

GRADE 9 SCHEMES OF WORK

MATHEMATICS

This scheme of work presents a systematic and organized plan outlining the objectives, content, teaching methods, resources, and assessments for this subject in this grade as designed by Mwalimu Consultancy professionals. It's a roadmap for teachers, offering a detailed overview of what needs to be covered throughout the academic year. This is a component for effective delivery of the CBC curriculum and attainment of educational objectives.

TERM 1 WORK

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MWALIMU CONSULTANCY

GRADE 9 RATIONALISED MATHEMATICS SCHEMES OF WORK – MENTOR

TEACHERS NAME..... SCHOOL..... YEAR.....

Wk	LSN	strand	Sub-strand	Specific Learning Outcomes	Key Inquiry Question(s)	Learning Experiences	Learning Resources	Assessment Methods	Refl
1	1	NUMBERS	Integers	By the end of the lesson, the learner should be able to: a) perform addition of Integers in different situations, b) work out addition of Integers in different situations, c) appreciate the use of integers in real-life situations.	1. How do we	The learner is guided to:	Number lines, games	Written test	
			Addition of		carry out	• discuss with peers and work out basic	on charts, number	QA	
			integers		operations of	operations on integers using number	cards,	Homework	
					integers in	cards and charts,	Mentor Maths Grd 9	Class activities	
					real-life	• play games involving numbers and	T.G Pg.1-2	Rubrics	
					situations?	operations by picking integers and	Mentor Maths Grd 9		
					2. How do we	performing all basic operations,	P.B Pg.1-2		
					apply integers				
					in daily				
					activities?				
	2	NUMBERS	Subtraction	By the end of the lesson, the learner should be able to: a) perform Subtraction of Integers in different situations, b) work out subtraction of Integers in different situations, c) appreciate the use	1. How do we	The learner is guided to:	Number lines, games	Written test	
			of integers		carry out	• discuss with peers and work out basic	on charts, number	QA	
					operations of	operations on integers using number	cards,	Homework	
					integers in	cards and charts,	Mentor Maths Grd 9	Class activities	
					real-life	• play games involving numbers and	T.G Pg.2-3	Rubrics	
					situations?	operations by picking integers and	Mentor Maths Grd 9		
					2. How do we	performing all basic operations,	P.B Pg.2-3		

				of integers in real-life situations.	apply integers in daily activities?				
	3	NUMBERS	Multiplication of integers	By the end of the lesson, the learner should be able to:	1. How do we carry out operations of integers in real-life situations?	The learner is guided to:	Number lines, games on charts, number cards,	Written test QA Homework	
				a) perform multiplication of Integers in different situations,		• discuss with peers and work out basic operations on integers using number cards and charts,	Mentor Maths Grd 9	Class activities	
				b) work out multiplication of Integers in different situations,		• play games involving numbers and operations by picking integers and performing all basic operations,	T.G Pg.3	Rubrics	
				c) appreciate the use of integers in real-life situations.			Mentor Maths Grd 9		
							P.B Pg.3-4		

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	4	NUMBERS	Division on integers	By the end of the lesson, the learner should be able to: a) perform division of Integers in different situations, d) work out division of Integers in different situations, e) appreciate the use of integers in real-life situations.	How do we carry out operations of integers in real-life situations?	The learner is guided to: • discuss with peers and work out basic operations on integers using number cards and charts, • play games involving numbers and operations by picking integers and performing all basic operations,	Number lines, games on charts, number cards, Mentor Maths Grd 9 T.G Pg.4 Mentor Maths Grd 9 P.B Pg.5-6	Written test QA Homework Class activities Rubrics	

	5	NUMBERS	Combined operation of integers	By the end of the lesson, the learner should be able to: b) work out combined operations on Integers in different situations, c) apply Integers to real life situations, d) appreciate the use of integers in real-life situations.	How do we carry out operations of integers in real-life situations?	The learner is guided to: • work out combined operations of integers in the correct order,	Number lines, games on charts, number cards, Mentor Maths Grd 9 T.G Pg.5-6 Mentor Maths Grd 9 P.B Pg.6-7	Written test QA Homework Class activities Rubrics	
2	1	NUMBERS	Combined operation of integers	By the end of the lesson, the learner should be able to: a) work out combined operations on Integers in different situations, b) apply Integers to real life situations, c) appreciate the use of integers in real-life situations.	1. How do we carry out operations of integers in real-life situations? 2. How do we apply integers in daily activities?	The learner is guided to: • carry out activities such as reading temperature changes in a thermometer and discussing with peers how to record it. Consider temperatures below zero points and consider cases of use of integers in real life, • play creative games that involve integers.	Number lines, games on charts, number cards, Mentor Maths Grd 9 T.G Pg.5-6 Mentor Maths Grd 9 P.B Pg.6-7	Written test QA Homework Class activities Rubrics	
	2	Cubes and cube roots	Cubes of numbers by multiplication	By the end of the lesson, the learner should be able to: a) Explain how to obtain cubes of numbers by multiplication. b) work out cubes of numbers by multiplication in real-life situations, c) apply cubes in real-life situations.	How do we work out the cubes of numbers?	The learner is guided to: • use stacks of cubes to demonstrate the concept of cube and cube roots, • demonstrate stacking of cubes,	Multiplication, cubes, and cube root tables. Mentor Maths Grd 9 T.G Pg.7-8 Mentor Maths Grd 9 P.B Pg.9-10	Written test QA Homework Class activities Rubrics	

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	3	Cubes and cube roots	Cubes of numbers from mathematical tables	By the end of the lesson, the learner should be able to: a) Explain how to obtain cubes of numbers from mathematical tables. b) determine cubes of numbers from mathematical tables in different situations, c) apply cubes in real-life situations.	How do we work out the cubes of numbers?	The learner is guided to: • use stacks of cubes to demonstrate the concept of cube and cube roots, • demonstrate stacking of cubes,	Multiplication, cubes, and cube root tables. Mentor Maths Grd 9 T.G Pg.8-10 Mentor Maths Grd 9 P.B Pg.11-12	Written test QA Homework Class activities Rubrics	
	4	Cubes and cube roots	Cubes of numbers from calculator	By the end of the lesson, the learner should be able to: a) Explain how to obtain cubes of numbers from a calculator. b) determine cubes of numbers from a calculator in different situations, c) apply cubes in real-life situations.	How do we work out the cubes of numbers?	The learner is guided to: • use stacks of cubes to demonstrate the concept of cube and cube roots, • demonstrate stacking of cubes,	Multiplication, cubes, and cube root tables. Mentor Maths Grd 9 T.G Pg.9-10 Mentor Maths Grd 9 P.B Pg.13-14	Written test QA Homework Class activities Rubrics	
	5	Cubes and cube roots	Cube roots of numbers by factor method	By the end of the lesson, the learner should be able to: a) Explain how to obtain cube roots of numbers by factor method. b) determine cube roots of numbers by factor method in different situations, c) apply cubes and cube roots in real-life situations.	How do we work out the cube roots of numbers?	The learner is guided to: • discuss the volume of a cube, determine both the cube and cube root, and relate the two,	Multiplication, cubes, and cube root tables. Mentor Maths Grd 9 T.G Pg.10 Mentor Maths Grd 9 P.B Pg.14-16	Written test QA Homework Class activities Rubrics	

3	1	Cubes and cube roots	Cube roots of numbers from mathematical tables	By the end of the lesson, the learner should be able to: a) Explain how to obtain cube roots of numbers from mathematical tables. b) determine cube roots of numbers from mathematical tables in different situations, c) apply cubes and cube roots in real-life situations.	How do we work out the cube roots of numbers?	The learner is guided to: • discuss the volume of a cube, determine both the cube and cube root, and relate the two,	Multiplication, cubes, and cube root tables. Mentor Maths Grd 9 T.G Pg.11-12 Mentor Maths Grd 9 P.B Pg.16-17	Written test QA Homework Class activities Rubrics	
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	2	Cubes and cube roots	Cube roots of numbers using a calculator	By the end of the lesson, the learner should be able to: a) Explain how to obtain cube roots of numbers using a calculator. b) determine cube and cube roots of numbers using a calculator, c) apply cubes and cube roots in real-life situations.	Where do we apply cubes and cube roots in real life situations?	The learner is guided to: • read the cube of numbers from mathematical tables and relate it to cube roots, • use calculators to work out cube and cube roots of numbers.	Multiplication, cubes, and cube root tables. Mentor Maths Grd 9 T.G Pg.12-13 Mentor Maths Grd 9 P.B Pg.18	Written test QA Homework Class activities Rubrics	
	3	Indices and Logarithms	Expressing in index form	By the end of the lesson, the learner should be able to: a) Identify the base. b) express numbers in index form in different situations, c) appreciate the use of indices and logarithms in real-life situations.	How do we express numbers in powers?	The learner is guided to: • discuss indices and identify the base,	Mathematical tables Calculators. Mentor Maths Grd 9 T.G Pg.14-15 Mentor Maths Grd 9 P.B Pg.20-021	Written test QA Homework Class activities Rubrics	

	4	Indices and Logarithms	Law s of indi ces	By the end of the lesson, the learner should be able to: a) state the different laws of indices. b) generate the laws of Indices in different situations, c) appreciate the use of indices and logarithms in real-life situations.	How do we express numbers in powers?	The learner is guided to: • discuss indices and identify the base,	Mathematical tables Calculators. Mentor Maths Grd 9 T.G Pg.15-17 Mentor Maths Grd 9 P.B Pg.21-26	Written test QA Homework Class activities Rubrics	
	5	Indices and Logarithms	Law s of indi ces	By the end of the lesson, the learner should be able to: a) list the laws of indices b) apply the laws of indices in different situations, c) appreciate the use of indices and logarithms in real-life situations.	How do we express numbers in powers?	The learner is guided to: • show the laws of indices using multiplication and division,	Mathematical tables Calculators. Mentor Maths Grd 9 T.G Pg.15-17 Mentor Maths Grd 9 P.B Pg.21-26	Written test QA Homework Class activities Rubrics	

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4	1	Indices and Logarithms	La ws of in dic es	By the end of the lesson, the learner should be able to: a) list the laws of indices b) apply the laws of indices in different situations, c) appreciate the use of indices and logarithms in real-life situations.	How do we express numbers in powers?	The learner is guided to: • show the laws of indices using multiplication and division, • use the laws of indices to work out indices,	Mathematical tables Calculators. Mentor Maths Grd 9 T.G Pg.15-17 Mentor Maths Grd 9 P.B Pg.21-26	Written test QA Homework Class activities Rubrics	

	2	Indices and Logarithms	Relating the powers of 10 to common logarithms	By the end of the lesson, the learner should be able to: a) Discuss the powers of 10 to common algorithms. b) relate powers of 10 to common logarithms in different situations, c) appreciate the use of indices and logarithms in real-life situations.	How do we express numbers in powers?	The learner is guided to: • discuss and relate powers of 10 to common logarithms, • use IT to work out common logarithms or use mathematical tables.	Mathematical tables Calculators. Mentor Maths Grd 9 T.G Pg.18-19 Mentor Maths Grd 9 P.B Pg.27-28	Written test QA Homework Class activities Rubrics	
	3	Indices and Logarithms	Relating the powers of 10 to common logarithms	By the end of the lesson, the learner should be able to: a) Discuss the powers of 10 to common algorithms. b) relate powers of 10 to common logarithms in different situations, c) appreciate the use of indices and logarithms in real-life situations.	How do we express numbers in powers?	The learner is guided to: • discuss and relate powers of 10 to common logarithms, • use IT to work out common logarithms or use mathematical tables.	Mathematical tables Calculators. Mentor Maths Grd 9 T.G Pg.18-19 Mentor Maths Grd 9 P.B Pg.27-28	Written test QA Homework Class activities Rubrics	
	4	Compound Proportions and Rates of Work	Dividing quantities into proportions	By the end of the lesson, the learner should be able to: a) define the term proportions. b) divide quantities into proportional parts in real-life situations, c) appreciate the use of compound proportions and rates of work in real-life situations.	1. What are proportions? 2. Why do we work fast?	The learner is guided to: • discuss and divide quantities into proportional parts and express them as a fraction,	Digital clocks Mentor Maths Grd 9 T.G Pg.20 Mentor Maths Grd 9 P.B Pg.30-32	Written test QA Homework Class activities Rubrics	

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	5	Compound Proportions and Rates of Work	Dividing quantities into proportion parts	By the end of the lesson, the learner should be able to: a) Discuss how to divide quantities into proportional parts b) divide quantities into proportional parts and express them as a fraction c) appreciate the use of compound proportions and rates of work in real-life situations.	1. What are proportions? 2. Why do we work fast?	The learner is guided to: • discuss and divide quantities into proportional parts and express them as a fraction,	Digital clocks Mentor Maths Grd 9 T.G Pg.20 Mentor Maths Grd 9 P.B Pg.30-32	Written test QA Homework Class activities Rubrics	
5	1	Compound Proportions and Rates of Work	Dividing quantities into proportion parts	By the end of the lesson, the learner should be able to: a) Discuss how to divide quantities into proportional parts b) divide quantities into proportional parts in daily life. c) appreciate the use of compound proportions and rates of work in real-life situations.	1. What are proportions? 2. Why do we work fast?	The learner is guided to: • discuss and divide quantities into proportional parts and express them as a fraction,	Digital clocks Mentor Maths Grd 9 T.G Pg.20 Mentor Maths Grd 9 P.B Pg.30-32	Written test QA Homework Class activities Rubrics	
	2	Compound Proportions and Rates of Work	Relating different ratios	By the end of the lesson, the learner should be able to: a) Define the term ratio. b) relate different proportional parts in real-life situations, c) appreciate the use of compound proportions and rates of work in real-life situations.	1. What are proportions? 2. Why do we work fast?	The learner is guided to: • compare and write different ratios,	Digital clocks Mentor Maths Grd 9 T.G Pg.21-22 Mentor Maths Grd 9 P.B Pg.31-33	Written test QA Homework Class activities Rubrics	

	3	Compound Proportions and Rates of Work	Relating different ratios	By the end of the lesson, the learner should be able to: a) discuss how to compare different ratios. b) Compare different ratios in real life. c) appreciate the use of compound proportions and rates of work in real-life situations.	1. What are proportions? 2. Why do we work fast?	The learner is guided to: • compare and write different ratios,	Digital clocks Mentor Maths Grd 9 T.G Pg.21-22 Mentor Maths Grd 9 P.B Pg.31-33	Written test QA Homework Class activities Rubrics	
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	4	Compound Proportions and Rates of Work	Relating different ratios	By the end of the lesson, the learner should be able to: a) Describe how to write different ratios. b) Write down different ratios. c) appreciate the use of compound proportions and rates of work in real-life situations.	1. What are proportions? 2. Why do we work fast?	The learner is guided to: • compare and write different ratios,	Digital clocks Mentor Maths Grd 9 T.G Pg.21-22 Mentor Maths Grd 9 P.B Pg.31-33	Written test QA Homework Class activities Rubrics	
	5	Compound Proportions and Rates of Work	Compound proportions	By the end of the lesson, the learner should be able to: a) explain the meaning of compound proportions b) work out compound proportions using the ratio method in different situations, c) appreciate the use of compound proportions and rates of work in real-life situations.	1. What are proportions? 2. Why do we work fast?	The learner is guided to: • determine compound proportions using ratios,	Digital clocks Mentor Maths Grd 9 T.G Pg.22-23 Mentor Maths Grd 9 P.B Pg.33-35	Written test QA Homework Class activities Rubrics	

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