exponents in a number sentence** **Word problem: Money and percentage** **Identify Prime numbers** **Identify prime numbers by calculating multiplication sums**
SM Assessment 17	**Word problem** **Calculating integers** **Multiplying integers** **Subtracting square roots**
SM Assessment 18	**Word problem: Time – calculating temperature and date** **Common fractions/percentages and decimals** **Convert mixed fractions to improper fractions** **Write down the rule in algebraic form** **Illustrate the next pattern**
SM Assessment 19	**Dividing integers** **Substitution** **Scientific notation**
SM Assessment 20	**Multiplying exponents** **Word problem: Unit of measurement** **Does the pattern have a constant difference or ratio?** **Determine the rule**

SKILLS MASTERY EXEMPLARS

Skills Mastery (SM) Assessment 1

Number	Assessment
1.	Are the following true or false? The sum of the interior angles of a triangle is 360°. Opposite sides of a kite are equal. Negative ÷ Negative = Positive.
2.	Label the diagram 
3.	Simplify the following. Show ALL your working out. a) (12 + 7) – (2 – 23) b) 8 x 5 ÷ (4 – 14)
4.	12; 13; 6; 11; 9; 12; 13; 10; 13 Use the above information to determine the following: a) Range b) Median c) Mode d) Mean
5.	Find the next term in the following number sequence: a) 5; 25; 125; 625; _____ b) 1122; 1095; 1068; 1041; ____

SM Assessment 2

Number Assessment

1. Round 3479,985 off to:
   a) Nearest tenth
   b) Nearest hundred

2. Nineteen million two hundred and eight thousand and six – in digits.
   a) 19 280 006
   b) 19 208 006
   c) 19 028 060
   d) 19 208 600

3. **Write an integer to represent each description.**

   Eight units to the left of –3 on a number line. _____

   Eight units to the right of –3 on a number line. _____

4. Write the answers of the following exponents:

   3^2 = _____

   7^2 = _____

5. Find the value of x in the following:

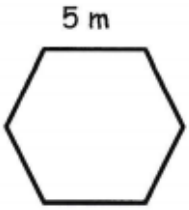
   $x \div 4 = 36 \div 3$

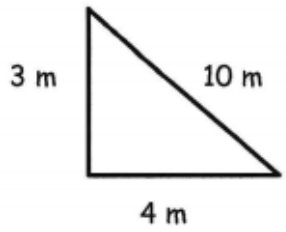
   x = _____

SM Assessment 4

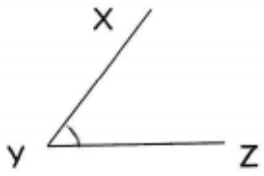
Number Assessment

1. Calculate the perimeter of the Hexagon and the area of the triangle below:





2. Use your protractor to measure the angles given below:



$X\hat{Y}Z =$ _____

3.

Common fraction	Decimal fraction	Percentage	Out of 100
$\frac{1}{2}$		50%	$\frac{50}{100}$
	0,75		$\frac{75}{100}$
$\frac{9}{10}$	0,9	90%	

4. Fill in the additive inverse for the following numbers:

-6 additive inverse : _____

7 additive inverse : _____

5. -14 – (-10) + 17

SM Assessment 5

Number Assessment

1. Identify the variable and constant of the algebraic expressions below:

Algebraic expression	Variable	Constant
b + 12		
$3b + \frac{1}{4}$		

2. Write an equation (number sentence) for each of the following.

A certain number multiplied by two then three is added to get 13.

3. **Order these integers from smallest to biggest.**

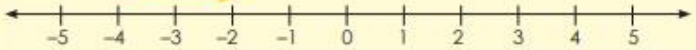
–5, –51, 21, –61, 42, –66, 5, 39, –31, –71, 31, 66

4. **Fill in <, > or =**

–2 ☐ 2

–4 ☐ –3

5. **Example:** –4 + 2 = –2



a. –5 + 5 =

SM Assessment 6

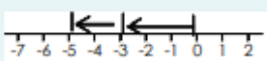
Number Assessment

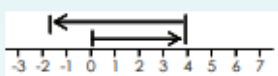
1. $10 - \frac{3^3}{3}$

2. $q + 7 + b$, when $q = 1$ and $b = 4$

3. $(-8) + \_\_\_\_\_ + 5 = -2$

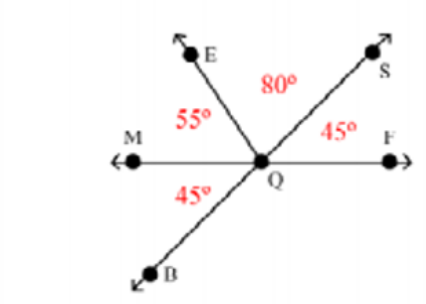
4. **Write sums for the following.**

a. 

b. 

5. a. 7 – (–31) =

SM ASSESSMENT 7

Number	Assessment
1.	-0.4 × 0.3 = _____
2.	a. $(a + b) + c = a + (b + c)$ If: $a = 4$ $b = -5$ $c = 3$
3.	Which of the following is a solution of $29 = k - 9$? 20 48 39 38 a. 38 c. 20 b. 39 d. 48
4.	Which of the following is a solution of $29 = k - 9$? 20 48 39 38 a. 38 c. 20 b. 39 d. 48
5.	 **Figure 7-5** What is the measure of $\angle BQE$ in Figure 7-5? a. 55° c. 180° b. 100° d. 125°

SM Assessment 8

Number Assessment

1. **What will the value of the tenth pattern be?**

Position in the sequence	1	2	3	4		10
Term	1	3	7	15		

2. **1. Solve for *m* and *n*.**

a. $x = 3y - 1$

y	2	4	6	n	10	20
x				23		m

3. 252 can be expressed as a product of primes as :

(a) $2 \times 2 \times 3 \times 3 \times 7$ (b) $2 \times 2 \times 2 \times 3 \times 7$

(c) $3 \times 3 \times 3 \times 3 \times 7$ (d) $2 \times 3 \times 3 \times 3 \times 7$

4. A number n is said to be perfect if the sum of all its divisors (excluding n itself) is equal to n. An example of perfect number is :

(a) 6 (b) 9 (c) 15 (d) 21

5. Collect like terms : $8y - 4 + 2 - y$.

(a) $7y^2 - 2$ (b) $9y - 2$ (c) $7y - 2$ (d) $9y - 6$

SM Assessment 9

Number Assessment

1. A ratio is a comparision of two numbers by _____.

   (a) addition (b) subtraction

   (c) multiplication (d) division

2. The value of (10 ÷ 2) + (20 ÷ 4) + (40 ÷ 8) = 60 ÷ _____

   (a) 15 (b) 12 (c) 5 (d) 4

3. **Say whether it is an expression or an equation.**

   a. –4 + 8 b. –9 + 7 = –2 c. –5 + 10

4. **1. Describe the following in words:**

   Example: –4, –8, –12, –16, –20, ...
   subtracting 4 from the previous term.

   a. 9; 6; 3; 0; –3; ... b. 4; 10; 16; 22; 28; ... c. 7; 14; 21; 28; 35; ...

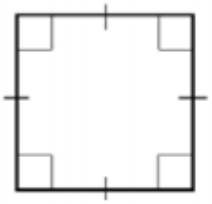
5. Determine whether the figure is a polygon.

   a. No
   b. Yes

SM Assessment 10

Number Assessment

1. Give all of the names that apply to the quadrilateral.

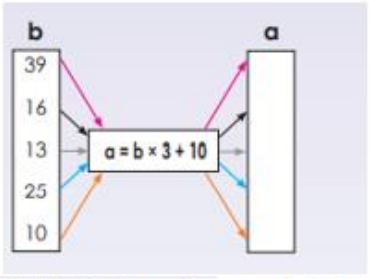


a. Parallelogram; rhombus
b. Parallelogram; rectangle
c. Parallelogram; rhombus; rectangle; square
d. Parallelogram; square

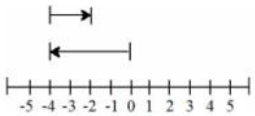
2. Identify the type of transformation.

a. Reflection
b. Translation
c. Rotation

3.



4. Which of the following number sentence below best describes the problem shown on the number line?



(a) −2 + (−4) (b) −5 + 3 (c) 5 +(−3) (d) −4 + 2

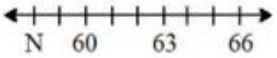
5. Which one of the following is equivalent to the expression given below? $(2^5)\,(2^6)$

(a) 2^{11} (b) 2^{30} (c) 4^{11} (d) 4^{30}

SM Assessment 11

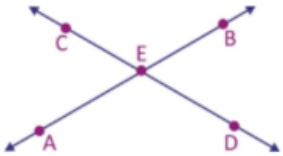
Number	Assessment
1.	**Solve for x.** a. $-2x-5=15$

2. The letter N represents which number?



(a) 58 (b) 59 (c) 61 (d) 62

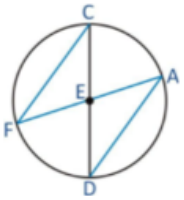
3. Angle AED and angle CEB are an example of _____ .



(a) Adjacent angle (b) Supplementary Angles

(c) Alternate Interior Angles (d) Vertically opposite angles

4. Which of the following statements about the circle is TRUE?



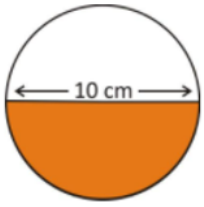
(a) AD and CF are chords.

(b) AD and CF are both, chords and diameter.

(c) CD and AF are radii.

(d) EC and ED are chords.

5. Calculate the area of the shaded portion.



(a) 31.4 cm^2 (b) 39.25 cm^2 (c) 48.25 cm^2 (d) 78.5 cm^2

SM Assessment 12

Number	Assessment
1.	**Substitute and calculate.** a. $y = x^2 + \frac{2}{x}$; $x = -4$
2.	What is the distance along the circumference of a part of a circle known as? (a) Diameter (b) Tangent (c) Arc (d) radius
3.	Which of the following value is the smallest? (a) 25% of 100 (b) 50% of 100 (c) $\frac{1}{2}$ of 100 (d) $\frac{3}{4}$ of 100
4.	ACD rotates in a CD player at about 350 revolutions per minute. How many revolutions would CD have made after 1 hours? (a) 2100 (b) 21000 (c) 350 (d) 210000
5.	**1. Use the data set below and calculate the range, the mean, the median and the mode:** 3, 13, 7, 5, 21, 23, 39, 23, 40, 23, 14, 12, 56, 23, 29 a. The range b. The mean c. The median d. The mode

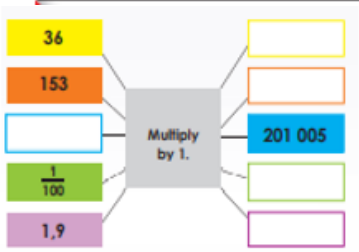
SM Assessment 13

Number Assessment

1. Complete the table.

Pattern Number	1	2	3	4	5		8	10	12	22
Number of dots										

2. a. 6,89 + 3,67 =

3. 

4. **What is the value of ✘ :**

a. ✘ + 19 = 19 + 5 ✘ = _____

b. 8 × 25 = ✘ × 8 ✘ = _____

5. **Add the following.**

a. $\frac{3}{6} + \frac{2}{6} =$ b. $\frac{3}{10} + \frac{5}{10} =$

SM Assessment 14

Number Assessment

1. A recipe for 20 rolls requires/needs 5 tablespoons of butter. How many tablespoons of butter are needed for 30 rolls?

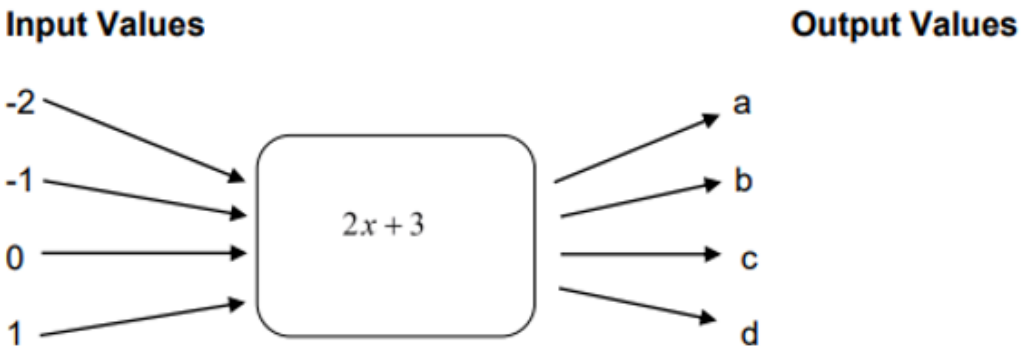
2. Calculate the amount that will be in the bank after 5 years if R4 700 is invested at 5% p.a. simple interest.

3. Study the patterns below and answer the questions that follow.

Pattern 1 Pattern 2 Pattern 3

4. Aisha is three years older than Mpho. Together their ages add up to 17 years. How old is Aisha.

5. Study the flow diagram and answer the questions that follow.



SM Assessment 15

Number Assessment

1. Determine the numerical values of the output values. Write the values in the table below.

x	-2	-1	0	1
y	a	b	c	d

2. a. Factors of 24 and 32

3. **Determine the lowest common multiple.**

Example: Multiples of 4: {4, 8, 12, 16, 20} LCM is 20 Multiples of 5: {5, 10, 15, 20}

a. Multiples of 8: {...}

Multiples of 5: {...}

4. **Calculate the HCF of two numbers using factorisation or inspection.**

Example: Factors of 192 and 216

192	2
96	2
48	2
24	2
12	2
6	2
3	3
1	

216	2
108	2
54	2
27	3
9	3
3	3
1	

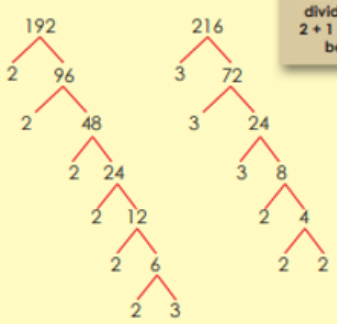
192 = 2 × 2 × 2 × 2 × 2 × 2 × 3

216 = 2 × 2 × 2 × 3 × 3 × 3

Common factors are = 2, 2, 2, 3

HCF = 2 × 2 × 2 × 3 = **24**

Factor trees



I know that 216 can be divided by 3 because 2 + 1 + 6 = 9, and 9 can be divided by 3.

a. 72 and 188

5. On 1 June Sipho opened a savings account at the Postbank that paid 4.5% interest. He deposited R600. Ten days later on 10 June he deposited R1 000. Five days later on 15 June he deposited R500. No other deposits or withdrawals were made. Fifteen days later, at the end of the month, the bank calculated the daily interest.

a. How much simple interest (calculated to the nearest cent) did he earn?

SM Assessment 16

Number Assessment

1.

1.1	$(4^3)^2$	$= 4^3 \times 4^3$	$= 4^6$
1.2	$(6^2)^4$	$= 6^2 \times 6^2 \times 6^2 \times 6^2$	$= 6^8$
1.3	$(10^5)^2$	$= 10^5 \times 10^5$	$= 10^{10}$

Compare these columns

A shorter way to "raise a power to another power", is to **multiply the exponents.**

Write each of the following using one exponent only:

3.1 $(7^2)^4$ **3.2** $(5^3)^5$ **3.3** $(2^6)^3$

2. Say whether the following are True or False. If false, write a correct statement.

$(-2)^2 + 4^2 + 8^1 = 28$ **1.2.2** $-4^3 - 3^2 + 12 = -61$

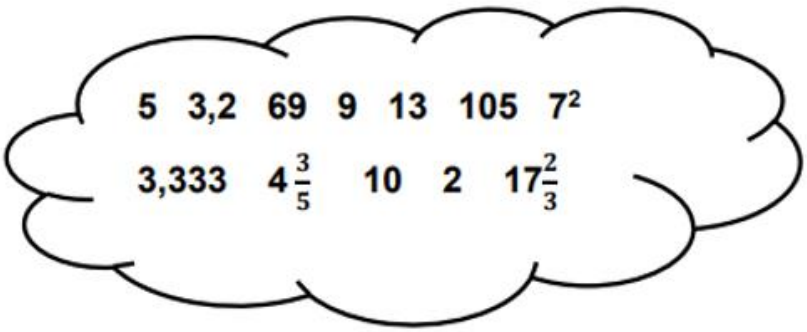
3. Each tile costs the builder R45,00 and he allows for a 20% mark-up per tile. He charges R25,00 per tile to lay them.

5.4.1 How much do the tiles cost the builder for each sized patio?

5.4.2 How much profit does he make on the tiles for each of the three patios?

5.4.3 How much do home owners pay to have each patio built?

4. Which numbers in the cloud below are Prime numbers?



5. Which of the multiplications below will give a prime number?
Give a reason for your answers.

4.3.1 2×7 **4.3.2** 1×11 **4.3.3** 6×7 **4.3.4** 20×1
4.3.5 1×19 **4.3.6** 13×3 **4.3.7** 3×1 **4.3.8** 99×1

SM Assessment 17

Number Assessment

1. Sibusiso takes a three-part "iron man" endurance test. In Part 1 he loses 22 points. In Part 2 he gains 29 points, and in Part 3 he gains five points. What is Sibusiso's score on the endurance test?

2. Write each of the following in a shorter way and then calculate the answer.

9×9

$(-20) \times (-20)$

3. Complete the table below by following the pattern already started:

Multiply	−5	−4	−3	−2	−1	0	1	2	3	4	5
5						0	5	10	15	20	25
4						0	4	8			
3						0	3	6			
2						0	2	4			

4. $\sqrt{25} - \sqrt{25}$

5. $-3 \times -3 \times -3$

SM Assessment 18

Number Assessment

1. The temperature at a certain place at midday on August 3 was five degrees Celsius. By 4am on August 4 it had fallen 12°, rising by midday on the same day by 14 degrees. The temperature recorded at 2am on August 5 was nine degrees below that for midday on the August 4. What was the temperature at 2am on August 5?

2. Complete the following table by filling in the correct missing values:

Common fraction in Simplest Form	Percentage	Decimal (round to 3 decimal places where necessary)
$\frac{1}{3}$		
	6.25%	
		1,18

3. Convert these mixed number fractions to improper fractions:

$2\frac{19}{25}$

$3\frac{1}{3}$

4. Fill in the missing values in these tables and write down the rule in algebraic form after completing the table.

x	1	2	3	?	8	?	15
y	11	20	29	56	?	101	?

5. For each of the patterns below, continue the pattern by drawing in the next two terms in the pattern and then write down a rule in words for the pattern.

SM Assessment 19

Number Assessment

1. $(+84) \div (+7)$

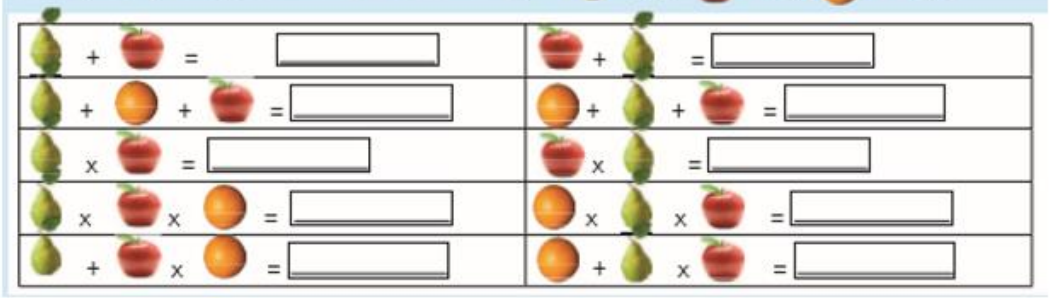
   $(-84) \div (+7)$

2. **If a = 200, b = 40, c = 1 200, complete and calculate the sums.**

   a. a + b = b + a _____

   b. a × b = b × a _____

3. **How quickly can you answer the following?** = 10 =100 = 1 000



4. **Choose the correct answer.**

   a. 1 000 000 + 50 000 = a + 1 000 000
      i. a = 1 000 000
      ii. a = 50 000
      iii. a = 5 000

5. **Use your calculator to do the following:**

   $5{,}417 \times 10^1 =$

   $5{,}417 \times 10^4 =$

SM Assessment 20

Number Assessment

1. Write out the value of each of the following in full:

2×10^7

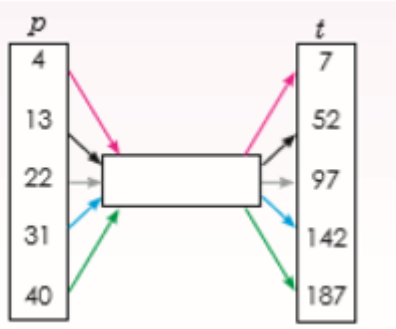
4×10^6

2. A submarine commander gave the following orders, which started when the boat was on the surface "down 24m, up 13m, down 19m, up 6m, down 12m". If the sea was 40m deep at that place, how far from the sea-bed was the submarine after the last order was carried out?

3. **Does this pattern have a constant difference or ratio or neither?**

a. 1, 4, 10, 19 ☐ b. 2, 4, 8, 16 ☐

4.



5. e. $\frac{4x}{6} = 12$