LAGOS STATE GOVERNMENT
MINISTRY OF EDUCATION

Mathematics

UNIFIED SCHEMES OF WORK

FOR

PRIMARY SCHOOLS

(PRIMARY 4-6)

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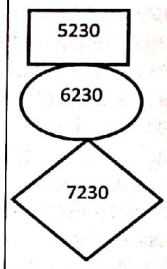
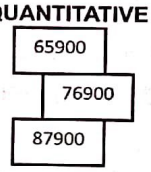
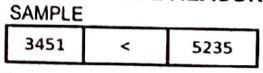
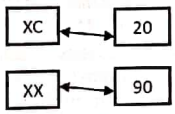
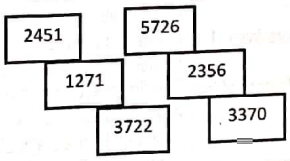
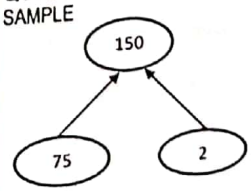
LAGOS STATE MINISTRY OF EDUCATION
UNIFIED SCHEMES OF WORK FOR PRIMARY SCHOOLS

(MATHEMATICS FOR PRIMARY SCHOOL)
PRIMARY FOUR FIRST TERM

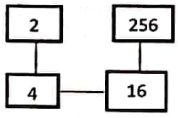
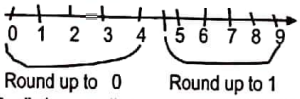
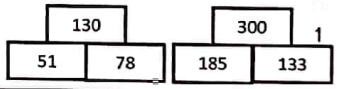
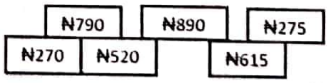
WEEKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCE
1	**REVISION/RESUMPTION TEST** **WHOLE NUMBERS** counting and reading numbers from 1000 up to 9,999 the place value of numbers up to 9,999 **Importance** -Whole number gives pupils basis to solve simple addition, subtraction, multiplication and division. -It can also be useful in banks, buying and selling, population taking.	Pupils should be able to: • count in hundreds and thousands. • generate numbers using abacus • apply counting of numbers in real life problems. • categorize the value of a digit in numbers up to 9,999 solve quantitative reasoning	Pupils: as a group generate numbers in Tens and Hundreds using abacus in pairs build understanding with LEGO bricks using place value concept. **QUANTITATIVE REASONING** 	Critical thinking and Problem solving Communication and Collaboration Leadership and Personal development Creativity and Imagination	AUDIO VISUAL RESOURCES Abacus to form and re numbers. LEGO bricks Number charts for eas identification Number cards. WEB RESOURCES Site Link https://www.math-only-math.com/place-value-chart.html Video Link www.youtube.com/watch 1gpAEQOQFkw
2	**WHOLE NUMBERS (Contd)** • Counting from Thousand to One Million • Writing numbers up to One Million • The place value of numbers up to One Million **Importance** It is used in adding, subtracting, multiplying and dividing our payments and expenses. -buying and selling. -Banking and Finance.	Pupils should be able to: • count numbers in Thousands and Millions • write numbers in words up to one million • identify place value of numbers up to one million	Pupils as a class extract numbers in millions from a number puzzle chart around the class. The teacher gives some list of numbers in thousand and million for the pupils to extract them out for identification and writing of large numbers. Sing number songs on large numbers. **QUANTITATIVE REASONING** 	• Critical thinking and problem solving • Communication and collaboration • Leadership and personal development • Creativity and imagination	AUDIO VISUAL RESOURCES abacus number puzzle number charts WEB RESOURCES Site Link https://www.math-only-math.com/place-value-chart.html Video Link www.youtube.com/watch 1gpAEQOQFkw
3	**WHOLE NUMBERS-SKIP COUNTING** • Count in groups of 5's • Count in groups of 7's, 60's • Count in groups of 100s and 1000s up to 10,000 • Quantitative reasoning **Importance** It lays a foundation for multiple division. It easily helps pupils solve multiplication problems.	Pupils should be able to: • count objects in 5's • count in 7's and relate it to real life situations • count in 60's and relate it to real life situations • solve quantitative reasoning on whole numbers.	Pupils: • in small groups demonstrate skip counting using skipping rope and music. • in pairs,identify weeks of the months in a year calendar. • in pairs, participate in the activities below: 5 10 15 20 25 30 etc. 7 14 21 28 35 42 60 120 180 270 360 420 etc. 100 00 300 400 500 600 etc. **QUANTITATIVE REASONING** 25 30 35 40 45 50..... 31 38 45 52 59 66..... 100 160 220 280 340.....	• Critical thinking and problem solving • Communication and collaboration • Leadership and personal development • Creativity and imagination • Citizenship	AUDIO VISUAL RESOURCES Abacus Calendar Counters Clock face Skipping Rope Number cards. Concrete models to solv story problems e.g. toy cars, egg cartons. WEB RESOURCES Site Link www.mathsisfun.com/numb rs/skip-counting.html Video Link www.youtube.com/watch?v D6IPnvX0dY
4	**ORDER AND COMPARE WHOLE NUMBERS** Ordering of whole numbers with symbols up to 1,000,000. Use of relation	Pupils should be able to: arrange numbers with symbols from the largest to the smallest express inequalities of 4 to 7 digit numbers using the relation sign greater than , less than and equal to	Individual pupil arranges some given numbers in the order of magnitude i.e from the biggest to the smallest and vice versa with the use of number flash cards. **QUANTITATIVE REASONING** SAMPLE 	Critical thinking and problem solving Communication and Collaboration Leadership and Personal development	AUDIO VISUAL RESOURCES Flash cards with numbers Flash cards with sign of = >, < WEB RESOURCES

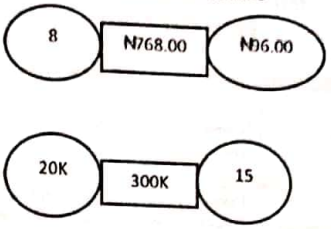
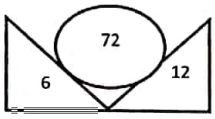
WEEKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
	signs -less than(<), greater than(>) and equal to (=) Quantitative reasoning **Importance** It helps when comparing quantities in real life.	e.g. 2690 < 3678, 723456 > 43456 256389 = 256389 rearrange numbers in quantitative reason.			Site Link https://www.math-salamanders.com/comparing-numbers.html Video Link www.youtube.com/watch?v=s_y9AHZDLZA
5	**ROMAN NUMERALS** Counting Roman numerals up to 1000 i.e i to M Reading clock faces with Roman numerals Re-write Arabic numbers in Roman numerals and vice versa Quantitative reasoning **Importance** -Used in the faces of clocks. -Numbering the pages of a book.	Pupils should be able to: count and write roman numerals from 1 to 1000 i.e i to M read and show clock faces with roman numerals write Arabic numbers in Roman numerals and vice versa. solve simple addition and subtraction in Roman numerals e.g. i. LXV + Xi = LXXVi ii. CCX - CiX= Xi	Pupils in small groups create a board game displaying Roman numerals i to XX on a cardboard or plywood. Make a message decoder to develop a language where an alphabet stands for the corresponding Roman numeral e.g. A=i, B=ii, C=iii, D=iv, E=V Sing songs on Roman numerals. **QUANTITATIVE REASONING** SAMPLE Match the numbers appropriately. 	Communication and collaboration Leadership and personal development Creativity and imagination	AUDIO VISUAL RESOURCES Roman numerical charts Wall of clock in Roman numerals. Roman Numerals flash cards. WEB RESOURCES Site Link https://www.math.olympiadsuccess.com/class-4-roman-numerals Video Link www.youtube.com/watch?v=9XxOgPgifrI
6	**BASIC OPERATIONS** Addition of whole numbers Subtraction of whole numbers Quantitative reasoning. **Importance** -Helps Bank Tellers, Accountants, Cashiers and Food servers. -It also helps in Carpentry work in the measurement of boards or planks.	Pupils should be able to: add whole numbers in Th H T U with and without remainder subtract whole numbers in Th H T U with and without remainder solve real life problems involving addition and subtraction. Th H T U 5 2 4 6 + 3 7 0 2 8 9 4 8 solve quantitative aptitude	Pupils: in pairs roll two dice for addition and subtraction in small groups generate numbers in thousands using abacus. in small groups tell addition story and subtraction story. **QUANTITATIVE REASONING** SAMPLE 	Critical thinking and problem solving Communication and collaboration Leadership and personal development	AUDIO VISUAL RESOURCES Dice Abacus Walk on number line. Addition Facts cards. Subtraction Facts cards Concrete models to solve story problems e.g. pupils, dice, abacus etc. Numbers cards. WEB RESOURCES Video Link www.youtube.com/watch?v=iVSNst1o_rg
7	MID TERM TEST/ MID TERM BREAK	MID TERM TEST/ MID TERM BREAK	MID TERM TEST/ MID TERM BREAK	MID TERM TEST/ MID TERM BREAK	MID TERM TEST/ MID TERM BREAK
8	**MULTIPLICATION** Multiplication of whole numbers Quantitative Reasoning **Importance** -Banking -Finance -Foreign Exchange -Buying and selling.	Pupils should be able to: revise basic multiplication facts multiply whole numbers by 2-digit numbers not exceeding 50 using the grid method and vertical method. e.g. Method 1 6 2 X 2 4 2 4 8 + 1 2 4 1 4 8 8 Grid Method 2 x | 60 | 2 20 | 1200 | 40 4 | 240 | 8 1 2 4 0 + 2 4 8 1 4 8 8 solve real life problems on multiplication. solve quantitative aptitude problems involving multiplication.	Pupils: as a group play multiplication war with a deck of cards. Just flip two cards and multiply. Whoever has the highest products keeps the card. After about 5 rounds, the winning group is applauded. as individuals design a multiplication facts drawing the center of a flower and write number 1-9 in the center. Next, draw 9 petals around the center, label them 4-12. Lastly, draw another 9 petals and write the product of the center number and the petal adjacent to the new petal. in small groups tell multiplication story. **QUANTITATIVE REASONING** SAMPLE 	Critical thinking and Problem solving Communication and Collaboration Leadership and Personal development Creativity and Imagination	AUDIO VISUAL RESOURCES Cardboard Scissors Beads Flip cards Number charts Number cards. Concrete models on additive multiplication. WEB RESOURCES Site Link https://www.math-only-math.com/multiplication-of-whole-numbers.html Video Link www.youtube.com/watch?v=3glsxZmHHQ

WEEKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
9	**DIVISION** Division of whole numbers Quantitative Reasoning **Importance** It is useful in Arts Projects, sharing of items and Choreography	Pupils should be able to: divide 2- and 3- digit numbers by numbers up to 9 with or without remainder. divide numbers with multiples of 10 up to 50 solve sharing problems in real life situations. solve quantitative aptitude involving division.	Pupils: in a group play division war with a deck of cards. Just flip two cards and divide. The group with the highest products keeps the card. in small groups roll two dice then divide the bigger number by the smaller number. in small groups tell division story **QUANTITATIVE REASONING** SAMPLE 150 ← → 50 ↓ 3	Critical thinking and problem solving Communication and collaboration Leadership and personal development Creativity and imagination	AUDIO VISUAL RESOURCES Deck of cards Dice Puzzle Number charts WEB RESOURCES Site Link https://www.math-only-math.com/division-of-whole-numbers.html Video Link www.youtube.com/watch?v=bVi7_6tqiQo
10	**LOWEST COMMON MULTIPLE** Lowest Common Multiples (L.C.M) of numbers Quantitative reasoning. **Importance** Helps in solving problems related to track races , traffic lights etc	Pupils should be able to: write multiple of number up to 9 find L.C.M using multiple method. solve real life problems using L.C.M solve quantitative aptitude involving L.C.M.	Pupils: in small groups, locate common multiples in the given number flash cards. e.g find the L.C.M of 4 and 6 multiple of 4= 4, 8, 12, 16, 20, 24 multiples of 6= 6, 12, 18, 24, 30 common multiple:12, 24 L.C.M =12 Pupils as a class play bingo game where pupils find the LCM of two or more numbers to find which square to mark. **QUANTITATIVE REASONING** SAMPLE 6 8 24	Critical thinking and problem solving Communication and collaboration Leadership and personal development Creativity and imagination	AUDIO VISUAL RESOURCES Blank bingo boards List of bingo numbers Pencils Cards with pairs of numbers written on them Number puzzle WEB RESOURCES Site Link https://www.splashlearn.com/math-vocabulary/number-sense/lowest-common-multiple Video Link www.youtube.com/watch?v=KqZ-GbtCLu0
11	**HIGHEST COMMON FACTOR** Highest Common Factors (H.C.F) of numbers. Quantitative reasoning **Importance** Helps in solving problems related to track races, traffic lights etc	Pupils should be able to: write factors of numbers from 1 – 99 identify the common factors of 2 and 3 work out the common solve quantitative aptitude related to H.C.F	- 2-4 pupils play bingo game where pupils find the HCF of two or more numbers to find which square to mark. The first player with fair HCF listed in any row, column or diagonal wins. 4-5 pupils in a class play a jump and spin game. They stand at arms' length to each other. Teacher calls out some number pairs and the pupils will need to determine whether the HCF is even or odd. When it's even they jump up but when odd they spin in a circle **QUANTITATIVE REASONING** SAMPLE 4 12 16	Critical thinking and problem solving Communication and collaboration Leadership and personal development Creativity and imagination	AUDIO VISUAL RESOURCES Blank bingo boards List of bingo numbers Pencils Cards with pairs of numbers written on them Number puzzle WEB RESOURCES Site Link www.mathsisfun.com/gcse/t-common-factor.html Video Link www.youtube.com/watch?v=KqZ-GbtCLu0
12	Revision	Revision	Revision	Revision	Revision
13	Examination	Examination	Examination	Examination	Examination

LAGOS STATE MINISTRY OF EDUCATION
UNIFIED SCHEMES OF WORK FOR PRIMARY SCHOOLS
PRE -VOCATIONAL STUDIES
(MATHEMATICS FOR PRIMARY SCHOOL)
PRIMARY FOUR SECOND TERM

WEEKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
1	REVISION OF 1ST TERM'S WORK. Resumption test Fractions - Proper fraction - Improper - Mixed fraction - Change of improper fraction to mixed fraction and vice versa. Quantitative reasoning **Importance** Helps pupils in sharing items and the proportion of items cut or derived from a whole	Pupils should be able to: identify some difficult topics from their 1st term's work demonstrate and explain the definition of fraction identify types of fractions differentiate between types of fractions represent fractions on a number line. solve quantitative reasoning on fraction	Pupils as a group cut a quarter of a circle from a cardboard to get one quarter as a fraction. A pupil divides an orange into 8 parts and give four to their friends to form half. Tell a story on mixed fractions, that is, how it can be obtained. **QUANTITATIVE REASONING** $\frac{3}{2}$ ⟷ $1\frac{1}{2}$	Critical thinking and problem solving Communication and collaboration Leadership and personal development Creativity and imagination Citizenship	**AUDIO VISUAL RESOURCES** Fraction diagram Number lines Orange Card board **WEB RESOURCES** **Site Link** https://www.math-only-math.com/_fractions.html **Video Links** www.youtube.com/watch?v=ISNO_C9FaD8 www.youtube.com/watch?v=N3_8MmaiLE
2	**Fractions** Equivalent fractions Addition and subtraction of like and unlike fractions. Reducing to lowest term Quantitative reasoning **Importance** It helps pupils know how to divide whatever they are given among themselves into equal sizes.	Pupils should be able to: obtain equivalent fractions of a given fraction. calculate addition and subtraction of like and unlike terms fractions. apply fractions in sharing commodities in home, market, school etc solve quantitative reasoning on equivalent fractions.	Pupils as individuals design number line showing equivalent fractions. Pupils in small groups design a pattern block card to find equivalent fractions. **QUANTITATIVE REASONING** $\frac{24}{32}$ ⟶ $\frac{3}{4}$	Critical thinking and problem solving Communication and collaboration Leadership and personal development Creativity and imagination	AUDIO VISUAL RESOURCES Paper cuttings of different shapes Squares Cardboards **WEB RESOURCES** **Site Link** https://www.math-only-math.com/equivalent_fractions.html **Video Links** www.youtube.com/watch?v=N1X0vf5PUx4 www.youtube.com/watch?v=AQZE-xEeleg
3	**Decimal fractions** Addition and subtraction of decimals. Quantitative reasoning **Importance** To calculate degree accuracy on weight, money and distances events. To record winning times at a track meet.	Pupils should be able to: identify decimal fractions up to tenths, hundredth and thousandths change from fractions to decimals calculate addition and subtraction of decimals solve quantitative reasoning involving decimal problems	Pupils in a small groups use cardboard to design 0.25 which is one quarter of a circle. **QUANTITATIVE REASONING** 14.81 5.23 | 9.58 94.72 | 52.68 42.04	Critical thinking and problem solving Communication and collaboration Leadership and personal development Creativity and imagination	**AUDIO VISUAL RESOURCES** Card board Marker Scissors Record of time in sport events. **WEB RESOURCES** Site Link https://educationwithfun.com/course/view.php?id=19&section=27 Video Link www.youtube.com/watch?v=quBVW5PiHLs
4	Multiplication of decimals Division of decimals. Changing common fractions with 10, 100, 1000 as denominator to decimal. Quantitative reasoning **Importance** -To compare the rates of speed over distances	Pupils should be able to: calculate decimals by multiplying with 1-digit number calculate decimals by dividing with 1-digit number. discover decimals by multiplying with 10, 100 and 1000. divide decimals with 10, 100, 1000 use numbers greater than 10 to multiply and divide decimals.	Pupils in a small group use cardboard to design twice the size of 0.25 which is half of a circle. Pupils in groups use different colours and sizes of cardboards to prepare flash cards on multiplication and division of numbers by multiples of 10, 100 and 1 000. Highlight boldly on shifting of the decimal point. **QUANTITATIVE REASONING** 15 } Incomplete	Critical thinking and problem solving Communication and collaboration Leadership and personal development Creativity and imagination	AUDIO VISUAL RESOURCES Card board Marker Scissors Multiplication chart **WEB RESOURCES** Site Link https://www.math-only-math.com/multiplication-of-decimal-numbers.html Video Link www.youtube.com/watch?v=rrT0of_eO4

WEEKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	MATHEMATICS LEARNING RESOURCES
5	Square Square Root of whole numbers Quantitative reasoning Importance It is used in Carpentry, Architects, Civil Engineering etc.	Pupils should be able to: calculate the square of numbers from 1-20 identify the perfect squares in a set of numbers e.g. 1,2,3,4,5,6,7,8,9,10,11,12, 13,14,15,16,17,18,19,20. 1, 4, 9, 16 are the perfect squares. find the square root of perfect squares up to 400 solving word problems involving the calculation of square of numbers and square root of numbers. solve quantitative reasoning	Pupils in a group design a clock using flash cards where $\sqrt{4}$ represent 2, $\sqrt{9}$ represent 3. Pupils select perfect square numbers from a basket containing number cards of 1-100 and tell the class the square root. Sing songs on squares of numbers and square root of numbers. Pupils calculate the square of number e.g. Find the square of 18 Method 1: 18 x 18 = 144; X18 = 324 Method 2: $(18)^2$ → 1^2 8^2 → 1st step 164 2nd step: 1x 2 = 2 x 8 = 16 3rd step: 164 + 16 = 324 **QUANTITATIVE REASONING** 	Critical thinking and problem solving Communication and collaboration Leadership and personal development Creativity and imagination	AUDIO VISUAL RESOURCES Flash cards Card board scissors WEB RESOURCES Site Link www.mathsisfun.com/square-root.html Video Link www.youtube.com/watch?=BJzZD03Sguc
6	**ESTIMATION** Round up of numbers Round up on addition and subtraction of numbers Quantitative reasoning **Importance** It is used in budget writing. To estimate the total cost of items at a departmental store.	Pupils should be able to: identify actual numbers. solve round-up numbers. calculate addition and subtraction of round-up of numbers. interpret and solve real life problems on estimation. solve quantitative reasoning.	Pupils in a group fill an empty jar with pebbles, count the number of pebbles that will fill the jar. Then estimate the number. Pupils use a ruler and cardboard to prepare scale chart for estimation.  Round up to 0 Round up to 1 Pupils in a small group check the weights of 5 different books and record. Each of the recordings is then estimated. **QUANTITATIVE REASONING** 	Critical thinking and problem solving Communication and collaboration Leadership and personal development Creativity and imagination	AUDIO VISUAL RESOURCES Empty jar Pebbles Hands Supermarket receipt WEB RESOURCES Site Link https://www.math-only-math.com/estimating-sums-and-differences.html Video Link www.youtube.com/watch?=LE-XSJ4RwKM
7	Review of first half terms and periodic test	MID-TERM BREAK	MID-TERM BREAK	MID-TERM BREAK	MID-TERM BREAK
8	MONEY Conversion of money Addition and Subtraction Profit and Loss Word problems Quantitative reasoning **Importance** It is used in obtaining the basic necessities of life including food, clothing and shelter. It is also used for foreign exchange.	Pupils should be able to: convert naira to kobo and vice versa. calculate the sum and difference of money. differentiate between profit and loss. solve real life problems on profit and loss. solve quantitative reasoning on money.	Pupils as a class dramatize classroom sales by using their books, writing materials, school bags, lunch box etc as commodities. They decide upon how much each item will be sold and create fun price tags to be placed on the items. Once the items are labeled, tagged and in place, set up a play cash register and then start shopping. One of them is given a small purse of dummy money and allow them to take turns in shopping for an item. One of the pupils to be at the cash register. **QUANTITATIVE REASONING** 	Critical thinking and problem solving Communication and collaboration Leadership and personal development Creativity and imagination	AUDIO VISUAL RESOURCES Books Writing materials School bags Lunch box WEB RESOURCES Site Links https://www.math-only-math.com/addition-of-money.html https://www.math-only-math.com/subtraction-of-money.html Video Link www.youtube.com/watch?=EPdkGwXjf7c
9	**MONEY** Multiplication of money Division of money Word Problem	Pupils should be able to: use whole number to multiply money. divide money by whole number.	Pupils as individual multiply the money in their pocket by 5 and the first to get it shout his or her result. Pupils study a supermarket receipt on purchase of commodities, identify multiplication activity	Critical thinking and problem solving Communication and collaboration	AUDIO VISUAL RESOURCES Money Multiplication chart

WEEKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
	Quantitative reasoning **Importance** It is used in obtaining the basic necessities of life including food, clothing and shelter.	Solve real life problems on multiplication and division of money. (Online shopping to be included) solve quantitative reasoning problems.	and practice it. **QUANTITATIVE REASONING** 	Leadership and personal development Creativity and imagination	Departmental store receipt. WEB RESOURCES Site Link https://www.math-only-math.com/multiplication-of-money.html Video Link www.youtube.com/watch?v=3lgEo4cmPrE
10	**OPEN SENTENCE** Addition and Subtraction Multiplication Division Quantitative reasoning **Importance** It is used in finding the miles per gallon achieved by a car.	Pupils should be able to: illustrate and explain the term open sentence. predict the missing numbers in an open sentence. tell stories on open sentence, write and solve the equations. solve quantitative reasoning involving open sentence	Pupils: -respond to the following questions with TRUE or FALSE **8 + 4 = 5 + 7** **6X8 = 25+23** **5 - 4 =7+7** -predict missing numbers in these open sentences: e.g. (a) □ + 5 = 12 (b) 20 - □ = 9 -tell stories on open sentences, write the equations and solve them. **QUANTITATIVE REASONING** 	Critical thinking and Problem solving Communication and Collaboration Leadership and Personal development Creativity and Imagination	AUDIO VISUAL RESOURCES Flash cards WEB RESOURCES Site Link https://www.mathsisfun.com/algebra/open-sentences.html Video Link www.youtube.com/watch?v=PsUqgUA6Atc
11	REVISION	REVISION	REVISION	REVISION	REVISION
12	EXAMINATION	EXAMINATION	EXAMINATION	EXAMINATION	EXAMINATION
13	EXAMINATION	EXAMINATION	EXAMINATION	EXAMINATION	EXAMINATION

Term 3 Primary 4

LAGOS STATE MINISTRY OF EDUCATION
UNIFIED SCHEMES OF WORK FOR PRIMARY SCHOOLS

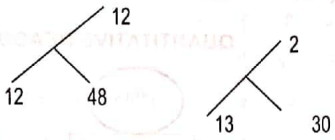
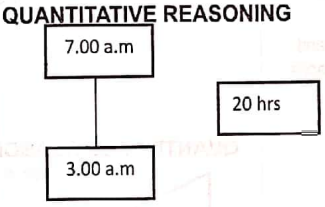
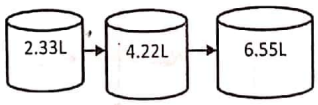
(MATHEMATICS FOR PRIMARY SCHOOL)
PRIMARY FOUR THIRD TERM

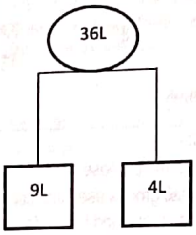
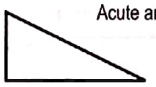
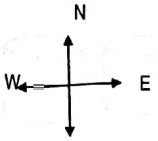
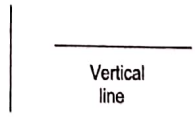
<table>
<tr><th>WEEKS</th><th>TOPICS</th><th>LEARNING OBJECTIVES</th><th>LEARNING ACTIVITIES</th><th>EMBEDDED CORE SKILLS</th><th>LEARNING RESOURCES</th></tr>
<tr><td>1</td><td>Revision of 2nd term's work.
Resumption Test</td><td>Revision of 2nd term's work
Resumption Test</td><td>Revision of 2nd term's work.
Resumption Test</td><td>Revision of 2nd term's work.
Resumption Test</td><td>Revision of 2nd term's work.
Resumption Test
AUDIO VISUAL RESOURCES
Tape rule
Measuring tape
Odometer
Fingers
WEB RESOURCES
Site Link
https://www.education.com/lesson-plan/whats-the-length
Video Link
www.youtube.com/watch?v=qLruC7--4T&t=828s</td></tr>
<tr><td>2</td><td>LENGTH
Estimating length
Comparing measurement
Addition and subtraction of length
Quantitative Aptitude

Importance
- It is used by fashion designers to measure clothes.
-carpentry works.-It is used in simplifying measurements.</td><td>Pupils should be able to:
estimate distances in kilometers and meters. e.g. estimate the width or height of: a wall, a table, a floor, plane shapes to the nearest meters or centimeters
compare measurement in meters and kilometers e.g. Dayo treks to the store which is a quarter of a kilometer from his house. If it takes him 15 minutes to get to the store, how many meters does he walk?
NB: 1 kilometer = 1000m
1/4km = 1000m/4 = 250m
calculate addition and subtraction of length in kilometers and meters.
Interpret and solve real life problems on length.
Solve quantitative reasoning on length.</td><td>Pupils as individual use non standard unit e.g. their fingers to measure the length of their tables and then compare their measurements.
Pupils in small groups use ruler or tape measure to measure different dimensions of objects in the classroom as follows.
<table><tr><th rowspan="2">Objects</th><th colspan="3">Measure</th></tr><tr><th>m</th><th>cm</th><th>mm</th></tr><tr><td>Height of door.</td><td></td><td></td><td></td></tr><tr><td>Width of door.</td><td></td><td></td><td></td></tr><tr><td>Length of a new a pencil.</td><td></td><td></td><td></td></tr><tr><td>Length of a marker board.</td><td></td><td></td><td></td></tr><tr><td>Length of a index finger.</td><td></td><td></td><td></td></tr></table>
QUANTITATIVE REASONING
<table><tr><th>m</th><th>Km</th></tr><tr><td>35000</td><td>35</td></tr><tr><td>54700</td><td>54.7</td></tr><tr><td>11200</td><td>11.2</td></tr></table></td><td>Critical thinking and problem solving
Communication and collaboration
Leadership and personal development
Creativity and imagination</td><td></td></tr>
<tr><td>3</td><td>WEIGHT
Addition and subtraction of weight
Multiplication of weight in kilograms by whole numbers
Division of weight in kilograms by whole number
Quantitative aptitude

Importance
It helps in the use of weighing heavy objects like haulage.
-It helps in the sales of frozen food items such as meat, fish, chicken, turkey, crabs, etc.</td><td>Pupils should be able to:
solve addition problems on weights of objects e.g. 236g + 362g = 598g
calculate difference in weights of objects
solve problems on multiplication of weight in kg and grams by whole numbers.
solve problems on division of weight in kg and grams by whole numbers.
solve real life problems on weight.
solve quantitative reasoning on weight</td><td>Pupils:
as a class discuss the meaning of weight.
in pairs compare the weights of their bags.
check their individual weight using the weighing scale and record.
find the sums and differences of their weights.

QUANTITATIVE REASONING
<table><tr><th>g</th><th>Kg</th></tr><tr><td>20</td><td>20000</td></tr><tr><td>3</td><td>3000</td></tr><tr><td>5</td><td>5000</td></tr></table></td><td>Critical thinking and problem solving
Communication and collaboration
Leadership and personal development
Creativity and imagination
Citizenship</td><td>AUDIO VISUAL RESOURCES
Weighing scale
Pictures of different measuring scales
Stone
Pupil's school bag
WEB RESOURCES
Site Link
https://study.com/academy/lesson/grams-kilograms-lesson-for-kids.html
Video Link
www.youtube.com/watch?v=44xeMoi3Hso</td></tr>
<tr><td>4</td><td>SQUARE AND RECTANGLE
Properties of a square and a</td><td>Pupils should be able to:
measure and calculate the perimeter of a square.</td><td>Pupils:
discuss the properties of a square and a rectangle.
in pairs use tape measure to record the length of each side of their desks, thenadd them together to get the</td><td>Critical thinking and problem solving
Communication</td><td>AUDIO VISUAL RESOURCES
Cardboard
Square chart</td></tr>
</table>

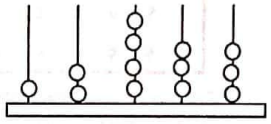
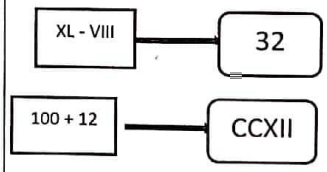
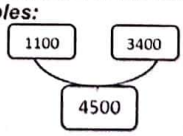
WEEKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
	rectangle. Perimeter of square Perimeter of rectangle Area of square and rectangle Quantitative aptitude **Importance** It helps in artistic design of houses and blocks/bricks making industries.	measure and compute the perimeter of a rectangle. solve the area of a square and rectangle. solve real life problems. solve quantitative reasoning related to areas and perimeters of squares and rectangles.	perimeter of their desks. They also multiply two of the lengths to calculate the area. use geoboard to make a square and rectangle. determine the amount of wall papers to decorate a wall of the classroom to understand the concept of an area of plane shape. Then paste the wall papers on the wall. **QUANTITATIVE REASONING** 	and collaboration Leadership and personal development Creativity and imagination	Classroom Tape rule Desktops **WEB RESOURCES** Site Link https://my.homecampus.com.sg/Learn/Primary-Grade-4/Measurement/Area-and-Perimeter-of-Rectangles-and-Squares Video Link https://youtu.be/ZMEaXHlfLac
5	**TIME** Calendar Date Quantitative aptitude **Importance** It helps us to schedule our activities with proper timing. -It helps Weather Forecaster. -To plan events and occasions e.g. festive periods, pregnancy period, arrival and closing at school etc.	Pupils should be able to: discuss the purpose of time. identify the seconds, minutes and hour hands on a clock. tell the time on the clock (digital and analogue). read and interpret and calculate time on daily, weekly and monthly activities using a calendar and recite 60 seconds make 1 minute rhymes of a year calendar. use the notation "a.m. (ante meridian- before noon)" and "p.m. (post meridian- after noon)" for time of the day conversion of hour to minutes, seconds and vice-versa tell stories on time in connection to real life problems solve exercises on quantitative aptitude.	Pupils: discuss the purpose of time and timing in life. in a small groups use flash cards to design seasons (raining, sunny and harmattan) of the year. as a class play a calendar game by picking at random from a box with questions like, today is? tomorrow willbe? How many days are in September? Count days ahead to plan event or back-date to trace historical events etc. NB: Pupils are to be exposed to real life experiences on time so that they can be time conscious for every event or occasion. **QUANTITATIVE REASONING** 	Critical thinking and problem solving Communication and collaboration Leadership and personal development Creativity and imagination	AUDIO VISUAL RESOURCES Wall clock (analogue and digital) Calendar Chart on seasons of the year. WEB RESOURCES Site Link https://youclevermonkey.com/2018/03/teaching-time.html Video Link www.youtube.com/watch?v=YJPIXvfFZQc
6	**CAPACITY** Basic units of measurements Addition and Subtraction in litres. Quantitative aptitude **Importance** It is used at the fuel station for fueling car. It helps to know the measurement of a containers and quantity of liquid they can hold. -To help solve problems in science class, laboratory and kitchen.	Pupils should be able to discuss the meaning of capacity. study the usage of standard measurement of some liquid containers e.g. bottles of water and soft drink, gallon of petrol, palm oil, groundnut oil etc.. convert liters to centiliters accurately e.g. 1000cl= 1 liter show the addition and subtraction in liters correctly. solve real life problems. solve quantitative aptitude.	Pupils: in groups fill different sizes of containers with water from a water vessel and then record their observation. in groups prepare a chart on metric unit conversion from smaller unit to bigger unit and vice versa. 	Critical thinking and problem solving Communication and collaboration Leadership and personal development Creativity and imagination Citizenship	AUDIO VISUAL RESOURCES Bottle of coke Bottle water Water vessel Number charts for easy identification WEB RESOURCES Site Link https://theschoolrun.com/what-is-capacity Video Link www.youtube.com/watch?v=CRdOth5TMuY
7	Review of first half terms and periodic test	MID-TERM BREAK	MID-TERM BREAK	MID-TERM BREAK	MID-TERM BREAK

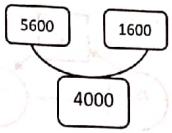
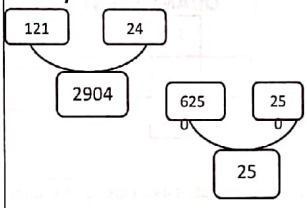
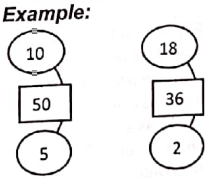
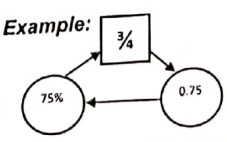
WEEKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
8	**CAPACITY** Multiplication in liters Division in liters Quantitative aptitude **Importance** It is used at the fuel station. It helps to know the actual capacity of a container.	Pupils should be able to: calculate the multiplication in litres by whole numbers solve in litres using division by whole numbers appreciate litres as the unit of capacity. Solve real life problems on capacity. use quantitative reasoning to solve problems in litres.	Pupils in groups measure and compare the quantity of a smaller container to be derive from a bigger container Unit Hunt Game: Three or four pupils hold 5 index cards each. Each player (pupil) is assigned a unit of measure (e.g. cm, litre, kg) to be written on the index cards. Variety of objects are presented to the pupils to tape the index cards to the appropriate objects. The winner is the first pupil to tape the cards to the appropriate items. **QUANTITATIVE REASONING**  	Critical thinking and problem solving Leadership and personal development Creativity and imagination Citizenship	AUDIO VISUAL RESOURCES Bottle of coke Bottle water Number charts/ easy identificatio WEB RESOURCES Site Link https://www.eplan m/worksheet_inf hs/keystage1/pic pic/877/978/m tion-and-divisor-problems-relate capacity Video Link www.youtube.com tch?v=cpTXdpT
9	**PLANE SHAPES** Symmetry on plane shapes Horizontal and vertical lines Cardinal points **Importance** It is used in designing of clothes, buildings etc	Pupils should be able to describe the symmetry of a shape. identify the symmetrical line on plane shapes e.g square, rectangle, triangle etc. in regulation to reflection. locate line(s) of symmetry of plane figures at school and homes identify right angle, acute and obtuse angles in plane shapes.	Pupils: in a group arrange their writing materials vertically and horizontally. in small groups arrange themselves in such a manner to form cardinal points. draw Nigerian flag on plane paper, colour it and draw the lines of symmetry on it. write the capital letters of the alphabets, select the letters that you can draw lines of symmetry on. Draw or write out the reflections of the letters on paper. **QUANTITATIVE REASONING** Acute angle is less than 90°  obtuse angle i.e. $90° > \theta < 180°$ identify the cardinal points i.e North, South, East, West.  distinguish between horizontal and vertical lines.  Horizontal line	Critical thinking and problem solving Communication and collaboration Leadership and personal development Creativity and imagination Citizenship	AUDIO VISUAL RESOURCES Metre rule Screw driver Pencil Biro WEB RESOURCES Site Link https://www.splash m.com/math-vocabulary/geomet horizontal Video Link www.youtube.com tch?v=PEYIc6AYC
10	**THREE DIMENSIONAL SHAPES (3D)** Quantitative Reasoning **Importance** It is useful in Art and Design, Architecture	Pupils should be able to: explain the meaning of three dimensional shapes. distinguish between 2 and 3 dimensional shapes. list the properties of three dimensional shapes. appreciate the presence and uses of 3 dimensional shapes at home. apply 3-Dimentional shapes into real life situations, solve quantitative reasoning	Pupils in groups use cardboards or cartons to build and design beautiful houses with these shapes - cube, cuboid, cone, pyramid and cylinder. **QUANTITATIVE REASONING** Copy and complete the table below **Shapes** | **No of edges** | **No of vertices** Tin of milk | | Cube of sugar | | Box of match | |	Critical thinking and problem solving Communication and collaboration Leadership and personal development Creativity and imagination Citizenship	AUDIO VISUAL RESOURCES Card board Cube of sugar maggi, die. Wooden pyramid Scissors WEB RESOURCES Site Link https://www.splash m.com/math-vocabulary/geomet 3-dimensional

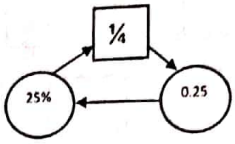
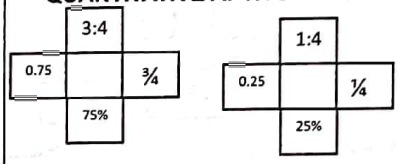
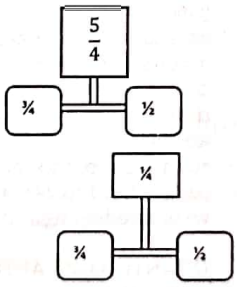
WEEKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
					Video Link www.youtube.com/watch?v=wal9k9bcqhs
11	**EVERYDAY STATISTICS** Pictogram Bar Chart Mode Simple probability **Importance** It helps in collecting, organizing, interpretingand presenting information in class, school or family.	Pupil should be able to: group data or information using diagram, pictures, images and symbols. draw a bar chart identify the mode from the graph. relate the graph to real life situations. tell stories on theoretical probability and solve the problems. solve quantitative reasoning.	Pupils: in the class are grouped according to their ages and represent the information in a chart. tell a story on data collection and interpreting. tell a story on theoretical probability, then solve. QUANTITATIVE REASONING P S S V C S P P S S P V S C C P V S P S V C C V P V C V S S C S S P S S Copy and complete the following Letter P appears how many times? Letter C appears how many times? Letter S appears how many times? Letter V appears how many times?	Critical thinking and problem solving Communication and collaboration Leadership and personal development Creativity and imagination Citizenship	AUDIO VISUAL RESOURCES Pencils Erasers Sharpeners Rulers Biros. Number charts for easy identification WEB RESOURCES Site Link https://www.splashlearn.com/math-vocabulary/geometry/baar-graph https://www.splashlearn.com/math-vocabulary/geometry/picture-graph Video Link www.youtube.com/watch?v=gKztszzzqsk
12	REVISION	REVISION	REVISION	REVISION	REVISION
13	EXAMINATION	EXAMINATION	EXAMINATION	EXAMINATION	EXAMINATION

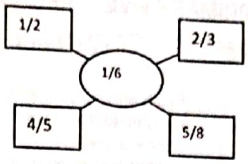
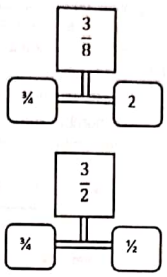
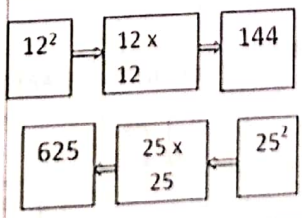
LAGOS STATE MINISTRY OF EDUCATION
UNIFIED SCHEMES OF WORK FOR PRIMARY SCHOOLS

(MATHEMATICS FOR PRIMARY SCHOOL)
PRIMARY FIVE FIRST TERM

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
1	**WHOLE NUMBERS** Counting and writing of numbers in thousands and millions Usage of abacus and number charts to identify and read numbers Place value of digits in whole numbers Place value of digits in decimal numbers Quantitative reasoning **Importance:** Day to day activities on counting Counting in thousands and millions help in addition of money, goods and commodities in large quantities.	Pupils should be able to: count in thousands and millions use abacus to form given numbers categorize the value of a digit in a whole number from a given set off digits in decimal numbers or whole numbers compare and order whole numbers to 100, 1000 round up nearest to the nearest 10, 000 apply counting of large numbers in real life problems. solve quantitative aptitude problems related to place value and whole numbers	Pupils as individuals identify values of each digit in a given number using abacus or place value number cards. Pupils in small groups categorize each digit in a decimal number according to its place value Pupils in pairs arrange and read large numbers using an abacus Example: Form and read 12 433 on abacus  **Answer: twelve thousand, four hundred and thirty-three** **QUANTITVE REASONING** ***Example:****Rearrange these numbers from the smallest to the biggest* 169 242, 209 242, 189 242, 179 242, 199 242 ***Answer:*** 169 242, 179 242, 189 242, 199 242, 209 242 **QUANTITATIVE REASONING** ***Example:****identify the place value of 9 in 7 789 125* ***Answer:*** 7 789 125 ⇨ 9 ⇨ 9 000	Critical thinking and problem solving Communication and Collaboration Leadership and Personal development	**AUDIO VISUAL RESOURCES** Abacus to form and read numbers Number chart for identification Number flash cards Flash cards with demonstration of place value of digits Video links http://m.youtube.com/watch?v=OURp7d_nJkM Site links https://math.libretexts.org/Bookshelves/PreAlgebra/Book%3A_(OpenStax)_(Prealgebra)/01%3A_Whole_Numbers/1.01%3A_Introduction_to_Whole_Numbers (Pa
2	**ROMAN NUMERALS** Changing Arabic numerals into Roman numbers Changing Roman numerals into Arabic numbers Addition and subtraction involving roman numerals **Importance:** Page identification in books It provides a new representation of numbers or numbering.	Pupils should be able to: convert Arabic numbers into Roman numbers change roman numerals to Arabic numbers add and subtract questions on roman numerals solve quantitative aptitude problems on roman numerals	Pupils: are divided into two groups. Few flash cards are scattered on the floor, each having Roman numerals written on it. Some numbers are given to both teams. One member from each team has to run with a number and pick the necessary roman numbers to match a required number given. The first group to finish after 3 to 5 rounds is the winner. Sing roman numeral songs. **QUANTITATIVE APTITUDE**  	Critical thinking and problem solving Student leadership and Personal development	**AUDIO VISUAL RESOURCES** Roman numerals flash cards Charts **Site links** https://study.com/academy/lesson/roman-numerals-lesson-plan.html **Video links** https://m.youtube.com/watch?v=_v2x9jd0HM
3	**ADDITION AND SUBTRACTION OF NUMBERS** Addition of whole numbers in thousands and millions Subtraction of whole numbers in thousands and millions Real life problems on addition and subtraction in thousands and millions Quantitative reasoning **Importance:** The knowledge of addition and subtraction	Pupils should be able to: add and subtract whole numbers involving three or more terms tell addition story and subtraction story. carry out correct addition and subtraction in everyday life activities correctly. solve quantitative aptitude problems involving addition and subtraction of whole numbers and decimal numbers	Pupils in small groups use a pair of abacus to add or subtract three or more-digit numbers Pupils as individuals apply place value in addition and subtraction of numbers. Pupils in pairs tell stories that require addition and subtraction in real life problems and solve them **QUANTITATIVE REASONIN** ***Examples:***  	Communication and collaboration Critical thinking and problem solving Student leadership and personal development Role play	**AUDIO VISUAL RESOURCES** Abacus charts for correct addition and subtraction of three or more-digit numbers Charts Physical materials e.g. counters, pebbles, money **Video links** https://m.youtube.com/watch?v=wNhbz1EUcPc **Site links** https://cnx.org/contents/

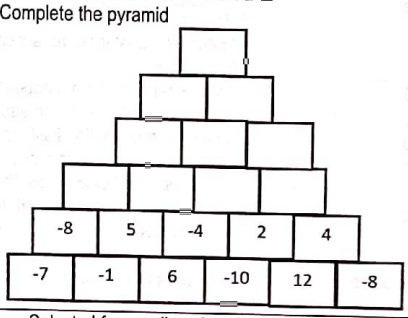
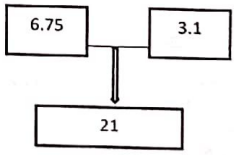
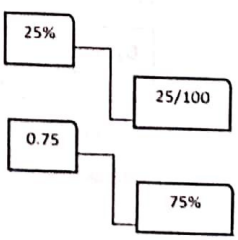
WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
	helps in day to day activities. For example, buying and selling of food items, provisions, balancing or preparing account sheet in a store etc.				CasoU7Z@5/Addition-and-subtraction-of-Whole-Numbers-Subtraction-of-Whole-Numbers
4	**MULTIPLICATION AND DIVISION OF WHOLE NUMBERS** Multiplication and division of three-digit numbers by three-digit numbers Multiplication of numbers by zero and one Real life problems on multiplication and division Division of numbers by 10, 20...90, 100,..... 200 and 1000, 2000..... Quantitative reasoning **Importance:** The idea of multiplication and division helps in faster calculations where large digit numbers which are paired or are in groups are needed to be counted.	Pupils should be able to: multiply and divide numbers with three digits by three digits solve real life problems on multiplication and division of whole numbers multiply numbers by zero and one divide numbers by 10 and multiples of 10 up to 90, 100, 200 and 1000 respectively solve quantitative aptitude problems on multiplication and division of whole numbers	Pupils in a class are arranged into smaller groups of five pupils. The group leader now identifies the number of groups created from the class population. This activity shows division have taken place Pupils in pairs arrange groups of different concrete materials in same quantity. To calculate the total quantity, they are asked to count the number of materials in a group and multiply with the number of groups available. (Additive Multiplication) Pupils as individual recite the multiplication table forward and backward off-hand. **QUANTITATIVE REASONING** ***Example:*** 	Role play Student leadership and Physical development Critical thinking and problem solving	**AUDIO VISUAL RESOURCES** Physical materials Multiplication flash cards Multiplication charts **Site link** https://math.libretexts.org/Bookshelves/PreAlgebra/Book%3A_Prealgebra_(Arold)/01%3A_The_Whole_Numbers/1.03%3A_Multiplication_and_Division_or_Whole_Numbers **Video Link** https://m.youtube.com/watch?v=6MFluoDmubU
5	**PRIME NUMBERS** Identification of odd and even numbers Identification of prime numbers less than 200 Lowest Common Multiples Highest Common Factor Quantitative Reasoning **Importance:** LCM helps in multiples of numbers HCF helps in normal division knowledge	Pupils should be able to: identify even and odd numbers in a given set of numbers categorize prime numbers less than 200 from a given set of numbers solve problems involving LCM and HCF solve quantitative aptitude problems related to prime numbers and factors	Pupils: in pairs categorize numbers less than 100 into odd or even numbers in tabular form using number flash cards in small groups use flannel boards and cards to identify common factors and multiples of given numbers class do a role play on skip counting of numbers in twos where numbers are distributed in ascending order round the class, pupil with number says his number aloud and step forward, followed by the next pupils who steps backward. In this manner, pupils with odd numbers and even numbers would have been separated into two groups.. **QUANTITATIVE APTITUDE** ***Example:*** 	Communication and collaboration Student leadership and personal development Critical thinking and problem solving	**AUDIO VISUAL RESOURCES** Charts of factors of numbers Charts of multiples of numbers Flash cards Flannel boards **Site links** https://study.com/academy/lesson/prime-numbers-lesson-plan.html video links https://youtu.be/4eNr1q-kOie
6	**FRACTIONS** Ordering of fractions Changing fractions to decimals Changing decimals to fractions Changing fractions and decimals to percentage Quantitative reasoning **Importance:** it helps in buying and selling	Pupils should be able to: arrange fractions in ascending or descending order change fractions to decimals and vice versa convert fractions and decimals to percentages solve real life problems. solve quantitative aptitude problems related to decimals, fractions and percentages	Pupils as a class use the fractions chart in computing percentages Pupils cut a cardboard into two, resulting into ½, the same action is repeated in the same pattern for each of the slices to give ¼, ⅛etc. **QUANTITATIVE APTITUDE** ***Example:*** 	Critical thinking and problem solving Communication and collaboration Student leadership and personal development	**AUDIO VISUAL RESOURCES** Cardboards Fraction to decimal conversion charts Fraction to percentage conversion charts Decimal to percentage conversion charts Percentage to decimal conversion charts

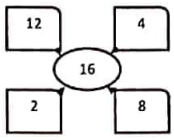
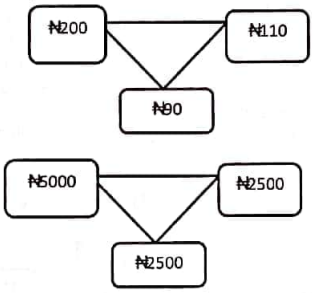
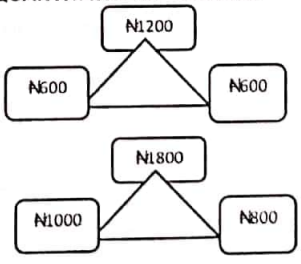
WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	MATHEMATICS LEARNING RESOURCES
	It also helps in the banking sector It helps in easy sharing of items or concrete objects.				**Site links** https://study.com/academy/lesson/what-is-fraction-definition-and-types.html **Video links** https://m.youtube.com/watch?v=zQutUNE5Jrw
7	Review of the first half term's work and periodic test	Pupils should be able to: review the first half term's work participate in the periodic test.	Pupils are to be grouped into three or more groups to do revision on topics treated. Pupils participate and interact with each other.	Leadership skill	Past questions Exercises from textbooks and notebook.
8	**RATIOS** Relationship between ratio and fractions Solving real life problems on ratio Quantitative aptitude **Importance:** It helps to determine better prices of commodities in a grocery store.	Pupils should be able to: explain the meaning of ratio express ratios in terms of fractions solve real life problems on ratios. solve quantitative aptitude problems related to ratio	Pupils discuss their understanding on ratio Pupils as a class perform a role play where they split ten concrete materials between two pupils; one taking three and the other seven. In this way, we say that the ten concrete materials are shared in the ratio three to seven i.e. 3:7 **QUANTITATIVE APTITUDE** 	Communication and collaboration Citizenship Critical thinking and problem solving	**AUDIO VISUAL RESOURCES** Physical materials e.g. objects, orange sticks, counters **Site links** https://study.com/academy/lesson/ratio-lesson-plan.html **video links** https://m.youtube.com/watch?v=nUAS2PN83LY
8	**ADDITION AND SUBTRACTION OF FRACTIONS** Addition of fractions and mixed numbers Subtraction of fractions and mixed numbers Addition of decimal fractions Subtraction of decimal fractions Real life problems Quantitative reasoning **Importance:** -Calculating stock market prices. -Measuring wood dimensions used for building.	Pupils should be able to: add and subtract fractions with common denominators add two proper fractions, improper fractions and mixed fractions subtract two proper fractions, improper fractions and mixed fractions apply addition and subtraction of proper and improper fractions into real life problems use LCM method to add and subtract fractions solve quantitative aptitude problems related to addition and subtraction of mixed numbers	Pupils as a class give examples of everyday life activities where accuracy of addition and subtraction of fractions are required e.g. sharing pizza or slices of bread. Pupils in a group use a tape measure to measure the length of 2 arms of a pupil and add the results together. **QUANTITATIVE REASONING** ***Example:*** 	Critical thinking and problem solving Communication and collaboration Student leadership and personal development	**AUDIO VISUAL RESOURCES** Fraction charts Chart showing basic operations on addition and subtraction **SITE LINK** **Site links** https://study.com/academy/popular/adding-fractions-numbers-lesson-plan.html Video link https://m.youtube.com/watch?v=Y69lobPbFMU
9	**MULTIPLICATION OF FRACTIONS** Multiplication of decimals by whole numbers Multiplication of fractions Real life problems on multiplication of decimals and fractions Quantitative reasoning **Importance:** -To calculate discount of an item in sales -To determine the ingredients needed to bake cake or pastries	Pupils should be able to: multiply fractions solve real life problems on multiplication of fractions multiply given decimals by whole numbers interpret and solve the given real-life problems solve given problems in quantitative aptitude on multiplication of decimals and fractions	Pupils as individuals solve mental sum on multiplication of numbers by 0 and 1 Pupils in pairs carry out multiplication of fractions using fraction flash cards or charts Pupils as a class recite the multiplication times tables of 8 and 9 forward and backwards Pupils in pairs give real life examples where multiplication and division involving decimal numbers or fractions can take place	Critical thinking and problem solving Communication and collaboration Student leadership and personal development	**AUDIO VISUAL RESOURCES** Charts on division of numbers of 12 and multiples of 12 up to 90 Flip chart Multiplication chart **Site links** https://study.com/academy/popular/multiplying-fractions-lesson-plan.html **Video links** https://m.youtube.com/watch?v=PMSmFiXBFVM

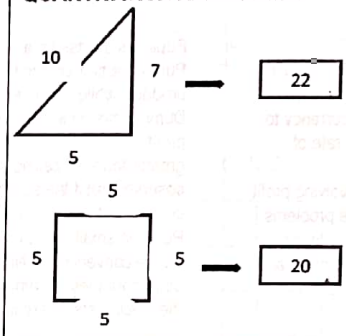
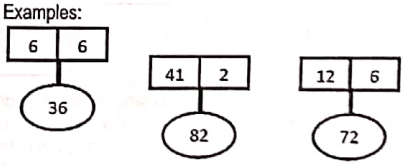
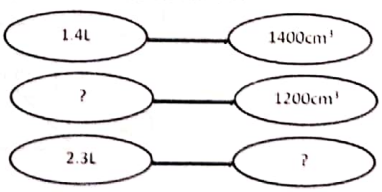
WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
			QUANTITATIVE REASONING ***Example:***  		
10	**DIVISION OF FRACTIONS** Division of decimals by whole numbers Division of fractions Real life problems on division of decimals and fractions Quantitative reasoning **Importance:** It helps in Maths puzzles It helps in measuring quantities It helps in understanding the nature of numbers and their interaction	Pupils should be able to: divide fractions solve real life problems on division of fractions apply the rule of shifting decimal points to the left to obtain result of division of numbers by 10, 100 and 1000. divide given decimals by whole numbers tell a division story on fractions and interpret to solve real-life problems quantitative aptitude on division of decimals and fractions	**QUANTITATIVE REASONING** ***Example:***  Multiplication game Players – 3 or 4 Materials – poster board, a dice. Procedure: Draw a big circle on a cardboard. Divide the circle into 16 to 18 segments. In each of the segments, paste different fraction flash cards. Each pupils in turn rolls a dice, the segment where the rolled dice stops, the fraction there is multiplied by the number that appears on the dice. A point is recorded for correct answer. The first pupils to score 5 points is the winner.	Critical thinking and problem solving Communication and collaboration Student leadership and personal development	**AUDIO VISUAL RESOURCES** Charts on division of numbers of 10 and multiples of 10 up to 90 Chart containing worked problems involving division of numbers by 100 and 200 Flip chart Fraction chart **Site links** https://study.com/academy/popular/dividing-fractions-lesson-plan.html **Video links** https://m.youtube.com/watch?v=PMSmFiXBFVM
11	**SQUARES AND SQUARE ROOTS** Squares of numbers Square roots Square of whole numbers up to 50 Square roots of whole numbers up to 900 Real life problems on squares and square roots of numbers Quantitative reasoning **Importance:** -Civil Engineers use it when building a road coming off of a hill side. -Architects use it to prepare blue prints of projects.	Pupils should be able to: find the square of a given whole number more than 50 find the square root of a perfect square of a whole number greater than 400 perform basic operations on squares and square roots of numbers. find the square root of perfect squares solve real life problems related to square and square roots solve quantitative aptitude problems relating to squares and square roots of whole numbers	Pupils as a class recite squares of numbers using the squares of numbers charts placed around the classroom Pupils as a class discuss how squares and square roots can be obtained and applied to real life problems Pupils use this mental maths drill to practice calculation of squares of numbers $(56)^2$ 1st step 5^2 6^2 25 36 2nd step 5 x 2 = 10x6 = 60 3rd step 25 36 + 60 31 36 **QUANTITATIVE REASONING**  	Critical thinking and problem solving Communication and collaboration Student leadership and personal development	**AUDIO VISUAL RESOURCES** Squares of numbers charts for reading and identifying squares of numbers Charts on quantitative aptitude problems on square roots and square of whole numbers **Site links** https://study.com/academy/lesson/perfect-squares-square-roots-up-to-144-lesson-for-kids.html Video links https://youtu.be/dTerpjRkFs https://m.youtube/watch?v=nTPMNnPOMU
12	REVISION	REVISION	REVISION	REVISION	REVISION
13	EXAMINATION	EXAMINATION	EXAMINATION	EXAMINATION	EXAMINATION

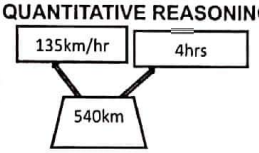
LAGOS STATE MINISTRY OF EDUCATION
UNIFIED SCHEMES OF WORK FOR PRIMARY SCHOOLS

(MATHEMATICS FOR PRIMARY SCHOOL)
PRIMARY FIVE SECOND TERM

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
1	**REVISION/ NUMBER LINE** Revision of 1st Term's work Addition using number line Subtraction using number line Real life problems Quantitative reasoning **Importance:** It is used for easy addition and subtraction procedures It helps in the reading of clinical thermometer.	Pupils should be able to: revise 1st term's topics add and subtract using number lines solve quantitative aptitude problems related to addition and subtraction of integers using number lines	Pupils are guided to write numbers -7 to +7 on sticky notes and place them on the floor in the class in ascending or descending order on a number line and allow enough space in-between the numbers. 3-4 pupils select simple addition or subtraction flash cards from a basket, e.g. 1 +6, 2 -5, -3+4 etc. Each pupil in turns is to stand and walk on the number line for addition or subtraction. Pupil in the class count aloud the movement of the volunteer according to the flash card picked. Pupils in groups use letters to represent numbers on number line. E.g. which letter best represent the number 2½ on the number line? K L M N O 1 2 3 4 The answer is letter M. **QUANTITATIVE APTITUDE** Complete the pyramid  	Critical thinking and problem solving Communication and Collaboration Leadership and Personal development	AUDIO VISUAL RESOURCES Coloring pens Number line sticky notes Flash cards **Site links** https://study.com/academy/lesson/number-line-lesson-plan.html **Video links** https://m.youtube.com/watch?v=WV...7uY
2	**ESTIMATION** Rounding up numbers Estimation sums, differences and products Quantitative reasoning **Importance:** Manipulating and storing of data in a computer system Used in building blocks like logic gates, registers and arithmetic processors Estimating the total cost of items at a departmental store.	Pupils should be able to: round up numbers to the nearest 10, 10 and whole numbers rounding numbers to the nearest tenth, hundredth and thousandth estimating sums, differences and products solve quantitative aptitude problems related with binary numbers	Selected few pupils to be given a handful of raw corns or beans . They are then asked how many are there without counting them Pupils in groups study and work on a receipt of a grocery store or a supermarket to practice estimation. **QUANTITATIVE APTITUDE** Example:  	Communication and collaboration Critical thinking and problem solving Digital literacy Student leadership and personal development	AUDIO VISUAL RESOURCES flash cards charts Erasers -Grocery store recepts. **Site links** https://study.com/academy/lesson/estimation-lesson-for-kids.html **Video links** https://m.youtube.com/watch?v=EVC8...
3	**PERCENTAGES** Meaning of percentages Changing a percentage to a fraction of decimal and vice versa Express number as a percentage of another Quantitative reasoning **Importance:** Percentages are used in calculating discounts on sales of goods, bank interest rates, rates of inflation They are important for understanding the financial aspects of everyday life It helps to interpret a monthly budget	Pupils should be able to: explain the term "Percentage" calculate the ratio of two numbers solve questions related to real life problems on percentages express a number as a percentage of another number solve quantitative related questions on percentages	Pupils work in pairs. Work on hundred boxes drawn on a piece of cardboard and then shade 10 out of the 100 boxes which is 10 out of 100. The process of percentage have been displayed which is 10%. **QUANTITATIVE APTITUDE**  	Communication and collaboration Critical thinking and problem solving Student leadership and personal development	AUDIO VISUAL RESOURCES Percentage charts Cardboards Pencils Coloring pens **Site links** https://study.com/academy/lesson/percents-lesson-plan.html **Video links** https://m.youtube.com/watch?v=x1w0C04C9uo

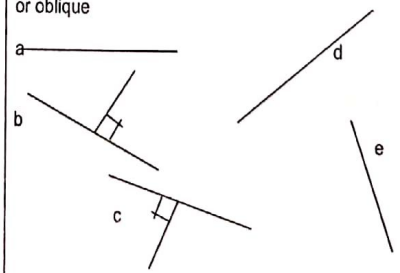
WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
4	**ALGEBRAIC PROCESSES** Simple equations Solving equations, using the balance method Solving real life problems using equations Quantitative reasoning **Importance:** It is necessary for better understanding of balancing quantity of commodities statistics and calculus It is faster and better than basic mathematics It reinforces logical thinking	Pupils should be able to: find missing numbers in open sentences use letters to represent boxes in open sentences solve real life problems involving equations calculate the value of algebraic expressions by substitution solve quantitative aptitude problems on algebraic expressions	Pupils in two groups do a role play on algebraic expression using an longer for hanging dresses. An hanger is on the handle of a classroom door pupils get 8-10 pegs of one colour (blue) and tie a thread to each of them. then tie 6pegs to **QUANTITATIVE REASONING** left side of the hanger and 2pegs to the right side of the hanger. It is observed that the position of the hanger is not balanced. To balance it, tie thread to another coloured pegs (red) and start to attach it one by one to the side of the hanger that dropped until it balances. Then count the number of pegs used to balance the hanger. **THE EQUATION** Left Right 6 blue pegs+2blue pegs= 8 blue pegs 6 blue pegs+2blue pegs= 8 blue pegs + 4 red pegs + 4 red pegs 6 pegs+6 pegs= 12 pegs 	Role play Student leadership and Physical development Critical thinking and problem solving Digital literacy	**AUDIO VISUAL RESOURCES** Paper notes e.g. money Recording sheet for pupil's observation Multiplication and division flash cards **Site links** https://study.com/academy/lesson/solving-algebraic-equations-defination-examples.html **Video links** https://m.youtube.com/watch?v=F1azJEdfx5c
5	**COMMERCIAL MATHS: MONEY** Introduction to money Conversion of the currency of a country to another country. Profit and loss Quantitative reasoning **Importance:** It is a medium of exchange in day to day transactions It helps in payment of services and settling bills for family needs e.g. education, health care, charity, vacation trips etc.	Pupils should be able to: recognize currencies used in Nigeria and other countries convert from one currency to another, using the rate of conversion solve problems involving profit and loss in real life problems solve quantitative aptitude problems related to profit and loss in money	Pupils as a class do a role play of class business. Pupils are shared into two groups. A group sells products while the other buys the products. Dummy money is required for exchange. Also, profit and loss are observed. If the cost price is greater than the selling price, there is loss observed but if the selling price is greater that the cost price, there is a profit. Pupils in small groups use dummy monies to work on the conversion of Nigerian currency (₦) into other countries' currencies and vice versa using the official rate of exchange. **QUANTITATIVE REASONING** 	Digital literacy Critical thinking and problem solving Communication and collaboration Student leadership and personal development	**AUDIO VISUAL RESOURCES** Paper material e.g. money Recording sheet for pupil's observation **Site links** https://byjus.com/maths/profit-and-loss/ **Video links** https://m.youtube.com/watch?v=RtqSqqRy8to
6	**COMMERCIAL MATHS: MONEY** Simple interest Discount and commission Money transactions Quantitative Reasoning **Importance:** Discount on sales draw customers to sales and services Money most important function is as a medium of exchange to facilitate transaction	Pupils should be able to: explain the simple interest in business transactions. solve problems on discount and commission find commissions, discount, simple interest on real life problems e.g. post offices, markets, etc. solve problems involving money transactions solve quantitative aptitude problems related to simple interest, discount, commission.	Charts on money of different denominations are placed around in the classroom and dummy monies are given to the pupils. The pupils in class work in groups brainstorming on giving different ways a smaller denominations can make up a bigger denomination and breaking down of a bigger denomination into smaller denominations. Pupils do a role play on obtaining discount on sales of item(s) and getting commission from a company on sales of products. **QUANTITATIVE REASONING** 	Communication and collaboration Student leadership and personal development Critical thinking and problem solving	**AUDIO VISUAL RESOURCES** Money charts and flash cards **Site links** https://betterlesson.com/lesson/553000/simple-interest **Video links** https://m.youtube.com/watch?v=Y20HH6qoRbk

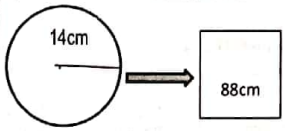
WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
7	Review of the first half term's work and periodic test	Pupils should be able to: review the first half term's work participate in the periodic test.	Pupils are grouped into three or more groups to do revision on topics treated. A group leader for each of the groups coordinates the activities. Allow the members of each group to participate and interact with each other.	Leadership skill	Past questions Exercises from textbooks and notebook.
8	**PLANE SHAPES** (PERIMETER) Meaning of perimeter Perimeter of regular plane shapes Perimeter of irregular plane shapes Real life problems on perimeter Quantitative aptitude **Importance:** They help in quantifying physical space e.g. fencing plots of land, roofing of a house. They provide foundation or more advanced Mathematics found in algebra, trigonometry and calculus e.g. quantity of tiles or rug/carpet to cover living room, rooms or toilet walls.	Pupils should be able to: explain the concept of perimeter find the perimeter of regular and irregular shapes solve the perimeter of a circle relate perimeter to real life problems and solve. solve quantitative aptitude problems related to perimeter of regular and irregular plane shapes	Pupils in pairs are asked to cut a polygon with measured shapes. They join the polygons together to give just a shape. After doing that, measure the total length around the shape being created. Pupils in small groups use tape measure to measure the perimeter of desk in the class. Pupils in groups use a thread or fishing thread, cut into sizeable pieces to for on a circle on a bottle. distance round the bottle circle is the circumference. Then, the thread or fishing thread is straightened to form a straight line, use ruler to measure the line. This is the perimeter of the circle. **QUANTITATIVE REASONING** 	Communication and collaboration Role play Critical thinking and problem solving Digital literacy	**AUDIO VISUAL RESOURCES** Flash cards on formulas of perimeter s of shapes Cardboards to create a polygon Scissors **Site links** https://study.com/academy/lesson/perimeter-of-irregular-shapes-lesson-plan.html https://study.com/academy/lesson/perimeter-of-regular-shapes-lesson-plan.html **Video links** https://m.youtube.com/watch?v=_yKtAvwuTuc
9	**PLANE SHAPES** (AREA) Area of regular shapes Area of irregular shapes Area of right-angled triangle Real life problems on area Quantitative reasoning **IMPORTANCE:** -Farmers use it to know the number of seedling to plant on a small piece of land. -Horticulturists use it to plant flowers or carper grasses on a field. -Painters use it to calculate the number of paint buckets to paint a room.	Pupils should be able to: find the area of regular, irregular shapes and its unit. calculate the area of right angled triangle. solve real life problems on area of regular, irregular and right-angled triangles solve quantitative aptitude problems related to area of regular, irregular and right-angled triangles	Pupils : -in pairs use the classroom in unlocking the concept of area. They count the number of columns in the class and multiply it with the number of rows, the resulting figure gives a rough estimate of area of the class. - in small groups draw a diagonal on a rectangular plane sheet to identify a right angle triangle. Use a pair of scissors to cut out the triangle and use a ruler to measure the base and the height. Then use the information to calculate the area. Sing songs on plane shapes. **QUANTITATIVE REASONING** Examples: 	Critical thinking and problem solving Communication and collaboration Student leadership and personal development Digital literacy	**AUDIO VISUAL RESOURCES** Cardboards Flash cards to show the formula of areas of shapes Charts containing different shapes with their areas **Site links** https://study.com/academy/lesson/area-of-irregular-shapes-lesson-plan.html https://study.com/academy/lesson/perimeter-of-regular-shapes-lesson-plan.html **Video links** https://m.youtube.com/watch?v=_5hXxFSE6qk
10	**VOLUME AND CAPACITY** Measurement of volume in cubes and cuboids using unit cubes Measurement of volume in cubes and cuboids using formula Comparing volume of spheres and cuboids Discovering relationships between litre and cubic centimeter Real life problems Quantitative reasoning **Importance:** -It is useful in science laboratories, and catering services	Pupils should be able to: use units to find the volume of cube and cuboids use formula to find the volume of cuboid find the relationship between litres and cubic centimeters convert cm^3 to litres and vice versa solve given problems in quantitative aptitude on volume and capacity	Pupils in small groups are taken for a gallery work round the school. They observe different storage materials that have their volumes and capacities written on them. For example water storage tank, water buckets, kegs, water bottles etc. They then compare the differences between all various types of materials with their respective volumes and capacities, arranging them in their increasing sizes **QUANTITATIVE REASONI** 	Critical thinking and problem solving Communication and collaboration Student leadership and personal development Gallery walk	**AUDIO VISUAL RESOURCES** Coloring pencils for recording observations Recording sheets for taking observations **Site links** https://study.com/academy/lesson/volume-capacity-lesson-for-kids.html **Video links** https://m.youtube.com/watch?v=zVanQrFRdsE

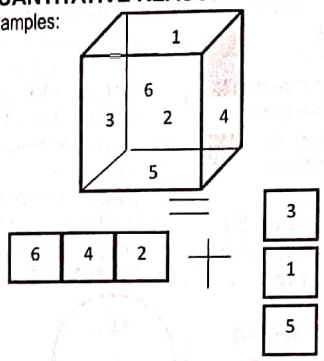
WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
	-It helps in the correct measurement of quantities e.g. groundnut oil, palm oil, kerosene, water etc.				
11	**TIME** Average speed Distance Duration Real life problems. Quantitative reasoning **Importance:** -Used by travelers, motorists, tourists to plan activities and movements.	Pupils should be able to: find the duration between one time and another calculate the distance covered within a length of time solve the average speed of a moving object given the total distance travelled and the time taken convert the units of time express the hours of a clock in minutes, seconds and vice versa solve real life problems on distance , time and speed. solve quantitative aptitude relating to time`	Pupils as an individual checks and says the time on a wall clock placed at the front of the class. Pupils work in small groups. A leader is chosen, he chooses another pupil in the group. A distance of about 5m is set between two pupils, a timer is also set to record the time involved in the throwing and catching of a ball over a specified distance. This activity goes on repeatedly for 5m, 10m, 20m, 30m, for each group. respectively. At the end of the activities, the time differences are compared. The pupils will notice that the farther the distance, the more time it takes the ball to reach its final destination **QUANTITATIVE REASONING**  	Critical thinking and problem solving Communication and collaboration Student leadership and personal development Digital literacy	**AUDIO VISUAL RESOURCES** Timer for checking time Ball Clock **Site links** https://study.com/academy/lesson/average-speed-velocity-lesson-for-kids.html **Video links** https://m.youtube.com/watch?v=Q05MCut03Y
12	**PROJECT** Pupils are divided into two groups. Each group is to work on types of angles and types of triangles. Materials: ice-cream sticks, markers, cardboards and glue. Procedure: Paint the ice-cream sticks with markers of different colours, arrange the sticks by using glue to paste them on a cardboard to form types of angles and types of triangles in each of the respective groups.	By the end of the lesson, students should be able to: 1. interact within the group and discuss how each project work is done.	i. Choose group leaders in each group. ii. Follow the procedure for the project. iii. Each group leader gives a presentation on mode of operation. iv. The students take a gallery walk where the projects are displayed.	-Leadership Skill -Communication and collaboration (Team work) -Critical thinking -Citizenship	
12	Project/Practical work and Revision of first term's work and preparation for Examination.	Pupils should be able to: Realize the areas of weakness in the topics treated for the term.	Pupils are arranged into groups for tutorial. The teacher supervises, corrects and marks the students' exercises/activities in each group	Collaboration Communication Leadership Skills Critical Thinking	
13	EXAMINATION	EXAMINATION	EXAMINATION	EXAMINATION	EXAMINATION

LAGOS STATE MINISTRY OF EDUCATION
UNIFIED SCHEMES OF WORK FOR PRIMARY SCHOOLS

(MATHEMATICS FOR PRIMARY SCHOOL)
PRIMARY FIVE THIRD TERM

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
1	**REVISION/ TEMPERATURE** Temperature of objects and towns in degrees Celsius Conversion of centigrade to Fahrenheit Conversion of Fahrenheit to Centigrade Real life problems on temperature Quantitative reasoning **Importance:** It plays a crucial role in Medical care, Foods and Beverages companies, Agricultural products processing It helps to check and monitor body temperature.	Pupils should be able to: Discuss the meaning of temperature. compare the degree of hotness or coldness in degree Celsius convert a given temperature in Centigrade to Fahrenheit change a given temperature in Fahrenheit to Centigrade appreciate the usefulness of temperature in our daily life solve quantitative aptitude problems related to temperature	Pupils: as individuals are asked to give their understanding of temperature and share with the class 3 to 4 pupils in the class use thermometer to examine their temperatures. Pupils in groups are given three cups each (each cup containing ice water, warm water and hot water). They use thermometer to check the temperatures of the water in each the cups and write their observations. After doing that, one cup is retained in the class, two cups are taken outside- one inside the sun and the other in the shade under a tree for ten minutes. Later-on, they check the differences in the three cups and write their observations **QUANTITATIVE REASONING** Examples: convert the following temperatures from Celsius to Fahrenheit using the formula $(\frac{9}{5}0\ ) + 32$ $25^oc \rightarrow 77^oF$; $40^oc \rightarrow 104^oF$; $20^oc \rightarrow 68^oF$ Examples: convert the following temperature from Celsius to Kelvin using the formula $K = {}^oC + 273$ $30^oc \rightarrow 303K$; $77^oc \rightarrow 350K$; $13^oc \rightarrow 286K$	Critical thinking and problem solving Communication and Collaboration Leadership and Personal development	AUDIO VISUAL RESOURCES Plastic cups Ice Warm water Refrigerated water Recording sh **Site links** https://www.educ .com/lesson-plan/time-mone temperature/ **Videdinks** https://m.youtube /watch?v=wlPslq k
2	**LINES, ANGLES AND BEARINGS** Parallel and perpendicular lines Complementary and supplementary angles Quantitative reasoning **Importance:** Angles are used for designing and construction of roads, buildings and sporting facilities	Pupils should be able to: identify parallel and perpendicular lines in measuring and drawing angles, using the protractor identify and calculate the complementary, opposite and supplementary angles by telling the directions accurately using angles in real life situations. solve quantitative aptitude problems on parallel and perpendicular lines, complementary and supplementary lines	Pupils: use body parts to demonstrate types of angles. use broomsticks or straws to demonstrate lines and how angles are formed. work in pairs, use their writing materials, e.g. a pair of compass ruler,pencils, to construct lines and angles **QUANTITATIVE APTITUDE** Categorize the following lines into horizontal, vertical or oblique 	Communication and collaboration Critical thinking and problem solving Student leadership and personal development	AUDIO VISUAL RESOURCES Cardboard Writing materials Flash cards **Site links** https://www.educa .com/lesson-plan/angles-and-in **Video links** https://m.youtube /watch?v=SUc66L Vg

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
3	**PLANE SHAPES** (PROPERTIES) Properties of a rhombus, square and rectangle Quadrilaterals Components of circle Real life problems. Quantitative reasoning **Importance:** Circles are used to symbolize harmony and unity It is used in designing the shape of camera lenses, pizzas, tyres, steering wheels, cakes, pies, buttons, etc.	Pupils should be able to: identify types and state basic properties of rhombus square rectangle in relation to real life situations. recognize quadrilaterals and state basic properties of quadrilaterals use real object to discuss the component parts of a circle and draw a circle with a specified radius. solve quantitative reasoning problems on properties of square, rectangle, quadrilaterals, circle solve real life problems	Pupils in groups gets random circles that can be folded and measured. The circle will include several sizes of paper plates, pizza box inserts in different number of sizes. They use a thread/string to measure the circumference of their circles for comparism, then place each thread on a ruler to measure the length which is the circumference . Then fold each circle into a quarter to find the point of intersection i.e. to identify the diameter. Use the measurement from the point of intersection to identify the radius too. **QUANTITATIVE APTITUDE**  	Communication and collaboration Critical thinking and problem solving Student leadership and personal development	**AUDIO VISUAL RESOURCES** Thread Recording sheets Materials e.g. paper, cardboards **Site links** https://study.com/academy/lesson/plane-shapes-types-properties.html **Video links** https://study.com/academy/lesson/plane-shapes-types-properties.html
4	**ANGLES** Angles Types of angles Transversal Measurement of angles Sum of angles on a straight line and shapes Quantitative reasoning **Importance:** Angles are used in constructions of houses Angles are used in making cloth hangers, scissors, arrowhead, windows, doors, etc.	Pupils should be able to: explain angles as a space between two lines that meet mention types of angles with examples in their immediate environment. measure angles in degrees by using protractor use the parallel and transversal lines to determine: corresponding alternate and vertically opposite angles solve real life problems on angles. solve quantitative aptitude problems on angles	Pupils: in pairs fold a piece of paper into two, the second time on the first straight line. A right-angled triangle is formed work individually to do physical exercises to identify the types and formation of angles, e.g. stretching and folding arms to certain degrees, curving elbows, bending the knees etc. turn the hands of a clock to measure different angles. **QUANTITATIVE APTITUDE** Example: Find the missing angle  Add all angles together (sum of angles in a triangle is 180°) 50 + 80 + x = 180 130 + x = 180 Subtract 130 from both sides 130 – 130 + x = 180 – 130 X = 50°	Student leadership and Personnel development Critical thinking and problem solving	**AUDIO VISUAL RESOURCES** Angles flash cards Charts containing all types of angles for easy learning **Site links** https://www.education.com/lesson-plan/angles-and-lines/ **Video links** https://m.youtube.com/watch?v=SUc56Ub1tVg
5	**THREE DIMENSIONAL SHAPES** Cube, cuboid and pyramid Square base and triangular prism Quantitative reasoning	Pupils should be able to: make three dimensional shapes using their net develop interest in the constructing nets of cube, cuboids and pyramid identify prism and pyramid solve real life problems. solve quantitative aptitude problems related to three dimensional shapes	Pupils work in groups. They are to cut cardboards into different two-dimensional shapes, then join them using glue or paper sellotape to form three dimensional shapes. Pupils work in small groups to decompose different three dimensional shapes e.g. carton of juice, tin of milk by using a tin cutter etc. Record the shapes that can be derived. Then use a paper sellotape to compose the shapes back to their original shapes.	Critical thinking and problem solving Communication and collaboration Student leadership and personal development	**AUDIO VISUAL RESOURCES** Paper materials scissors glue cardboards **Site links** https://academy/lesson/3d-shapes-lesson-plan.html

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
	Importance: It helps to unlock the learning skills in other subject areas It helps in understanding other signs and symbols It is useful in companies and industries for packaging end products in cartons or boxes for sales e.g. toothpaste, biscuits cartons etc.		**QUANTITATIVE REASONING** Examples: 		https://byjus.com/maths/three-dimensional-shapes/ **Video links** https://m.youtube.com/watch?v=i_8zqc-hKMM
6	**MEASUREMENT** Measurement of height Conversion of units in height and distances Measurement of distances Quantitative Reasoning **Importance:** It helps in conducting experiments or form theories It is essential in Farming, Engineering, Construction and Manufacturing companies, Commerce and Industries, etc.	Pupils should be able to: measure the height of some pupils, desk, flowering plants and short distances. use tape to measure the dimensions of the classroom compare heights of pupils in the classrooms convert units of measurement solve real life problems on measurement solve quantitative aptitude problems related to measurement of height and distances	Pupils work in pairs; each pair is given a tape measure in checking their partners' heights and compare the differences. Also, they move around the school to compare heights of buildings, adults, trees etc. **QUANTITATIVE APTITUDE** Examples: convert the following units using 1km = 1000meters 1m = 100 centimeters 1212m ⟺ 1.212 km 9.6km ⟺ 9600m 1200cm ⟺ 12m 16.23m ⟺ 1623cm	Communication and collaboration Student leadership and personal development Critical thinking and problem solving Citizenship	**AUDIO VISUAL RESOURCES** Measurement tapes **WEB RESOURCES** **Site links** https://owlcation.com/academia/Measurement-Lesson-Plan-for-Elementary-School-Students **Video links** https://m.youtube.com/watch?v=Sz1IRAq_AJo
7	Review of the first half term's work and periodic test.	Pupils should be able to: review the first half term's work participate in the periodic test.	Pupils are grouped into three or more groups to do revision on topics treated. A group leader for each of the groups formed in the class supervises the activities. Allow the members of each group to participate and interact with each other.	Leadership skill	Past questions Exercises from textbooks and notebook.
8	**BINARY NUMBER** Binary number systems Identification of numbers in base 2 Conversion from base two to base ten and vice versa Quantitative reasoning **Importance:** Manipulating and storing data in a computer system Used in performing arithmetic operations. Used in building blocks like logic gates, registers and arithmetic processors.	Pupils should be able to: explain the concept of number systems identify numbers written in base ten and two convert from base two to base ten and vice versa add and subtract numbers in base two solve quantitative aptitude problems related with binary numbers	Pupils as a class read out binary numbers for digits greater than one from a binary chart placed in front of the class. Pupils in small groups prepare binary numbers for numbers 1-9. **QUANTITATIVE APTITUDE** Example: Convert the following numbers in base 10 to base 2 9 → 1001_2 7 → 111_2 Convert the following binary numbers to base ten 101_2 → 5_{10} 1110_2 → 14_{10}	Communication and collaboration Critical thinking and problem solving Student leadership and personal development	**AUDIO VISUAL RESOUCES** Binary charts Binary cards Cardboards **Site links** https://study.com/academy/lesson/binary-numbers-lesson-plan.html **Video links** https://www.coursera.org/lecture/mathematics-for-computer-science/1-101-introduction

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
9	**BINARY NUMBER** Addition of binary numbers Subtraction of binary numbers Quantitative reasoning **Importance:** Manipulating and storing of data in a computer system Used in performing arithmetic Used in building blocks like logic gates, registers and arithmetic processors	Pupils should be able to: add numbers in base two subtract numbers in base two solve quantitative aptitude problems related with binary numbers	Pupils as a class read out binary numbers for digits greater than hundred from a binary numbers chart or flash cards placed in front of the class **QUANTITATIVE APTITUDE** Example: ***Add the following binary numbers in these questions*** 1011_2 + 10001_2 = 11100_2 110001_2 + 11001_2 = 1001100_2 ***subtract the following binary questions*** 11101_2 − 1011_2 = 10010_2 11110011_2 − 100011_2 = 11010000_2	Communication and collaboration Critical thinking and problem solving Digital literacy Student leadership and personal development	**AUDIO VISUAL RESOUCES** Binary charts Binary flash cards **Site links** https://study.com/academy/lesson/binary-addition-subtraction-rules-examples.html **Video links** https://m.youtube.com/watch?v=h_fY_zzSiMfY
10	**DATA PRESENTATION** Definition of Statistics Tally Pictograms, bar graphs, and pie chart Quantitative reasoning **Importance** It makes articles easy to interpret. It helps to present large and complex information in tables for easy reading and interpretations.	Pupils should be able to: explain Statistics as the collection, classification analysis, presentation and interpretation of data prepare a tally represent data collected in pictograms, bar graphs and pie chart tell a statistics story, draw and interpret the information. solve real life problems on Statistics solve given problems in quantitative aptitude on Statistics	Pupils: as a class are asked which food they like best, which are recorded down by a leader appointed. After writing them, similar types of food are counted by the class and then represented on a table drawn on the board. Numbers are then represented in a tally column. Work in groups to collect data on their birthday months. The information is represented in a table which is used to plot a bar-chart graph. **QUANTITATIVE APTITUDE** Arrange these letters using the system. T V T N N H M K H M K T K N T V N T T H H M H H T H M T T H Answer LETTERS | NUMBERS | TALLY T | 9 | 𝍸 // V | 2 | // N | 4 | //// M | 4 | //// K | 3 | /// H | 8 | 𝍸 𝍸	Critical thinking and problem solving Communication and collaboration Student leadership and personal development	**AUDIO VISUAL RESOURCES** Data charts on weather, election results, teachers' game or activity, biological data, test results to tabulate tally **Site links** https://mathssolutions.com/ms_classroom_lessons/collecting-representing-interpreting-data/ **Video links** https://m.youtube.com/watch?v=0ZKtsUkrqFQ

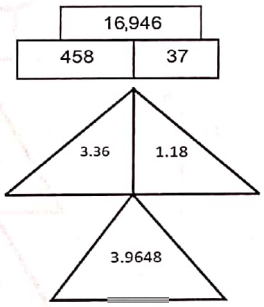
WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	MATHEMATICS LEARNING RESOURCES
11	**MEASURES OF CENTRAL TENDENCY** Mode Median Mean Probability Quantitative reasoning **Importance:** It helps in representation of a large set of data in a system. It helps in collation of information on extreme values.	Pupils should be able to: find the mode from a set of numbers identify the median from a given set of numbers calculate mean of a given set of numbers solve problems on chances of events solve real life problems on measure of central tendencies and probability solve quantitative aptitude problems relating to time`	Pupils as a class do a role play, nine pupils are lined up in front of the classroom. Their heights are studied by the rest of the class, then line up in descending order (tallest to the shortest), the most common height is the mode, the height at the middle of the pupils lined up is the median and the total numbers of the pupils' heights divided by the total number of pupils standing which is the mean Pupils in groups arrange given number cards orderly, then select the numbers into category of sizes. The pupils identify and calculate the mode, the median and the mean of the numbers given. **QUANTITATIVE REASONING** Mean, DATA, Mode, Median Find the mean, median and mode of the following questions 4 3, 4, 6, 3, 2, 5, 3, 2, 3, 8 3 3 22 12, 14, 17, 20, 35, 17, 17 17 20	Critical thinking and Problem solving Communication and Collaboration Student leadership and Personal development	Cardboard & writing Data charts **Site links** https://study...demy/lesson-mean-median-mode-plan.html **Video links** https://m.youtube.com/watch?v=1C...
12	Project/Practical work and Revision of first term's work	Pupils should be able to: Realize the areas of weakness in the topics treated for the term.	Pupils are arranged into groups for tutorial. The teacher supervises, corrects and marks the pupils' exercises/activities in each group.	Collaboration Communication Leadership Skills Critical Thinking	
13	EXAMINATION.	EXAMINATION.	EXAMINATION.	EXAMINATION.	EXAMINATION.

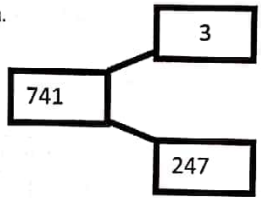
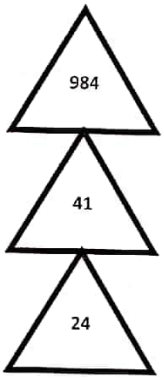
LAGOS STATE MINISTRY OF EDUCATION
UNIFIED SCHEMES OF WORK FOR PRIMARY SCHOOLS

(MATHEMATICS FOR PRIMARY SCHOOL)
PRIMARY SIX FIRST TERM

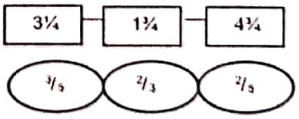
WKS	TOPICS	LEARNING OBJECTIVES /CONTENTS	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
1.	WHOLE NUMBERS a. Reading and writing numbers in millions up to billions in words and figures b. Skip counting in thousands, millions and billions. c. Place value and value of whole numbers d. Quantitative Reasoning **Importance** - Banking - Census Office - Budgeting - Journalism - Education - Business	Pupils should be able to: i. read and write numbers up to one billion in words ii. read and write numbers up to one billion in figures iii. count in thousands, millions and billions iv. write the place value and values of numbers v. solve quantitative reasoning questions related to thousands, millions and billions.	Pupils: - as a class skip count in thousands up to hundred millions. -2 -3 pupils use skipping rope to count in thousands and millions. -read and write numbers up to one billion in words e.g. 1825408756 = one billion, eight hundred and twenty five million, four hundred and eight thousand, seven hundred and fifty six -read and write numbers up to one billion in figures e.g. one billion, three hundred and forty million, seven hundred and eighty two thousand, four hundred and ten = 1 340 782 410 -count in thousands, millions and billions e.g. 5 000 000; 10 000 000; 15 000 000; 20 000 000 etc vi. write Place value and values of numbers: e.g. **1465.3872** **1465 . 3872** **Whole Decimal** **Number number** **Value Place Value** 1 = 1 x 1000 = 1000Thousand 4 = 4 x 100 = 400 Hundred 6 = 6 x 10 = 60 Ten 5 = 5 x 1 = 5Unit 3 = 3 x $^1/_{10}$ = $^3/_{10}$ = 0.3 Tenth 8 = 8 x $^1/_{100}$ = $^8/_{100}$ = 0.08Hundredth 7 = 7 x $^1/_{1000}$ = $^7/_{1000}$ = 0.007 Thousandth 2 = 2 x $^1/_{10000}$ = $^2/_{10000}$ = 0.0002Ten Thousandth Express in expansion form: 1465.3872 = 1000 00 + 60 + 5 + $^3/_{10}$ + $^8/_{100}$ + $^7/_{1000}$ + $^2/_{10000}$ **Quantitative Reasoning** Solve questions related to thousands, millions and billions. e.g. a. 6000 8000 → 14000 b. 4000000 3000000 2000000 c. 5 000 000 000 → 750 000 000 and 4 250000 000	Communication and Collaboration. Leadership and personal development Skills	- Abacus - Charts of Numbers up to billion. - Cardboard paper - Overlap cards - Number cards in thousands, millions. www.math-only-math.com www.waitbutwhy.com www.youtube.com,math www.mathhelp.com
2.	Addition and Subtraction of numbers (a) Whole Numbers (b) Decimal Fraction (c) Real Problems on addition and subtraction of numbers. (d) Quantitative Reasoning. **Importance** - Banking - Census Office - Budgeting - Journalism - Education - Business / Trading	Pupils should be able to: a. add any 4 – 10 digits numbers and write the answers in words e.g. b. subtract and 4 – 10 digits numbers and write the answers in words c. add any decimal fractions and write the answers in words d. subtract any decimal fractions and write the answers in words e. solve real life problems on addition, subtraction and decimal fractions. f. solve quantitative reasoning related to addition and subtraction of numbers.	-Pupils in pairs use number cards to calculate the sum of 5 or 8 digits numbers. -tell addition story and subtraction story on large numbers and solve them. -add any 4 – 10 digits numbers and write the answers in words e.g. a. 436050 + 784275 HTh TTh Th H T U 4 3 6 0 5 0 + 7 8 4 2 7 5 1 2 2 0 3 2 5 One million, two hundred and twenty thousand, three hundred and twenty five. - subtract two 4 – 10 digits numbers and write the answers in words e.g. (b)7436528 – 4208925 23 36 8 96	-Communication and Collaboration -Leadership and personal development skills	- Abacus - Population Distribution Chart - Addition and Subtraction Charts www.purplemath.com

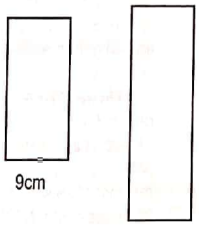
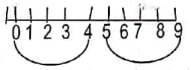
WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	MATHEMATICS LEARNING RESOURCES
			M HTh TTh Th H T U 7 4 3 6 5 2 8 4 2 0 8 9 2 5 3 2 2 7 6 0 3 Three million, two hundred and twenty seven thousand, six hundred and three. -add any decimal fractions and write the answers in words e.g. 486.84 +53.4 c. H T U . Tth Hth 4 8 6 . 8 4 + 5 3 . 4 5 4 0 . 2 4 Five hundred and forty point two, four d. subtract any decimal fractions and write the answers in words e.g. 8796.408 – 43.95 TH H T U . Tth Hth THth 8 7 9 6 . 4 0 8 4 3 . 9 5 8 7 5 2 . 5 5 8 Eight thousand, seven hundred and fifty two point five, five, eight - solve real life problems on addition, subtraction and decimal fractions. e.g. i. The population of three states in Nigeria are estimated as: Lagos 9 307 805 Oyo 6 410 208 Ondo 2 498 910 What is the total population of the three states? 9 3 0 7 8 0 5 6 4 1 0 2 0 8 + 2 4 9 8 9 1 0 1 8 6 1 6 9 2 3 ii. There are 12489 students in a university, 5387 are boys. How many of the students are girls? Total students = 1 3 4 8 9 Less Boys = - 5 3 8 7 8 1 0 2 **8102 students are girls.** iii. A table is 23.7m long and another table of 18.03m long is joined to it. What is the length of the two tables? 23.7m + 18.03m 41.73m Total Length = 41.73m **QUANTITATIVE REASONING** a. 8756 — 2504 — 11260 b. N8900 N5400 N3500 c. 23 36 8 96 14 60		
3.	**Multiplication of Numbers** ► Whole Numbers ► Decimal Fractions ► Real life Problems ► Quantitative Reasoning **Importance** - Banking and	Pupils should be able to: i multiply 3 digits by 3 digits numbers and write the answers in words ii. multiply decimal fraction by decimal fraction of different ii. solve real life problems on multiplication related to daily	Pupils: - in pairs work on different questions on multiplication and the fastest pair to give the answer is appraised. Each pupil of a pair is identified with multiplier or multiplicand. -in small groups multiply 3 digits by 3 digits numbers and write the answers in words e.g. 436 x 134 Method i	Critical thinking and problem solving Communication and collaboration skill	- Flash cards - Multiplication table - Cardboard - Chart on multiplication www.onlinemathsng.com

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
4.	**Division of Numbers** ► Whole Numbers ► Decimal Numbers ► Real life Problems ► Quantitative Reasoning **Importance:** It helps in the sharing of items or commodities among people.	Pupils should be able to: a. divide whole numbers by 2 digits and 3 digits numbers without and with remainder b. interpret and solve daily life activities exercises on division c. solve quantitative reasoning related to division in real.	Pupils are grouped to perform these activities: -divide whole numbers by 2 digits and 3 digits numbers without and with remainder e.g. i. 210 ÷15 14 15⟌210 - 150 – Subtract 10 x 15 60 -60 – Subtract 4 x 15 00 ∴210 ÷15 = 14 **Note** 210 is the dividend 15 is the divisor 14 is the quotient ii. 4756 ÷23 206 23⟌4756 -4600 (subtract 200 x 23) 156 -0 (subtract 0 x 23) 156 -138 (subtract 6 x 23) 18 (remainder) 4756 ÷23 = 206 Rm 18 - divide decimal numbers by whole numbers and decimal numbers e.g. a. 43.26 ÷10 4.326 10⟌43.26 -40 (subtract 4 x 10) 32 (take the point up -30 and bring down 2). 26 (bring down 6) -20 60 (add 0) -60 (subtract 6 x 10)	Leadership and personal development skills.	- Multiplication table - Division rules chart -
			Quantitative Reasoning  		
	- Finance - Marketing - Insurance - Industrial Companies.	life activities iii. solve quantitative reasoning related to multiplication.	4 3 6 (multiplier) x 1 3 4 (multiplicand) 1 7 4 4 (436 x 4 = 1744) 1 3 0 8 0 (436 x 30 = 13080) + 4 3 6 0 0 (436 x 100 = 43600) 5 8 4 2 4 (Fifty eight thousand, four hundred and twenty four. Method ii 436 x 134 = 436 x 100 + 436 x 30 + 436 x 4 = 43600+13080+1744 = 58424 Multiplication by value method. i. Multiply decimal fraction by decimal fraction of different forms e.g. 3.12 x 4.2 3.12 (2 dp) x 4.2 (1dp) 624 1248 13.104 2dp + 1dp = 3dp, therefore count three digits from your right hand side (RHS) and put a point. - tell multiplication story on daily life activities and solve e.g. a. What is the payment made to 15 workers if each receives N45840 monthly? A worker receives N45840 monthly ∴ 15 of such worker will receive a total of N45,840 x 15 = N45,840 (10+5) =N45,840 x 10 + N45,840 x 5 =N458,400 + N219,200 =N687,600		

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	MATHEMATICS LEARNING RESOURCES
			00 OR 43.26 ÷10 = 4.326 shifting of decimal point backwards by the number of zero: 4.3 26 + 1Ø = 4.326 - interpret and solve daily life activities exercises on division e.g. a. Ten Pupils were given N10600 to share equally. How much did each pupil receive? N10600 ÷ 10 = N10600 = N1060 10 :. each pupil received N1060 b. One box contains 46 biscuits. How many of such box will 736 biscuits fill? 16 46Γ736 -46 276 (bring down 6) - 276 000 :.736 ÷46 = 16 16 boxes will be needed. **Quantitative Reasoning** a.  b.  		
5	**L.C.M and H.C.F** -Lowest Common Multiples and Highest Common Factors of not more than 3 digits. -Real life Problems on LCM and HCF	**Pupils should be able to:** i. find the L.C.M of 2 or 3 digits using the multiple method ii. find the L.C.M of 2 or 3 digits using prime factors method iii. find the HCF of any given 2 or 3 numbers using the factor	Pupils: - in small groups randomly pick digits from number pigeon holes and find the L.C.M and H.C.F of digits picked - in pairs find the L.C.M of 2 or 3 digits using the	Communication and collaboration Leadership and personal development skills	- Flash Card - Cardboard - Multiplication table - Chart of factor numbers

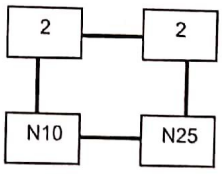
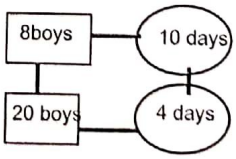
WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
	-Quantitative Reasoning. **Importance:** -To find the interval at which events occur. -It helps in solving problems related to track races , traffic lights etc	method iv. iv. Interpret and solve daily life activities related to L.C.M and H.C.F v. solve quantitative reasoning questions related to L.C.M and H.C.F	multiple method e.g. What is the LCM of 3 and 4? Multiples of: 3 are 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36 ... 4 are 4, 8, 12, 16, 20, 24, 28, 32, 36, 40 ... Common multiples of 3 and 4 are 12, 24, 36 Lowest Common Multiple is 12. - in pairs find the L.C.M of 2 or 3 digits using prime factors method e.g. Find the LCM of 3, 6 and 8 2 | 3 6 8 2 | 3 3 4 2 | 3 3 2 3 | 3 3 1 1 1 LCM = 2 x 2 x 2 x 3 = 24 i. find the HCF of any given 2 or 3 numbers using the factor method e.g. use factor method to find the H.C.F of 15 and 20. Factors of 15 are 1, 3, 5, 15 20 are 1, 2, 4, 5, 10, 20 Common factor = 5 Highest common factor = 5 - interpret and solve daily life activities related to L.C.M and H.C.F e.g. Three clocks ring alarm at an interval of 15, 25 and 30 seconds. At what time will they ring together again? Find their L.C.M 2 | 15 25 30 3 | 15 25 15 5 | 5 25 5 5 | 1 5 1 1 1 1 :.LCM = 2 x 3 x 5 x 5 = 150 seconds. They will ring alarm together in 150 seconds **Quantitative Reasoning** A. i. 24 (6, 8) ii. 30 (5, 6) B .i 15 | 30 | 15 — 20 | 30 | 10		
6.	**Fractions and Decimals** a. Addition and subtraction of fractions b. Multiplication and division on fractions c. Real life problems on fractions. d. Quantitative reasoning IMPORTANCE:	Pupils should be able to: a. add and subtract any given set of fractions. b. multiply and divide any given set of fractions c. change fractions to decimals and vice versa d. interpret and solve real life problems on fractions and decimals. e. solve problems on quantitative reasoning related to fraction	Pupils in small groups: - are given packs of fractional cards to arrange according to types of fractions. - add and subtract any given set of fractions cards e.g. i. $^3/_5 + {}^2/_3$ ii. $8^4/_7 - 5½$ $^3/_5 + {}^2/_3$ (first, find the LCM of 5 and 3) which is 15 $^3/_5 + {}^2/_3 = \frac{(3 \times 3) + (5 \times 2)}{15}$ $= {}^{9+10}/_{15} = {}^{19}/_{15} = 1^4/_{15}$ ii. $8^4/_7 - 5½$ (LCM of 7 and 2 is 14) $8^4/_7 - 5½ = (8 - 5)\ \frac{(8 - 7)}{14}$ $= 3^1/_{14}$ Alternatively; $8^4/_7 - 5½$ (firstly, change the mixed numbers to improper fractions) $\frac{(8 \times 7) + 4}{7} - \frac{(5 \times 2) + 1}{2}$ $\frac{56 + 4}{7} - \frac{10 + 1}{2}$ $\frac{2 \times 60 - 7 \times 11}{14}$ $= \frac{120 - 77}{14} = 43/14 = 31/14$ b. multiply and divide any given set of fractions e.g. i. $^1/_5 \times {}^2/_7$	Critical thinking and problem solving Communication and collaboration skills	- Packs of fractional cards - Cardboard - Sheet of paper - Wall clock www.prodigygame.com www.mathhelp.com

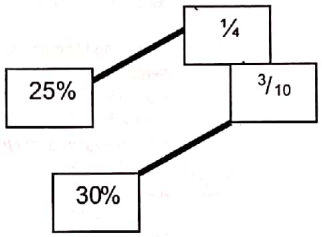
WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
	Quantitative Reasoning IMPORTANCE: -Orderliness of items or quantities.	BODMAS c. simplify world problems related to daily life activities on order of operations d. solve quantitative reasoning problems related to order of operations e. use basic operations in the right order f. explain the steps involved in using order of operation i.e. BODMAS.	D = 3rd - Division – Follows; then M= 4th - Multiplication A =5th - Addition is done after multiplication S = 6th - Subtraction is done last NB: These steps need to be followed for solving whole numbers and fractions in exercises. e.g. i. Simplify: (4 +5) x 8 ÷2 – 5 ii. Evaluate: ¾ + 5/6 x 2/5 ÷ 4 i. (4 +5) x 8 ÷2 – 5 = 9 x 8 ÷ 2 – 5 = 9 x 4 – 5 = 36 – 5 = 31 ii. ¾ + 5/6 x 2/5 ÷ 4/1 ¾ + 5/6 x 2/5 x ¼ ¾ + 5/6 x 1/10 ¾ + 1/6 x ½ = ¾ + 1/12 = ¾ + 1/12 = $\frac{3 \times 3 + 1 \times 1}{12} = \frac{9+1}{12} = \frac{10}{12}$ = 5/6 - simplify world problems related to daily life activities on order of operations e.g. 8 sacks of onions weight 163.2kg and 5 bags of salt weigh 60kg. What is the total weight of one sack of onion and one bag of salt? 8 sacks of onions weigh = 163.2kg 1 sack of onion = 163.2k/8 = 20.4kg 5 bags of salt = 60kg 1 bag of salt = 60kg/5 = 12kg Therefore: Total weight = 20.4kg + 12kg = 32.4kg ii. 3 4/5 ÷ 3/5 i. 1/5 x 2/7 = $\frac{1 \times 2}{5 \times 7}$ = 2/35 ii. 3 4/5 ÷ 3/5 = 19/5 ÷ 3/5 = 19/5 x 5/3 = 19/3 = 6 1/3 c. interpret and solve real life problems on fractions and decimals. e.g. A man traveled 4¾km and then 10 3/5km. Find the total distance of his journey Total Journey = 4¾km + 10 2/5km 4¾ + 10 2/5 = (4 + 10) ¾ + 2/5=14¾ + 2/5 $\frac{5 \times 3 + 4 \times 2}{20}$ = 14 15+8/20 = 14 23/20 = 14 + 1 3/20 = 15 3/20 -change fractions to decimals and vice versa e.g. i. 3/5 = 0.6 ii. 0.05 = 5/100 = 1/20 **Quantitative Reasoning** 		- Division rules chart - BODMAS char www.adopted m www.pinterest.co
7	MID TERM BREAK	MID TERM BREAK	MID TERM BREAK	MID TERM BREAK	- MID TERM BREAK
8	**Order of Basic Operations** Whole numbers Fraction numbers Decimals	**Pupils should be able to:** a. use basic operations in the right order b. explain the steps involved in using order of operation i.e.	Pupils: in small groups are named by the letters in BODMAS to solve exercises on order of operations. B = 1st - Bracket, which is done first O = 2nd – Of or (x) is done next	Leadership and Personal development	- Numbers and Fractions Flash cards - Multiplication table

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
			Quantitative Reasoning i. 80 − 40 ÷ 5 = 72 $^3/_5$ x ($^1/_4$ x $^3/_4$) = $1^3/_5$		
9.	**Scale Drawing:** Objects Maps Distance **Importance:** It can be used by the Surveyor, Architects, Pilots etc.	**Pupils should be able to:** a. draw plane shapes according to a given scale b. apply and use scale drawing in converting lengths and distances of objects in their environment with a given scale. c. interpret and solve real life problems on scale drawing.	Pupils: - in pairs use ruler or tape measure to measure the length of their tables, teacher's table, their classroom, marker board e.t.c. and convert their measurement to a given scale. - in small groups draw plane shapes according to a given scale -apply and use scale drawing in converting length and distance of objects in their environment to a required scale. Example;  9cm 12cm Of what scale are these diagrams? $^{9cm}/_{12cm} = ^3/_4$ Scale = 3cm: 4cm - interpret and solve real life problems on scale drawing e.g. If the length of a table is in 1cm = 20m. What is the actual length of 2.5cm? = 2.5 x 20m = 50m.	Citizenship Leadership and Personal development skill. Communication and Collaboration	- Ruler - Type rule - Pencil - Cardboard paper www.youtube.com/scaling
10	**Approximation and Estimation** i. Whole numbers ii. Decimal numbers iii. Quantitative Reasoning **Importance:** -It is used by the Architect to sketch the plan of a building.	Pupils should be able to: i. round u whole numbers to the nearest ten, hundred and thousand ii. round up decimal numbers ii. solve quantitative reasoning on approximation	Pupils: in small groups prepare Round up numbers scale by using cardboard. - in small groups take measurement of playground and approximate the length to nearest ten or hundred.  0 1 2 3 4 5 6 7 8 9 Round up to 0 Round up to 1 round up whole numbers to the nearest ten, hundred and thousand. Examples a. Write in nearest hundred and ten (i) 4537 (ii) 7284 Nearest hundred of i. 4537 4500 ii. 7284 7300 Nearest ten of i. 4537 4540 ii. 7284 7280 -in small groups estimate the value of 38 x 63 When 38 is rounded off to nearest ten; then 38 40 and when 63 is rounded off to nearest ten; then 63 60 38 x 63 = 40 x 60 = 2394 2400 **Quantitative Reasoning** i. 2.34 2.00 (1st) 5.56 6.00 (1st)	Leadership and personal development skill Citizenship Communication and Collaboration	www.my.homecampus.com www.youtube.com/appromation
11.	REVISION/ PROJECT	**Pupils should be able to:** Revise and put into practice all what they learnt in first term topics.	Draw map of Nigeria and specify the scale to be used for each state.		
12	EXAMINATIONS	EXAMINATIONS	EXAMINATIONS	EXAMINATIONS	EXAMINATIONS
13	EXAMINATIONS	EXAMINATIONS	EXAMINATIONS	EXAMINATIONS	EXAMINATIONS

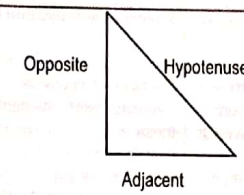
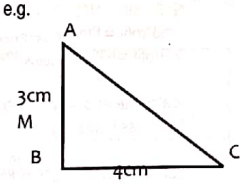
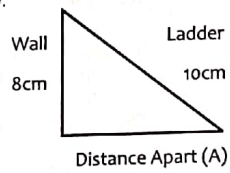
LAGOS STATE MINISTRY OF EDUCATION
UNIFIED SCHEMES OF WORK FOR PRIMARY SCHOOLS

(MATHEMATICS FOR PRIMARY SCHOOL)
PRIMARY SIX SECOND TERM

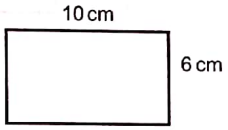
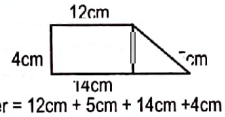
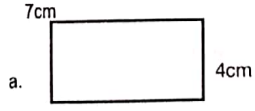
WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEAR RESOU
1.	Revision of first term's topics: Emphasis on whole numbers, decimal numbers and fractions.	**Pupils should be able to:** i. revise the first term on addition, subtraction and multiplication and division of (a) whole numbers (b) decimal numbers (c) fraction ii. participate in Resumption Test.	Pupils: - in small groups practice exercises on first term topics and questions from first term examination - as individual participate in the Resumption Test	Communication and Collaboration. Leadership and Personal development. Critical thinking and Problem solving.	Exercises fro work and hom Questions fro examination Mathematics Te
2	**Ratio and Proportion** - Direct Proportion - Inverse Proportion - Real life problems on ratio and proportion. -Quantitative Reasoning. IMPORTANCE: -It helps in the sharing of items -Shares and dividends	**Pupils should be able to:** a. discuss the meaning of ratio and solve problems on ratio b. interpret and solve direct proportion equations c. interpret and solve inverse proportion equations e. solve Quantitative Reasoning exercises on ratio and proportion	Pupils in small groups: - express their ages in ratio and record. -discuss the meaning of ratio and solve problems on ratio e.g. There are 30 boys and 40 girls in a class. What is the ratio of boys to girls? $= {}^{Boys}/_{Girls} = {}^{30}/_{40} = {}^{3}/_{4}$ ratio = 3:4 - interpret and solve questions on direct proportion e.g. 20 shoes cost N300. What is the cost of 25 shoes at the same rate? 20 shoes cost = N300.00 1 shoe cost S = $^{N300}/_{20}$ = N15.00 :.25 shoes will cost 25 x N15 = N375.00 -interpret and solve inverse proportion equations. e.g. 9 men can finish a job in 8 days. How many men will finish the job in 12 days, if they work at the same rate? 9 men takes 8 days 1 man will take = 9 x 8 days = 72 days number of men for 12days = $^{72days}/_{12day}$ = 6 6 men take 12 days - share N450 between Audu and Dele in ratio 2:3 Total ratio = 2+3 = 5 Audu's share = $^{2}/_{5}$ x N450 = 2 x N90 = N180 Dele's share = $^{3}/_{5}$ x N450 = 3 x N90 = N270 Therefore; Audu will get N180 and Dele gets N270 **Quantitative Reasoning** e.g i.  ii. 	Communication and Collaboration Citizenship	Chart on ratio a proportion Mathematics Te Pupils ages www.onlinemath om www.coolmath4
3	**Percentages** **Importance:** -Collation of school results -It helps in the distribution and allocation of social amenities to communities or states in a country	**Pupils should be able to:** a. express one number as a percentage of another b. solve exercises on percentage increase and decrease c. solve real life problems on percentages d. solve quantitative reasoning	Pupils in small groups: -study percentage scores of a pupil's result in an examination. - express one number as a percentage of another e.g. what percentage of N400 is N20? $\frac{N20}{N400} \times \frac{100\%}{1} = 5\%$ - solve exercises on percentage increase	Critical thinking and Problem solving	Pupils scores in examination Chart on percentage Multiplication table www.study.com www.mathematics om www.youtube.com/ age

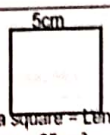
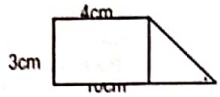
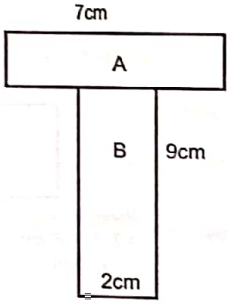
WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
			and decrease. Thus: i. % increase = $\frac{\text{increase}}{\text{initial value}} \times \frac{100\%}{1}$ ii. % decrease = $\frac{\text{decrease}}{\text{initial value}} \times \frac{100\%}{1}$ Example: i. The population of a village increases from 800 people to 1000 people. What is the percentage increase? Increase = 1000 – 800 = 200 :. % increase = $^{200}/_{800} \times {}^{100\%}/_{1} = \frac{1}{4} \times {}^{100\%}/_{1} =$ 25% ii. Decrease N300 by 25% = $^{N300}/_{1} \times {}^{25}/_{100} =$ N75. :.N300 – N75 = N225 Method II Decrease N300 by 25% = (100 – 25)% = 75% :. $^{N300}/_{1} \times 75\%$ = $^{N300}/_{1} \times {}^{75}/_{100}$ = N225 **Quantitative Reasoning**  		
4	**Indices (Power)** -Numbers in index form -Rules of indices -Real life problems -Quantitative Reasoning **Importance** They are used in computer games. -They are used in Engineering, Economics, Accounting and Finances	**Pupils should be able to:** a. write numbers in index forms b. solve exercises involving c. use rule of indices of multiplication and division to solve exercises d. use indices (power) to solve daily life activities. e. solve quantitative reasoning on indices.	Pupils as individual sing or recite square table song i.e. $2^2, 3^2, 4^2, 5^2$etc = 4, 9, 16, 25, ... - write numbers in index forms e.g. 32 =2 x 2 x 2 x 2 x 2 =2^5 27 = 3 x 3 x 3 = 3^3 - solve exercises involving power e.g. i. $\frac{2^3 \times 3}{2^2 \times 3^2}$ $\frac{2^3 \times 3}{2^2 \times 3^2} = \frac{2 \times 2 \times 2 \times 3}{2 \times 2 \times 3 \times 3} = \frac{1}{3}$ - use rule of indices of multiplication and division to solve exercises i.e i. $n^2 \times n^3 = n^{2+3} = n^5$ e.g. $3^3 \times 3^4 = 3^{3+4}=3^7$ $x^7 \div x^5 = x^{7-5} = x^2$ e.g. $4^5 \div 4^2 = 4^{5-2} = 4^3$ NB: any number raises to power zero is equal to 1^0 i.e. $5^o = 1$ or $9^o = 1$ Simplify: $2^3 \times 2 \div 2^2 \times 2^0$ $= 2^{3+1-2+0} = 2^2$ e g evaluate: $5^2 \times 3^o = 5 \times 5 \times 1 = 5^2$ - use indices (power) to solve daily life activities. e g Pencils are arranged in pile of 3 Find the total number of pencils in 4 piles. Total number of pencils in 4 piles = 3^4 = 3 x 3 x 3 x 3 = 81 pencils **Quantitative Reasoning** i 2 4 8 16 32 ii 3 9 81 243	Leadership and Personal development.	Chart of square Chart of square root Multiplication table Chart of indices Chart of rules of indices www.khanacademic.com www.youtube.com/indices

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	MATHEMATICS LEARNING RESOURCES
			iii. 1, 3, 9, 27 iv. 1, 2, 4, 8		
5	**Open sentences:** i. Addition and subtraction ii. Multiplication and division. iii. Reciprocal of numbers. b. Real life Problems on open sentences c. Quantitative Reasoning **Importance:** -It helps to project and plan for an event that is about to occur.	**Pupils should be able to:** a. interpret word problems and real life problems into open sentences and solve correctly a. solve addition and subtraction of open sentences b. solve multiplication and division exercise on open sentences. **Reciprocal of number:** The reciprocal of 5 is $^1/_5$ and reciprocal $^1/_5$ is 5. Also the reciprocal of $^2/_3$ is $^3/_2$. Since $^2/_3 \times ^3/_2 = 1$ e. solve quantitative reasoning on open sentences	Pupils in groups: - tell stories on open sentences and solve them. - interpret word problems and real life problems into open sentences and solve correctly e.g. the length of a rectangle is 6 times its width. If the perimeter is 182cm. Calculate its length. Let the width be x :.Length = 6cc x = 6cc Perimeter = 2 (L + W) 182cm = 2 (6x + x) = 2 (7x) 182cm = 14x Divide both sides by 14 i.e. $^{14x}/_{14} = ^{182cm}/_{14}$ x = 13cm length = 6 x 13cm = 78xm - solve addition and subtraction of open sentences e.g. i. a + 13 = 23 ii. 2x – 5 = 11 Find the value of each letter i. a + 13 = 23 a = 23 – 13 = 10 ii. 2x – 5 = 11 2x = 11 + 5 2x = 16 Divide both sides by the coefficient of x (i.e.2) :. $^{2x}/_2 = ^{16}/_2$ x = 8 -solve multiplication and division exercise on open sentences. e.g. Toyin thinks of a number, she multiplies it with 5 and her result is 15. Find the number. Let the number be 'a' multiply it by 5. a x 5 = 5a :. 5a = 15 Multiply both sides by $^1/_5$:. 5a x 1/5 = 15 x 1/5. a = 3 **Reciprocal of numbers** The reciprocal of 5 is $^1/_5$ and reciprocal $^1/_5$ is 5. Also the reciprocal of $^2/_3$ is $^3/_2$. Since $^2/_3 \times ^3/_2 = 1$ **Quantitative Reasoning** i. $\begin{vmatrix} 4 & 2 \\ 3 & 3 \end{vmatrix} = (4 \times 3) - (3 \times 2)$ = 12 – 6 = 6 ii. $\begin{vmatrix} 5 & 4 \\ 2 & 4 \end{vmatrix} = 5 \times 4 - 2 \times 4$ = 20 – 8 = 12	Communication and Collaboration skills Critical thinking and Problem solving	Cardboard paper Chart of equations Flash cards on open sentences www.pinterest.com on www.prodigygame.com
6	**Length and Pythagoras Rules** **Importance:** -It helps to describe the locations of two or three	**Pupils should be able to:** (a) identify the three sides of a right angled triangle (b) state the Pythagoras Rules	Pupils in small groups: - draw right angled triangle of any given dimensions and use scissors to cut the shape out - identify the three sides of a right angled triangle	Communication and Personal development Creativity and imagination	Cardboard paper Chart of Pythagoras theorem Mathematics textbook Pencil Ruler

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
	areas that are closely situated. -It helps to make use of a short-cut route between two major long routes.	(c) identify the three sides of a right angled triangle. (d) use the Pythagoras rules to find the unknown length of a right angled triangle (e) interpret and solve word problems on Pythagoras. (f) solve quantitative reasoning exercises on Pythagoras	 -state the Pythagoras Rules e.g i. $H^2 = \sqrt{O^2 + A^2}$ $H = \sqrt{O^2 + A^2}$ ii. $O^2 = H^2 - A^2$ $O = \sqrt{H^2 - A^2}$ iii. $A^2 = H^2 - O^2$ $A = \sqrt{H^2 - O^2}$ Where: H = Hypotenuse O = Opposite A = Adjacent -use the Pythagoras rules to find the unknown length of a right angled triangle e.g.  $x^2 = 3^2 + 4^2 = 9 + 16 =$ $x = \sqrt{9 + 16} = \sqrt{25} = 5cm$ -interpret and solve word problems on Pythagoras. i. A ladder of length 10cm is rested on a wall of length 8cm high. What is the distance between the foot of the ladder and the wall? ii. Draw:  :. Distance apart, $A^2 = H^2 - O^2$ $= 10^2 - 8^2$ $A = \sqrt{100 - 64} = \sqrt{36}$ $A = \sqrt{36} = 6cm$ **Quantitative Reasoning** i. 13 / 12 / 5 ii. 17 / 15 / 8 10 / 8 / 6		www.pinterest.com www.study.com www.youtube.com/length
7	MID TERM BREAK	**Pupils should be able to:** i. revise exercises on topics learnt ii. participate in midterm test	Pupils in small groups partake in quiz. i. revise exercises on topics learnt	Critical thinking and Problem solving. Communication and	Questions from class work, home work exercises

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCE
			ii. participate in midterm test	Collaboration Leadership and Personal development.	Mathematics textbook
8	**COMMERCIAL MATTER MONEY** - Profit and Loss - Simple Interest - Discount and Commission - Rate and Tax - Share and Dividend **Importance:** -It gives an insight to plan well on profit making business. -It helps to be prudent in spending e.g. shares.	**Pupils should be able to** a. calculate the profit and loss on sales. Thus % Profit = $\frac{\text{Profit}}{\text{Cost Price}} \times 100\%$ % Loss = $\frac{\text{Loss}}{\text{Cost Price}} \times \frac{100\%}{1}$ i. discuss the meaning of discount and commission and calculate the discount and commission on sales of commodities ii. explain the meaning of tax and rate, use copies of bills to calculate tax and rate iii. If on N1 he pays 5k. He will pay tax of 5k x N15,000 = $\frac{N5}{100} \times \frac{N15,000}{1}$ = N750 v. calculate shares and dividends of a company	Pupils in small groups: - transact sales with dummy money on these: i. Profit and loss. ii. Simple interest. iv. Discount and Commission. - study different bills and exchange the bills in turns among the groups. Each group practices the activity given on discount, commission, tax, share, dividend respectively. - calculate the profit and loss on sales. Thus % Profit = $\frac{\text{Profit}}{\text{Cost Price}} \times 100\%$ % Loss = $\frac{\text{Loss}}{\text{Cost Price}} \times \frac{100\%}{1}$ e.g. Mr. Kunle purchased a radio for N15, 000 and sold it to Mr. Uche for N18, 000. Find his percentage profit Cost price = N15, 000 Selling Price = N18, 000 Profit = Selling Price – Cost Price N18, 000 – N15, 000 = N3, 000 ∴ %Profit = $\frac{\text{Profit}}{\text{Cost Price}} \times \frac{100\%}{1}$ %Profit = $\frac{N3000}{15000} \times \frac{100\%}{1} = 20\%$ -calculate and solve simple interest on business loans e.g. Simple Interest = $\frac{\text{Principal x Time x Rate}}{100}$ v. Mrs. Awoyade borrowed N120, 000 from a bank for 3 years at an annual interest rate of 15% per annum. Find the interest on the loan and how much will she pay back to the bank? Principal = N120, 000 Time = 3 years Rate = 15% ∴ I = $\frac{P \times T \times R}{100}$ = $\frac{N120,000 \times 3 \times 15}{100}$ =N54, 000 vi. Amount = Principal + Interest = N120, 000 + N54, 000 = N174, 000 She will pay back = N174, 000 -discuss the meaning of discount and commission and calculate the discount and commission on sales of commodities e.g. A supermarket gives a discount of 5% on goods purchase during a festivity. How much will a man pay for a good of N7, 000? % Discount = N7000 x $\frac{5}{100}$ = N350 He will pay = N7000 – N350 = N6, 650 -explain the meaning of tax and rate, use copies of bills to calculate tax and rate e.g. A man's annual income is N25,000. If N10,000 is tax free of his income. a. Calculate how much of his income is taxable. b If he pays tax at the rate of 5k per naira, how much has he to pay? His income = N25, 000 His tax free = N10, 000 Taxable income = N25,000 – N10,000 = N15 000 v. If on N1 he pays 5k. He will pay tax of 5k	Citizenship Communication and collaboration skills	Hart on market pricing index Cardboard paper Shop corner Home used items e.g. empty cartoons, tins e Dummy money. -Photocopies of share certificate. -Photocopies of divid on shares of a compa -Water rate bill. -Electricity bill. -Photocopy of payslip monthly salary. www.study.com/more

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
			x N15,000 = $^{N5}/_{100}$ x $^{N15,000}/_{1}$ = N750 -calculate shares and dividend of a company e.g. A woman bought 300 shares in a Company. How much dividend should she receive if dividends are paid at N50 per share? On a share, a dividend of N50 is paid. On 300 shares, a dividend of N50 x 300 will be paid = N50 x 300 = N15,000		
9	**Perimeters and Areas of Plane Shapes** -Regular plane shapes e.g. rectangle, square, trapezium, parallelogram, circle etc. triangle -Properties of each plane shape -Area and perimeter of irregular shapes -Solve real life problems. **Importance:** -Surveyors use it to measure the dimensions of land in plots, acres, hectres etc.	Pupils should be able to: a. discuss the properties of the plane shapes. b. discuss the meaning and calculate the perimeter of plane shapes i.e. Perimeter of a rectangle = 2 (Length + Breadth)	-Pupils as individuals use scissors to cut different plane shapes from cardboard, carpet, paper, use ruler or tape measure to measure the dimensions (sides) and then calculate the perimeter by adding all the sides of each shape. -Pupils in small groups discuss the properties of the plane shapes. -Pupils in pair discuss the meaning and calculate the perimeter of plane shapes i.e. Perimeter of a rectangle = 2 (Length + Breadth) e.g. a. A rectangle is of length 10cm and breadth of 6cm. Find its perimeter  Perimeter = 2 (L + B) = 2 (10 + 6) cm = 2 x 16cm = 32cm - Perimeter of a square = 4 x length A square has a length of 10cm. what is its perimeter? Perimeter = 4 x length = 4 x 10cm = 40cm - Perimeter of a trapezium equals to the sum of distance round it. E.g. find the perimeter of the figure below.  Perimeter = 12cm + 5cm + 14cm +4cm = 35cm -Find the perimeter of a circle whose radius is 7cm. Perimeter of a circle = 2 r 2 x $^{22}/_{7}$ x $^{7cm}/_{1}$ = 2 x 22cm = 44cm The perimeter of a circle can also be calculated using diameter i.e. Circumference = d -calculate the area of a rectangle, square, trapezium etc a. area of a rectangle = Length x Breadth e.g.  Area = 7cm x 4cm = 28cm^2	Creativity and imagination	Carpet Cardboard paper Scissors Pencil Ruler www.sciencedirect.com www.youtube.com/shapes

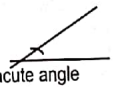
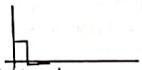
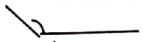
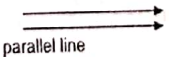
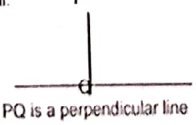
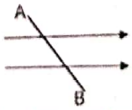
WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	
			b.  Area of a square = Length x Length = 5cm x 5cm = $25cm^2$ c.  Area of a trapezium = ½ x (a + b) x height = ½ x (4 + 10)cm x 3cm = ½ x $^{14cm}/_{1}$ x $^{3cm}/_{1}$ = 7cm x 3cm = $21cm^2$ d. Area of a circle = r^2 What is the area of circle whose radius is 7cm? Area = r^2 = 22/7 x 7 x $7cm^2$ = $154cm^2$ - find the area and perimeter of irregular shape e.g. What is the area and perimeter of this figure?  Area = firstly, detach the small regular shapes from irregular shape, calculate each area and add their areas together. i.e. Area of A = 7cm x 2cm = $14cm^2$ Area of B = 9cm x 2cm = $18cm^2$ ∴ Area of the shape = $14cm^2$ + $18cm^2$ = $32cm^2$ Its perimeter = P = 7cm + 2cm + 2.5cm + 9cm + 2cm + 9cm + 2.5cm + 2cm = 36cm solve real life problems on perimeters and area of regular and irregular shapes. **Quantitative Reasoning** 9cm 26cm 4cm 2.50cm 10.00cm		
10	**Weight** -Conversion of units. -Addition, subtraction, multiplication and division on weight. -Quantitative Reasoning **Importance:** Meat, chicken, turkey sellers use weight to determine the prices of their products	**Pupils should be able to:** a. express the same weights in different units e g. gram, kilogram, tonneeg. 1000g = 1kg 1000kg = 1tonne 1000000g = 1 tonne i. How many kilograms are in 8500g? 1000g = 1kg 8500g = $^{8500g}/_{1000}$ = 8.5kg b. solve real life problems on weight c. solve quantitative reasoning exercises related to weight	Pupils in small groups: - convert weight to tonnes, grammes and kilograms - express the same weights in different units e g. gram, kilogram, tonneeg. 1000g = 1kg 1000kg = 1tonne 1000000g = 1 tonne i. How many kilograms are in 8500g? 1000g = 1kg 8500g = $^{8500g}/_{1000}$ = 8.5kg -solve real life problems on weight e.g. a basket weights 3kg 350g and 1kg 420g drops from the basket. what will be the new weight of the basket?	Communication and Collaboration Critical thinking and Problem solving	Samples of different objects Weighing scale Spring balance Chart on weight conversion www.mathsfun.com

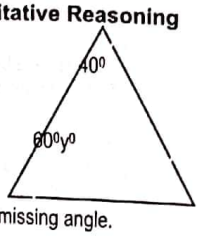
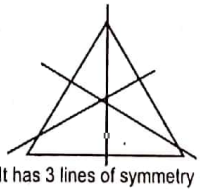
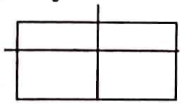
WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
			3kg 350g 1kg 420g 1kg 930g **Quantitative Reasoning** i. 2kg 750g + 4kg 315g = 7kg065g ii. 10.25kg, 2059, 5		
11	Revision PROJECT	**Pupils should be able to:** i. revise topics in 2nd term	Pupils in small groups practice 2nd term's topics together. Pupils in groups construct a rectangular board ruler with plywood.	Communication and collaboration Leadership and personal development	Exercises from class work and homework Mathematics textbooks
12	EXAMINATION	EXAMINATION	EXAMINATION	EXAMINATION	EXAMINATION
13	EXAMINATION	EXAMINATION	EXAMINATION	EXAMINATION	EXAMINATION

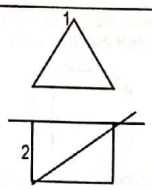
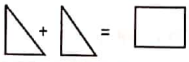
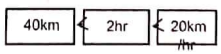
LAGOS STATE MINISTRY OF EDUCATION
UNIFIED SCHEMES OF WORK FOR PRIMARY SCHOOLS

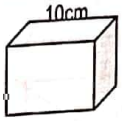
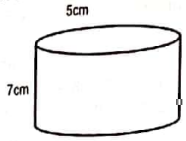
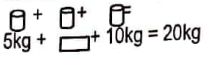
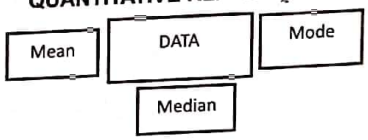
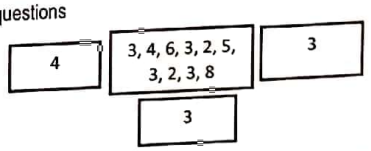
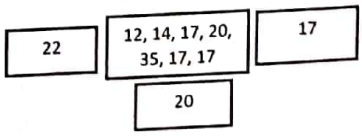
(MATHEMATICS FOR PRIMARY SCHOOL)
PRIMARY SIX THIRD TERM

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
1	Revision of 2nd term topics. Emphasis on, i. ratio and proportion ii. money iii. plane shapes.	**Pupils should be able to:** i. revise 2nd term's topics on ratio, proportion, money and plane shapes. ii. participate in resumption test.	Pupils in small groups revise 1st and 2nd terms' topics and home-work. Pupils as individuals: i. revise 2nd term's topics on ratio, proportion, money and plane shapes. ii. participate in resumption test.	Critical thinking and problem solving Communication and Collaboration Leadership and personal development Skills	- Class and home work exercises - 2nd term examination questions - Mathematics Textbooks
	Number Bases: i. Binary Numbers ii. Denary Numbers iii. Quantitative Reasoning. **IMPORTANCE:** -It is used in computing, calculating in computer. - They are also used in assigning internet protocol or IPs.	Pupils should be able to: i. write numbers in binary numbers ii. convert denary (base 10) to binary (base 2) iii. convert denary to other number bases and vice versa iv. add and subtract numbers bases from binary to denary. v. multiply and divide number bases from binary to denary	Pupils in small groups: - share themselves into different units of numbers, e.g. a group with 11 members will be regrouped into 4 which gives 2 remainder 3 this means 11_{10} have been converted into base four. This exercise continues with other groups. -write numbers in binary numbers -convert denary (base 10) to binary (base 2) -convert denary to other number bases and vice versa - add and subtract of numbers bases from binary to denary. -multiply and divide number bases from binary to denary Examples: i. binary numbers comprising of only 2 different digits i.e 0 and 1. ii. convert base 10 to base 2. e.g convert 15_{10} to base 2. 2 15_{10} 2 7 R 1 2 3 R 1 2 1R 1 0 R 1 :. $15_{10} = 1111_2$ iii. convert denary to other base e.g convert 21_{10} to base 5. 5 21_{10} 5 4 R 1 5 0 R 4 :. $2110 = 41_5$ iv. convert binary to denary e. g 10112 3210 $1011_2 = 1 \times 2^3 + 0 \times 2^2 + 1 \times 2^1 + 1 \times 2^0$ $= 1 \times 8 + 0 \times 4 + 1 \times 2 + 1 \times 1$ $= 8 + 0 + 2 + 1 = 11_{10}$ iv. convert 32_4 to base 10. 10 $32_4 = 3 \times 4^1 + 2 \times 4^0$ $= 3 \times 4 + 2 \times 1$ $= 12 + 2 = 14_{10}$ v. add and subtract number bases. e.g a. 1011_2 $+101_2$ 10000_2 b. 734_8 - 305_8 427_8 - multiply and divide number bases e. g 312_6 x 23_6 1340_6	Communication and Collaboration Skills. Critical thinking and problem solving skills.	- Buddle of sticks - Counters - Cardboard papers - Chart of number bases - www.purplemath.com/numbbase www.nrich.maths.org www.youtube.com/watch

TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
		1024_6 102020_6 - divive 320_4 by 10_4 firstly convert to base 10. $320_4 = 3 \times 4^2 + 2 \times 4^1 + 0 \times 4^0$ $= 3 \times 16 + 2 \times 4 + 0 \times 1$ $= 48 + 8 + 0 = 56_{10}$ $10_4 = 1 \times 4^1 + 0 \times 4^0$ $= 4 + 0 = 4_{10}$ $\therefore 56_{10} - 4_{10} = 14_{10}$ Then convert 14_{10} to base 4. $\therefore = 32_4$ **Quantitative Reasoning** + 4 5 6 0 3 0 1 2 3 5 2 3 4 5		
Angles Angle, Lines and Bearings. **Importance:** -It is used for architectural design in building houses or construction companies.	**Pupils should be able to:** **a.** explain the meaning of angle in details and give some samples in the classroom environment. b. mention different types of angles c. measure angles in degrees using clocks e.g. 30^0,45^0, 60^0, 90^0, 120^0, etc d. explain the term line and pinpoint some lines in the classroom. e. measure different types of lines accurately f. identify various types of angles and lines.	Pupils in small groups: - sketch two different lines meeting at a point on a paper or cardboard and use protractor to measure the degrees of the angles formed at the intersection of the two lines. - explain the meaning of angle in details and give some samples in the classroom environment. -mention different types of angles c. measure angles in degrees using clocks e.g 30^0,45^0, 60^0, 90^0, 120^0, etc - explain the term line and pinpoint some lines in the classroom. e. measure different types of lines accurately - identify various types of angles and lines. a. Angle is a space measure between two intersecting lines close the point where they meet. b. types of angles are acute angle, right angle, obtuse angle, straight angle, reflex angle, complementary angle e.t.c i.  acute angle ii.  right angle iii.  obtuse angle e.t.c A line is a one-dimensional figure which has length but no width. c. types of lines are parallel line, transversal line, perpendicular line, vertical line, horizontal line e.t.c i.  parallel line ii. P  PQ is a perpendicular line iii. A  B AB is a transversal line - solve real life problems on angles.	Communication and Collaboration Creativity and imagination skills	Papers Pencils Erasers Cardboard papers Protectors (Mathematical Set) Rulers Chart of angles Chart of line www.mathsisfun.com, angles www.geom.uluo.edu, angles www.onlinemathlearning.com

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	MATHEMATICS LEARNING RESOURCES
3	**Polygon** **Importance:** -It is used in designing the mode for cartons in packaging industries. -It is useful in naming some chemicals in chemical industries.	**Pupils should be able to:** a. explain the term polygon in details. b. name some two dimensional shapes not exceeding octagon .e.g. i. triangles (3 sided shapes) : right angled triangle, isosceles triangle, equilateral triangle, scalene ii. quadrilaterals (4 sided shapes) ; square, rectangle, kite, rhombus, trapezium etc iii. pentagon (5sided shapes) iv. hexagon (6 sided shapes) v. heptagon (7 sided shapes) vi. octagon (8 sided shape) c. draw any kind of polygon including their names. d. draw lines of symmetry of polygons (shapes).	**Quantitative Reasoning**  Find the missing angle. Pupils in pairs complete this polygon tables e.g. | polygons	No of sides	No of angles	Sum of angles
---	---	---	---
Pentagon	5	5	
					Communication and Collaboration skills Leadership and Personal development.	Chart of polygons Papers Pencils Erasers Cardboard paper Protectors (Mathematical Instruments) Rulers www.toppr.com/guides/maths/polygon www.mathgoodies.com
			a. explain the term polygon in details. b. name some two dimensional shapes not exceeding octagon. e.g. i. triangles (3 sided shapes) : right angled triangle, isosceles triangle, equilateral triangle, scalene ii. quadrilaterals (4 sided shapes) ; square, rectangle, kite, rhombus, trapezium etc iii. pentagon (5sided shapes) iv. hexagon (6 sided shapes) v. heptagon (7 sided shapes) vi. octagon (8 sided shape) c. draw any kind of polygon including their names. d. draw lines of symmetry of polygons (shapes).e.g i. Equilateral triangle  It has 3 lines of symmetry ii. Rectangle  It has two lines of symmetry. NB: Number of sides of any regular polygon above quadrilateral is equal number of its sides. e.g. pentagon has 5 sides and 5 lines of symmetry. - find the number of triangles in a polygon. i.e. No. of triangles = n – 2 where 'n' is number of sides. e.g. How many triangles are in a pentagon?		

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
			 A pentagon has 5 sides, therefore its number of angles is n -2 = 5 – 2 = 3. - find the sum of angles in each polygon, i.e. sum of angles = (n - 2)180 e.g. sum of angles in a pentagon = (5 – 2)180 (3)180 = 3 x 180 = 540. g. solve quantitative reasoning exercises on polygon. e.g. 		
4	**Time, Distance and Average speed.** - Time - Distance -Average speed -Real life problems -Quantitative Reasoning **Importance** -It helps the motorists determine the distance a vehicle covers over a period of time. This can be noticed on the dash board of a car.	**Pupils should be able to:** i. calculate the distance, time and average speed of objects or persons. e.g. a. Distance = Average speed x Time b. Time = Distance / Average speed c. Average speed = Distance / Time. NB: Distance, Average speed and time are measured in Km or m; Km/hr or m/s and Hr or seconds.	Pupils in pairs: - run round the school field and each person's time spend is recorded to calculate average speed. i. calculate the distance, time and average speed of objects or persons. e.g. a. Distance = Average speed x Time b. Time = Distance / Average speed c. Average speed = Distance / Time. NB: Distance, Average speed and time are measured in Km or m; Km/hr or m/s and Hr or seconds. Examples: i. An aeroplane travelled to London at an average speed of 825km/hr for 4hr, what distance was covered by the aeroplane? Given : Speed = 825km/hr Time = 4hr Distance = ? Therefore you are to find the distance; D = S x T = 825km/hr x 4hr = 3300km ii. A man walks a distance of 42km in 6hr, calculate the average speed. Given : Distance = 42km Time = 6hr S = D/T Speed = 42km/6hr = 7km/hr **Quantitative Reasoning** 	Citizenship Leadership and personal develop skills	www.toppr.com.guides,average www.study.com,speed
5	**Volume and Capacity:** -Cube -Cuboid -Cylinder -Cone etc - Quantitative Reasoning	**Pupils should be able to:** a. calculate the volume of 3 dimensional shape such as cube, cuboid, cylinder, prism etc b. state the properties of solid shapes. c. calculate the capacity of liquid in litres d. express capacity in litre and in centilitres cube e. explain the difference between volume and capacity e.g. volume is how much space an object takes up while capacity is the amount of liquid a container can hold. f. derive the formulae of volume of	Pupils in small groups: - measure the surface cover of their tables, benches, chair etc in their classroom by using ruler or tape measure to measure the length, breadth and height, then, multiply the outcomes.. ie Length x Breadth x Height. - calculate the volume of 3 dimensional shape such as cube, cuboid, cylinder, prism etc - state the properties of solid shapes. - calculate the capacity of liquid in litres. - express capacity in litres and in centilitres cube - explain the difference between volume and capacity. e.g volume is how much space an object takes up while capacity is the amount of liquid a container can hold.	Critical thinking and problem solving skill Communication and Collaboration Citizenship skill.	Classrooms Type rule Pencils Cardboard paper Chart of volume and capacity formulae Teacher's tables Pupils' tables www.m.youtube.com,math www.askanydifference.co

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	LEARNING RESOURCES
	Importance -It is useful in bottling companies e.g. water, soft drinks, juice, malt companies - It is also useful in Fishery, Pharmacy, Catering etc.	solid shapes.	-derive the formulae of volume of solid shapes. e.g find the volume of the diagrams below, i.  Volume of a cube = length x length x length = L^3 = 10cm x 10cm x 10cm = $1000cm^3$ ii.  Volume of a cylinder = r^2H = 22/7 x 5cm x 5cm x 7cm = $550cm^3$. **Quantitative Reasoning**  5kg + ▭ + 10kg = 20kg		
6	**Everyday Statistics:** -Population represented on pictograms, bar chart and pie-chart. -Measures of Central Tendency: Mode Median Mean Range Probability **Importance** -It is helps to collect and analyze data for making decisions on: * Business * Population * Provision of social amenities to people in a place or community.	Pupils should be able to: find the mode from a set of numbers identify the median from a given set of numbers calculate mean of a given set of numbers solve problems on chances of events. solve quantitative aptitude problems relating to statistics and probability.	Pupils as a class do a role play, nine pupils are lined up in front of the classroom. Their heights are studied by the rest of the class, then line up in descending order (tallest to the shortest), the most common height is the mode, the height at the middle of the pupils lined up is the median and the total numbers of the pupils' heights divided by the total number of pupils standing which is the mean Pupils in groups arrange given number cards orderly, then select the numbers into category of sizes. The pupils identify and calculate the mode, median and the mean of the numbers given. **QUANTITATIVE REASONING**  Find the mean, median and mode of the following questions  	Critical thinking and problem solving Communication and collaboration Student leadership and personal development	AUDIO VISUAL RESOURCES Cardboards with numbers Data charts Site links https://study.com/academy/lesson/median-mode-lesson-plan.html Video links https://m.youtube.com/watch?v=1QPsk
7	Midterm Break	Midterm Break	Midterm Break	Midterm Break	Midterm Break
8	Revision on whole numbers.	**Pupils should be able to:** i. use basic operations to solve exercises on whole numbers up to billions.	Pupil as individual revise exercises from class and home work.		
9	Revision on past questions.	**Pupils should be able to:** i. solve exercises on placement test pack, ii. model entrance test iii. solve exercises on related entrance examinations questions.	Pupils in small groups solve past entrance examination questions.		