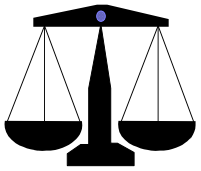
MINISTRY OF EDUCATION

REVISED CURRICULUM GUIDE

MATHEMATICS

GRADE 4



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Joseph McKenzie	Interactive Radio Instruction Mathematics Specialist, NCERD
Rajwantie Permual	Head, Learning Resources Development Unit, NCERD
Peter Wintz	Mathematics Lecturer, University of Guyana
Albert Sugdeo	Head, Materials Production Unit and Former Headteacher
Indroutie Samichand	Data Processor, NCERD

CURRICULUM GUIDE
MATHEMATICS: GRADE 4
CONTENTS

INTRODUCTION

In keeping with the Ministry of Education policy of continuous updating of its curriculum guides, a team of experienced teachers under the guidance of senior curriculum officers in mathematics undertook the task of revising the mathematics Curriculum for Primary Schools. The revision takes into account the Revised Scope and Sequence for Primary School Mathematics.

The revision was done along a number of principles and reflects a number of features:
These are:

- the spiral arrangement of content across the levels
- defining objectives to cater for the three intellectual domains-cognitive, psychomotor, affective
- the integration of the other curriculum areas into mathematics
- an interactive methodology in teaching the subject
- the use of assessment strategies that go beyond the traditional paper and pencil test.

The Easy Path Series ***Let's Do Mathematics*** is an integral support for this guide.
Some concepts in this Guide may require using other supporting texts to enhance interactive approach.

The teaching strategies suggested would allow children to explore, investigate, and discover the foundation principles of mathematics thus enhancing their chances of succeeding in mathematics beyond the primary level. Learning in such an enriched mathematics environment will bring to the fore the joy of learning.

The methodology used in the Interactive Radio Instruction (IRI) in mathematics for Grades 1 – 3 has been infused in the teaching strategies suggested.

Best wishes!

Bibi S. Ali
Head, Curriculum Development and Implementation Unit
National Centre for Education Resource Development
2008 – 09 - 08

MATHEMATICS CURRICULUM GUIDE
GRADE 4
SETS

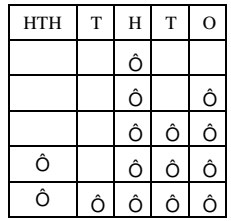
TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
Sets Describe sets and identify and list their members.	Collecting and sorting objects into sets. Describing sets. Comparing sets. Differentiating. Listing members of sets.	Describe and name given sets and list the members of the sets.	Share ideas and materials.	The concept of a set and members of the set.	Sort a mixed collection of objects. Describe and name each set. Identify and list all the members of given sets. Identify which members belong and which members do not belong to a particular set.	- Use given sets of assorted materials to form other sets. - Describe, name and list the members of the sets formed.	Science Classify animals in the environment as vertebrates or invertebrates. Art and Craft Make and display Picture cards showing sets of objects.
Distinguish between equal and equivalent sets.	Matching members of sets using one-to-one correspondence. Differentiating Discussing. Identifying. Listing.	Identify sets that are equal and sets that are not equal.	Participate willingly in classroom activities.	Equal and equivalent sets.	Identify sets that are equal. Match members of sets using one-to-one correspondence to identify equivalent sets. Discuss the difference between sets that are equal and sets that are equivalent. Identify and list the members of equal sets and equivalent sets.	- Identify sets that are equal and sets that are equivalent using concrete materials.	Art and Craft: Drawing and colouring sets of objects.
Identify subsets of given sets.	Listing Naming Describing and making subsets.	List subsets of given sets.	Appreciate that while some things belong to particular groups others do not..	Sets and subsets.	Describe and name given sets. List the members of given sets. Make subsets from a given set.	List subsets of given sets including the empty set as a subset.	Physical Education Form teams for different events.

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
					Identify the empty set as a subset of the set. Identify and list subsets of given sets.		

NUMBER CONCEPTS

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
Number Concepts Counting up to 999 999.	Counting Writing Recognising patterns	Count up to 999 999 by the units. Write any number up to 999 999.	Enjoy finding answers to "How many objects are there in sets of objects?" Develop appreciation for achieving.	Count and write numbers up to 999 999 Skip counting in 2's, 3's, 5's, 10's, 25's, 50's, and 100's. Write numbers from 1000 to 999 999. e.g. 9000 + 1=9001: nine thousand one 9000 + 2 = 9002 : nine thousand two 9000+100= 9100 : nine thousand one hundred. 90 000 + 900 = 90 900 : ninety thousand nine hundred	Counting on by the units from a given number to another given number (forward and backward) e.g. 43, 44, 45, …, 56 56,55,54,…, 43 Write numerals for numbers shown on an abacus. Skip counting and complete sequences in 2's, 3's, 5's, 10's, 25's, 50's, 100 and 1000's on a hundred grid, a number line or an abacus (both forward and backward) Increase or decrease a given number by either 2, 3, 10, 25, 50 100 or 1000 and write numerals	Complete sequences involving skip counting e.g. 5, 10, 15_, _, 30. 100, _, _, 400,500,600… 1000, 2000, 3000 … Increase and decrease given numbers by 10, 100, 50, 25. Use the calculator to generate and complete sequences. Match numerals with their number names e.g. 11 100 : eleven thousand one hundred	Art and Craft: Use decorative patterns on objects.

<table>
<tr><th rowspan="2">TOPIC</th><th colspan="3">OBJECTIVE</th><th rowspan="2">CONTENT</th><th rowspan="2">METHODS/ STRATEGIES-</th><th rowspan="2">EVALUATION</th><th rowspan="2">AREAS OF INTEGRATION</th></tr>
<tr><th>SKILLS</th><th>KNOWLEDGE</th><th>ATTITUDE</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td>formed by the increase or decrease e.g.
Increase 25 by 3
Decrease 25 by 3
Use tallies to record hundreds of thousands, tens of thousands, thousands, hundreds, tens and units on a place value chart
Write and read the numerals represented by tallies e.g.
<table><tr><td>HTH</td><td>TH</td><td>H</td><td>T</td><td>O</td></tr><tr><td>11</td><td>1</td><td>𝍸 𝍸</td><td>111</td><td>𝍸 1</td></tr><tr><td>2</td><td>1</td><td>5</td><td>3</td><td>6</td></tr></table>
Write numerals in expanded notation.
412 536 = 400 000 + 10 000 + 2000 + 500 + 30 + 6.
Write and read number names for given numerals e.g. 412 536 – four hundred twelve thousand five hundred thirty-six.
State values of identified digits in a numeral e.g. the value of 4 in the numeral 59 413 is</td><td></td><td></td></tr>
</table>

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
					400.		
Counting up to 999 999.	Reading Writing Recognising each value of a digit in a 6-digit numeral.	Read and write up to 999 999 and state the value of each digit in 6 – digit numerals..	Develop enthusiasm for mathematics related activities.	Numbers up to 999 999. Value of each digit in 6 – digit numerals.	Use a variety of materials e.g. coloured strips of cardboard, an abacus, base-ten blocks to show:- - (1) Sets of thousands up to hundreds of thousands. - Sets of thousands up to 999 000. - Set of thousands and hundreds up to - 999 000 - Naming the place or position in which a digit appears in a numeral e.g. in the numeral 82 605, the 6 is in the hundreds place. State the value of each digit in 6-digit numbers up to 999 999.	-Write the names for 6-digit numerals e.g. -766 305, 972 005 -Write the numbers represented on the abacus  - State the value of underlined digit in 5 digit numbers e.g. 43 276, 74 609	
Odd and even numbers up to 999 999.	Recognising patterns Sorting Observing Classifying numbers as odd numbers or even	Identify odd and even numbers.	Develop self confidence	Odd and even numbers to 999 999	-Identify odd and even numbers on the hundred square grid. -Skip counting in 2's to identify odd and even numbers on a number line.	Complete sequences in odd and even numbers e.g. 109, 111, 113,… __, 224,225,226 Identify odd and	Games Games related to odd and even numbers.

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
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	numbers.				Note: Skip count in 2's from zero for even numbers and from one for odd numbers. - Recognise odd and even numbers by examining the last digit in the numeral. Sort numeral cards (up to 5 digits) into piles of odd and even numbers using the appropriate name cards. (Odd numbers/Even numbers)	even numbers from given sets of numbers e.g. 37, 91, 108, 113, 1102, 4713, 28 704, 19 711, 897 996 Quizzes	
Successors	Recognising Reading Writing	Identify the number that comes after (successor) or before (Predecessor in a sequence of numbers up to 99 999	Develop self confidence	Successors	Oral exercises in which pupils identify the successors of given numbers.	Oral exercises in which pupils give answers to questions, e.g. What number comes after 120? What number comes after 230? What number comes after 340?	Games related to stating of successors of numbers.
					Reading a number and then writing the number that comes after it. E. g. Write the number that comes after 1019	Exercises involving the reading and writing successors of given numbers.	

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
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					(1020) Explaining with examples that the successors of numbers that end with 9 begin with the next set of 'tens'. E.g. the successor of 2029 begins with the next set of 'tens', the 30s (2030, 2031, …2039)		
Predecessors				Predecessors	Oral exercises in which pupils identify the predecessors of given numbers.	Oral exercises in which pupils give answers to questions, e.g. What number comes before 120? What number comes before 247? What number comes before 340?	Games related to the stating the predecessors of numbers.
					Read a number and then write the number that comes before it. E. g. Write the number that comes before 2005 (2004)	Exercises involving the reading and writing predecessors of given numbers.	
				Successors and Predecessors	Oral and written exercises in which pupils identify the	Oral exercises in which pupils give answers to	Games related to stating the successors and

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
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					predecessors and successors of given numbers. E.g. 30 109, 30 111, 30 113, 30 115	questions, e.g. What number comes after 10 028? What number comes before 10 028? What number comes after 39 119? What number comes before 89 190?	predecessors of numbers.
Ordinals up to 100^{th}.	Ordering Recognising and using patterns Reading dates using the calendar	Read and use ordinals up to 100^{th}.	Use knowledge gained in mathematics meaningfully	Ordinals up to 100^{th}	Read dates using the calendar. Use ordinal names and ordinal numerals First 1^{st} Second 2^{nd} Third 3^{rd} up to hundredth (100^{th}) to identify positions of objects. Continue using ordinals as shown: (a) 1^{st} - 9^{th} (b) 10^{th}, 20^{th} , 30^{th} , … 100^{th} (c) 10^{th} , 11^{th} , 12^{th}, ….19^{th} (d) 21^{st} , 22^{nd} ,23^{rd} …29^{th} (e) 31^{st} , 32^{nd} , 33^{rd} ,…39^{th} (f) 41^{st} , 42^{nd} ,	Read and write the date for each day of the week using ordinals Complete sequences e.g. (a) 1^{st}, 2^{nd}, 3^{rd} ,-, -, 6^{th}. (b) 10^{th} , -, -, 13^{th}, 14^{th}, 15^{th}. (c) 20^{th}, 21^{st}, 22^{nd}, -, 24^{th}, 51^{st}, 92^{nd}	<u>Language Skills</u> Arrange words in alphabetical order.

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
					43^{rd} ,…49^{th} (g) 50^{th} , 51^{st} , 52^{nd}, ….59^{th} etc. Use ordinals to state the position of athletes in a race at the finishing line, pupils in line and other objects in classroom. Read and write dates as a daily exercise e.g. dates of birthdays, school activities, anniversaries, national events e.g. Silver Jubilee, Golden Jubilee, etc.		
Basic number facts for addition and subtraction	Computing Recognising patterns Memorising Generalising Discovering rules Problem solving	Recognise the commutative property of addition and subtraction as the inverse operation of addition.	Develop eagerness to solve problems	Addition and subtraction facts up to 100.	Use concrete materials and the addition table to memorise facts. Examine tables and find patterns. Examine these patterns and make generalisations, e.g zero added to any number is the number itself: 0 + 4 = 4 Zero taken from any number leaves the number: 5 – 0 = 5	Completing the addition table. + | 1 | 2 | 3 | 4 1 | | | | | 2 | | 4 | | | 3 | | | | | 4 | | | 7 | | 5 | | | | 9 6 | | | | | 7 | | | | | 8 | | | | | 9 | | | | | Use concrete materials to solve	Language Arts Comparing similarities and differences

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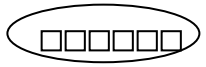
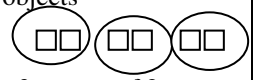
<tr><th>SKILLS</th><th>KNOWLEDGE</th><th>ATTITUDE</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td>The order in which two numbers are added does not alter the answer:
5 + 4 = 9
4 + 5 = 9</td><td>addition and subtraction problems.

Complete odd and even addition and subtraction table, e.g.
<table><tr><td>+</td><td>2</td><td>3</td></tr><tr><td>2</td><td></td><td></td></tr><tr><td>3</td><td></td><td></td></tr></table></td><td></td></tr>
<tr><td>Factors of 1-, 2-, 3-, and 4-digit numbers.</td><td>Listing factors
Communicating</td><td>Identify and write factors of 1-, 2-, 3- and 4-digit numbers.</td><td>Use patterns carefully to generalise
Practise creative thinking</td><td>Factors of 1–, 2- and 3-digit numbers.</td><td>Arrange given sets of objects into equal rows in different ways e.g. using 6 objects the arrangement will look like these.

 
1 group of 6 objects
 
2 groups of 3 objects
 
- 3 groups of 2 objects

6 groups of 1 object</td><td>Identify and write factors of 1- , 2-, 3- , and 4-digit numbers using concrete materials e.g. use bingo chips to find the factors of 5, 4, 6, 17, and 20.
Quiz</td><td>Games
Games involving Listing factors of given numbers.
Language Skills
Use mathematical terms in sentences e.g. “is a factor of” and “product of factors.”</td></tr>
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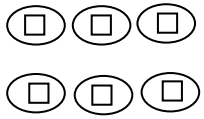
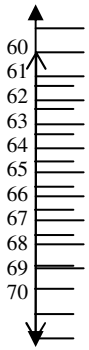
TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
					each. 		
					Write number sentences to describe these arrangements e.g. 1 x 6 = 6 2 x 3 = 6 3 x 2 = 6 6 x 1 = 6 Write the numbers that describe the arrangements in order, smallest to largest. Describe these numbers as "factors of 6". Discuss the meaning of factors. Identify and write factors of given 1 –, 2-, and 3 – digit numbers. Use multiplication tables to identify products of factors e.g. 2 x 5 = 10		

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
Rounding off numbers	Counting Identifying Rounding-off	Rounding-off whole numbers to the nearest ten, hundred, or thousand.	Value the benefits of rounding-off numbers in everyday life.	Rounding –off whole numbers to the nearest ten, hundred, or thousand.	Count in ones, tens and hundreds from a given number to another given number on a number line. Identify a given number on the number-line and state its position in relation to the tens on both sides of this number e.g.  63 is nearer to 60 than to 70. 66 is nearer to 70 than to 60. Write numbers to the nearest ten e.g. 63 to the nearest ten is 60. 66 to the nearest ten is 70. Use the number line in a similar manner to round - off numbers	Round - off given numbers to the nearest hundred e.g. 780 to the nearest 100 is _____. Round - off given numbers to the nearest hundred e.g. 364 to the nearest hundred is ___, to the nearest thousand.	<u>Social studies</u> Round- off numbers related to small population size e.g. number of students in the school.

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					to the nearest hundred. e.g. 136 is nearer to 100. It is rounded – off to 100. Discuss rounding – off of numbers at the half way mark using the number line: Numbers at the half way mark are rounded – off upward if the digit before 5 is odd e.g. 35 rounded-off to the nearest 10 is 40, 350 rounded – off to the nearest 100 is 400. Numbers at the half way mark are rounded –off downward if the digit before the 5 is even e.g. 45 rounded-off to the nearest 10 is 40, 250 rounded –off to the nearest 100 is 200.		
Roman numerals	Identifying patterns Discovering rules Applying rules Arranging basic Roman numerals	Recognise four basic Roman numerals I,V,X, L and C	Appreciate that there are other numeration systems other than the Decimal Numeration System.	Four basic Roman Numerals	Identify patterns in Roman numerals 1 to 5 and use the patterns to write Roman numerals from 1 to 8. Identify patterns in the Roman numerals 9 to 11 and use the	Write and read Roman numerals e.g. XL – 40. Arrange Roman numerals from smallest to largest and vice-versa.	Craft Make note books/scrap books numbering the pages using Roman numerals.

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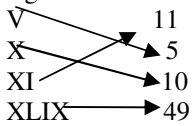
					pattern to write Roman numerals for the numerals 9 to 20. Identify patterns in the Roman numerals 20 to 39 and use the pattern to write Roman numerals for the numerals 20 to 39 Introduce L as the Roman numeral for 50 followed by the Roman numeral for 40. Write Roman numerals for the numerals 41 to 49. Identify Roman numerals up to 100 from a wall chart.	Match Roman numerals with Hindu-Arabic numerals e.g.  	

OPERATIONS, RELATIONS AND PROPERTIES

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
Basic number facts for addition and subtraction	Computing Recognising patterns Memorising Generalising Discovering rules Solving problems	Recognise the commutative property of addition. Subtraction as the inverse operation of addition.	Develop eagerness to solve problems.	Addition and subtraction facts to 100.	Use concrete materials and the addition table to memorise facts. Examine tables and finding patterns discussing these patterns and making generalisation e.g. zero added to any	Complete addition table. **+** | **0** | **5** | **6** | **9** **5** | | | | 14 **7** | | | 13 | | **8** | | | | | **9** | 9 | | | |	Language: Comparing Similarities and differences.

<table>
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STRATEGIES-</th><th rowspan="2">EVALUATION</th><th rowspan="2">AREAS OF

INTEGRATION</th></tr>
<tr><th>SKILLS</th><th>KNOWLEDGE</th><th>ATTITUDE</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td>number is the number itself.
0 + 4 = 4.
Zero taken from any number leaves the number
e.g. 5 – 0 = 5.
The order in which two numbers are added does not alter the answer.
i.e. 5 + 4 = 9
4 + 5 = 9.
Addition and subtraction are inverse operations
i.e. 4 + 5 = 9
9 – 4 = 5
9 – 5 = 4
Solving simple addition and subtraction problems</td><td>Use concrete materials to solve addition and subtraction problems.

Complete addition tables, e.g.
<table><tr><td>+</td><td>3</td><td>4</td><td>7</td><td>9</td></tr><tr><td>0</td><td></td><td></td><td></td><td>9</td></tr><tr><td>5</td><td></td><td></td><td>12</td><td></td></tr><tr><td>6</td><td></td><td></td><td></td><td></td></tr><tr><td>8</td><td>11</td><td></td><td></td><td></td></tr></table></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td>Using odd and even numbers to reinforce addition and subtraction facts by finding out if the result of the operation is an odd or an even number.
e.g. 8 + 6 = 14
Even + Even = Even
6 + 5 = 11
Even + Odd = Odd
7 + 5 = 12
Odd + Odd = Even.
Using brackets to</td><td></td><td></td></tr>
</table>

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	SKILLS	KNOWLEDGE	ATTITUDE				
					write number sentences to show which part of the problem must be done first e.g. (7 + 9) – 8 means add first then subtract.		
		Build number sequences (not more than 100 numbers in a sequence) so that the difference between consecutive terms is 2 – digits number, 10 or a multiple of 100 up to 1000.		Addition of numbers up to four digits 2137 = 2000 + 100 + 30 + 7 4626 = 4000 + 600 + 20 + 6 7563 = 7000 + 500 + 60 + 3	Using expanded notation to show addition of 2 – 3 – 5 digit numbers without regrouping with regrouping in the ones only. Addition of 2 – 3, 4 and 5 digit numbers and combination of these without showing the expanded notation.	Use expanded notation to do addition of 2 – 3, and 5digit numbers Writing problems vertically then add. 14137 + 179 + 356 =	
	Computing	Add sets of numbers up to five digits without and with regrouping in either vertical or horizontal form not more than 5 addends.	Sharing ideas	Addition of numbers up to four digits. 9123 = 9 thousand + 1 hundred + 2 tens 3 ones 7102 = 7 thousand + 1 hundred + 0 tens + 2 ones 3275 = 3 thousand + 2 hundred + 7 tens	Using expanded notation to show addition of 2-, 3-, 4-, 5-digit numbers without regrouping - with regrouping in the ones only With regrouping in the tens only with regrouping in the hundred only, with regrouping in the thousand only addition of 2, 3,4 and	Use expanded notation to do addition of 2, 3, 4 and 5 digit numbers Write problems vertically then use the expanded notation.	

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
				5 ones 9116 = 9 thousand + 1 hundred + 1 ten + 6 ones 6381 = 6 thousand + 3 hundred + 8 tens 1 ones	5 digit numbers and combinations of these without showing the expanded notation.		
		Subtract 2, 3, 4 and 5 digit numbers from other 2, 3, 4 and 5digit numbers without and with regrouping		Subtraction of numbers up to 5 digits without regrouping e.g. 49 = 4 tens 9 ones -25 = 2 tens 5 ones = 2 tens 4 ones = 24 Regrouping in the ones only e.g. 56 = ^{4}5 tens ^{1}6 ones -29 = 2 tens 9 ones 2 tens 7 ones = 27 Regrouping in the tens only 546 -261 5 h 4 t 6 ones 2 h 6 t 1 ones 2 h 8 t 5 ones = 285 3429 - 161	Using expanded notation to show subtraction of 2, 3 and 4 digit numbers and their combinations - without regrouping in the ones only. - In the tens only - In the hundreds only Regrouping in the ones, tens and hundreds. Subtracting 2, 3 and 4 digits numbers from 2, 3 and 4 numbers and combination of there without showing the expanded notation. Using margin square to practice addition and subtraction.	Use expanded notation to show subtraction of 2, 3 and 4 digit numbers. Complete magic squares. 39 | 32 | 37 | 36 | | 40 |	

<table>
<tr><th rowspan="2">TOPIC</th><th colspan="3">OBJECTIVE</th><th rowspan="2">CONTENT</th><th rowspan="2">METHODS/ STRATEGIES-</th><th rowspan="2">EVALUATION</th><th rowspan="2">AREAS OF INTEGRATION</th></tr>
<tr><th>SKILLS</th><th>KNOWLEDGE</th><th>ATTITUDE</th></tr>
<tr><td></td><td></td><td></td><td></td><td>3 th 4 h 2 t 9 o
1 th 6 h 1 t 8 o
1 th 8 h 1 t 1o
= 1811</td><td></td><td></td><td></td></tr>
<tr><td></td><td>Calculating
Investigating</td><td>- Recall multiplication tables 2, 3, 4, 5, 10.
- Build up multiplication tables 6, 7, 8, 9;
- Recognise and use zero property;
- Property for one; the commutative property and inverse relation between multiplication and division.</td><td>Willingness to participate in class discussion.</td><td>Multiplication facts.

Multiplication table 1 – 10 times. (grid)
Here is a partial display of the table.

<table><tr><td>X</td><td>3</td><td>4</td><td>7</td><td>9</td></tr><tr><td>0</td><td></td><td></td><td></td><td>0</td></tr><tr><td>5</td><td></td><td></td><td>35</td><td></td></tr><tr><td>6</td><td></td><td></td><td></td><td></td></tr><tr><td>8</td><td>24</td><td></td><td></td><td></td></tr></table></td><td>Making the multiplication table (grid) for 2, 3, 4, 5, times tables

Using the table to reinforce facts for 2, 3, 4, 5 times tables

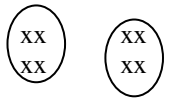
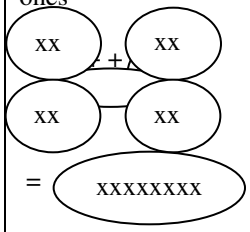
Identifying patterns and relationships in multiplication table e.g.
0 x 4 = 0
zero multiplied by any number is zero.
One multiplied by any number is the number itself e.g.
1 x 5 = 5.

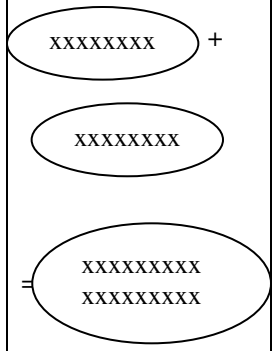
The order in which two numbers are multiplied does not alter the answer i.e.
2 x 4 = 8
4 x 2 = 8
Each table is built up by counting in sets according to the table used e.g.
2, 4, 6 - - - - -</td><td>Complete multiplication table (grid)
<table><tr><td>X</td><td>0</td><td>5</td><td>6</td><td>9</td></tr><tr><td>5</td><td></td><td></td><td></td><td>45</td></tr><tr><td>7</td><td></td><td></td><td>42</td><td></td></tr><tr><td>8</td><td></td><td></td><td></td><td></td></tr><tr><td>9</td><td>0</td><td></td><td></td><td></td></tr></table>
Complete number sentence with basic multiplication and division facts
e.g.
5 x 3 = □
□ x 6 = 24

3 ÷□ = 21
□ ÷ 7 = 4

Write repeated addition sentences as multiplication sentences and vice versa.
2 + 2 + 2 + 2 = 8
4 x 2 = 8
4 x 2 = □ + 2

Solve simple multiplication and</td><td></td></tr>
</table>

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
					3, 6, 9 - - - - - Multiplication and division are inverse operations e.g. 10 ÷ 2 = 5 10 ÷ 5 = 2 Solving simple multiplication and division problems involving the basic facts for up to 9 times tables.	division problems.	
Multiplication	Calculating	Multiply up to 4–digit numbers by 2 – digit numbers by 100 and by 1000.	To develop team spirit.	Multiplication up to 4-digit numbers. TH H T O 1 2 3 4 x 2 _____ _____	e.g. TH H T O 1 2 2 4 x 2 _____ Make 2 groups of 4 Ones  Add the 2 groups of 4 ones  Add the 2 groups of 2 tens	Multiply up to 4-digit numbers e.g. 144 x 2 7120 x 3	Science Social Studies English

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
					 Make 2 groups of 2 hundreds xx xx Add the 2 groups of 2 hundred x + x = xx x x xx Make two groups of one thousand. H T O 2 2 4 x 2 4 4 8		
				45 x 25 = (40 + 5) x 25 = (40 x 20) + (40 x 5) + (5 x 20) + (5 x 5)	Using expanded notation and the distributive property to multiply 2-, 3-, and 4-digit numbers by 2-	Use the expanded notation to multiply 2-, 3-, and 4-digit numbers by 2 digit numbers.	

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
				800 + 200 + 100 + 25 = 1125 293 x 4 (200 + 90 + 3) x 4 = (200 x 4) + (90 x 4) + (3 x 4) = 800 + 360 + 12 = 800 + 360 + 10 + 2 = 800 + 300 + 70 + 2 = 1100 + 70 + 2 = 1172	digit numbers. e.g. 45 x 25 = (40 + 5) x 25 = (40 x 20) + (40 x 5) + (5 x 20) + (5 x 5) 800 + 200 + 100 + 25 = 1125 and 293 x 4 = (200 + 90 + 3) x 4 = (200 x 4) + (90 x 4) + (3 x 4) 800 + 360 + 12 800 + 360 + 10 + 2 800 + 370 + 2 800 + 300 + 70 + 2 = 1100 + 70 + 2 = 1172	Use expanded notation to find the answer. 57 x 6 209 x 8. Multiply 2-, 3-, and 4-digit numbers by 2-digit numbers by 1 digit number without showing the expanded notation	
					Multiplying 2 and 3 digit numbers without showing the expanded notation. Adding consecutive tens up to 100 by counting in tens e.g. 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 = 10, 20, 30 …….. 100.	Multiply 2-digit numbers by 10. 45 x 10 = 10 x 66 = Use repeated addition to multiply 2-digit number by 100 e.g. 100 + 100 + 100 = 3 x 100 = 300 Multiply 1 digit	

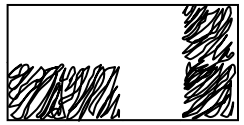
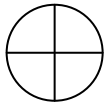
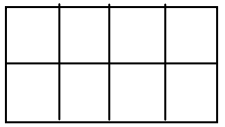
TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
					Adding consecutive hundreds and showing the number of hundreds tens and ones on an abacus/plane value chart.	numbers by 100 e.g. 6 x 100 =[] 100 x 9 =[]	
				4 x 10 = 40 10 x 6 = 60 100 x 4 = 400 4 x 100 = 400.	Identifying patterns in multiplication of 2-digit numbers by 1, by 10, by 100 and by 1000 through discussion.	Multiply 2-digit numbers by 10 and by 100 and by 1000. Complete these 28 x = 28 28 x 1000 = 28 x = 0 Complete place value charts to show multiplication by 10 and 100. TTH | TH | H | T | O 15 x 10 46 x 10 9 x 100	
	Identifying patterns	Multiply 2- and 3-digit numbers by 10; multiples of 10 up to 1000 and other 2 digit numbers.	Appreciate others contribution.	Multiplication by 2- and 3-digit numbers including 10 and multiples of 10 (up to 90) e.g. 10 x 2 = 20	Identifying patterns in multiplication of 2-digit numbers by 2-digit numbers and multiples of 10 up to 100 through discussion and the	Multiply 1 digit number by 1 digit numbers, 10 and multiples of 10 up to 90. e.g. 9 x 2 = [] 9 x 10 = []	

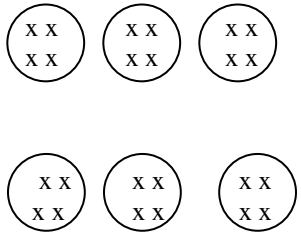
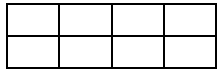
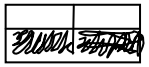
TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
				20 x 2 = 40 30 x 3 = 90 20 x 100 = 200 40 x 10 = 400	use of the abacus and place value chart e.g. 6 x 2 = 12 ones = 12 6 x 2 tens = 12 tens = 120 7 x 3 = 21 7 x 30 = 210 Discuss: When you multiply by 10 the number moves one place to the right when you multiply by 100, the number moves two places to the left. Multiplying up to 3-digit numbers by 10, multiples of 10 up to 100.	21 x 10 = []	
	Calculating by dividing	Divide up to 4-digit numbers by 2-digit numbers without and with regrouping remainders.	Develop self awareness.	Division of up to 4-digit numbers by 2-digit number. e.g. $5\overline{)45}$ 9 - 5 - 1 40 - 5 - 2 35 - 5 - 3 30 - 5 - 4 25 - 5 - 5	Using concrete materials to solve simple division problems (using the basic division facts). Drawing diagrams to show simple division problems. Using a repeated subtraction algorithm to do division. Using expanded notation to divide up to 4-digit numbers by 1-digit numbers - without regrouping and	Solve simple division problems using the basic facts. Do exercise with repeated subtraction Do exercises using expanded notation.	

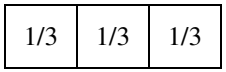
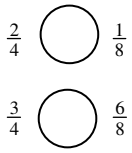
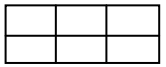
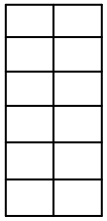
TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
				20 - 5 - 6 15 - 5 - 7 10 - 5 - 8 5 - 5 - 9 0 e.g. 38 ÷ 2 = 19 $2\overline{)20+18}^{10+9}$ $2\overline{)40+19}^{20+9r1}$	no remainder. = 38 ÷ 2 = 20 + 18 ÷ 2 = $2\overline{)20+18}^{10+9}$ = 19 With regrouping and remainder e.g. 59 ÷ 2 = 40 + 19 ÷ 2 $2\overline{)40+19}^{20+9r1}$ = 29 r 1 Dividing up to 3 digit numbers by 1 digit number without showing the ' expanded notation e.g. 38 ÷ 2 = $2\overline{)38}^{19}$		
	Computation	Solve simple 1 – step and 2 – step problems involving the four operations.	Awareness of objects in the environment.	Problem solving involving the four operations	Using concrete materials and diagrams to solve simple addition, subtraction, multiplication and division problems.	Solve simple one – step problems. Solve simple two step problems.	
	Inquiring	Have the concept of average and find average of 2 and 3 quantities	Awareness of real life situations.	Average of 2 and 3 quantities	Using concrete materials to make equal amounts from unequal amounts by shifting parts of these	Rearrange 2 or 3 unequal piles to have the same number of objects in each pile	

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
					sets until they are equal. Making equal piles from 2 or 3 unequal piles and discussing the situation. Finding averages of 2 or 3 unequal quantities from real life situation by pooling together the quantities and then redistributing these pooled quantities so that each share has the same amount. Discussing the computation involved in finding average.	Find the average of 2 or 3 quantities.	

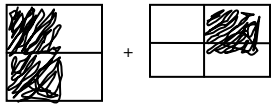
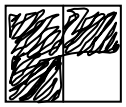
FRACTIONS

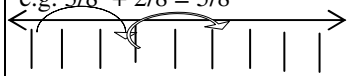
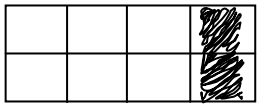
TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
Fractions Identifying ½, ¼, $\frac{1}{8}$, $\frac{1}{16}$ of wholes and sets. .	Identifying Shading Labelling Comparing Computing	Shade and label parts of wholes to show ½,1/4,1/8,1/16 Group to show 1/2,1/4,1/8 ,1/16 of sets.	Show enthusiasm to participate in activities	½, ¼, $\frac{1}{8}$, $\frac{1}{16}$ of wholes and sets.	Fold geometric cut – outs to show ½, ¼, $\frac{1}{8}$, $\frac{1}{16}$ - Shade and label parts of wholes to show halves, quarters, eighths and sixteenths - e.g -  - - -	Shade to show a named part e.g.  Shade 4/4 of the diagram 	Craft Decorative craft: Utilise materials in the environment to make jewellery such as necklaces using a variety of coloured beads of different colours.

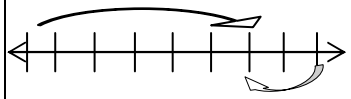
TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
					-  2/4 - Group to find ½, ¼, $\frac{1}{8}$, $\frac{1}{16}$ of sets of objects and write number sentences to show these e.g.  ½ of 24 = 12 ¼ of 24 = 6 1/8 of 24 = 3	$\frac{4}{4}$ Shade 2/8 of the diagram  Name the shaded parts e.g.   Draw objects and group to show ½, ¼, $\frac{1}{8}$, $\frac{1}{16}$ of sets of objects Complete number sentences e.g. $\frac{1}{8}$ of 16 = 1/8 of 32=	
Fractions (1/2, ¼, 1/8, 1/16) of wholes and	Comparing fractions Using	Recognise that fractions can be compared.	Develop determination to succeed	Comparison of fractions	Fold, shade, label and cut strips of cardboard of the same size to show halves,	Use the symbols >, < to complete number sentences	

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
sets	comparison symbols Folding Shading Labelling Constructing			½, ¼, $\frac{1}{8}$, $\frac{1}{16}$.	quarters, eighths and sixteenths Match these strips of cardboard to compare these fractions e.g  1/3 = 1/6 + 1/6 Writing number sentences to show these relationships using comparison symbols > is greater than < is less than = is equal to e.g. ½ > ¼, ¼ < 3/4, 4/8= ½.	to show comparison of two fractions e.g.  	
Fractions (1/3, 1/6,1/12) of wholes and sets.	Identifying Shading Labelling Calculating	Identify $\frac{1}{3}$, $\frac{1}{6}$, $\frac{1}{12}$ of wholes, and sets.	Develop self – confidence in making decisions	1/3,1/6 and 1/12 0f wholes and sets	Fold, shade and label strips of cardboard of the same size to show 1/3, 1/6, 1/12 Find 1/3, 1/6. 1/12 of sets of objects by grouping and write number sentences to show these relationships using comparison symbols > is greater than < is less than = is equal to e.g. 1/3 > 1/6, 1/12 < 1/3, 2/6= 1/3.	Shade to show given fractions e.g.  5/6  5/12	

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
						Identify what fraction of shapes have been shaded Group to show $\frac{1}{3}$, $\frac{1}{6}$, $\frac{1}{12}$ of sets Complete number sentences e.g. $\frac{1}{3}$ of 12 = Use the symbols > is greater than < is less than = is equal to to complete sentences e.g. $\frac{1}{3}$ ○ $\frac{1}{6}$ $\frac{3}{12}$ ○ $\frac{1}{3}$, $\frac{6}{12}$ ○ $\frac{2}{12}$.	
Proper fractions	Identifying proper fractions Shading Labelling Classifying	Identify numerator and denominator of the proper fraction	Enjoy interacting with other pupils to solve problems	Numerator and denominator of the proper fraction	Use congruent strips/geometric cut outs to shade and label fractions of wholes. -Name these fractions -Recognise that fractions that are less than a whole are called proper fractions -Identify proper fractions. -Identify the denominator of the proper fraction (the denominator tells into how many equal parts the whole is divided) Identify the numerator of the proper fraction(the numerator	Identify proper fractions from a given set of fractions State the numerator and denominator of each of a set of proper fractions.	

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
					tells how many of these equal parts are being considered)		
Addition and subtraction of fractions with like denominators using halves, quarters, eighths and sixteenths, thirds, sixths and twelfths.	Using halves, quarters, eighth, sixteenths, thirds, sixths and twelfths to add and subtract fractions	To add and subtract fractions with like denominators	Sharing ideas in groups and working together to find answers to problems in fractions	Addition and subtraction of fractions with like denominators	Use congruent strips of cardboard to show given fractions with like denominators e.g. use two strips, one showing 1/8 shaded, the other 3/8. Add the shaded parts. Write number sentences to show these additions e.g. - $\frac{1}{8} + \frac{3}{8} = \frac{4}{8}$ - Using diagrams to complete addition sentences e.g.  =  = 3/4 2/4 + ☐ = 3/4	Worksheets with fractional problems	

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
					Shade the number line to show given number sentences e.g. 3/8 + 2/8 = 5/8  - Using the number line to add fraction with like denominators e.g. 0 ⟷ 1 $\frac{0}{8}$ $\frac{1}{8}$ $\frac{2}{8}$ $\frac{3}{8}$ $\frac{4}{8}$ $\frac{5}{8}$ $\frac{6}{8}$ $\frac{7}{8}$ $\frac{8}{8}$ $\frac{2}{8} + \frac{4}{8} = \frac{6}{8}$ Fold and shade strips of cardboard to show named fractions Cut off a given fraction from the strip and state what fraction is left. Write number sentences to show these fractions e.g. $\frac{8}{8} - \frac{2}{8} = \frac{6}{8}$ Use diagrams to write sentences to show the unshaded or shaded part  e.g. 8/8 – 2/8 = 6/8		

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
					- Use the number line to subtract fractions with like denominators e.g. $\frac{0}{8}$ $\frac{1}{8}$ $\frac{2}{8}$ $\frac{3}{8}$ $\frac{4}{8}$ $\frac{5}{8}$ $\frac{6}{8}$ $\frac{7}{8}$ $\frac{8}{8}$  $\frac{6}{8} - \frac{2}{8} = \frac{4}{8}$ Repeat learning experiences to add and subtract fifths and tenths.		
Add and subtract fractions with unlike denominators	Adding and subtracting fractions Writing number sentences	Add and subtract fractions with unlike denominators	Show interest in activities	Addition and subtraction of fractions with unlike denominators	Using fraction charts to find equivalent fractions to add or subtract fractions within a family Write number sentences to show these additions or subtractions e.g .(a) 1/4 + 1/8 2/8 +1/8 3/8 (b) 5/6 – 1/3 5/6 – 2/6 3/6	Use the fraction chart to find equivalent fractions Add and subtract fractions with unlike denominators within a family e.g. $\frac{1}{3} + \frac{1}{6} = \square$ $\frac{1}{4} + \frac{2}{8} = \square$	
Have a concept of improper	Shading Classifying	Recognise improper fractions as	Develop self reliance	Improper fractions	Shade diagrams to develop the concept of improper fractions	Write the improper fractions shown by sets of diagram	

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
fractions and rename – improper fractions as whole numbers or mixed numbers and vice versa.		fractions with numerators greater than or equal to the denominators			Show and name improper fractions on number line Identify improper fractions from a given set of fractions e.g. $\frac{3}{2}$, $\frac{5}{8}$, $\frac{5}{3}$, $\frac{7}{2}$. Shade diagrams to show the relationships between improper fractions and whole numbers or mixed numbers	Shade diagrams to show given improper fractions Rename the improper fractions as whole numbers or mixed numbers. e.g. 6/2, 6/5, 8/7, 5/ 6/2 = 3 6/5 = 1 1/5 8/7 = 1 1/7.	

DECIMALS

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
DECIMALS Read and write decimal tenths.	Differentiating ordering comparing.	To compare decimal tenths.	To appreciate working with decimal tenths.	Writing decimal tenths.	Reading and writing decimals with tenths. e.g. 0.1, 0.5, 0.9.	Use place value chart to show the following fractions in decimal tenths. $\frac{8}{10}$ $\frac{5}{10}$ $\frac{3}{10}$ $\frac{1}{10}$	Science. Social Studies. Language Arts.
Express a given number of tenths as an improper fraction and as a mixed number.	Re-ordering Comparing Differentiating.	To express a given number of tenths as improper fractions and as mixed numbers.	To appreciate changing from decimal tenths to improper fractions and mixed numbers.	Writing tenths as improper fraction and as mixed numbers.	Expressing a given number of tenths as an improper fraction and as a mixed number.	Use strips of paper divided into tenths to express tenths into improper and mixed numbers.	Science. Social Studies. Language Art.
Add and subtract decimals involving	Adding Subtracting Converting.	To add and subtract decimal involving tenths.	To appreciate adding and subtracting decimals	Addition and subtraction of decimals involving	Adding and subtracting decimals involving tenths.	Complete these (a) 0.7 + 3.6 (b) 1.8 – 0.5	Science. Social Studies. Language Arts. Physical

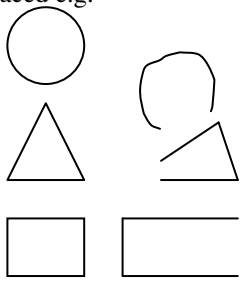
TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
tenths.			involving tenths.	tenths.	e.g.0.7 + 0.6 = 0.7 + 0.6 1.3 3.8 – 0.7 = 3.8 - 0.7 3.1		Education.

GEOMETRY

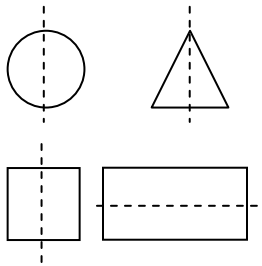
TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
Solids	Counting Identifying Drawing Making models of solids.	Identify and name simple solids e.g. cube, cuboids, cone, cylinder and sphere .Draw nets of solids	Share ideas.	Solids -cubes, cuboids, cones, cylinders and spheres.	Play with given sets of solids e.g. toothpaste boxes, match boxes, marbles, balls, tissue rolls, snow cone cups etc Group solids according to shape. Feel and count corners, surfaces and edges. Identify and name the cube, cuboid, cone, cylinder and sphere. Cut and open and refit solids. Observe nets of cubes,	Identify and name simple solids Draw nets of solids Make models of solids	Art and Craft. Construct skeleton models of cubes and cuboids from drinking straws, bamboo, jointed grass, wires etc. Science Make models e.g. the skeleton, joints etc.

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
					cuboids, cones and cylinders Make models of solids from nets.		
Properties of solids	Collecting and grouping solids Identifying edges, surfaces and vertices of given solids. Counting Recording	Identify the number of edges, surfaces and vertices in the cube, cuboid, cone, cylinder and sphere and describe the nature of the edges and surfaces.	Work cooperatively in groups Share ideas.	Properties of solids-surfaces, edges and vertices.	Sort a given set of solids according to the number of surfaces, edges and vertices. Demonstrate what are surfaces and edges using solid objects. Identify vertices and count the number of vertices on given solids. Record the number of surfaces, edges and vertices of solids on a table. Record the nature of the surfaces and edges of solids on a table e.g. curved surfaces, flat surfaces, straight edges and curved edges. Make model toys from solids around.	Identify the number of surfaces, edges and vertices in the cube, cuboid, cone, cylinder and sphere. Play games – can you find me? E.g. I have no vertices, one curved surface, no edges. Can you find me?	<u>Art and Craft.</u> Make solids and colour surfaces. <u>Language Skills</u> Read passages on solids and answering questions.
Plane shapes	Observing and identifying plane shapes.	Classify plane shapes according to the number of edges and angles.	Work in groups and sharing ideas.	Plane shapes – squares, rectangles, triangles and circles.	Discuss shapes. Identify plane shapes as seen from the surfaces of models of solids e.g. squares from faces of cubes rectangles from faces of cuboids circles from faces of cylinders Sort plane shapes	Use rubber bands and geoboards to make some of the shapes. Cut out the surfaces from solids as representation of plane shapes.	<u>Art and Craft</u>. Cut out representations of plane shapes. Draw and colour plane shapes.

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
					according to the number of sides. Identify angles formed on plane shapes.		
Angles	Identifying Discussing Demonstrating Constructing models of solids Drawing	Identify right angles, angles that are greater than the right angle and angles that are less than the right angle.	Appreciate discovery activities	The concept of a right angle, an acute angle and an obtuse angle.	Discuss the concept of angles and drawing same. Constructing right angles by paper folding and tracing lines. Using the paper right angle to identify right-angles from objects in the environment. Using arms to demonstrate a right angle, an angle greater than and less than a right angle. Use two strips of cardboard joined by a paper fastener to show right-angles Identify (1) right angles (2) angles more than a right angle (3) angles less than a right angle from a given set of angles. Draw right angles, angles that are greater than and less than right angles.	Identify right angles, angles that are greater than a right angle or angles that are less than a right angle from given diagram	Art Draw different sizes of angles on plane sheets.

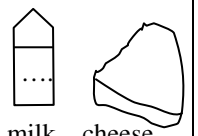
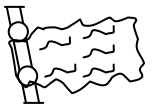
TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
Closed and open shapes.	Identifying Drawing closed and open shapes. Tracing, using templates	Recognise the differences between closed and open shapes	Value and enjoy activities in mathematics	Closed and open shapes.	Trace the edges of solids such as cubes, cuboids, tissue rolls, and sides of templates of triangles, circles, rectangles and squares. Trace around parts of the edges of the given solids and sides of the templates. Draw what they have traced e.g.  Cut what was drawn on sheets of paper. Identify closed and open shapes from the diagrams and the cut-outs.	Identify closed and open shapes from diagrams. Draw closed and open shapes.	<u>Language Skills</u> Use the technical language of mathematics to communicate with each other.
Polygons	Observing and identifying polygons up to five sides. Identifying and grouping polygons according to	Identify and name polygons up to five sides Identify congruent polygons.	Develop an approach tendency to activities in mathematics.	Polygons up to five sides Congruent polygons.	Sort templates and cut-outs of three, four and five sided shapes according to the number of sides. 	- Make shapes on geoboards using coloured rubber bands. - Identify polygons with three to five sides from a set of diagrams	<u>Art</u> Draw and colour polygons Make templates of polygons.

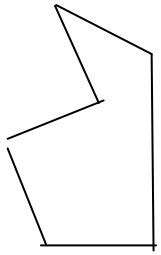
TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
	number of sides.				Name each set of polygons depending on the number sides as triangles, quadrilaterals, and pentagons). Name the shapes as polygons and arrive at a definition of what is a polygon Identify congruent polygons by fitting size and shapes. Draw and cut out polygons from cardboard.	Identify congruent polygons from pictures diagrams. - Work on a class project on polygons.	
Lines and line segments.	Observing, Identifying Drawing Discussing Naming	Identify lines, line segments, congruent line segments and points.	Recognise and appreciate the use of points, lines and line segments in real life situations. Analyse critically while working in groups.	Lines and line segments.	-Fold paper to form a line. -Use folded paper to draw lines, line-segments and congruent line-segments. -Discuss the differences between lines and line segments. -Identify lines and line segments. -Draw and name line segments and lines. -Identify lines, line segments, congruent line-segments and points.	- Identify and name lines, line segments, congruent line segments and points from given diagrams.	<u>Art</u> Draw scenes from the environment making use of points and line segments.
Symmetrical shapes.	Investigating Comparing Folding paper.	Recognise shapes that are symmetrical	Show willingness to work in small groups and produce common symmetrical	Symmetry – when a shape can be folded so that one half lies exactly on	-Use soaked beans to bring out the concept of symmetry. -Cut the soaked bean into two.	Identify the number of lines of symmetry in given shapes. Identify	<u>Art and Craft</u>. Use powder colours to produce symmetrical

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
			shapes. Appreciate beauty through symmetry in the environment	top of the other we say the shape is symmetrical.	-Observe and discuss the above activities -Fold cut-outs of some common plane shapes, as shown, to show symmetry.  -Name the line formed when the shapes are folded as the line of symmetry. -Fold shapes in different ways to discover the number of lines of symmetry in each shape.	symmetrical shapes from diagrams and pictures. Use a 3 x 3 geoboard to make symmetrical shapes using coloured rubber bands.	shapes. Science Investigate symmetry in the environment e.g. shapes of butterflies.

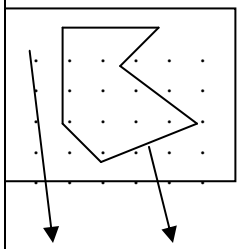
MEASUREMENT- LENGTH

TOPIC	OBJECTIVES			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
Measurement: Length Non-standard units	Estimating, Measuring Comparing Recording Discussing	Estimate, measure and compare lengths using non-standard units.	Show willingness to guess and estimate	Measurement of length of objects using non-standard units.	Estimate length of objects around the classroom using non-standard units Measure length of	Measure the length of classrooms using three non-standard units and	Language Skills Say why the use of non-standard

TOPIC	OBJECTIVES			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
					objects using non-standard units. Colgate boxes, pencils, bares.. Record estimated and measured lengths of a table and compare same. Measure one length using a variety of non-standard units e.g. use hand-spans, drinking straws etc to measure the length of desks. Record the result on a table.	record results Select non-standard units to measure length of objects and distances e.g. the distance round the classroom, the height of a pupil, the length of the playground etc.	units may cause problems if used in everyday life. <u>Physical Education</u> Estimate and measure distances using non-standard units.
Standard units- the metre and centimetre	Estimating Communicating Measuring and recording length.	Recognise the metre and centimetre as standard units of length	Share ideas with group members.	Long lengths are measured in metres. Short lengths are measured in centimetres One metre is the same as 100 centimetres in length	Discuss the importance of standard units of length. Make a metre strip Estimate length of objects in metres Use the metre strip to measure length of objects and record results Cut a 80-centimetre strip to to get length of 40 centimetres, 20 centimetres and 10 centimetres. Estimate and measure using	Which of these are measured in metres?  milk cheese  Cloth  flour  Dress	<u>Science</u> Estimate and measure height of plants

TOPIC	OBJECTIVES			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
					80-,40-, 20- and 10 centimetre strips Paste coloured 10-centimetre strips to cover the metre strip. Count the number of centimetres in a metre. Estimate and measure parts of the body in metres, centimetres, in metres and centimetres e.g. distance around head, waist etc. Record the estimated length and measured length Discuss the information recorded Name lengths that would be measured in metres and lengths that would be measured in centimetres. Measure length in metres and centimetres.	Estimate then measure, in centimetres ,the length of each line in plane shapes e.g.  Measure length of sides of plane shapes e.g shapes made on the geoboard with rubber bands.	
Relationship between the millimetre and the centimetre	Comparing Estimating Measuring	Recall and use the understanding that one centimetre is	Co-operate with group members.	The relationship between the centimetre and	Draw a line 1 centimetre long Below it draw a line 1 millimetre	Use comparison symbols > is greater than < is less than	<u>Language Skills</u> Use the language

TOPIC	OBJECTIVES			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
		equal to 10 millimetres.		the millimetre i.e 1 centimetre = 10 millimetres	long Estimate how many millimetres are in 1 centimetre Count the member of millimetres in one centimetre. Name length that can be measured in millimetres. Estimate and measure length in millimetres and record the estimated length and the actual length.	= is equal to to complete these 50cm ☐ 50mm 10cm ☐ 1cm 2cm ☐ 18mm 8mm ☐ 1cm	of mathematics in communicating.
Word problems	Solving problems	Solve simple word problems using any of the four operations.	Share ideas with group members.	Word problems involving the four operations.	Solve simple problems which involve the four operations e.g. Seon's height is 136 cm. Tom's height is 128 cm. What is the difference in their heights?	Solve problems e.g. Susan shared 12 metres of ribbon equally among her three friends. What length of ribbon, in metres, did each of her friends get?	Language Skills Reading problems Make up mathematics stories
Perimeter of regular and irregular shapes	Measuring lengths Computing	Find the perimeter of irregular and regular shapes	Appreciate that there are various ways in solving problems	Perimeter of plane shapes.	Use non-standard units e.g. strides, hand spans etc. to find distances around objects Record results and discuss Measure distances around objects in the	Find the perimeter of plane shapes e.g. 15 cm 15 cm 15 cm 15 cm	

TOPIC	OBJECTIVES			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
					classroom e.g. hand towels, crayon boxes, shelves etc in metres, centimetres, metres and centimetres.		
Area of plane shapes	Making shapes Counting Comparing Estimating Measuring	Have a concept of area and find the area of irregular and regular shapes.	Show willingness to manipulate materials	Area is the amount of surface space bounded and is measured in squared units.	Use coloured rubber bands to make irregular then regular shapes on a rectangular geo-board e.g.  nail rubber band Count the number of squares and half squares in the shapes. Compare the size of two objects of about the same area by guessing which is larger then by printing them on square grids and	Use six squares to make six different shapes. (half squares can be used) What is the area of each shape?	Language Skills

TOPIC	OBJECTIVES			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
					counting the number of squares and part squares covered by each object. Use coloured rubber bands to make square and rectangles on a rectangular geo-board. Find the area of the shapes made on the geo-board by counting the number of squares in the shape. Place given cut outs of squares and rectangles on squared paper and find their areas, in units squared, by counting the number of squares covered by each shape.		
Solving word problems	Translating the words of problems into equivalent problems Solve equivalent problems Interpreting answers Discarding	Know how to attack problems	Execute plans confidently Develop willingness to solve problems .	Simple word problems involving perimeter and area.	Solving simple problems involving perimeter and area with out conversion.	Solve problems based on area and perimeter.	<u>Science</u> Pose questions and devise experiments or Investigations to answer them e.g. What type of soil will drain the quickest?

TOPIC	OBJECTIVES			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
	irrelevant information Using sketches and diagrams						

CAPACITY

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
Capacity Non-standard units	Estimating Measuring Recording Discussing	Estimate, measure and compare capacity using non-standard units.	Recognise the need to use standard units	Capacity is the measure of how much liquid containers hold.	Estimate then measure the capacity of containers using non-standard units e.g. spoonfuls, cupfuls etc Estimate then measure the capacity of containers using given non-standard units. Record the estimated capacity on a table and compare same. Discuss the importance of standard units of measure for capacity.	Measure the capacity of a mug using four different non-standard units e.g cups, bottles, glasses etc Record the information on a table.	
Standard units	Estimating Measuring Recording Ordering Writing	Estimate, measure and record the capacity of containers in litres and	Co-operating with group members	Litre and millilitre are standard units of measure for capacity. 1 ℓ = 1000 mℓ	Estimate, then measure the capacity of containers of various shapes and sizes in litres and millilitres.	Write > is greater than < is less than = is equal to on each the circle to make each	<u>Science</u> Use measuring cylinders of different sizes to measure water correctly

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
		millilitres. Know that 1 litre is made up of 1000 millilitres.		½ ℓ = 500 mℓ	Record estimated and measured capacity Arrange containers in ascending and descending order according to their capacity. Making sentences to show comparison of containers. Discuss the relationship between the litre, half litre and millilitre by using half litre measures to fill a 1litre container and using100 mℓ containers to fill a half litre and a 1 litre container. Discuss that 1 litre is equal to 1000 millilitres and half litre is equal to 500 millilitres.	statement true. 500 mℓ ◯ 5 ℓ 70 mℓ ◯ 100 mℓ 175 mℓ ◯ 1 ℓ 3 ℓ ◯ 200 mℓ 250 mℓ ◯ 2 ℓ 1000 mℓ ◯ 1 ℓ	with respect to the meniscus
Solving word problems	Translating word problems into equivalent problems Solving equivalent problems Interpreting the answer Discarding irrelevant information	Plan how to attack problems and execute the plan	Willingness to read and solve problems	1-step word problems involving litres and millilitres.	Solve simple word problems which involve any one of the four operations without conversion) e.g. Susan had 189 litres of kerosene oil. She sold 87 litres. How many litres of kerosene has she now? Read problems	Simple 1-step word problems	<u>Language Skills</u> Reading for understanding <u>Science</u> Pose questions and devise experiments or investigations to answer them

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
	Using sketches and diagrams.				Identify what information is given and what is required Discuss how the problem can be attacked Sketch or draw diagrams if necessary		

MASS

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
Mass. Non-standard units	Estimating Measuring Comparing Recording	Recognise mass as how much there is of an object	Share objects and working co-operatively in finding results of measurements of objects.	Mass of objects The amount of matter an object has is known as its mass.	Estimate, measure and compare the mass of objects using an improvised balance and non-standard units. .	Compare the mass of objects. Put a tick under the appropriate column. Objects / Mass (Light, Heavy) 1. book 2. ruler 3. pencil 4. eraser 5. table 6. chalk Which is heavier (a) book or ruler? (b) pencil or eraser?	Science Estimate the mass of some everyday objects.

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
Standard units of mass	Estimating Comparing Measuring Using an improvised balance Pre-weighing	Estimate and measure mass of objects using standards units, the kilogram and gram.	Value standard units for heir usefulness	Mass of objects measured in kilograms and grams	Estimate mass of large objects stating whether the mass is the same as, more than or less than one kilogram/ half kilogram using pre-weighed objects. Use a balance to measure large objects using the kilogram and half kilogram as standard units Compare the estimated mass with the measured mass. Measure mass of small objects using 100-gram and 10-gram masses. Compare the estimated mass with the measured mass. Use comparison symbols to write number sentences Find out the number of grams in one kilogram by balancing a set of 100-gram masses with a kilogram mass.	Write > is greater than < is less than = is less than in the circle to make each statement true. (1) 400 g ○ 4 kg (2) 20 g ○ 2 kg (3) 3 g ○ 3 kg	<u>Craft</u> Make improvised balance <u>Games</u> Use a see-saw to compare mass of self with others.
Solving word problems	Translating words into an equivalent problem Using mathematical symbols Problem solving	.Know how to apply problem attack skills to solve word problems	Develop an interest in solving word problems. Approach problem solving in a variety of ways	Problem solving involving measurement of mass without conversion and the four	Read the problem for understanding Discuss the problem to devise a plan Execute the plan using sketches and diagrams Check answers. Solve non-routine	Solve simple problem involving the four-operation (e.g.). Solve the problems. (1) Share 75 kg of cereal	<u>Science</u> Pose questions and devise experiments or investigations to answer them <u>Language Skills</u>

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
	Interpreting answers Checking answers			operations.	problems.	equally among 5 children. How many kg of cereal will each child receive? (2) What is the sum of 25 g, 86 g and 236 g? (3) What is the difference between 50 g and 125 g?	Make up problems and solve them

TIME

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
TIME Read and write time on the hour, half hour, quarter hour, 5 minutes and 1 minute interval	Estimating Recording Discussing Manipulating clock/model of clocks.	Use the 24-hour clock to read and write time on the hour, quarter-hour, and 5 minutes and 1 minute interval. Tell time that has elapsed between given intervals of hours half-hour, quarter-hour, 1 minute and 5 minutes and dates.	Share and work together.	Time on the hour, ½ hour, ¼ hour, 5 minutes and 1 minute	Use an improvised pendulum to measure duration of activities in terms of number of swings. Discuss how long it takes to complete certain activities e.g. getting ready for school, having breakfast, and travelling to school Refer to expressions of time e.g. just now, not yet, later, in a minute, in a second, one hour test etc.	Draw clock faces to show: 10:00 h; 13:30 h; 07:15 h; 09:01 h; 08:05 h.	Art – Drawing faces of clock. Science Use a pendulum to measure time

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
					Write down units of time- hour, minute, second Show time on the hour using a 24-hour clock/model of a 24-hour clocks, Write time on the hour, half hour, quarter hour, 5 minutes and 1 minute Use 24-hour clock notation e.g. 09: 00 h, 10:30 h, etc. Use a large 24 hour clock with moveable hands to show time given		
Reading the calendar	Investigating Recording Reading the calendar Grouping	Use the calendar to gather information	Value resource materials	State the number of days in a year (including the leap year), approximate the number of weeks in a year, and the number of months in a year.	Read the calendar and name the days of the week. Use the calendar to find : -the number of days in a week. -approximate number of weeks in a month. - the number of months in a year. Group months according to the number of days in the month.	Complete number sentences e.g. There are ___ days in January. There are ___ Saturdays in the month of December. Count and add to find the number of days in the 12 months of the year and therefore the number of days in the year.	Language Skills Games involving use of words related to the calendar e.g. Calendar Capers
Solving word problems	Translating words into an	Solve simple word problems	Develop determination to	Word problems-the	Solving simple word problems in addition,	Simple word problems	Science Role Play

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
	equivalent problem Using mathematical symbols Solving equivalent problems Interpreting answers	using the four operations applied to time.	succeed.	four operations applied to time.	subtraction, multiplication and division as applied to time (without conversion) by: (a) reading the problem for understanding (b) devising a plan (c) carrying out the plan (d) checking answers	Quizzes	related to passing of time e.g. life cycles

MONEY

TOPIC	OBJECTIVES			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
Money Problem Solving	Shopping Making changes Making shopping bills Computing Recognising whether a profit or a loss is made	Solve one - step and two - step problems up to $100 involving the four operations. (including simple profit and loss.	Approach shopping orderly e.g. checking items, paying , and receiving change	Problem solving involving the four operations and simple profit and loss.	Give coins and notes of equivalent value for amounts up to $100 Shop and make change for amounts up to $100 using a classroom shop corner Making shopping bills, calculating the price for each item on the bill and calculating the change from up to $100 Shopping problems	- Solve one – step and two – step money problems involving the four operations.	<u>Language Skills</u> Use of words related to the shop corner e.g. change, item, profit, loss etc. <u>Art and Craft</u> Make price tags and representation of items.

TOPIC	OBJECTIVES			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
					involving addition and subtraction only. Shopping problems involving multiplication only. Shopping problems involving division only. Identify what an item is bought for and fix prices to gain a profit or a loss. Use a calculator to make change.		

STATISTICS

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
GRAPHS Pictographs and bar graphs.	Sorting Classifying Collecting data Recording information Displaying information	Be able to collect data and display information.	Develop care in interpreting data to avoid sharing misleading information.	Pictographs and bar-graphs.	Sort and classify objects showing criterion used Formulate questions that will require collection of data e.g. What is the favourite subject of each student in the class? Collect data and display information	Display information on pictographs and bar graphs.	<u>Science.</u> Collect data and record information on a table.

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
					on simple pictographs and bar graphs		
Read and interpret simple pictographs, bar graphs (horizontal and vertical) and pie charts.	Reading Interpreting	Read and interpret information on given pictographs, bar graphs and pie charts.	Appreciate that data can be used to gain information.	Read and interpret pictographs, bar graphs and pie charts.	Read and interpret data on simple pictographs, bar-graphs (horizontal and vertical) and pie charts.	Read and interpret information on given pictograph, bar graphs and pie charts.	Language Skills Report findings to class using technical language of mathematics
Read and interpret pictographs and bar graph where a single picture (or bar) represents two objects.	Presenting data Reading Interpreting.	That in some graphs one symbol represents more than one object.	Be aware of distorted information	Pictographs and bar-graphs.	Reading and interpreting data on pictographs and bar-graphs where a single picture or bar represents two objects.	Read and interpret information on a given pictograph/bar graph where one picture (or bar) represents two objects.	
Construct and read tally charts and tables.	Reading Interpreting information Constructing tally charts and tables	Place tallies into groups and reading information from tally charts.	Appreciate that data can be presented in many ways.	Tally charts. Tables	Constructing and reading tally charts and tables.	Read and interpret information on tally charts and tables.	Social Studies Collect data and present information using tally charts and tables.
Use information given on tables and tally charts to complete pictographs and bar graphs.	Collecting data Constructing tables and tally charts Interpreting tables and tally charts	Use information on tables and tally charts to complete bar-graphs and pictographs	Willing to present work to class	Represent information on pictographs and bar graphs using tables and tally charts	Use information given on table and tally charts to complete pictographs and bar charts.	Complete pictographs and bar charts using information on tally charts or tables.	
Use points on a graph to record	Constructing grids	Display information.	Analyse data carefully	Point graph	Use square grids marked according	Show information by points on a	Language Skills

TOPIC	OBJECTIVE			CONTENT	METHODS/ STRATEGIES-	EVALUATION	AREAS OF INTEGRATION
	SKILLS	KNOWLEDGE	ATTITUDE				
and present information	Gathering data Presenting information Discussing Representing information on a point graph Reading information on a point graph Interpreting information on a point graph				to the information to be presented e.g. show the cost of up to 5 mangoes at $ 20 each. Discuss the two sets of numbers on the grid - Make points on the grid to display information e.g. What is the cost of 1 mango, two mangoes etc? Show this on a point grid. Read and interpret Information given on point graphs	graph. Read and interpret information on given point graphs.	Use point graphs to tell stories