FAYOL INC. 0547824419/0549566881

FIRST TERM WEEKLY LESSON PLAN – B7

WEEK 1

Date:	**Period:**	**Subject:** Mathematics	
Duration:		**Strand:** Number	
Class: B7	**Class Size:**	**Sub Strand:** Numeration Systems	
Content Standard: B7.1.1.1 Demonstrate understanding and the use of place value for expressing quantities recorded as base ten numerals as well as rounding to a given decimal place and significant figures.	**Indicator:** B7.1.1.1.1 Model number quantities more than 1,000,000,000	**Lesson:** 1 of 5	
Performance Indicator: Learners can use names to count numbers up to 1,000,000,000		**Core Competencies:** CP, CC	
References: Mathematics Curriculum Pg.2			
Keywords: denomination, combination			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Recap with learners to count forward and backwards, read and write number names of number quantities and vice versa, addition and subtraction of numbers. Share with learners the performance indicators.	
PHASE 2: **NEW LEARNING**	Guide learners to form numbers with given multi-base ten materials, given that a small cube is 1,000; 10 small cubes is a rod (i.e. 10,000), 10 rods is a flat (i.e. 100,000); and 10 flats is a block (i.e. 1000,000) Learners to use multiples of 10s, 50s, 100s and 200s to represent numbers in multiples of ways E.g. 5,560 = 20×200 + 10×100 +11×50 + 1×10; or 5,560 = 15×200 + 20×100 +10×50 + 6×10; etc. Let learners use tokens (or paper-made currency notes) such as GH₵20, GH₵50, GH₵100 and GH₵200 to work out how many of each denomination would be required to model given amount up to one billion. i. *Workout how many GH₵200 will make GH₵185, 000,000, GH₵1,890,750,000, etc.*	Counters, bundle and loose straws base ten cut square, Bundle of sticks

	ii. *Determine combinations of GH₵50, GH₵100 or GH₵200 notes that make GH₵1,000,000 (make sure each denomination is used* <u>Assessment</u> 1. Model the following numbers with multi-base ten materials or graph sheet: a. 150,000 b. 485,000 2. Write these numbers using words a) 3,500 b) 17,100 c) 54,400	
PHASE 3: **REFLECTOIN**	Engage learners to summarize the lesson outcomes. Ask learners how the lesson will benefit them in their daily lives.	

Date:	**Period:**	**Subject:** Mathematics	
Duration:		**Strand:** Number	
Class: B7	**Class Size:**	**Sub Strand:** Numeration Systems	
Content Standard: B7.1.1.1 Demonstrate understanding and the use of place value for expressing quantities recorded as base ten numerals as well as rounding to a given decimal place and significant figures.	**Indicator:** B7.1.1.2 Compare and order whole numbers more than 1,000,000,000 and represent the comparison using ">, <, or="	**Lesson:** 2 of 5	
Performance Indicator: Learners can use <, > and = to compare numbers up to 1,000,000,000		**Core Competencies:** CP, CC	
References: Mathematics Curriculum Pg.2			
Keywords:			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Recap with learners to count forward and backwards, read and write number names of number quantities and vice versa, addition and subtraction of numbers. Share with learners the performance indicators.	
PHASE 2: **NEW LEARNING**	Skip count forwards and backwards in 25s, 50s and 250s beginning from 1000. Identify numbers which are for instance, 500,000 more than or less than a given 8-digit or 9-digit number. i. 1,295,800,000 is 500,000 more than 1,295,300,000 and 1,295,300,000 is 500,000 less than 1,295,800,000 Use phrases such as "is equal to", "is greater than" and "is less than' as well as their symbols such as ">", "<" and "=" to compare any two numbers. i 1,300,850,700 …. 1,300,850,700 ii. 5,223,487,637 …. 5,113,487,637 etc. <u>Assessment</u> 1. Compare the following numbers using < or >: a) 345 and 395 b) 4,726 and 9,726 c) 57,821 and 52,821 d) 209,481 and 279,481 d) 63,237 and 23,237 e) 368,7693 and 9,687,693	Counters, bundle and loose straws base ten cut square, Bundle of sticks

PHASE 3: **REFLECTOIN**	Engage learners to summarize the lesson outcomes. Ask learners how the lesson will benefit them in their daily lives.	

WEEK 2

Date:	**Period:**	**Subject:** Mathematics	
Duration:		**Strand:** Number	
Class: B7	**Class Size:**	**Sub Strand:** Numeration Systems	
Content Standard: B7.1.1.1 Demonstrate understanding and the use of place value for expressing quantities recorded as base ten numerals as well as rounding to a given decimal place and significant figures.	**Indicator:** B7.1.1.1.3 Round (off, up, down) whole numbers more than 1,000,000,000 to the nearest hundred-thousand, ten-thousands, thousands, hundreds and tens	**Lesson:** 3 of 5	
Performance Indicator: Learners can round (off, up, down) whole numbers	**Core Competencies:** CP, CC		
References: Mathematics Curriculum Pg.2			
Keywords: round up" and "round down			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Recap with learners to find out what they already know about rounding off and significant figures. Share with learners the performance indicators.	
PHASE 2: **NEW LEARNING**	Guide learners to round off whole numbers up to over 1,000,000,000 to the nearest hundred-thousands, ten-thousands, thousands, hundreds, etc. For example, 1,879,653 to the nearest i. hundred thousand is 1,900,000 since 1,879,653 is nearer to 1,900,000 than 1 ,800,000 ii. ten thousand is 1,880,000 since 1,879,653 is nearer to 1,880,000 than 1,870,000. Guide learners to explain the differences between the "round up" and "round down" concepts. When rounding up, we consider the larger number, while when rounding down, we consider the smaller of the two. The table below may bring out the meaning of the concept.	Counters, bundle and loose straws base ten cut square, Bundle of sticks

2,846,655	Round up	Round down	Round off
To the nearest thousand	2,847,000	2,846,000	2,847,000
To the nearest ten thousand	2,850,000	2,840,000	2,850,000
To the nearest hundred thousand	2,900,000	2,800,000	2,800,000

	Guide learners to express whole numbers to significant figures For example 857386321 i. five significant figures is 857390000 the fifth significant figure is 8 but the figure after it (i.e. the 6^{th} significant figure) is 6 which is greater than 5. Therefore we add 1 to 8 to give 9. ii. four significant figures is 857400000 the fourth significant figure is 3 but the figure after it (i.e. the 5^{th} significant figure) is 8 which is greater than 5. Therefore we add 1 to 3 to give 4 iii. three significant figures is 857000000 the third significant figure is 7 but the figure after it (i.e. the 4^{th} significant figure) is 3 which is less than 5. Therefore we leave 7 as it is. <u>Assessment</u> 1. correct 287530 to: (a) 4 s.f. (b) 3 s.f. (c) 2 s.f. (d) 1 s.f.	
PHASE 3: **REFLECTOIN**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson. Ask learners how the lesson will benefit them in their daily lives.	

Date:	**Period:**	**Subject:** Mathematics	
Duration:		**Strand:** Number	
Class: B7	**Class Size:**	**Sub Strand:** Numeration Systems	
Content Standard: B7.1.1.1 Demonstrate understanding and the use of place value for expressing quantities recorded as base ten numerals as well as rounding to a given decimal place and significant figures.	**Indicator:** B7.1.1.1.4 Round decimals to the nearest tenth, hundredth, thousandths, etc.	**Lesson:** 4 of 5	
Performance Indicator: Learners can Round decimals to the nearest tenth, hundredth, thousandths	**Core Competencies:** CP, CC		
References: Mathematics Curriculum Pg.2			
Keywords: tenth, hundredth, thousandths			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Revise with learners on what was taught in the previous lesson. Share with learners the performance indicators.	
PHASE 2: **NEW LEARNING**	Round (off, up and down) decimals to the nearest tenths, hundredths, thousandths……. For example: Round 486.3685 as indicated in the table below i. to the nearest whole number is 486. Discard figures after decimal point if the figure immediately after the decimal point is less than 5. If the figure is 5 or more more, add 1to the whole number. ii. to the nearest tenth (i.e. 1 d.p.) is 486.4 iii. to the nearest hundredth (i.e. 2 d.p.) is 486.37 iii. to the nearest thousandth (i.e. 3 d.p.) is 486.369 <u>Assessment</u> Round the following numbers to the nearest i. tenth ii. Hundredth iii. Thousandth a. 14.526 b. 78.460 b. 478.036 d. 1.23564	Counters, bundle and loose straws base ten cut square, Bundle of sticks

Number	Round to the nearest tenths	Round to the nearest hundredths	Round to the nearest thousandths
486.3685	486.4	486.37	486.369
0.0605368	0.1	0.06	0.061

PHASE 3: **REFLECTOIN**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson. Ask learners how the lesson will benefit them in their daily lives.	

WEEK 3

Date:	**Period:**	**Subject:** Mathematics	
Duration:		**Strand:** Number	
Class: B7	**Class Size:**	**Sub Strand:** Numeration Systems	
Content Standard: B7.1.1.1 Demonstrate understanding and the use of place value for expressing quantities recorded as base ten numerals as well as rounding these to given decimal places and significant figures	**Indicator:** B7.1.1.1.5 Express decimal numerals to given significant and decimal places	**Lesson:** 5 of 5	
Performance Indicator: Learners can correct numerals to given significant and decimal places		**Core Competencies:** CP, CC	
References: Mathematics Curriculum Pg.4			
Keywords: significant figure			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Revise with learners on what was taught in the previous lesson. Share with learners the performance indicators.	
PHASE 2: **NEW LEARNING**	Using several examples explain to learners when zero (0) is significant in a decimal numeral. *A zero is significant when it follows a non-zero figure*. Example: i. 0.360 = the significant number in 0.360 is 3 but not 0. The 0 after the 6 is the 3rd significant figure. ii. 7.021 = the significant number in 7.021 is 7. The 0 after the 7 is the 2nd significant number. Guide learners to correct or round numbers to significant figures. Example: 1) 0.00234567 i. 3sf – 0.00235 ii. 4sf – 0.002346 iii. 6sf – 0.00234567 2) 84.40995000 i. 3sf – 84.4 ii. 4sf – 84.41 iii. 6sf – 84.4100	Counters, bundle and loose straws base ten cut square, Bundle of sticks

	Guide learners to express decimal numbers to a given number of decimal places. Example: (i) 745.9674 (3 d.p.) – 745.967 (2 d.p.) – 745.97 (1 d.p.) – 746.0 ii. Musa measured the length of his teacher's table and corrected his measurement to 2 decimal places as 0.76m. State the possible actual readings Musa might have obtained. Engage learners to investigate similar problems on significant figures. <u>Assessment</u> Correct the following numbers to i) 4 ii) 3 iii) 2 iv) 1 a) 17300 e) 20023 b) 0.423568 f) 23354204 c) 0.651234 g) 2785469 d) 46.10214 h) 0.60080107	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson. Ask learners how the lesson will benefit them in their daily lives.	

Date:	**Period:**	**Subject:** Mathematics
Duration:		**Strand:** Number
Class: B7	**Class Size:**	**Sub Strand:** Number Operations

Content Standard: B7.1.2.1 Apply mental mathematics strategies and number properties used to solve problems	**Indicator:** B7.1.2.1.1 Multiply and divide given numbers by powers of 10 including decimals and benchmark fractions	**Lesson:** 1 OF 3

Performance Indicator: Learners can multiply and divide given numbers by powers of 10	**Core Competencies:** CP, CC
References: Mathematics Curriculum Pg.7	
Keywords: decimal point, benchmark	

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Write on the board: List the first ten multiples of 15. Ask pupils to write the answers in their exercise books. Call on pupils one at a time to give one of the multiples, and list their answers on the board. (Answers: 15, 30, 45, 60, 75) Share the performance indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Have learners recall multiplication facts up to 144 and related division facts. Revise with learners to multiply large numbers. Example: 1264 by 328 Guide learners to recall decimal names of given benchmark fractions converted to decimals or percentages (and vice versa) Learners to find the product of a given decimal number when it is multiplied. Example: decimals are multiplied as if they are no decimal point. E.g. 4.91 x 12 First 291 x 12 = 5892 There are three decimal places altogether in the two numbers. Now put the decimal places into the answer, which gives 5.892	Multiplication chart, place value chart, abacus

	<u>Assessment</u> Evaluate the following 1. 9.31 x 1.0 2. 0.56 x 10 3. 0.02 x 0.08 4. 3.566 x 0.005	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

WEEK 4

Date:	**Day:**	**Subject:** Mathematics	
Duration: 45mins		**Strand:** Number	
Class: B7	**Class Size:**	**Sub Strand:** Number Operations	
Content Standard: B7.1.2.1 Apply mental mathematics strategies and number properties used to solve problems	**Indicator:** B7.1.2.1.2 Apply mental mathematics strategies and number properties used to perform calculations	**Lesson:** 2 of 3	
Performance Indicator: Learners can apply mental mathematics strategies in solving math problems.		**Core Competencies:** CP, CC	
References: Mathematics Curriculum Pg.7			
Keywords: mental, strategies			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Revise with learners on what was taught in the previous lesson. Share with learners the performance indicators.	
PHASE 2: **NEW LEARNING**	Guide learners to apply the halving and doubling techniques to determine the product of two given numbers. i. 28 x 5, think 14 x 10=140 ii. 125 x 4, think (125 x 2) x 2 = 250 x 2 = 500 Have learners to solve mathematics problems involving the properties of operations. Example: the commutative property. *In mathematics, a binary operation is commutative if changing the order of the operands does not change the result.* *If a and b are rational numbers and — a x b = b x a. Then we say multiplication of rational numbers is commutative.* *E.g. 2 x 3 = 3 x 2* Guide learners to apply the distributive property to determine the product of two given numbers. Example: i. 7 x 15, = 7 × (10 + 5) = 70 + 35 = 105 ii. 18 × 6, = (20 − 2) × 6 = (20 × 6) – (6 × 2) = 120 −12 = 108 <u>Assessment</u> Solve the following	Counters, bundle and loose straws base ten cut square, Bundle of sticks

	a) 68 x 50 e) 95 x 13 b) 98 x 38 f) 27 x 19 c) 62 x 11 g) 88 x 14 d) 83 x 43 h) 93 x 65	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

Date:	**Period:**	**Subject:** Mathematics
Duration: 100mins		**Strand:** Number
Class: B7	**Class Size:**	**Sub Strand:** Number Operations

Content Standard: B7.1.2.1 Apply mental mathematics strategies and number properties used to solve problems	**Indicator:** B7.1.2.1.3 Apply mental mathematics strategies to solve word problems.	**Lesson:** 3 of 3
Performance Indicator: Learners can solve word problems	**Core Competencies:** CP, CC	
References: Mathematics Curriculum Pg.7		
Keywords: mental, strategies		

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Revise with learners on what was taught in the previous lesson. Share with learners the performance indicators.	
PHASE 2: **NEW LEARNING**	Guide learners use mental strategies to perform addition using words like plus, add, calculate the sum, increase a number by, and find the total; E.g.1. what is 23 + 34 + 45 + 78 = 180 E.g.2. Add the following numbers; 45, 10 and 57 E.g.3. calculate the sum of the following numbers; 1,2,3,4,5,6,7,8,9 E.g.4. Increase 45,000 by 234 Guide learners use mental strategies to perform subtraction using words like minus, from a number take, , find the difference, and what must be added to make; E.g.1. what is 109 minus 49 = 60 E.g.2. from 89 take away 32 E.g.3. find the difference of 586 and 158. E.g.4. what must be added to 102 to make 574. Guide learners use mental strategies to perform multiplication using words like times, multiply, find	Counters, bundle and loose straws base ten cut square, Bundle of sticks

	the product, square, and what must be divided by … to give …; Guide learners use mental strategies to perform division using words like divide, share, how many times does it go into? and what must be multiplied by … to give … <u>Assessment</u> 1. How many 40's must be added together to get a sum equal to 240? 2. Lucy went to the grocery store. She bought 12 packs of cookies and 16 packs of noodles. How many packs of groceries did she buy in all? 3. Multiply 96358 by 524	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

WEEK 5

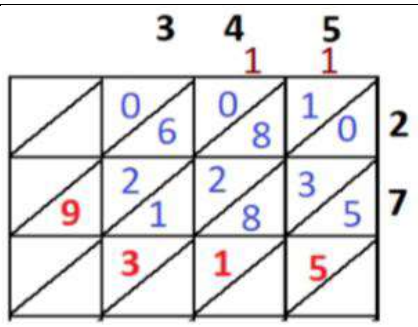
Date:	**Period:**	**Subject:** Mathematics	
Duration:		**Strand:** Number	
Class: B7	**Class Size:**	**Sub Strand:** Number Operations	
Content Standard: B.7.1.2.2 Demonstrate an understanding of addition, subtraction, multiplication and division of (i) whole numbers, and (ii) decimal numbers, to solve problems.	**Indicator:** B7.1.2.2.1 Add and subtract up to four-digit numbers.	**Lesson:**	
Performance Indicator: Learners can add and subtract up to four-digit numbers		**Core Competencies:** CP, CC	
References: Mathematics Curriculum Pg.9			
Keywords: mental, strategies			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Revise with learners on what was taught in the previous lesson. Share with learners the performance indicators.	
PHASE 2: **NEW LEARNING**	Guide learners to use partitioning (or expanded form) and place value system to add whole and decimal numbers. Example: i) Add 785 and 9,342 785 = 700+80+5 + 9,342 = 9000+300+40+2 10,127 = 9000+1000+120+7 ii) Add 327.6 and 54.13 $327.60 = 300 + 20 + 7 + \frac{6}{10} + \frac{0}{100}$ + $54.13 = 50 + 4 + \frac{1}{10} + \frac{3}{100}$ $381.73 = 300 + 70 + 11 + \frac{7}{10} + \frac{3}{100}$ Guide learners to use partitioning (or expanded form) and place value system to subtract whole and decimal numbers. Example:	Counters, bundle and loose straws base ten cut square, Bundle of sticks

	iii) Subtract 7.85 from 93.6 $93.60 = 90 + 3 + \frac{6}{10} + \frac{0}{100}$ − $7.85 = 7 + \frac{8}{10} + \frac{0}{100}$ $85.75 = 80 + 5 + \frac{75}{100}$ Guide learners to practice with more examples. <u>Assessment</u> Solve for the following 1) 4.13 and 2.13 2) 785 and 9,342 3) 327.6 and 54.13	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

Date:	**Period:**	**Subject:** Mathematics	
Duration:		**Strand:** Number	
Class: B7	**Class Size:**	**Sub Strand:** Number Operations	
Content Standard: B.7.1.2.2 Demonstrate an understanding of addition, subtraction, multiplication and division of (i) whole numbers, and (ii) decimal numbers, to solve problems	**Indicator:** B71.2.2.2 Multiply or divide multi-digit numbers by 1- and 2- digit numbers.	**Lesson:**	
Performance Indicator: Learners can multiply or divide multi-digit numbers		**Core Competencies:**	
References: Mathematics Curriculum Pg.10-11			
Keywords: mental, strategies			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Revise with learners on what was taught in the previous lesson. Share with learners the performance indicators.	
PHASE 2: **NEW LEARNING**	Guide learners to use partitioning/expanded form to multiply and divide efficiently Example: i) Multiply 584 by 8 584 = 500 + 80 + 4 × 8 = 8 4,000 + 640 + 32 4,672 = 4,672 Guide learners to multiply whole numbers using the vertical place value method or lattice method: i. Place value method: 345 x 27 = 345 x27 2,415 + 6,900 9,315 Lattice method: Draw a 2 by 3 lattice for solving 345 × 27.	Counters, bundle and loose straws base ten cut square, Bundle of sticks

	 Guide learners to use the distributive property to multiply whole numbers. Example: 325 by 15. =325 x (10 + 5) = (325 x 10) + (325 x 5) =3,250 + 1,625 =4,875 Let learners investigate and determine basic division facts including divisibility test. (i) determine how a given number is divisible by 2,3, 4, 5, 6, 7 8, 9,10, etc. For example, a number is divisible by 3 if the sum of its digits is divisible by 3. So, 72 is divisible by 3 because 7+2 = 9. Hence since 9 is divisible by 3, then 72 is divisible by 3. Also, to find out if a number is divisible by 7, take the last digit in the number then double it and subtract from the rest of the number. If the answer is 0 or a multiple of 7, then the number is divisible by 7. So, 595 is divisible by 7 because 5 x 2 =10. 59 – 10 = 49. Therefore, 595 is divisible by 7.	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

WEEK 6

Date:	**Period:**	**Subject:** Mathematics	
Duration:		**Strand:** Number	
Class: B7	**Class Size:**	**Sub Strand:** Number Operations	
Content Standard: B.7.1.2.2 Demonstrate an understanding of addition, subtraction, multiplication and division of (i) whole numbers, and (ii) decimal numbers, to solve problems.	**Indicator:** B7.1.2.2.3. Create and solve story problems involving decimals on the four basic operations.	**Lesson:**	
Performance Indicator: Learners can create and solve story problems involving decimals		**Core Competencies:** CP, CC	
References: Mathematics Curriculum Pg.13			
Keywords: mental, strategies, basic operations, decimals			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Ask learners open-ended questions: What are the words used for addition in maths? Allow learners to give their answers, and tell them any other answers. (Example answers: Sum, total, add, increase, altogether). Repeat this question for subtraction, multiplication and division. (Answer: Subtraction (subtract, takeaway, difference, reduce, decrease) Multiplication (Multiply, 'of', product) division (divide, quotient, share). Share performance indicators and introduce the lesson	
PHASE 2: **NEW LEARNING**	Write and read the word problem on the board: Example: *Abu's height is 1.5 m. and Foday's height is 1.3 m. What is their total height?* Ask learners what can we to do to find the total height of the boys? (Answer: We add 1.5 m. and 1.3 m.) Ask learners: Why do you think we should add? (Answer: Because of the word total.) Guide learners to solve the word problem. $\begin{array}{r} 1\ .5 \\ +\ 1\ .3 \\ \hline 2\ .8 \end{array}$	Counters, bundle and loose straws base ten cut square, Bundle of sticks

Example: *A group of two hundred and fifteen men and seven hundred and eighty-four women went to watch a musical concert. An amount of GH₵25 was collected at the gate from each person. How much money was collected all together?*

Give learners few minutes to solve the problem.

Call volunteer learners to board to present their answers. Encourage them to explain their answers.

Guide learners to solve word problems on data presented in a table

Example: *In preparation towards an open day anniversary, a school's Management Committee approved the following budget on some projects.*

Activity	Cost (GH₵)
Painting school building	4,580
Mending cracks on the basketball pitch	3,050
Restock the library with new books	2,690
Buying of choir robes	5,340
Buying prizes for awards	4,270

(a) How much was approved for painting the school building and buying choir robes?
(b) How much more was to be spent on mending the cracks on the basketball pitch than restocking the library with new books?
(c) How much was spent on buying prizes for awards if twice the amount approved was spent on this activity?

<u>Assessment</u>

(i)Ebo weighs 28.6kg. His father weighs four times as heavy. What is the total weight of Ebo and his father?

(ii) Mrs Armah bought 45.75 metres of linen for her five children. If they share the material equally, how many metres of linen did each receive?

(iii) Mrs Adamu bought 13.6kg of meat. Mrs Anderson bought 2.4kg of meat less than Mrs Adamu. How many kilograms of meat did they buy all together?

PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

Date:	**Period:**	**Subject:** Mathematics	
Duration:		**Strand:** Number	
Class: B7	**Class Size:**	**Sub Strand:** Number Operations	
Content Standard: B7.1.2.3 Demonstrate understanding and the use of powers of natural numbers in solving problems	**Indicator:** B7.1.2.3.1 Illustrate with examples the meaning of repeated factors using counting objects such as bottle tops or bundle sticks.	**Lesson:**	
Performance Indicator: Learners can the use of powers of natural numbers in solving problems		**Core Competencies:** CP, CC	
References: Mathematics Curriculum Pg.13			
Keywords: mental, strategies, basic operations, decimals			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**		
PHASE 2: **NEW LEARNING**	Write on the board: Express in index form: 2×2 = $2\times2\times2$ = $2\times2\times2\times2$ = Ask learners to think about the problems on the board for a moment. Ask for a learner to volunteer the answer for the first one. (Answer: $2\times2 = 2^2$) Ask another learner to answer the second one. (Answer: $2\times2\times2 = 2^3$) Ask: How do you think we will write the third one? Allow learners to share their ideas, and ask them to write the answer in their exercise books. (Answer: $2\times2\times2\times2 = 2^4$) Guide learners to model repeated factors using counters or bottle tops.	counters and bottle tops.

	Example: 3×3×3, is repeated factors, and each factor is 3. i. $2\times2\times2\times2x2 = 2^5=32$ Guide learners to explain the features of an index form or index notation. Ask pupils to look at 2^4 written on the board. Ask: How do you think we read this? Allow them to share their ideas. Guide learners to read it as '***two to the fourth power***' or '***two to the power four'*** Again guide learners to explain the features of the power 2^3 .The 2 in 2^3 is the base, while the 3 in 2^3 is the exponent or index. <u>Assessment</u> Find the value of; 1) 5^5 6) 9^3 2) 6^3 7) 2^7 3) 10^3 8) 4^4 4) 2^{10} 9) 10^4 5) 7^2 10) 20^3	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

WEEK 7

Date:	**Period:**	**Subject:** Mathematics
Duration:		**Strand:** Number
Class: B7	**Class Size:**	**Sub Strand:** Number Operations

Content Standard: B7.1.2.3 Demonstrate understanding and the use of powers of natural numbers in solving problems	**Indicator:** B7.1.2.3.2 Express a given number as a product of a given number or numbers, as well as, in the form of a power or two such numbers as product of powers	**Lesson:**
Performance Indicator: Learners can express a given number as a product of a given number or numbers		**Core Competencies:**
References: Mathematics Curriculum Pg.13		
Keywords: prime numbers, prime factors,		

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Using blackboard illustrations, review learners understanding in the previous lesson. Share performance indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Revise with learners to list the factors of numbers on the board. Example: 27 = {1,3,9,29} Ask a learners to describe prime numbers in his/her own words. Guide learners to distinguish between factors and prime factors of natural numbers. Engage learners to express a given number as a product of a given number or numbers. E.g. i. $32 = 2\times2\times2\times2\times2 . = 2^5$ ii. $81 = 3\times3\times3\times3 = 3^4$ iii. $49 = 7\times7 = 7^2$ iv. $16 \times 27 = 2\times2\times2\times2 \times 3\times3\times3 = 2^4 \times 3^3$ Assist pupils to write a natural number as powers of a product of its prime factors. E.g. 72 You can find the prime factors by repeatedly diving by prime numbers. 72 = 2 x 36 = 2 x 2 x 18 = 2 x 2 x2 x 9	Counters, bundle and loose straws base ten cut square, Bundle of sticks

	= 2 x 2 x 2 x 3 x 3 = $2^3 \times 3^2$ <u>Assessment</u> Express the following as a product of their prime factors 1) 180 2) 72 3)81 4) 49 5) 16	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

Date:	**Period:**	**Subject:** Mathematics
Duration:		**Strand:** Number
Class: B7	**Class Size:**	**Sub Strand:** Number Operations

Content Standard: B7.1.2.3 Demonstrate understanding and the use of powers of natural numbers in solving problems	**Indicator:** B7.1.2.3.3 Show that the value of any natural number with zero as its exponent or index is 1 and use it to solve problems	**Lesson:**
Performance Indicator: Learners can explain the fact that the value of any natural number with zero as exponent or index is 1	**Core Competencies:**	
References: Mathematics Curriculum Pg.14		
Keywords: exponent, index		

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Using blackboard illustrations, review learners understanding in the previous lesson. Share performance indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Perform activities with pupils to discover that for any natural number a, $a^0 = 1$ Example: i.e. (i) $\frac{24}{24}$ $24 \div 24 = 1$ 2222 2222 (ii) $24 \div 24 = 24\text{-}4 = 20 = 1$ Guide learners to verify why the value of any natural number with exponent zero is 1. Verification:. $\frac{x}{x} = 1$, but from indices, $\frac{x}{x} = x^0$, hence $x^0 = 1$ for any natural number Thus: if we have $\frac{4}{4}$, the result is 1. This can also be done using powers of numbers. That is, $\frac{4}{4} = 2^2 \div 2^2 = 2^{2-2} = 20 = 1$. Therefore, any natural number with an exponent of 0 is 1. Also, if we have $\frac{27}{27}$, the result is 1. This can also be done using powers of numbers. That is, $\frac{27}{27} = 3^3 \div 3^3 = 3^{3-3} = 3^0 = 1$.	Counters, bundle and loose straws base ten cut square, Bundle of sticks

	Therefore, any natural number with an exponent of 0 is 1. Let learners practice with more examples to verify that any natural number with zero as exponent or index is 1. <u>Assessment</u> Simplify the following 1) $2^3 \times 2^{-4}$ 2) $2^2x2^4x2^{-3}$ 3) $5^6x5^{-2}x5^{-3}$ 4) 2^4x2^{-3} 5) 5^3x5^{-3}	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

WEEK 8

Date:	**Period:**	**Subject:** Mathematics	
Duration: 50mins		**Strand:** Number	
Class: B7	**Class Size:**	**Sub Strand:** Number Operations	
Content Standard: B7.1.2.3 Demonstrate understanding and the use of powers of natural numbers in solving problems	**Indicator:** B7.1.2.3.4 Find the value of a number written in index form.	**Lesson:**	
Performance Indicator: Learners can find the value of a number written in index form		**Core Competencies:** CP 1	
References: Mathematics Curriculum Pg.15			
Keywords: prime numbers, prime factors,			

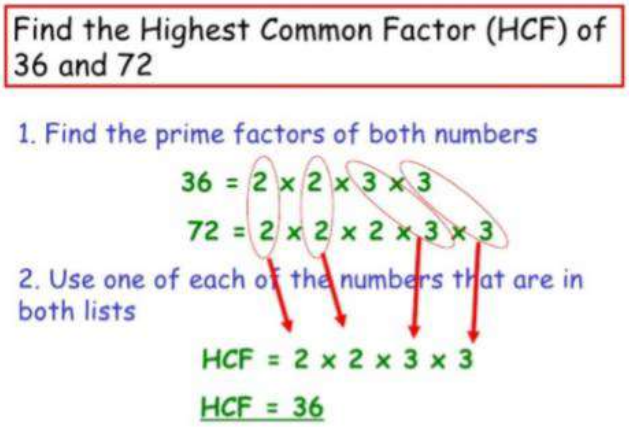
Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Using blackboard illustrations, review learners understanding in the previous lesson. Share performance indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Revise with learners to list the factors of numbers on the board. Example: 27 = {1,3,9,29} Ask a learners to describe prime numbers in his/her own words. Guide learners to distinguish between factors and prime factors of natural numbers. Engage learners to express a given number as a product of a given number or numbers. E.g. i. $32 = 2\times2\times2\times2\times2 . = 2^5$ ii. $81 = 3\times3\times3\times3 = 3^4$ iii. $49 = 7\times7 = 7^2$ iv. $16 \times 27 = 2\times2\times2\times2 \times 3\times3\times3 = 2^4 \times 3^3$ Assist pupils to write a natural number as powers of a product of its prime factors. E.g. 72 You can find the prime factors by repeatedly diving by prime numbers. 72 = 2 x 36 = 2 x 2 x 18 = 2 x 2 x2 x 9 = 2 x 2 x 2 x 3 x 3 $= 2^3 \times 3^2$	Counters, bundle and loose straws base ten cut square, Bundle of sticks

	Guide learners to find the value of a number written in index form. Example: 5^3 Here we write out what the number means and work out the multiplication. $5^3 = 5\times5\times5 = 25 \times 5 = 125$ E.g.2. find the value of 3^4 $3^4 = 3\times3\times3\times3 = 9 \times 9 = 81$ <u>Assessment</u> Express the following as a product of their prime factors 1) 180 2) 72 3)81 4) 49 5) 16 Find the value of 1) 10^5 2) 5^4 3) 9^3 4) 3^5 5) 7^2	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

Date:	**Period:**	**Subject:** Mathematics
Duration: 50MINS		**Strand:** Number
Class: B7	**Class Size:**	**Sub Strand:** Number Operations

Content Standard: B7.1.2.3 Demonstrate understanding and the use of powers of natural numbers in solving problems	**Indicator:** B7.1.2.3.5 Apply the concept of powers of numbers (product of prime) to find Highest Common Factor (HCF).	**Lesson:**

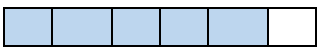
Performance Indicator: Learners can find Highest Common Factors of numbers	**Core Competencies:** CP 1
References: Mathematics Curriculum Pg.15	
Keywords: prime numbers, prime factors,	

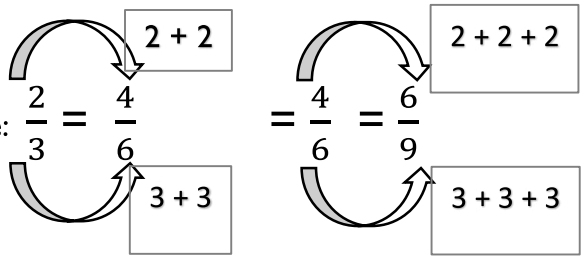
Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Using blackboard illustrations, review learners understanding in the previous lesson. Share performance indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Guide learners to expand a given number using product of prime concept.  Use real life scenarios to explain HCF to learners. Example: *Akweley has two pieces of paper. One piece is 24 cm wide and the other piece is 30 cm wide. She wants to cut both pieces into strips of equal width that are as wide as possible. How wide should she cut the strips?* Answer: *This problem can be solved using H.C.F. because we are cutting or "dividing" the strips of cloth into smaller pieces (Factor) of 24 and 30 (Common) and we are looking for the widest possible strips (Highest).*	Counters, bundle and loose straws base ten cut square, Bundle of sticks

	So, H.C.F. of 24 and 30 is 6 So we can say that Akweley should cut each piece to be 18 cm wide. Have learners practice with more examples. <u>Assessment</u> Find the HCF of the following. 1) 36 and 72 2) 12 and 24 3) 36 and 48 4) 25 and 125 5) 16 and 48	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

WEEK 9

Date:	**Period:**	**Subject:** Mathematics	
Duration:		**Strand:** Number	
Class: B7	**Class Size:**	**Sub Strand:** Fractions	
Content Standard: B7.1.3.1 Simplify, compare and order a mixture of positive fractions (i.e. common, percent and decimal) by changing all to equivalent (i) fractions (ii) decimals, or (iii) percentages	**Indicator:** B7.1.3.1.1 Determine and recall the percentages and decimals of given benchmark fractions (i.e. tenths, fifths, fourths, thirds and halves) and use these to compare quantities	**Lesson:** 1 OF 4	
Performance Indicator: Learners can find the equivalent fractions of a given fraction.		**Core Competencies:** Communication and Collaboration, Critical thinking and problem solving	
References: Mathematics Curriculum Pg.17			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Teacher ask: I have GHc 200, and I want to give half of it to my son for transport. How much will I give to my son? Let learners think-pair and discuss the question and find the answer. Ask them to share their answers with the class. (Answer: I will give GHc100 to my son, because GHc100 Leones is half of GHc200) Explain that 'Half' is a word that we use in our everyday lives. It means to divide something into two equal parts. We can use 'half' to talk about sharing something between two people. Explain that 'Half' is also a fraction in mathematics. Share the performance indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Using blackboard illustrations review the concept of fractions. Engage learners to shade given fraction of squares in given shapes: example: shade $\frac{5}{6}$ of the rectangle. 	Square grid sheet or Geodot paper for shading fractions

	Guide learners to write down equivalent fractions of given fractions. To find the equivalent of a given fraction. We add up the numerator and denominators. Example:  Therefore: $\frac{2}{3} = \frac{4}{6} = \frac{6}{9} = \frac{8}{12} = \frac{10}{15}$ Guide learners to express the fractions in its simplest form: Example: $\frac{6}{10} = \frac{3}{5}$ Learners convert given improper fractions to mixed numbers: Example: $\frac{12}{5} = 2\frac{2}{5}$, $\frac{25}{9} = 2\frac{7}{9}$ Guide learners to identify fractions which are *(i) closer to half; (ii) closer to one; and (iii) closer to zero* in games with fraction cards and fraction wheel.	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

Date:	**Period:**	**Subject:** Mathematics
Duration:		**Strand:** Number
Class: B7	**Class Size:**	**Sub Strand:** Fractions

Content Standard: B7.1.3.1 Simplify, compare and order a mixture of positive fractions (i.e. common, percent and decimal) by changing all to equivalent (i) fractions (ii) decimals, or (iii) percentages	**Indicator:** B7.1.3.1.2 Compare and order fractions (i.e. common, percent and decimal fractions up to thousandths) limit to the benchmark fractions	**Lesson:** 2 OF 4

Performance Indicator: Learners can compare and order fractions	**Core Competencies:** Communication and Collaboration, Critical thinking and problem solving

References: Mathematics Curriculum Pg.17

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Using blackboard illustrations, review learners understanding in the previous lesson. Share performance indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Guide learners to compare and order common fractions using the symbol (<, = or >). To order fractions with the same denominator, we compare the numerators. Example: order $\frac{2}{3}, \frac{5}{3}, \frac{1}{3}$ in ascending or increasing order. (from the smallest to biggest). In this case we start from 1, 2 and 5 So $\frac{1}{3}, \frac{2}{3}, \frac{5}{3}$ To order fractions with different denominators, we change them to have the same denominator by finding equivalent fractions. Example: order $\frac{1}{2}, \frac{1}{3}, \frac{2}{5}$ in ascending order. So $\frac{1}{2} = \frac{15}{30}, \frac{1}{3} = \frac{10}{30}, \frac{2}{5} = \frac{12}{30}$ Now we compare the numerators since they have the same denominators as 30. In this case 10 ($\frac{1}{3}$), 12 ($\frac{12}{30}$) and 15 ($\frac{15}{30}$). So $\frac{1}{3}, \frac{2}{5}, \frac{1}{2}$ Learners to Find which decimal fractions is greater: 0.99 is greater than 0.977	Square grid sheet or Geodot paper for shading fractions

	Guide learners to order the decimal numbers 0.098, 0.985 and0.123 from least to greatest. Ask learners to compare and order decimal fractions and percent, and express them in one form (i.e. either common, decimal or percent). For instance, to order 0.832, $\frac{3}{8}$ and 38% from least to largest; we have 0.832 =832 1000 = 83.2%, $\rightarrow \frac{3}{8} = \frac{375}{1000}$ = 37.5%, 38% = $\frac{38}{100}$ = 0.38%, Hence the order from least to the largest is $\frac{3}{8}$, 38% and 0.832.	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson. Ask learners how the lesson will benefit them in their daily lives.	

WEEK 10

Date:	**Period:**	**Subject:** Mathematics
Duration:		**Strand: Number**
Class: B7	**Class Size:**	**Sub Strand: Fractions**

Content Standard: **B7.1.3.2 Demonstrate an understanding of the process of addition and/or subtraction of fractions and apply this in solving problems**	**Indicator:** B7.1.3.2.1 Explain the process of addition and subtraction of two or three unlike and mixed fractions.	**Lesson:** 3 of 7

Performance Indicator: Learners can add and subtract unlike and mixed fractions	**Core Competencies:** Critical thinking and problem solving (CP) Digital Literacy (DL)

Reference: Mathematics Curriculum Pg. 19-20

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Using blackboard illustrations, review learners understanding in the previous lesson. Introduce the lesson by sharing the performance indicators.	
PHASE 2: **NEW LEARNING**	Guide learners to add mixed fractions, i.e. $2\frac{2}{5}$ and $1\frac{2}{3}$, we first add the whole numbers and then add the fractions; i.e. $2 + 1 + \frac{2}{5} + \frac{2}{3}$ $= 3 + \frac{6}{15} + \frac{10}{15}$ $= 3\frac{6+10}{15}$ $= 3\frac{16}{15} = \frac{61}{15}$ $= 4\frac{1}{15}$ Guide learners to subtract mixed fractions, i.e. $2\frac{4}{5} - 1\frac{2}{3}$, we first subtract the whole numbers and then subtract the fractions; i.e. $(2 - 1) + \frac{4}{5} - \frac{2}{3}$ $= 1\frac{12-10}{15}$ $= 1\frac{2}{15}$.	Square grid sheet or Geodot paper for shading fractions

	Alternatively, we may change the mixed fractions to improper fractions first. i.e. $2\frac{4}{5}$ - $1\frac{2}{3}$, $2\frac{4}{5} = \frac{14}{5}$, $1\frac{2}{3} = \frac{5}{3}$ $= \frac{14}{5} - \frac{5}{3}$, change to equivalent fractions $= \frac{42}{15} - \frac{25}{15} = \frac{42-25}{15}$ $= \frac{17}{15} = 1\frac{2}{15}$ <u>Assessment</u> Solve the following 1) $2\frac{1}{3} - 1\frac{1}{4}$ 2) $1\frac{5}{6} + 3\frac{7}{8}$ 3) $3\frac{3}{14} - 2\frac{7}{4}$ 4) $8\frac{3}{10} + 7\frac{3}{5}$	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

Date:	**Period:**	**Subject:** Mathematics
Duration:		**Strand:** Number
Class: B7	**Class Size:**	**Sub Strand:** Fractions

Content Standard: B7.1.3.2 Demonstrate an understanding of the process of addition and/or subtraction of fractions and apply this in solving problems	**Indicator:** B7.1.3.2.2 Solve problems involving addition or subtraction of fractions	**Lesson:** 4 of 7

Performance Indicator: Learners can solve problems involving addition or subtraction of fractions	**Core Competencies:** Critical thinking and problem solving (CP) Digital Literacy (DL)
Reference: Mathematics Curriculum Pg. 19-20	

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Using blackboard illustrations, review learners understanding in the previous lesson. Introduce the lesson by sharing the performance indicators.	
PHASE 2: **NEW LEARNING**	Guide learners to solve word problems involving addition or subtraction of fractions. Example: i. $3\frac{1}{3}$ feet are cut off a board that is $12\frac{1}{4}$ feet long. How long is the remaining part of the board? i.e. $12\frac{1}{4} - 3\frac{1}{3} = (12 - 3) + \frac{1}{4} - \frac{1}{3}$ $= 9\frac{4-3}{12} = 9\frac{1}{12}$ The remaining part of the board is $9\frac{1}{12}$ long. Engage learners to practice with more examples. <u>Assessment</u> i. The Musa family decided to hike to a waterfall, approximately 8⅝ kilometers away. After an hour the lake was still 5⅓ kilometers away. How far did the group hike so far? ii. If you add 2 fractions and the sum is greater than ½, what can you say about the fractions	Square grid sheet or Geodot paper for shading fractions

PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson. Ask learners how the lesson will benefit them in their daily lives.	

WEEK 11

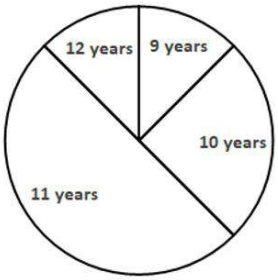
Date:	**Period:**	**Subject:** Mathematics
Duration:		**Strand:** Number
Class: B7	**Class Size:**	**Sub Strand:** Fractions
Content Standard: B7.1.3.3 Demonstrate an understanding of the process of multiplying and dividing positive fractions and apply this in solving problems	**Indicator:** B7.1.3.3.1 Explain the process of multiplying a fraction (i.e. common, percent and decimal fractions up to thousandths) by a whole number and by a fraction.	
Performance Indicator: Learners can multiplying a fraction	**Core Competencies:** Critical thinking and problem solving	
References: Mathematics Curriculum Pg. **20 - 21**		

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Using blackboard illustrations, review learners understanding in the previous lesson. Share performance indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Guide learners to multiply a whole number by a fraction, the multiplication is read as 'times'. For instance, $3 \times 2\frac{2}{3}$ means 3 times $2\frac{2}{3}$ or 3 groups of $2\frac{2}{3}$; i.e. $3 \times (2 + \frac{2}{3})$ or $3 \times \frac{8}{3}$. The product can be obtained by (i) changing all into common or equivalent fraction; (ii) multiplying all numerators and denominators; (iii) simplifying the results. Guide learners to multiply a fraction by a whole number, the multiplication is read as 'of'. For instance, $\frac{2}{3} \times 5$ means $\frac{2}{3}$ of 5 or i.e. $\frac{2}{3} \times \frac{5}{1} = \frac{2x5}{3x1} = \frac{10}{3} = 3\frac{1}{3}$. The product can be obtained by (i) changing all into common fraction; (ii) multiplying all numerators and denominators; (iii) simplifying the results. Guide learners to multiply a fraction by a fraction, the multiplication is read as 'of'. For instance, $\frac{2}{3} \times \frac{1}{2}$ means $\frac{2}{3}$ of $\frac{1}{2}$ or i.e. $\frac{2}{3} \times \frac{1}{2} = \frac{2x1}{3x2} = \frac{2}{6} = \frac{1}{3}$. The product can be obtained by	Square grid sheet or Geodot paper for shading fractions

	(i) changing all into common fraction; (ii) multiplying all numerators and denominators; (iii) simplifying the results. <u>Assessment</u> Find 1). 15 x $\frac{2}{3}$ 2). 12 x $\frac{3}{8}$ 3). $\frac{2}{3}$ x 240 4) Calculate the following (when necessary, round your answer to the nearest tenth): a. 28% of 40 b. 234% of 8 c. 3½ % of 50 d. 0.2% of 15000 e. 8.25% of 62	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

Date	**Period:**	**Subject:** Mathematics
Duration:		**Strand:** Number
Class: B7	**Class Size:**	**Sub Strand:** Fractions

Content Standard: B7.1.3.3 Demonstrate an understanding of the process of multiplying and dividing positive fractions and apply this in solving problems	**Indicator:** B7.1.3.3.2 Find a fraction of given quantity (i.e. money or given quantity of objects)	**Lesson:**
Performance Indicator: Learners can find a fraction of given quantity	**Core Competencies:** Critical thinking and problem solving	
References: Mathematics Curriculum Pg. **21-22**		

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Using blackboard illustrations, review learners understanding in the previous lesson. Share performance indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Guide learners to multiply a given quantity by a fraction is just like multiplying by a whole number, so the multiplication is read as 'of'. For instance, $\frac{2}{3}$ × GH₵60 means $\frac{2}{3}$ of GH₵60, i.e. $\frac{2}{3} \times \frac{60}{1} = \frac{2x60}{3x1} = \frac{120}{3}$ = GH₵40. E.g. 2. There are 132 learners in a class. If $\frac{2}{3}$ of the learners are girls, how many boys are in the class? i.e. $\frac{2}{3}$ x 132 = $\frac{2}{3}$ x $\frac{132}{1} = \frac{2x132}{3x1} = \frac{264}{3}$ = 88 girls so; 132 – 88 = 44 boys. Have learners to practice with more examples. <u>Assessment</u> The graph shows the ages of learners in a Primary 5 class.  (i) Approximately, what fraction of the learners are 10 years old? (ii) How many learners are 11 years old if there are 32 learners in the class?	Square grid sheet or Geodot paper for shading fractions

PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

WEEK 12

REVISION AND END OF TERM ASSESSMENT

Date:	**Period:**	**Subject:** Mathematics
Duration: 50 mins		**Strand:** Strands treated for the term
Class: B7	**Class Size:**	**Sub Strand:** Sub Strands for the term
Content Standard: Demonstrate knowledge and understanding in the topics treated so far.	**Indicator:** Recall and summarize all what they have learnt within the term.	
Performance Indicator: Learners can recall and summarize all what they have learnt within the term	**Core Competencies:** Critical thinking and problem solving	
References: Mathematics Curriculum Pg. **1-22**		

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Using blackboard illustrations, review learners understanding in the previous lesson. Share performance indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Revise with learners to form numbers with given multi-base ten materials, given that a small cube is 1,000; 10 small cubes is a rod (i.e. 10,000), 10 rods is a flat (i.e. 100,000); and 10 flats is a block (i.e. 1000,000) Learners to use multiples of 10s, 50s, 100s and 200s to represent numbers in multiples of ways E.g. 5,560 = 20×200 + 10×100 +11×50 + 1×10; Guide learners to apply the halving and doubling techniques to determine the product of two given numbers. i. 28 x 5, think 14 x 10=140 ii. 125 x 4, think (125 x 2) x 2 = 250 x 2 = 500 Have learners to solve mathematics problems involving the properties of operations. Example: the commutative property. *In mathematics, a binary operation is commutative if changing the order of the operands does not change the result.* *If a and b are rational numbers and --- a x b = b x a. Then we say multiplication of rational numbers is commutative.* *E.g. 2 x 3 = 3 x 2*	Counters, bundle and loose straws base ten cut square, Bundle of sticks

	Guide learners use mental strategies to perform subtraction using words like minus, from a number take, , find the difference, and what must be added to make; E.g.1. what is 109 minus 49 = 60 E.g.2. from 89 take away 32 Engage learners to express a given number as a product of a given number or numbers. E.g. i. $32 = 2\times2\times2\times2\times2 . = 2^5$ ii. $81 = 3\times3\times3\times3 = 3^4$ iii. $49 = 7\times7 = 7^2$ iv. $16 \times 27 = 2\times2\times2\times2 \times 3\times3\times3 = 2^4 \times 3^3$ Perform activities with pupils to discover that for any natural number a, $a^0 = 1$ Example: i.e. (i) $\frac{24}{24}$ $24 \div 24 = 1$ 2222 2222 (ii) $24 \div 24 = 24\text{-}4 = 20 = 1$ Guide learners to verify why the value of any natural number with exponent zero is 1. Verification:. $\frac{x}{x}$ =1, but from indices, $\frac{x}{x} = x^0$, hence x^0=1 for any natural number <u>Assessment</u> Simplify the following 6) $2^3 \times 2^{-4}$ 7) $2^2x2^4x2^{-3}$ 8) $5^6x5^{-2}x5^{-3}$ 9) 2^4x2^{-3} 10) 5^3x5^{-3} Express the following as a product of their prime factors 1) 180 2) 72 3)81 4) 49 5) 16	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

Date:	**Period:**	**Subject:** Mathematics
Duration: 50 mins		**Strand:** Strands treated for the term
Class: B7	**Class Size:**	**Sub Strand:** Sub Strands for the term
Content Standard: Demonstrate knowledge and understanding in the topics treated so far.	**Indicator:** Preparation towards vacation	
Performance Indicator: Learners can answer all end of term assessment questions in their exercise books.	**Core Competencies:** Critical thinking and problem solving	
References: Mathematics Curriculum Pg. **1-22**		

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Ask learners to bring and display all the materials needed for the assessment. Educate them on the consequences of examination mal practice.	Exercise books, pen, pencils, erasers, Answer sheets.
PHASE 2: **NEW LEARNING**	Engage learners to arrange themselves properly to sit for the assessment test. Mark learners answer sheets or exercise books. Fill in learner's SBA books and report cards. Distribute learners answer sheets or exercise books for feedback.	SBA, Assessment Questions and exercise books.