REPUBLIC OF RWANDA

MINISTRY OF EDUCATION.

NATIONAL CURRICULUM DEVELOPMENT CENTRE (N C D C)
P.O.BOX 608 KIGALI.

MATHEMATICS CURRICULUM FOR LOWER PRIMARY EDUCATION **(P1, P2, P3)**

Kigali, July 2005.

I. INTRODUCTION

Mathematics is one of the disciplines which give a learner logic reasoning and coherent thinking and enable him or her to follow other disciplines effectively. Mathematics is also a tool of learning other disciplines at primary level (e.g. SET: Science and Elementary Technology, , Geography**,….)**

The Mathematics curriculum of primary level has the following aspects:

- Numeration and operations
- Metric systems
- Geometry
- Algebra
- Graphs and interpretation

This curriculum will help the learner to follow the upper primary level Mathematics and other related disciplines effectively. This curriculum prepares also the learner the welfare in his /her real life such as accountancy, using metric systems, read and understand the simple graphics.

This curriculum is based not only on the reason of revising primary Mathematics syllabus of Rwanda but also making a relationship between Rwanda primary syllabus and the primary syllabus of its surrounding countries in order to facilitate the teachings of mathematics for responding the current needs of citizens ; this syllabus will be used by the learners of lower and upper primary levels schools of Rwanda.

II.GENERAL ORIENTATION

A holistic approach for the teaching of Mathematics in primary education is highly recommended. In other words, all the branches that are supposed to be taught (arithmetic, metric system, geometry, algebra, graphics and their interpretations) cannot be separated.
As such they can not appear, separately in the school timetable. The teaching of Mathematics will be so useful, to the extent that, it will expose the learner to a lot of exercises which will make them acquire the basic, simple notions/knowledge of Mathematics.
Pupils will be encouraged to participate in all activities so as to get used to the principles and the language of Mathematics.

III. GENERAL OBJECTIVES

1) Apply the acquired knowledge to solving Mathematics problems
2) Solve everyday problems that need quick application of simple mathematical principles
3) Exploit the acquired Mathematics applications so as to use them later in the pupils' future training.

IV. GENERAL OBJECTIVES FOR LOWER PRIMARY LEVEL

At the end of lower primary level the learner should be able to:

1. Solve everyday problems using the four operations on numbers from 0 up to 10 000.
2. Apply the acquired knowledge related to metric systems and geometric shapes to solve everyday problems.
3. Use the acquired knowledge in Mathematics in order to follow better the Mathematics teachings of upper primary level

V. CURRICULA

CURRICULUM FOR PRIMARY ONE

SPECIFIC OBJECTIVES	CONTENTS	METHODOLOGICAL NOTES
At the end of primary one , the learner should be able to: 1) Count, read and write numbers from **0** up to **99**	**1. CHAPTER 1. NUMERATION AND OPERATIONS** -Counting, reading and writing of numbers from **0** up to **99**. - Breaking down numbers that is less than100 into Ones and Tens	- Prepare enough teaching aids including stones , beans, sticks, and so on . - Help the learners to show the appropriate teaching aids to a number which will be taugh from 1 up to 9. - Show the reading and the writing of each number. - Teach 0: give 5 beans to the learner or other countable things, and take these beans (away) from him/her and ask him/her how many beans does he/she remain with. - On Tens: make a pile of 10 objects and show that each pile is a tens.

		- To teach 10: Draw 2 circles down and put 10 objects in the first circle and put nothing in the second circle, and a tens is represented by 1 and the empty is represented by 0 . - Show the writing of a number 10. - To teach numbers from 11 up to 99: make a pile of 10 same objects and adding the current ones on it respectively. - Show the writing of these numbers.
2) Compare 2 numbers these are less than 100 using the signs **<, >, and =**	- Comparing whole numbers less than 100. - Ascending, descending order of numbers between 0 and 99 not exceed 5 numbers.	- Compare numbers from 0 up to 99 : give the teaching aids to the learner differently (Unequal numbers, equal numbers), count the objects of each people and compare them together. -Show and explain the writing of the signs of comparing to the learner and explain also to him/ her the using of these signs.
3) Add and substract numbers from **0** up **99**	-Adding numbers without carrying a term whose total sum does not exceed 99. -Substracting two numbers between 0 and 99 without borrowing. - Breaking down numbers between 0 and 10 into terms of addition.	-Use a pile of different countable things in the Teachings of addition and substraction. -Use circles which contain a number of objects equals to the numbers in addition or in substraction. - Show the writing of +, - and = signs .

SPECIFIC OBJECTIVES	CONTENTS	METHODOLOGICAL NOTES
4) Do multiplications of a numbers from 1 up to 10 by two.	-Applying the multiplication table of 2, where the product does not exceed 20.	- Use the teaching material making a group / a pile of objects which is equal to times a wished number up to 10. - Use a table of what they have done. - Show the sign of multiplication (X)
5) Compare numbers including addition, multiplication and substraction using the **>, <** , and = signs .	- Comparing numbers using the signs **<, >,** and **=** For instance 4 - 3 < 8 - 6 2 x 7 > 2 x 5 14+5 = 16+3	- Workout the different exercises in comparing the product, the sum or the substraction of numbers.
6) Work out problems related to the real life of the learner and that need quick application of four mathematics operations	- Problems on four operations in whole numbers.	- Help the learners to workout the real life problems involving the 4 operations. - Acquire each learner to show the way / the hint of finding a solution.

At the end of primary one, the learner should be able to: 1) Tell and show where people and things are located. . 2) - Separate and draw lines according to their features. - Show points considering their position. 3) Draw a table with 4 rows and 4 columns	**CHAPTER 2 : DIRECTIONS AND GEOMETRIC FIGURES .** - Over/Above, under; in front of, behind; at the bottom of, on top; right, left. - Lines: closed lines, straight lines, curved lines broken lines. - The points : - Into a closed lines , -0utside of a closed line -On closed lines - Columns, rows, and a table.	- Use the real life teaching material. - Ask learners where the things are located. (their places) - Draw lines and ask the learner to do the same/ imitate using sticks , pieces of rope , … - Learners must draw these lines in their notebooks. - Bring all learners out of classroom and fix the sticks vertically and horizontally. - Explain that the horizontal sticks are **rows** and vertical sticks are **columns** - Learners must draw these in their notebooks.

SPECIFIC OBJECTIVE	CONTENTS	METHODOLOGICAL NOTES
At the end of primary one, the learner should be able to:	**Chapter III. METRIC SYSTEM**	
1) - Compare the length of objects, the length of people, or the length of the places. – Measure their lengths - Work out problems related to the measurements of length	- 1) - Comparing the length of objects, the length of people, or the length of the places by estimation /observation) - Measuring the length does not exceed 10m in m using : - a handstep - a footstep - sticks - Solving problems on length in metres. (m)	- Take realthings with different lenght and ask learners to compare them. - Ask learners to go out of their classroom and measure the existing things using the differents ways. - Measure the lenght of a piece of rope, the lenght of a door, of a window, of a wall and other lenght does not exceed 10 metres using a ruler of one metre. - Show the writing of a metre. - Workout the different existing exercises involving addition and substraction where the answer does not exceed 10 metres. - Ask the learners to workout the everyday problems.

2) Differenciate the days of the week.	- a week and its days. - today, tomorrow, yesterday, tomorrow but one .yesterday but one.	- Ask different questions related to the main local activities such as the days of market, the days of Gacaca, the days of churches, and so on in order to differenciate days.
3) – Differenciate the Rwandan money from a coin of 1F up to 100 F note /coin .	- The Rwandan currency from a coin of 1F up to a 100 F note/ a coin	- Bigin with a player where a learner takes the name of the day and when you call the name of a given day the learner who has that name must come. - Show the Rwandan currency including coins and a note/ a coin of 100F. - Differenciate coins according to their colours, their size and the number written on each coin.
- Convert Money do not exceed 100F.	- Converting the currency that not exceed 100F	- Workout problems on converting currency.

FIRST TERM

NO OF WEEK	NUMERATION AND OPERATION	METRIC SYSTEMS	Directions and geometric shapes
1	Count numbers from 1 up to 5	_____	- Directions : , under; in front of , behind ; at the bottom of, on top ; right , left
2	Count, read and write numbers from 1 up to 2	_____	- Draw vertical lines and horizontal lines.
3	Count, read and write numbers from 1 up to 4	____	- Draw closed lines and open lines
4	Count, read and write numbers from 5 up to 10	_____	- Draw broken lines .
5	Count, read and write numbers from 1 up to 2	_____	- Draw lines with equal lenght
6.	Count, read and write numbers 5, 6 and 7	- Compare the lengths of things and people.	____
7.	Compare numbers using < , > and = signs	____	____
8.	Count, read and write numbers 8, 9 and 0	- Measure the lenght using a	___

		handstep or a footstep, sticks , matchsticks , and so on .	

N0 of weeks	**Numeration and operation**	**Metric systems**	**Directions and geometric figures**
9	Add a number by 1 , by 2, by 3, by 4 and by 5 where the sum does not exceed 9.	- Measure the lenght using a handstep or a footstep, sticks, matchsticks, and so on.	_____
10	Revision	Revision	Revision
11	Examination	Examination	Examination

SECOND TERM

N0 of weeks	Numerations and operation	Metric systems	Directions and geometric figures
1.	Revision	Revision	Revision
2.	Count, read and write a number 10.	- Measurements of lenght : -reading and writing the measurements of length, the length in (m)	_____
3.	Substract numbers 1 and 4 from a number.	____	Draw different type of lines .
4.	Substraction of numbers less than 10, the smallest number does not exceed 5.	-Measurements of lenght does not exceed 10m.	Show the points into a closed lines, the point behind closed lines and the points on a closed lines.
5.	Substraction of numbers less than 10,	Addition of measurements of lenght in	____

	the smallest number does not exceed 9	metre(m) where the sum does not exceed 10m.	
6.	Exercises on addition and substraction where the sum does not exceed 10.	- Substraction of measurement of lenght where the difference does not exceed 10m.	____
7.	Problems involving addition and substraction whose answer does not exceed 10.	- A week and its days.	Draw lines with equal lenght. ____
8.	Count , read and write numbers from 11 up 20 .	____	____
9.	Compare numbers using < ; >, and = signs .	____	____
10.	Exercises of addition where the sum and substraction does not exceed 20 using numbers which are less than 20.	____	____
11.	idem	-Problems involving the measurement of lenght whose answer does not exceed 20m .	Revision
12	Revision.	Revision	
13	Examination	Examination.	Examination

THIRD TERM

No of week	Numeration and operation	Metric systems	Directions and geometric figures
1.	Revision	Revision	Revision
2.	Count, read and write numbers from 10 up to 30.	- Measurements of lenght : the length in (m) Measurement of lenght does not exceed 30m.	Draw the straight lines.
3.	Breaking down numbers from 10 up to 30 into Tens and Ones.	___	Exercises on directions : under; in front of, behind ; at the bottom of, on top ; right and left
4.	Count , read , write and compare numbers from 30 up to 60.	Rwandan currency from 1F up to 50 F.	_____
5.	Breaking down numbers from 30 up to 60 into Tens and Ones.	_____ .	_____
6.	Multiplication table of 2: the product does not exceed 20.	_____	_____ Columns, rows and its table.
7.	Count , read , write and compare numbers from 60 up to 99.	Rwandan currency from 1F up to 100 F.	_____

	.	Converting currency do not exceed 100 F.	_____
8.	Exercises of addition and substraction of numbers where the sum or the difference does not exceed 50. . Exercises of multiplication of numbers by 2 where the product does not exceed 20.	Exercises on addition and substraction of measurement of lenght where the sum and the difference does not exceed 50m.	_____ _____
9.	Breaking down numbers less than a 100 into Tens and Ones . .	Measurement of lenght: measure the lenght does not exceed 99m.	
10	Problems on addition, substraction whose answer does not exceed 99. Problems on multiplication a number by 2 where the product does not exceed 20.	Exercises on addition and substraction of measurement of lenght where the sum and the difference does not exceed 99m.	Revision
11	Revision	Revision	
12	Examination	Examination	Examination

CURRICULUM FOR PRIMARY TWO

SPECIFIC OBJECTIVES	CONTENTS	METHODOLOGICAL NOTES
At the end of primary two, the learner should be able to: 1) Count , read and write numbers from 0 up to 999	**Chapter ones.** **Numeration and operations** - Counting , reading and writing of numbers from 0 up to 999 - Breaking down numbers of three digits into Hundreds, into Tens and into Ones.	- Recall the reading and the writing of numbers from 0 up to 99. - To teach a number 100: draw ten circles down and put 10 objects in each circle. - Draw one big circle and put all things which are in above 10 circles. - Explain to the learners that big circle has 10 Tens which are equal to one Hundred. - Show to the learners how 100 must be written using the abacus which contains 10 tens and the empty circle, and then 0 is Written behind 10 so it becomes a 100.

2) Compare 2 numbers these are less than 1000 using the signs **<, >,** and **=**	- Comparing whole numbers less than 1000 using the signs **<, >,** and **=**	- To teach numbers from 101 up to 109: use the above method, the current ones must be put into the circle that has no object. - Show the writing of these numbers. - To teach numbers from 110 up to 999: use the large square to show Hundreds, use the small square to show Tens and use sticks to show Ones. - The number of these squares must be equal to the number of Hundreds or Tens on which they represent, and the number of sticks must be equal to the number of Ones on which they represent. - Use a table of Hundreds, Tens and Ones to compare numbers.
3) Add numbers where the sum does not exceed 999.	- Adding without carrying a term where the sum does not exceed 999. - Addition with once carrying a term where the sum does not exceed 999 vertically. -Addition using brackets.	- Show the subsraction and the addition of numbers vertically, write the Ones under the ones the Tens under the Tens, and Hunreds under the hundreds, using a accounting table . - Show the addition with carrying and the substraction with borrowing a term. .
4)Substract numbers less than 1000.	- Substracting without borrowing a term. - Substraction with once borrowing - Substraction using brackets.	- Begin by Ones in adding and the substracting numbers.

5) Multiply a number does not exceed two digits by numbers from 2 up to 6. -	- Multiplication table of numbers from 2 up to 6 - Multiplying without carrying - Multiplication with carrying.	- In multiplication tables apply the method used in primary one. - Using the multiplication table and multiply vertically. - Using the countable teaching materials. (oranges, sticks, and so on).

6) Divide a number does not exceed two digits by 2, by 3 and by 4. Divide a whole thing into 2 equal parts or into 4 equal parts and show these parts by the flowing fractions : ½ , ¼. 7) Solve problems using 4 fundamental operations.	- Divising without a remainder - Fractions : ½, ¼. - Problems involving 4 fundamental operations and their signs.	- Explain to the learners what is a whole or a unit. - Give the simple real life problems. Show always the method used in finding solution

SPECIFIC OBJECTIVE	CONTENTS	METHODOLOGICAL NOTES.
At the end of primary two, the learner should be able to	**CHAPTER 2 : METRIC SYSTEMS**	
1) Measure the lenghts in metre (m), measure the liquids in l and measure the weights in kg.	- Measurements of lenght in metre (m), measurementsof capacity in litre (l) and the measurements of mass in kg.	-Use the appropriate teaching materials in measurement of lenght, measurement of capacity, and measurement of weight of different things. - Go out of your classroom when you teach the metric systems; the learners must measure, compare and give the conlusion on what they have done and do the exercises.
- To convert the following measurements of lenght between themselves in descending order These are metre (m), decimetre (dm) and centimetre (cm).	- converting m, dm, cm between them.	
- Workout problems including m, dm, cm; l and kg.	- Problems involving measurements of lenght, measurement of capacity and measurement of mass.	
2) Recognize Rwandan currency and convert them.	- The Rwandan currency from a coin of 1F up to a 1000 F note.	. - Use the method used in primary one.

	- Converting the Rwandan currency that not exceed 1000F	
3) List the number of days in a week, List the number of months in a year, and the relationship between them. - Recognise time using digital and analog watches.	- Days of a week. - Weeks of a month. - Days of a month, days of a year, - Weeks of a year, and months of a year Time : - a short hand that shows the hours and the long hand that shows the minute. - a hour, a half past a hour or a half to a hour	- Use the calendar.
At the end of primary two, the learner should be able to:	**Chapter 3 : DIRECTIONS AND GEOMETRIC FIGURES**	
1) – Distinguish lines between them and draw them. - Distinguish points between them according to their position.	-Lines: straight lines, oblique lines, curved lines, broken lines, open lines, closed lines, cutting lines, no cutting lines / parallel lines. -Points inside a closed line , points outside a closed line and the points on a closed line.	- Use the method used in primary one.

2) –Locate drawings and images in a table by using lettres or numbers. 3)- Choose a square, a rectangle, a triangle In the different type of geometric shapes. Draw : - a square and a rectangle using a table (in the chalkboard, in their notebooks, etc. -a triangle using the square, the rectangle or 3 points. - measure the sides and find the perimeter of the following geometric figures - a square - a rectangle - a triangle	-A table does not exceed 10 rows and 10 columns. –Locate coordinates/ points in a table by using numbers. - Properties of: - A square - a rectangle - a triangle. - Exercises of drawing - Perimeter of: -a square - a rectangle - a triangle.	- The columns are represented by numbers and the rows are represented by lettres. - Locate the coordinate in a table. - Use the different objects and images which are similar to each geometric shape. - Habituate pupils to do drawings by using the rulers. - Help pupils to measure the sides and calculate the perimeter of different objects which are similar to the square, to the rectangle and to the triangle.

PRIMARY 2 : FIRST TERM

No of weeks	*Numerations and operations.*	*Metric systems.*	*Geometric figures.*
1	Revision	Revision	Revision
2	Counting, reading, writing, breaking down and compare numbers from 0 up to 20	- measurement by using m , the lenght does not exceed 200m	- curved lines.
3	Exercises on addition and substraction numbers vertically, horizontally and without borrowing.	- The days of a week.	- Cutting and none cutting lines.
4	Multiplication table of 2 and 3 The Sum and the difference from a number by 10.	- measurement of length : m and dam	- Closed and open lines.
5	Compare numbers by using >, < and = signs.	-relationship between **m, dm** and **cm**	- Broken lines.
6	Adding without carrying, the sum does not exceed 999. Adding with once carrying, the sum does not exceed 999.	- convert the measurements of length between them from **m** up to **cm**	-
7	Multiplication table of 4 and 5. Exercises of multiplication and addition without carrying.	-	- Points located outside a closed lines, outside the closed line or On the closed line.
8	Quick Substraction without borrowing.	Measurement of capacity : litre (l)	-
9	Multiplication table of 6. Ascending progression and descending progression.	Exercises of addition and substraction of measurements length and the measurement of capacity where the answer does not exceed 200.	-
10	Revision.	Revision.	Revision
11	Examination	Examination	Examination

Primary 2 : Second Term.

N0 of week	*Numeration and operatios*	*Metric systems.*	*Geometric figures.*
1	Revision	Revision	Revision.
2	Dividing the sum of two numbers by their common factors.	-	-
3	Counting, reading and writing numbers from , 100 up to 500	- measurement of weight in "kg"	-
4	Breaking down and compare numbers from 100 up to 500	-	- Straight lines.
5	Breaking down the number of 3 digits which does not exceed 500 into Ones, Tens and Hundreds.	- measurement of length from m up to cm	-
6	Exercises of multiplication of numbers, exercises of addition by carrying and substraction without borrowing.	- converting the measurement of length from **m** up to **cm**.	Columns, rows and a table.
7	- Quick calculation in multiplication by using a chart. - Substraction numbers by borrowing.	Rwandan money from 100 F up to 500 F .	-a table which does not exceed 10 columns and 10 rows.
8	-Multiplication of a number of 3 digits by a number of 1 digit with keeping or without keeping where the product does not exceed 500.	Exercises on addition and on substraction the measurement of length and weight.	-
9	Dividing of numbers by 2 and by 3	Converting currency: a note of 500RWF.	Draw a square and list its properties.
10	Exact division (a remainder R= 0)	Problems on measurement of length, of capacity and weight by using 4 0peration.	-
11	Problems on 4 operations	-	-
12	Revision	Revision	Revision
13	Examen	Examen	Examen

Primary 2 : Third term

N0 OF WEEKS	*NUMERATION AND OPERATIONS*	*METRIC SYSTEMS*	*GEOMETRIC FIGURES.*
1	Revision	Revision	Revision
2	Counting, reading and writing numbers from 500 up to 999.	- Days of a week. - Weeks of a month.	-properties of a rectangle
3	Breaking down and compare numbers from 500 up to 999.	- Rwandan currency from 500F up to 1000 F.	-
4	Quick multiplication of a number with 3 digits by 10.	- Days of a month - Measurement of length from the **m** up to the **cm**	- Properties of a triangle
5	Dividing numbers without a remainder (a number does not exceed 2 digits) by the divisor (That has 1 digit.)	- Days of a year. - Converting measurement of length between them.	- Perimeter of a square
6	Exercises of addition by carrying and substraction by borrowing.	- Weeks of the year, - Using the 4 fundamental operations in numeration.	- Perimeter of a rectangle.
7	Multiplication by keeping .	- Weeks of the year, - Using the 4 operations in numeration	- Perimeter of a rectangle
8	Quick calculation in multiplication and division. by using a chart	- A hour exactly.	- Perimeter of a triangle.
9	Fractions 1/2 na 1/4	- A half past a hour or a half to a hour.	-exercises on a square, on a rectangle and on a triangle.
10	Problems on 4 operations where the solution does not exceed 999.	-converting Rwandan currency between them up to a 1000 note.	-
11	Revision	Revision	Revision
12	Examen	Examen	Examen

CURRICULUM FOR PRIMARY THREE

SPECIFIC OBJECTIVES	CONTENTS	METHODOLOGICAL NOTES.
	CHAPTER ONE : **<u>NUMERATIONS AND OPERATIONS</u>** **A Whole Numbers**	
At the end of primary three, the learner should be able to: :		
1) –Count, read and write numbers form 0 up to 9999.	-Counting, reading and writing of numbers do not exceed 4 digits. - Breaking down numbers of 4 digits into Thousands, Hundreds , Tens and Ones	- Recall the reading and counting of numbers from 0 up to 999. - To teach 1000: use a counting table (including the Thousands, Hundreds, Tens and Ones.) - Teach numbers from 1001 up to 9999 by using the table of numbers.
2) Compare numbers do not exceed 4 digits.	-Comparing numbers by using > , < and = -Ascending order and descending order of numbers do not exceed 4 digits.	- Using the table of Thousands, Hundreds Tens and Ones in ordering and comparing numbers.

SPECIFIC OBJECTIVE	CONTENTS	METHODOLOGICAL NOTES.
3) – Add numbers where the sum does not exceed 9 999	- Adding a numbers by 10, 100 and by 1 000, the sum does not exceed 9 999.	- Showing the addition and the substraction of numbers vertically by writing the Ones under the ones, the Tens under the tens, Hundreds under the hundreds, Thousands under the thousands in counting table .
4) Apply the properties of addition. 5) calculate the difference of two numbers do not exceed 9 999.	- adding without carrying. - adding with carrying. - commutative law in addition. - associative law in addition. -substracting without borrowing. - substracting with borrowing.	- Showing the addition with carrying and the substraction with borrowing.
6)Multiply a number of 3 digits by a number does not exceed 2 digits where the product does not exceed 9999 .	- multiplication table of 7, 8 and 9 - the product of a number of 3 digits and a number does not exceed 2 digits. - Casting out of 9. - commutative law in multiplication. – - associative law in multiplication.	-In multiplication table apply the method used in primary one. - Using the table of multiplication and multiply numbers vertically. - Showing the casting out of 9 starting on different examples of multiplication vertically. - Using many exemples to show the commutative and the associative laws.
7) Apply the properties of multiplication.	- the product of a number by 10, 100, 1000	

8) Multiply a number by 10, 100 and 1000, where the product does not exceed 9 999. 9) Divide a number of 3 digits by a number of 1 digit. 10) Divide a number by 10, 100 and 1000 where the quotient does not exceed 9 999. 11) Work out the different excercises involving 4 operations. 12) Work out problems involving 4 operations.	- The division of numbers without a remainder. - The division of a numbers which have 3 digits by a number of 1 digit. -the division of numbers which are not exceed 9999 and ended by 3 zero by numbers 10, 100 and 1000 - working out 4 operations using different exercises. - working out 4 operations using different problems.	- Help learners to discover the multiplication laws. - Using different examples in exact division without and the division with the remainder. - Help pupils to differenciate the division laws. - Give different exercises. - Give the realife problems.
At the end of primary three, the learner should be able to: 1) Read, write and draw fractions do not	B**. Fractions.** - Reading, writing and drawing a fraction (the	-Using the teaching aids to teach fractions. - Showing fractions using drawings. - Showing the writing of a fraction and its components.(a denominator and a

exceed one unit, where the denominator does not exceed 10. 2) Compare fractions which have the same denominator and not exceed one unit. 3) Calculate the fraction of a whole number where the answer is a whole number. 4) Add or substract fractions which have the same denominator where the answer does not exceed 1. 5) Work out problems using fractions.	fraction do not exceed one unit and the denominator does not exceed 10.) -comparison of fractions : Of common denominator (the denominator does not exceed 10), these fractions do not exceed one unit. - adding or sustracting fractions of common denominator, the answer does not exceed 1. . – the complement of a fraction . - problems on fractions.	numerator) - Using the normal method to compare fractions of common denominator(the numerator is a whole number) - Calculate the fraction of a whole number by using drawings. - Use the normal method of the substraction and the addition. -Give the real life problems.
At the end of primary three, the learner should be able to: 1) Use the appropriate teaching aids in measuring lenght. 2) Read, write, convert the measurement of lenght.	**CHAPTER 2 : METRIC SYSTEMS** **A. MEASUREMENT OF LENGTH** -Measuring lenght . - Multiples and sub multiples of lenght unit. (km, hm, dam, m, dm, cm, mm) - conversion of measurement of lenght between them. (the answer does not exceed 9999 by	-using the appropriate teaching aids to measure lenght, the liquids and the weights/mass of different objects. - Teach the lessons of measurement out of yourclassroom where pupils measure, compare and give the conclusion from their observations and do the exercises.

3) Work out 4 fundamental operations using measurement of length 4) Wor kout problems on measurement of lenght. *At the end of primary three, the learner should be able to:* 1) Use the appropriate teaching aids in measuring capacity. 2) Read, write, convert the measurement of capacity.	decreasing order.) -4 fundamental operations : .addition and substraction of measurements of lenght. . multiplication and division of measurement of lenght by a whole number.) -problems on measurement of lenght. **B. <u>MEASUREMENT OF CAPACITY</u>** -Measurements of capacity. - Multiples and sub multiples of capacity unit. (hl, dal, l, dl, cl, ml) - conversion of measurement of capacity between them. (the answer does not exceed 9999 by decreasing order.)	-use the conversion table in converting measurements.

3) Work out 4 fundamental operations using measurement of capacity.	-4 fundamental operations : .addition and substraction of measurement of capacity. . multiplication and division of measurement of capacity by a whole number of 1 digit.	
4) Work out problems on measurement of lenght.	-problems on measurements of capacity.	
At the end of primary three, the learner should be able to:	**C. MEASUREMENT OF MASS.**	
1) Use the appropriate teaching aids in measuring mass.	- Measurements of capacity.	
2) Read, write, convert the measurement of weight.	. - Multiples and sub multiples of mass unit. (kg, hg, dag, g, dg, cg, mg) -conversion of measurement of mass between them. (the answer does not exceed 9999 by decreasing order.)	
3) Work out 4 fundamental operations using measurement of weight.	- 4 fundamental operations : .addition and substraction of measurement of mass. . multiplication and division of measurement of mass by a whole number of 1 digit.	
4) Work out 4 fundamental operations		

using measurement of capacity.	- -problems on measurements of mass.	
At the end of primary three, the learner should be able to: 1) Recognize Rwandan currency and 2) Convert Rwandan currency does not exceed 5000RWF 3) Work out problems involving the using of Rwandan currrency (currency do not exceed 9 999.) *At the end of primary three, the learner should be able to:* - Tell the time *At the end of primary three, the learner should be able to:* 1) Measuring obtuse angle, right angle	**D**. **<u>MONEY</u>** **Rwandan currency : coins and notes** Converting the coins and notes in buying and selling. Problems on Rwandan currency. **E. TIME** -Time shown by a watch.	- use the same method as the method used in primary two. - Using the clock.

and acute angle by using a set square and a protractor. 2) Draw a square and a rectangle and draw a mediane and a diagonal into them. 3) Differenciate and draw the main types of a triangle. 4) Calculate the perimeter of triangles 5) Recognise the circle among the other geometric shapes.	**CHAPTER 3 DIRECTION AND GEOMETRIC FIGURES.** -obtuse angles, right angles, acute angles - a square and a rectangle. A mediane and a diagonal. - a right triangle, equilateral triangle and isosceles triangle - the perimeter of a triangle - a circle	- Use the appropriate teaching aids in measuring and drawing the different types of angles. - Recall how to calculate the perimeter of the square and the rectangle. - Draw the square and the rectangle by using a table and a ruler. - Draw the mediane and the diagonal. - Help pupils to differenciate the types of triangles by observing, measuring and drawing. - Help pupils to measure the perimeter of triangles by using the ruler. - Draw the circle by using a stick and a rope (go out your classroom.) - Help pupils to discover the circle among the different geometric shapes.

PRIMARY 3 : First Term

No of weeks	*Numeration and systems*	*Metric systems.*	*Geometric systems.*
1	Revision	Revision	Revision
2	Reading, writing, breaking down and compare numbers from 0 up 3000	Measurements of length from Km up to m.	_____
3	Adding by carrying or without carrying, where the sum does not exceed 3000. Properties of addition.	-measurements of capacity from hl up to dl	_____
4	Substracting without borrowing or with borrowing numbers without do not exceed 3 digits.	_____	- Right angles, obtuse angle, and acute angle.
5	Multiplying numbers by a number of 1 digit. Multiplication table of 7	- Measurements of mass from kg up to g	_____
6	Multiplying numbers by a number of 2 digits. Multiplying a number by 10, 100 and by 1000	- conversion of measurements.	- Draw the right angles, acute angles and obtuse angles.
7	Dividing a number by a number of 1 digit.	_____	_____
8	Multiplication table of 8	-exercises on addition and substraction the measurement of lenght and capacity where the sum /difference does not exceed 2000	_____
9	Quick calculation in addition or substraction.	_____	_____
10	Revision	Revision	Revision
11	Examination	Examination	Examination

Primary 3 : SECOND TERM

N0 of weeks	***Numeration and operations***	***Metric systems***	***Geometric figures.***
1	Revision	Revision	Revision
2	Quick calculation in multiplication or division.	Problems which include measurements of lenght, of capacity and the measurement of mass.	_____
3	Exercises and problems on 4 fundamental operations.	_____	_____
4	Reading, counting, comparing and breaking down numbers from 1000 up 9999.	- measurements of lengt from **km** up to **m**	- Different types of angles.
5	Adding by carrying, substraction by borrowing numbers do not exceed 9999	_____	_____
6	Multiplication table 9 Casting out of 9.	_____	Describe a square and calculate its perimeter
7	Properties of multiplication. Multiply a number by 10, 100, and by 1000	-measurements of capacity from **hl** up to **ml**	_____
8	Drawing fractions and compare them (the fractions do not exceed 1 unit and the denominator does not exceed 10.	- conversion of measurement of lenght between them.	_____
9	-	-conversion of measurements of capacity between them.	- describe the rectangle and calculate its perimeter.
10	Exercises of addition, substraction, multiplication and division.	-converting Rwandan notes and coins in buying and selling.	_____
11	Problems on 4 fundamental operations.	Problems including Rwandan money	_____
12	Revision	Revision I	Revision
13	Examination	Examination	Examination .

Primary 3 : THIRD TERM .

No of weeks	*Numeration and operations*	*Metric systems*	*Geometric figures.*
1	Revision	Revision	Revision
2	Calculate a fraction of a whole number.	_____	_____
3	Exercises of addition, substraction, multiplication and division.	- 4 fundamental operations on addition and substraction the measurements of lenght.	-the properties of a triangle.
4	Addition of fractions (fraction of common denominator, the answer does not exceded 1).	- Addition and substraction the measurement of capacity.	-types of triangles: a right triangles, and equilateral triangle
5	Substract fractions with common denominator.	- Addition and substraction the measurements of mass.	_____
6	Division with a remainder. (Divide a number which does not exceed 3 digits by a number of 1 digit.)	- Multiplication and division of measurement of lenght, capacity and mass by a whole number.	_____
7	Division without the remainder (divide a number which does not exceed 3 digits by a number of 1 digit.)	-exercises on conversion of measurements.	The perimeter of the triangle.
8	Fractions of a whole numbers (the numerator does not exceed 1, the numerator does not exceed 10, the quotient is the whole number.	-a time represented by a watch.	_____
9	-a compliment of the fraction to 1 unit.	_____	- a circle and its properties.
10	Problems on fractions.	-problems including the measurement	-problems including the geometric shapes.
11	Revision	Revision	Revision
12	Examination.	Examination	Examination.

VI. METHODOLOGICAL APPROACH

The methodological approach of Mathematics in the first cycle of primary level is based on a greater contribution and participation of each learner in the learning-teaching process. So that the pupil has enough time in discovering, in observing, touching, changing, measuring, searching, through the teaching aids. The teacher is there as a facilitator.

The teacher prepare the appropriate teaching aids to the lesson (these teaching aids may not be distract pupils attention) ; if possible the learners can bring the teaching aids.

The teaching of Mathematics should take into consideration the following steps : Concrete
Semi-concrete
Abstract

The teacher should give enough time for discovering and thinking to the learners before giving the answer.
All exercises he/ she should give in the teaching may be related to the real life of the pupil.
. Leaving alone the home works, there should be assignments done in class and enough exercises; under the guidance of the teacher; this allows the teacher to check on how the pupils participate during their training.

The teacher should choose some topics in which they will be taught outside the classroom (for instance: - measurements).

VII. EVALUATION APPROACH

During the lesson the teacher prepares the questions to ask pupils, these can be oral or written questions.
This allows the teacher to verify, if the pupils are attentive, if the lesson is appropriate, and if the teaching methods used are effective. After verification the teacher, can take appropriate measures, to achieve his objective.

During this verification the teacher, should not reject automatically, the false answers, given by the pupils; he/she should try to guide the answer in a better direction. The evaluation exercises should be carried out at different levels.

The teacher should also evaluate the pupils through written tests, after one or two weeks, through end of term, and end of year examinations.

The teacher will always bear in mind, that the evaluation approach, should focus on verifying, how the acquired knowledge, in all the different branches of mathematics, can be put together, in the solving of similar problems, in the every day life of the pupils.

During the correction of the exercises, of tests or examinations, the teacher will take care of all the pupils, but he/she, should give Particular attention to weaker pupils.

Leaving alone the home works, there should be assignments done in class, under the guidance of the teacher; this allows the teacher to check on how the pupils participate during their training.

VIII. PARTICULAR FACTORS

1. During the first cycle, the learner meets a number of problems, such as abrupt changes of certain writings, or numbering especially on the units of measurement. Hence, for example, h1, 5min, 30s, 20F. The teacher will have to explain to the pupils, why those changes, and make them get used to those new writings.

2. During the preparation of evaluation exercises, the teacher will not only depend on the school book at hand, but will also try to expand his/her documentation according to the level of his/her learners.

3. His/her teaching and evaluation should also take into consideration such fields as

   - Knowledge
   - Skills
   - Attitude.

4. One should not put full stops, commas, to distinguish the classes, in the writing of whole numbers from 1000 up to 10 000. Spacing should be enough, to determine the classes.(Ex.: 9.345 will be 9 345)

IX. BIBLIOGRAPHY

AUTHOR	NAME OF A BOOK	PUBLISHING HOUSE	YEAR
-Ubuyobozi bw'Integanyanyigisho z'Amashuri Abanza n'iz'Agamije Amajyambere y'Imyuga.	. IMIBARE 1 : - Igitabo cy' umunyeshuri	Icapiro ry' Amashuri KIGALI	1979
''	. IMIBARE 2 : - Igitabo cy'umwarimu - Imboneracapa rya 2	'' ''	Mutarama 1987
''	. IMIBARE 2 : - Igitabo cy'umunyeshuri	''	[s.d.]
''	. IMIBARE 3 : - Igitabo cy'umwarimu - Iboneracapa rya 2	'' ''	Mutarama 1987
''	. IMIBARE 3 : Igitabo cy'umunyeshuri	'' ''	1982
''	. IMIBARE 3 :	''	Gashyantare 92
-Global Publishers KAMPALA	. IMYIGISHIRIZE Y'IMIBARE MU MASHURI ABANZA. Lexique spécialisé Français - Kinyarwanda	'' ''	Kamena 1983 1985 ''
-Matovu Fred F.K, Roy D. Holland	PRIMARY SCHOOL MATHEMATICS BK1 - BK2 - BK3 PRIMARY MATHEMATCS FOR UGANDA	Uganda Bookshop '' ''	'' 200 0
-Kiggundu-Mukasa Daniel et al. -Mugumu Deogratias et al.	Primary Mathematics 2000. Pupil's books:2 and 3 Primary Mathematics 2000.Teachers guide 6	MK Publishers-Kampala ''	2000