

AREA OF STUDY: MATHEMATICS

STANDARD II

UNIT/THEME: Understand Place Value in numbers up to five digits

AREA OF STUDY OUTCOMES

Pupils should:

M1a – Understand Place Value in numbers up to five digits

CROSS-CURRICULAR OUTCOMES

Pupils should:

M1a – Understand Place Value in numbers of five digits

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT				
1. Each digit in a number has its own value and can be stated.	- Introduce lesson using flash cards depicting place value. - In groups children will demonstrate place value using blocks, sticks, etc. 5 hundred 2 tens 4 ones H T O - Determine the value of the underlined digit. E.g. 7<u>3</u>6- 3 tens - Construct acabus to show the value of a specific digit. e.g. 3 4 1 1 4 3 4 3 1	Write what number is shown in each row. <table><tr><td>Hundreds III 11111111</td><td>Tens 11111 111</td><td>Ones 111111 1</td><td>Number 356 831</td></tr></table> Cooperation and performance within the group.	Hundreds III 11111111	Tens 11111 111	Ones 111111 1	Number 356 831
Hundreds III 11111111	Tens 11111 111	Ones 111111 1	Number 356 831			

AREA OF STUDY: MATHEMATICS**STANDARD II****UNIT/THEME: Understand Place Value in numbers up to five digits**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
2. Whole numbers have different value. 3. Numbers can be compared to determine equality and inequality 4. Numbers may be expressed in expanded form to show place value.	• Demonstrate the difference between numbers. • Compare numbers using the appropriate symbols e.g. $537 > 753$ • Write sentences to show comparison. • Using (abacus) flash card show how numbers may be expanded. • Writing of numerals in expanded form. E.g. $529 = 500 + 20 + 9$ • Play game to re-enforce number in expanded form. • Compare numerals in standard and expanded form. E.g. Standard 386 Expanded $300 + 80 + 6$	• Express a numeral in both standard and expanded form. • Fill in the blanks in the expanded notation. e.g. $482 = \underline{\quad} 80 + 2$

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CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
1. Whole numbers may be rounded off to the nearest ten, hundred, thousand. - a rounded number tells about how many. - Rounding numbers is one way to estimate total 2. 3 digit numerals with may be added with or without re-grouping	Display numberline for children to observe. Elicit from children the pafem on the numberline,then have them read and write same. Teacher will explain rule to follow when rounding of number example. If the digit is less than five round down by keeping the number as the same number. Add 3 digit numerals without regrouping (vertically and horizontally). $\begin{array}{r} 212 \\ 123 \\ \hline 335 \end{array} \quad 212 + 123 = 335$ Use of flash cards to get more practice. Add 3 digit numerals with re-grouping (vertically and horizontally) $\begin{array}{r} 532 \\ + 189 \\ \hline 721 \end{array} \quad 532 + 189$ Compile dictionary using mathematical words used in addition e.g. adden, sum, total, etc.	Children will research and record the distance of five (5) district capitals from Belize. These will berounded off to the nearest ten. Record number of children in other division of theschool and round off number to the nearest ten. Compile and identify sum of 3 digit numerals onflash card. Solve to find some of 3 digit numerals using words.- Follow instruction in logical order.

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Each part of a subtraction problem has a name. In subtraction the number you are subtracting is generally called the Minuend. The number you subtract is called the Subtrahend. The answer is most often called the difference. 3 digit numerals may be subtracted with or without regrouping.	• Demonstrate and label on blackboard $\begin{array}{r} 436 \text{ minuend} \\ -112 \text{ subtrahend} \\ \hline 326 \text{ difference} \end{array}$ $436 - 112 = 326$ • Discuss and elicit from children. • Work in groups using flash cards. • Introduce words used in subtraction. Have children write and pronounce same. E.g. difference, takeaway, minuend, subtrahend, minus, etc. • Subtract 3 digit numeral without regrouping (vertically and horizontally)	Subtraction of 3 digit numerals with/without regrouping

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CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Ordering Select Arrange Recognize Match/compare Re-group Demonstrate Research/investigate <u>Attitudes</u> Sharing Responsibility Respect Cooperation Interest		

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
EL3b – common rules for spelling and writing EL4a - express ideas and opinion SP2a - take part in group activities CPI a - recognize a problem	• Caribbean Primary Math Bk. 4 • World Book Encyclopedia 1994 Edition • Silver Burdett. Ginn - Mathematics4. • Todays Mathematics, Sixth Edition

AREA OF STUDY: MATHEMATICS

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AREA OF STUDY OUTCOMES

Pupils should:

M1b – Understand consecutive sequence and position of numbers 1 – 9999

M1c – Understand quantity in numbers 0 - 9999

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CROSS-CURRICULAR OUTCOMES

Pupils should:

SP2a – Take part in group activity

CP1a – recognize a problem

CP2a – Handle real objects

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Knowledge Numbers can be written and read in an orderly manner. Numbers can be placed in series to show a regular pattern.	- Reading and writing of numbers using flash cards. - Choosing 3 digit numbers at random and arrange them in orderly manner. Select Arrange orderly 342 341 342 343 344 341 344 343 - Matching of numerals with words 214 Two hundred fourteen. Play game - counting in sequence Spell and write number games.	Copy and complete number patterns. 144, 145, 146, _____ 260, 250, 240, _____ 300, 400, 500, _____ - Writing of number patterns. E.g. Give the ruler for the pattern 180, 182, 184, 186 (each number is 2 more than the one before). - Arrange numerals to show/create a pattern, using dots to connect. Creativity of design

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UNIT/THEME:NUMBERS

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Numbers may be compared in order to show equality or inequality. Symbols are used to show comparison < = >	• Students shall be given numbers and ask to compare numbers in a specific value eg. Hundreds: 4<u>5</u>67 & 29<u>3</u>6. 9 is bigger than 5. • Students shall be taught the concept of the inequality sign. • Students will be given different answers to problems. They will be required to compare them, use estimation and make an educated guess e.g. e.g. A band marched for one hour. How many streets did they pass? a. 3 b. 30 c. 300 Ans: b. 30	• Identify the place value of a number. • Use of the signs accurately. • Comparison of answers rationally. • Make accurate estimations.

AREA OF STUDY: MATHEMATICS**STANDARD II****UNIT/THEME:NUMBERS**

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Numbers can be represented in different form to show value e.g. Expanded notation figure - 107 words = one hundred and seven. Numbers can be patterned and identified according to their attribute.	• Volunteers would cite ways in which they use numbers when purchasing goods at break-time e.g. 2 chips, 1 ideal and their cost. It can also be depicted using date of birth. • Graphing numbers to show place value. • Illustrate place value on number line. • Students would create an abacus to distinguish value of a number. • The use of the place value chart to assist giving numbers its value. • Group children in pairs. One recites a number and the other writes it. • Students will model numbers in different forms e.g. $426 = 4 \text{ hundreds, } 2 \text{ tens, } 6 \text{ ones}$; or $3 \text{ hundreds, } 12 \text{ tens, } 6 \text{ ones}$. • Teachers would give students several patterns and they would discover, through guided questions, the rules governing them. • Creating patterns using children in the class (game). • Patterns will be given with the use of visual aids. • Students can create patterns using money e.g. what coins equal 45 c; $4(10c) + 1(5c)$. • Students shall make squares with 4 numbers beside each other as a calendar. They will add the numbers diagonally and note that the answers are the same.	• Understand the concepts of numbers. • Illustrate place value of a given number. • Convert from expanded form back to standard numbers. • Create place value chart, graphs etc. • Convert from larger values to smaller, vice versa. • Ability to recognize a pattern and give its attribute.

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CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Numbers may be placed in order for an easier understanding e.g. ordering from least to greatest. Numbers can be ordered from least to greatest and vice-versa <u>Skills</u> Collect Count Observe Identify Compare Match Arrange Draw Attitudes Sharing Responsibility Respect Cooperation Interest	• Students shall first order numbers vertically in terms of place value. (addition format). • Students shall unscramble a number series and rewrite it in a required order e.g. least to greatest vice-versa. • Have children order money and objects from least to greatest, vice-versa.	• The ability to structure several numbers in order of place value e.g. 4675 326 • Ability to use deductive reasoning to determine the order of a number and recognition of their values. • Recognizing the value and being able to read numbers. Ability to group numbers from of least to greatest vice-versa.

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LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
El3b – Common rules for spelling and writing EL4a - Express ideas and opinions SP2a - Take part in group activities CPI a - Recognize a problem MI a - Understand place value in numbers up to five digits Mlg - Understand other systems of writing numbers	Exploring Mathematics - Scott Foresman Silver Burdett & Ginn Math Guiding Children's Learning of Math - (Teachers' Resources) Math Advantage - Volume 2 Teachers Edition Mathematics Connection - Course I Count Me In - Bk. I Teachers' Edition

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UNIT/THEME: Number(Fractions)

AREA OF STUDY OUTCOMES

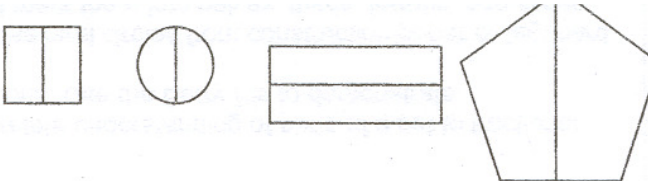
Pupils should:

M1f – Understand the concept of other rational numbers including percent, fraction, ratio and integers

CROSS-CURRICULAR OUTCOMES

Pupils should:

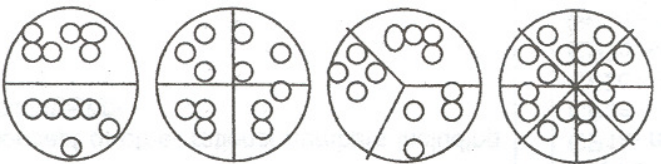
CP1a – recognize an/or a problem
CP2a – use pictures and diagrams
CP2c – handle real objects
CP2g – sort and classify
SP2a – take part in group activities

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Common fractions are Numerals used to represent fractional numbers. Geometric shapes can be sub-divided into equal sized parts.	<u>Discovery Method</u> - Give each child several geometric regions and a pair of classroom scissors. Let children experiment to see how many ways they can fold and out each region to show 2 pieces that are the same size.  After explanation time, have children discuss and show what they have done. Help them use words: one half; halves and half to describe parts. Have children sub-divide appropriate regions into fourths until the meaning of sub-divisions become clear.	• Ability to fold and cut paper to make common fractions from several geometric regions. • Ability to use vocabulary to describe fractional parts like: one half, halves and half to describe the parts.

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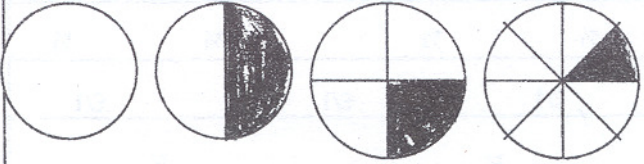
UNIT/THEME: Number(Fractions)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Folding regions can show the common fractions $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{8}$, etc. Fraction can be represented using sets.	Fold and cut blank paper models for fourths, thirds, and fifths.  To relate understanding of parts of a set to fractional regions. Use the Berry Pie to demonstrate. Cut several circles from construction paper or tagboard and mark them into halves, thirds, fourths, and sixths. These are pies. Have cut out shapes to represent raspberries, cherries, strawberries and blue berries. Have the children count sets of 24 of each berry. Explain that the pies have been cut into equal parts and that you want to make sure that each person will receive an equal number of berries in each piece of pie. Have children take a set of 12 berries and place them on a pie so that an equal number of berries are on each region. 	• Creation of a model showing common fractions, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{5}$ • Accuracy of creation.* • Creation of design. • Ability to count out sets. • Accurate description of tasks. • Organization of fractional parts.

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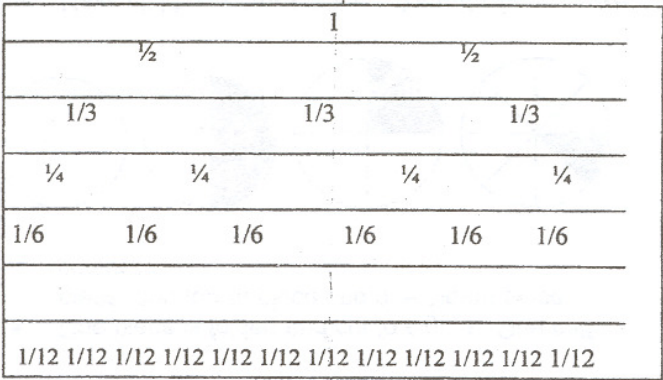
UNIT/THEME: Number(Fractions)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Common fraction can be compared using congruent geometric shapes.	Describe what is happening as the child completes each pie. "The pie has six parts'. There are 12 berries, one sixth of the berries is 2. Comparing fractions using the geometric shapes, Give each child paper cut in circles, squares or other shapes that they can fold and cut to show halves, fourths and eights. • Children fold 1 piece to show halves, cut it and colour $\frac{1}{2}$ with a crayon. • One piece is folded and cut to eights. One half piece, one fourth piece and one eighth piece coloured.  • Have children compare the coloured pieces to see that $\frac{1}{2} > \frac{1}{4}$ and that $\frac{1}{4} > \frac{1}{8}$. • Have them cut and colour appropriate shapes to show thirds, sixths, ninths and twelfths and halves, fifths and tenths to compare fractions.	• Ability to fold congruent shapes to show common fractions e.g. halves, fourths and eights. • Comparison of one fraction with another.

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UNIT/THEME: Number(Fractions)

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Fraction strips are also useful for comparing and identifying fractional numbers.	Cut a set of strips from coloured cardboard and attach magnets on the back of each strip for manipulation on a magnetic board. FRACTION STRIPS  Ask questions like these: • How many $\frac{1}{2}$ strips are as long as the 1 strip? • How many $\frac{1}{3}$ strips are as long as the 1 strip? • Which is longer, a $\frac{1}{2}$ strip or a $\frac{1}{3}$ strip? • Which is the longer strip? • What is the shortest fraction strip in this set? • Use the fraction strip to put these common fractions in order, beginning with the largest and ending with the smallest. $\frac{1}{8}$, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{6}$, $\frac{1}{4}$	• Use of the sets of strips on magnetic board to make a fraction. • Ability to answer questions accurately. • Creation design of a fraction strip booklet. • Identification of common fractions like $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{12}$, etc.

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Number(Fractions)**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
A fraction is a part of a whole. A fraction is made up of two numbers, the numerator and the denominator. The counter method can be used to explain the meanings of numerator and denominators.	• Use strips to put these common fractions in order beginning with the smallest and ending with the largest: $\frac{1}{4}$, $\frac{2}{3}$, $\frac{2}{4}$, $\frac{3}{6}$, $\frac{4}{12}$. • Make a fraction strip booklet to compare common fractions. Children will use their dictionary to find the meanings of fractional parts - numerator, denominator • Class discussion on the three words. • Pupils will record these words and their meanings in their Math Journals. • Have the class form groups of 2 or 3 students. Provide each group with 24 counters, a paper cup, and an activity master sheet for each student. • Ask students to show a set of 12 counters, then have them separate the 12 counters into three equal sized groups. Ask students to put one of the groups or $\frac{1}{3}$ of the counters into the cup. • Ask how many counters are in the cup. [4 counters] • Ask what is $\frac{1}{3}$ of 12 (4), then have the class separate all the counters into four equal-sized groups. • Tell students to put three of the four groups, or $\frac{3}{4}$, of the counters into the cup.	• Dictionary skills.. • Record words and meanings. • Ability to work in groups, share, cooperate and participate. • Understand the meanings of terms like numerator and denominators. • Use of counters to form various fractions.

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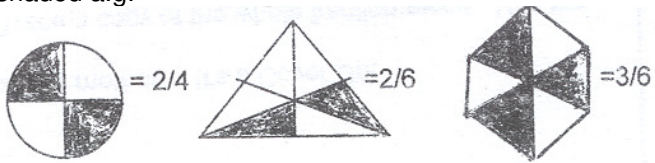
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A fraction is a part of a whole. <u>3</u> Numerator 3 4 (number of parts being considered) Denominator 4 (number of parts in the units being considered).	- Ask how many counters are in the group. [9counters). - Ask: what is $\frac{3}{4}$ of 12? [9]. What part of the fraction tells how many groups to put in the cup? The (numerator] - What part of the fraction tells us how many equal groups of counters are there? [the denominator] The flag of Sierra Leonne is divided into 3 equal parts. One of the parts is red. A fraction can be used to name a part of a whole. Number of red parts 1 numerator. Number of equal parts 3 denominator. THE FLAG OF SIERRA LEONNE <table><tr><td>Red</td><td>1/3</td></tr><tr><td>White</td><td>1/3</td></tr><tr><td>Blue</td><td>1/3</td></tr></table>	Red	1/3	White	1/3	Blue	1/3	- Write a fraction for the coloured portion. - Answer questions based on the coloured regions. - Identify the parts of a fraction.
Red	1/3							
White	1/3							
Blue	1/3							

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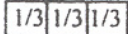
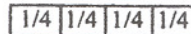
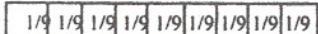
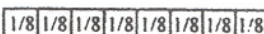
UNIT/THEME: Number(Fractions)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	• The white strips represent unity and justice • The blue strips represent loyalty. • The colour red represents courage. 1. What fraction of the flag represents unity and justice? [$\frac{1}{3}$] 2. What colour represents courage? [red] 3. What colour represents loyalty? (blue] Write a fraction to show how much of the,figure is shaded a.g. 	

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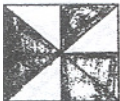
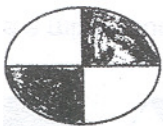
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When fractions name the same amount or part, they are called equivalent fractions. one way to find equivalent fractions is to use fraction bars. The game 'It's a Cover Up!' can be played to find equal fractions.	Find the fractions. 1.  2.    $\frac{1}{3} = \frac{\quad}{9}$ $3 \frac{\quad}{4} = \frac{6}{8}$ Discovery method - It's a Cover Up! - Trace a copy of the whole fraction piece. Use the half fraction piece to divide your tracing into two parts. Shade one of the parts. Put the whole and half fraction piece aside. - Put one of each remaining kind of equation piece in the bag. Place the rest of the pieces on the table. - Without looking, pick a fraction piece from the bag. Collect all fraction pieces that match the one you chose.	Use fraction strips to find and write equal fractions. - Ability to follow instructions of the game. - Collect and match fraction pieces on the shaded portion, - Write the fractional parts that match.

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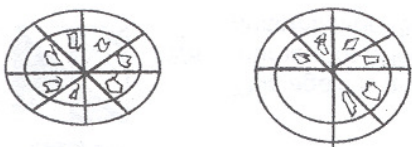
UNIT/THEME: Number(Fractions)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
A proper fraction is a fraction whose numerator is less than the denominator.	a. Use your fraction pieces to try to exactly cover the shaded portion of the whole piece. If you can cover the shaded portion, write the fraction your pieces represents. If you cannot cover the shaded part exactly, put those fraction pieces aside and draw another piece from the bag. b. Name the fraction piece that did not cover the shaded region. Write the fraction for each group of pictures and say whether each one is proper or not.  $\frac{2}{4}$ This is a proper fraction because the 2 $\leq$ 4 [2 is less than 4]  $\frac{5}{8}$ This again is a proper as the numerator is less than the denominator. [5 < 8]  This is not a proper fraction as 4 is equal to 4 and not less than four. $\frac{4}{4}$ is not a proper fraction. [$\frac{4}{4}$ is not an improper fraction].	Identify fractions as proper or improper fractions. Compare numerator and denominators to determine whether the fraction is a. proper b. improper e. g. $\frac{5}{9}$ 5 < 9 Proper fraction $\frac{3}{2}$ 3 > 2 Improper fraction

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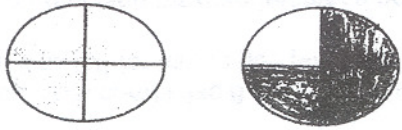
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An improper fraction is a fraction whose numerator is equal to or greater than the denominator.	 = $\frac{9}{6}$ is an improper fraction is $9 > 6$. Nine is greater than 6. Write a mixed number for the picture.  = $1 \frac{3}{4}$ Joan had $1 \frac{3}{4}$ pizzas left after serving pizza at a party. Numbers like $1 \frac{1}{4}$ are mixed. Whole numbers 1 $\frac{3}{4}$ fraction. ↑ ↑ _____ One and three fourths.	• Use diagrams and/or pictures to write mixed numbers. • Draw diagrams to represent, given mixed numbers

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The Hop Along game is played to show a path used by a frog to cross a pond using mixed and improper fractions or vice versa. *Note: The path must show a mixed number and an improper fraction that are equal e.g. $1\frac{5}{8} = \frac{13}{8}$ can travel this path verses $2\frac{1}{5} - \frac{8}{5}$ can't travel this path.	Each pizza was divided into 4 equal pieces, of fourths. Seven fourths were left.  $1\frac{3}{4} = \frac{7}{4}$ Draw a picture to show the mixed number $3\frac{1}{2} =$  Guided Discovery Method = "Hop Along" Show how the frog can hop across the pond. Follow a path of true equations.	

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Simple word problems with fraction can be completed using fraction strip.	PROBLEM SOLVING Tom rode his bicycle to see his grandmother. He made several stops along the way. His grandmother lives 12 miles away from Tom's house. Draw a diagram to help you solve the problem.  1 Tom had gone $\frac{1}{4}$ of the way when he had to stop. What fraction of the distance was left for him to reach his grandmother's house? ($\frac{3}{4}$) 2. After Tom completes 8 miles of his journey what fraction was left for him to go? [$\frac{4}{12}$] or $\frac{1}{3}$. 3. Upon reaching his grandmother's house; what distance was this he travelled in fraction form [$\frac{12}{12}$]. What kind of fraction does the 8 miles of the total distance represent? $\frac{2}{3}$ = (proper fraction).	Draw a diagram and Use fraction strips to compare and solve word problems,

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CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Define Communicate Identify Estimate Compare Use Cancel Relate Change Find Solve List Measure Calculate Record Apply Classify Share Analyse Take steps Follow directions Brainstorm Recall <u>Attitudes</u> Understand Share Participate Interest Cooperation Enjoyment Demonstrate greater awareness of the world around Show enjoyment Assume responsibility		

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Number(Fractions)**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
CPI a - Recognize an issue or a problem CPI c - Suggest ways of dealing with the problem/issue SP2a - Take part in group activities SP2b - Express their opinion and feelings in a socially acceptable way SP2d - Respond to the feelings of others SP2f - Help the group to achieve its goals ELI k - Interpret and follow instructions/directions EL3d - Produce work that is legible and acceptable EL4a - Express ideas and opinions Mif - Understand the concept of fractions M3e - Add and subtract fractions to solve problems	• Guiding Children's Learning of mathematics (Teacher's Resource) Exploding Mathematics - Scoff Foresman & Co • Addison - Wesley Mathematics • Silver Burdett & Ginn Mathematics • H.B.J. Mathematics • Health into Mathematics (Longman) Teachers Resource) • Caribbean Primary Mathematics • Math Advantage - Middle School I Teachers Edition - Volume 2(Harcourt Brace) (Teacher Resource) • Mathematics - Application & Connections (Course 1) • Count Me In (Teachers' Book) Book I • Math Tools For Success (Teachers' Ed.) • New Common Entrance Mathematics (Student Resource)

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Number(Decimals)****AREA OF STUDY OUTCOMES**

Pupils should:

M1f – Understand the concept of other rational numbers, including percent, fractions, decimals, ratios and integers

CROSS-CURRICULAR OUTCOMES

Pupils should:

SP2a - take part in group activities

SP2f - help the group to achieve its goals

CPI a - Recognize an issue or a problem

CPIc - Suggest ways of dealing with the problem/issue

CONTENT ORGANIZED INTO MANAGEABLE STS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Decimals</u> Decimals can be used to name parts of regions or sets.	- Field trip to a gas station, observe and discuss the recordings of the meter. - Collect labels of food stuffs, etc. observe/discuss measurements recorded on the labels. - Visit shops/supermarkets, observe and discuss weight and money from electronic scales. - Play shop - adding/subtracting money. - Compare standard numerals with decimals. Work with a partner. - Use graph paper and outline an area 10 squares long, 10 squares wide. Divide the area into 10 equal rows. Select 3 or 4 vegetables each partner will use.	- Observation - Understanding the use of the decimal point - Ability to use the decimal point correctly - Reading numerals involving the decimal system up to hundredths. - Ability to make comparison between standard numerals and decimals. - Ability to work with a partner - Ability to follow instructions

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Number(Decimals)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT																																													
Fractions can be written as decimals, e.g. $\frac{1}{10} = 0.1$, $\frac{502}{1000} = 0.502$	Decide how many rows of each kind of vegetable to plant. Colour the rows - use a different colour for each kind of vegetable. - Record each plan on a chart e.g. <table border="1"> <thead> <tr> <th>Plant</th><th>Colour</th><th>Fraction</th></tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table> Explain that there is another way to name the parts of the garden. Decimals can be used. Use the place value chart - introduce tenths. Refer to the previous activity and ask questions such as - What decimals are shown in your plans? - Suppose $\frac{1}{2}$ of a garden was left unplanted. What decimal would describe the planted part? Make or draw individual place value charts. Make flash cards with digit 0 through 9. Work as partners or in small groups - wholeclass - read numbers; use the chart/flash cards to show tenths e.g. <table> <tr> <td>Read</td><td>Ones</td><td>Tenths</td></tr> <tr> <td>4, 1, 9, 17</td><td>0</td><td>4</td></tr> <tr> <td>25, 50, 75</td><td>1</td><td>7</td></tr> <tr> <td></td><td>5</td><td>0</td></tr> </table>	Plant	Colour	Fraction																															Read	Ones	Tenths	4, 1, 9, 17	0	4	25, 50, 75	1	7		5	0	Competency in recording information. Ability in making and using a place value chart. Reading/writing decimal in tenths
Plant	Colour	Fraction																																													
Read	Ones	Tenths																																													
4, 1, 9, 17	0	4																																													
25, 50, 75	1	7																																													
	5	0																																													

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Number(Decimals)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Decimals can be written in words. Hundredths can be written as a decimal and in words.	4/10, 6/10, 7/10 Read fractions. Show the decimals on the place value chart, • Use the place value chart, given decimals and practice to read decimals e.g. 5.5 = 5 point 5; five point five; 0.6 = six tenths. • Give shapes - pupils identify the shaded parts as what part of 10, name the decimal. • Pupils draw pictures to show given fraction shown by the picture. • Use a calculator and write fractions as decimals in tenths. • Use a 1 cent piece and a 10 cents piece and discuss relation to a dollar e.g. 1c is 1/100; 0.01 of a dollar. 10c is 1/10, 0.10 of a dollar.	Competency in converting fractions to decimals 'in tenths. Ability in using a calculator to convert fractions to decimals in tenths.

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Number(Decimals)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT						
Decimals can be round off to the nearest tenth.	Use the place value chart <table border="1"> <thead> <tr> <th>Ones</th><th>Tenths</th><th>Hundredths</th></tr> </thead> <tbody> <tr> <td></td><td></td><td></td></tr> </tbody> </table> • Show/read value of given digits up to hundredths. • Write fractions as decimals and vice versa. Write hundredths in words. • Use hundred squares and name given shaded parts as fractions/decimals in hundredths. • Use decimal models, shades given fractions, name the decimal. • Read/write and state value of decimal fractions up to tenths/hundredths using place value chart, hundred squares. • Use a calculator to show decimals as hundredths. • Use money and round to the nearest cents.	Ones	Tenths	Hundredths				Competency in stating the value or given digits in hundredths. Competency in writing fractions as decimals and vice versa. Competency in naming shaded parts of diagrams as fractions and decimals. Competency in reading, writing/stating the value of decimal fractions using tenths, hundredths.
Ones	Tenths	Hundredths						

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Number(Decimals)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Decimals can be compared and ordered. Decimals can be added and subtracted the same way you add and subtract whole numbers.	• Use place value chart. Read the value of given decimals, demonstrate and explain rounding to nearest tenth. • Give samples of decimal fractions and practise to round off to nearest tenth. • Use the number line, the symbols $>$, $<$, sequencing, arrange decimals according to size, e.g. smallest to largest; in order to compare/order decimals. • Use decimal models and demonstrate adding and subtracting decimals. • Problem solving activities involving decimals up to hundredths. • Adding and subtracting decimals. • Pupils create problems involving adding/subtracting of decimals, share with classmates. • Count in tenths/hundredths using the number line. Use an abacus to show tenths/hundredths	• Ability to use the number line, the symbols $>$, $<$, $=$ to compare/order decimals. • Ability to sequence a series of decimals. • Ability to arrange decimals according to size - ascending or descending order. • Competency in adding/subtracting decimals. • Ability to solve word problems involving adding/subtracting of decimals • Ability to create own problem.

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Number(Decimals)**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Define, identify, compare, change, solve,measure, record, list, follow direction, brainstorm, recall, communicate, estimate,use, relate, find, list,calculate, apply, classify, share, analyze, compare, take steps. <u>Attitudes</u> Understand, share, participate, interest, cooperation, enjoyment, demonstrate greater awareness of the world around, show enjoyment assume responsibility		

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Number(Decimals)**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
CPIa - recognize an issue or a problem. CPic - suggest ways of dealing with the problem/issue. SP2a - take part in group activities. SP2b - express their opinion and feelings in a socially acceptable way. SP2d - respond to the feelings of others. SP2f - help the group to achieve its goals. ELI k - Interpret and follow instructions/directions EL3d - produce work that is legible and acceptable. EL4a - express ideas and opinions MI f - understand the concept of fractions M3e - add and subtract fractions to solve problems	Guiding Children's Learning of Mathematics (Teachers Resource) Exploring Mathematics - Scott Foresman & Co. Addison - Wesley Mathematics Silver Burdett & Ginn MathematicsH.B.J. Mathematics Health into Mathematics (Longman - Teacher's Resource) Caribbean Primary Mathematics Math Advantage - Middle School ITeachers' Edition - Volume II (Harcourt Brace) Teachers Resource Mathematics - Application & Connections (Course 1) Count Me In (Teacher's Book) Book I Math Tools For Success (Teachers Edition) New Common Entrance Mathematics (Student Resource)

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Number****AREA OF STUDY OUTCOMES**

Pupils should:

M1g – Understand other systems of writing numbers

CROSS-CURRICULAR OUTCOMES

Pupils should:

SP2a – take part in group activities

SP2f – help group achieve its goal

CP2a – use pictures and diagrams

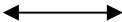
CP2f – compare ideas and information

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
- A number system is characterized by a set of infinite elements called numbers. - Written records go back to 3400 B.C. in Egypt where the Egyptians used groups of tallies to represent numbers less than ten.	Story telling gives brief history to introduce the various systems of numbers, that is, Egyptian, Romans, Mayan and Hindu - Arabic. Use the Egyptian system to write the number of students in the class using the strokes/ and heelbone e.g. - I have _____ students in my class. - How many heelbones did you use? - How many strokes? - If you add the heelbones and the strokes together, what number do you end up with?	Check criteria for role playing the use of number systems in the time of the ancient Egyptians, Romans and Mayans

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Number

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT														
The Romans used some features of the Egyptian symbols but add ideas of their own. The Romans has 7 symbols. <table><tr><td>Romans</td><td>Value</td></tr><tr><td>I</td><td>1</td></tr><tr><td>V</td><td>5</td></tr><tr><td>X</td><td>10</td></tr><tr><td>L</td><td>50</td></tr><tr><td>C</td><td>100</td></tr><tr><td>M</td><td>1000</td></tr></table> The Mayans introduced a new attribute that was neither present in the Egyptian's nor the Roman's They used only three symbols:  A dot  A line  A shell	Romans	Value	I	1	V	5	X	10	L	50	C	100	M	1000	• Matching card game with Roman symbols and their value. • Listing of places or forms in which the Roman System is used e.g. some clocks. • Creation of clocks and watches using Roman numerals. • Addition of Roman Symbols e.g. L + X + V + III • Games using the three Mayan symbols. • Matching cards with Mayan symbols and values e.g. 7  • •	• Ability to correctly match Roman symbols and their value. • Formulation of list showing places or forms in which Roman numerals are used. • Construction of clocks and watches with accurate use of Roman numerals. • Demonstration of accuracy in identifying and adding Roman numerals. • Observation of accuracy in identifying Mayan symbols while playing games. • Ability to match cards accurately.
Romans	Value															
I	1															
V	5															
X	10															
L	50															
C	100															
M	1000															

AREA OF STUDY: MATHEMATICS
STANDARD 11
UNIT/THEME: Number

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT									
Mayan Numeral Value  The numerals 1 to 9 which are used today are thought to have originated with the Hindus in India about 2000 years ago. The Western world has adopted a numeration system used by the Hindu-Arabic and one developed by the Arabic. This system of numeration is called a base-ten numeration system or a decimal system. The groupings is by ten.	- Use cards to show numbers in the various systems. - Write numbers using the three systems -Egyptian, Roman, Mayan. Project Work Create a mathematical instrument using one of the systems. - Use tally chart using three digit numerals using Hindu Arabic numerals. - Make and use tally chart. Use tally marks to show what each numeral in Hindu – Arabic means e.g. USNG TALLY CHART <table border="1"> <thead> <tr> <th>Hundreds</th><th>Tens</th><th>Ones</th></tr> </thead> <tbody> <tr> <td>11111</td><td>111</td><td>11</td></tr> <tr> <td>111</td><td>11</td><td>1</td></tr> </tbody> </table> 532 321	Hundreds	Tens	Ones	11111	111	11	111	11	1	- Demonstrate accuracy in matching numbers to symbols. - Ability to write numbers using the Egyptian, Roman and Mayan systems - Assess creativity and accuracy of the instruments. - Evaluation of group or individual performance
Hundreds	Tens	Ones									
11111	111	11									
111	11	1									

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Number

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT																																								
The Hindu Arabic Numeration system can be described by a base ten system.	MAKING THE TALLY CHART <table><tr><th>Hundreds</th><th>Tens</th><th>Ones</th><th></th></tr><tr><td>11</td><td>11</td><td>111</td><td>323</td></tr><tr><td>111</td><td>111 111</td><td>11</td><td>362</td></tr><tr><td>1111</td><td>11</td><td>1111 11</td><td>426</td></tr></table> - Game "Find My Partner" using the Hindu Arabic, Egyptian, Roman and Mayan systems. Find partners for numbers in the four systems. - Use charts with numbers 0-9. Children will form numbers using any two or three digits in the base ten system. - Teacher will conclude that any number in the Hindu-Arabic system is formed using the base ten system.	Hundreds	Tens	Ones		11	11	111	323	111	111 111	11	362	1111	11	1111 11	426	- Observe ability to find right partners in the four systems. - Completion of chart using the Egyptian, Roman, Mayan and Hindu Arabic system of numeration e.g. write the missing symbol for each system. <table><tr><th>Roman</th><th>Hindu-Arabic</th><th>Mayan</th><th>Egyptian</th></tr><tr><td></td><td>5</td><td></td><td></td></tr><tr><td>X</td><td></td><td></td><td></td></tr><tr><td>IV</td><td></td><td></td><td></td></tr><tr><td></td><td>8</td><td></td><td></td></tr><tr><td></td><td></td><td>● ●</td><td></td></tr></table> Completion of task placing missing symbols.	Roman	Hindu-Arabic	Mayan	Egyptian		5			X				IV					8					● ●	
Hundreds	Tens	Ones																																								
11	11	111	323																																							
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AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Number

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> List display Discuss create Match listen Discover write Compare Recognize <u>Attitudes</u> Understanding Awareness Enjoyment Appreciating Sharing and participation		

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Number**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
<u>English Language</u> ElkI - Interpret and follow instructions <u>Writing</u> Produce work that is legible and acceptable EL4a - Express ideas and opinions <u>Expressive Arts</u> EAI b - Explore and experiment to create images through out use of avariety of artistic tools.	TB.T.C. Module 8 Power Math For Elementary and Secondary Schools Learning Mathematics Today's Mathematics 0 Edition Elementary Mathematics 4 <u>Materials</u> Paper Crayons Markers Pencils Available materials from the environment Glue Scissors Pens Markers Ruler Bristol board

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Spatial Relationship****AREA OF STUDY OUTCOMES**

Pupils should:

M2a - Understand the geometric properties of some common two dimensional and three dimensional shapes.

M2b - Understand how the position of two dimensional shapes is affected by movement.

CROSS-CURRICULAR OUTCOMES

Pupils should:

CP1a.b.c. – recognize an issue or a problem

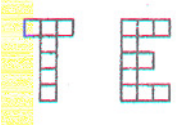
SP1a – recognize the values associated with choices

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Two dimensional shapes have length and width. Some 2-D shapes are triangle, squares, rectangle, pentagon, hexagon, octagon and circles. Three dimensional shapes have length, width and height. Some 3-D shapes are cubes, cylinder, sphere and rectangular prisms. 2. Two dimensional shapes can be used to create patterns e.g. A tangram, is an ancient Chinese puzzle consisting of 7 pieces which are cut from a square.	• Identify 2-D and 3-D shapes in classroom, school building, other buildings, walkways, etc. • Use all tangram pieces to make geometric shapes e.g. trapezoid, pentagon, rectangle etc. Cover 2-D shapes with tangram pieces. • Identify 2-D & 3-D shapes in diagrams/pictures. • Classify pictures/objects of 2-D and 3-D figures • Construct and cut out 2 and 3-D shapes. • Make models of 3-D figures. Name the 2-D shapes recognized in them.	Identify 2-D and 3-D shapes. Sort and categorize shapes into 2-D and 3-D Construct 3-D figures Construction of 3-D figures Identify and interpret properties of 2-D and 3-D shapes.

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Spatial Relationship

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Transformation – a movement that doesn't change the size or shape of a figure e.g. Translation  Move a figure so that every point moves in the same direction and the same distance. Reflection E 9 Flip the figure across a line. The new figure is a mirror image of the original.	Use 2-D figures to form letters e.g.  Use 2-D figures to demonstrate types of transformation e.g. translation and reflection. Provide children with materials to explore and experiment with transformation. Provide children with 2-D shapes to create their own designs/patterns. Identify 3-D figures through labelling, matching, touching. Create models using 3-D figures e.g. castle, birthday caps, robots, etc.	Creativity in designing letters and patterns using 2-D figure. Demonstrate movement of 2-D figures to show transformation. Distinguish and name the different 3-D figures.

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Spatial Relationship

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
A figure has line symmetry if it can be folded so that the two parts of the figure match. <u>Skills</u> Draw, construct, design, compare, explain, demonstrate, describe, classify, assembly, communicate, collect, discuss, display, follow instructions. attitudes Awareness, interest, sharing, independence, Cooperation, ability to use, tolerance, willingness, enjoyment, responsibility, leadership.	• Fold a paper in half. Use crayon to write your name in cursive along the fold line. • Fold the paper along the fold line so your name is inside. Use the handle of the scissors to make a rubbing of your name. Unfold the paper. Your name appears on the other half of the paper. QUESTION: • Where is the line of symmetry on the design? • How many line symmetry does the design have? Have children compare congruent figures. • Have children experiment in pairs with a variety of figures. • Trace figures and practice drawing lines of symmetry.	Ability to recognize a line symmetry. To complete a task. Answer questions. Results of the experiments.

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Spatial Relationship**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
UPI a. b.C. -Recognize an issue or a problem SP2a.b.c.d.e.f - Recognize the values associated with choices ELlj.k - Reading EL2 d.e - Listening and viewing EL4a.e. - Speaking M2a.b - Spatial relationship N14a - Estimate and make prediction M5a - Data handling	Scott Foresman Mathematics 4 and 5Exploring Mathematics 4 and 5 Caribbean Primary mathematics Level 4 Pentice Hall, Middle Grades pg. 72-91 chaps 2 (Teachers Ref.)

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Spatial Relationship

STANDARD 11

AREA OF STUDY OUTCOMES

Pupils should:

M2c – Understand degrees as a measure of turn.

CROSS-CURRICULAR OUTCOMES

Pupils should:

SP2a. – Take part in group activities

SP3b – Assess progress.

EL2b – Follow instructions and directions

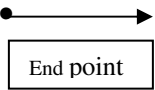
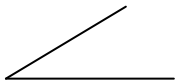
SP2p – Help the group to achieve its goal

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Point</u> A point is represented by a dot. - <u>Lines</u> A line is straight. It goes on and on in both directions.  point A line segment is part of a line. It has 2 end points.  End point End point	Connecting Dots • In a series of letters, numbers. • To form curved and straight lines • In shapes of animals cartoon figures, etc. Use real objects, pictures of objects, buildings, lines drawn to various lengths and directions and brainstorm to find lines, line segments. Use paint, crayons, markers to create patterns using lines.	Competence in connecting dots in series correctly. Recognition of - Point - Lines - Line segments - Rays The ability to understand and explain the different terms - Point - Line - Line segment - Ray Ability in matching names to the different concepts/diagrams

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Spatial Relationship

TENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
A ray is part of a line. It has one end point. It goes on and on in one direction.  Angles An angle is formed when two rays meet. - Right angles form square corners.  Some angles are less than right angles. They are called acute angles.  Some angles are greater than right angles. They are called obtuse angles. 	• Work in pairs using flashlights to demonstrate rays and lines. • Discussion as small, whole groups and define- point-line - line segment- ray • Create a dictionary using cards or a book. Use books, pictures, the classroom, clocks, and discuss. - What is an angle? - How angles are formed. • Draw angles illustrating the right angle, acute, obtuse angle. <u>Discussion</u> • Search/find angles in their immediate surrounding. Use body parts to form angles. • Use shapes, line segments and clocks and solve simple worded problems.	Ability to work as partners, and in groups. Creativity in producing a dictionary based on the geometric figures. Formation of an angle describing an angle. Identification of the different kinds of angles. <u>Figures</u> Creativity in using lines to form patterns. The ability to use body parts to demonstrate understanding of angles. Understanding the figures and using them to solve simple worded problems.

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Spatial Relationship**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Skills Observe Contrast Construct Draw Discuss Compare Identify Recognize Classify Calculate Measure Differentiate Explain Define <u>Attitudes</u> Cooperate Interaction Respect Understanding Appreciation Leadership Interest		

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Spatial Relationship**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
SP2a - Take part in group activities SP2e - Lead and follow where appropriate SP2p: A Help the group to achieve its goal SP3b - Assess progress EL1j - Make inferences and draw conclusions EL1k - Interpret and follow instruction/direction EL2b - Follow instructions and directions EL2e - Interpret and respond appropriately to messages conveyed EL4a - Express ideas and opinions EL4e - Ask questions and give information SL1d - Follow instructions and directions M2b - Understand how the position of 2D shape is affected by Movement M4a - Make reasonable approximation M4b - Use logical reasoning based on meaningful data M5a - Collect, analyse and present data using chart etc. SS4b - Understand the division of the earth's land and water. WTSA - identify a simple problem/need WT5b - Design a device to meet a need/solve problem WT5c - Construct a simple device to meet a need/solve problem WT5d - Test a simple device to see if it meets a need/solve a problem	Middle Grades Math - To for Success Course I pg. 40-49 Primary Mathematics for the Caribbean 5 Second edition Caribbean Primary math Bk. 4 Heath Mathematics Level 4 Pg. 154

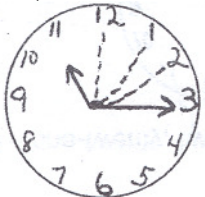
AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Measure, Quantify and Calculate(Time)****AREA OF STUDY OUTCOMES****Pupils should:****M3a - Measure capacity, distance, weight and time using standard and non-standard measuring devices.****CROSS-CURRICULAR OUTCOMES****Pupils should:****CPI b - examine information related to the problem issue****SP2a - take part in group activity****SP2e - lead and follow where appropriate****SP2f - help the group to achieve its goals**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Many things are used in everyday life to tell time. Time is important for us to organize and manage our daily activities. Time is indicated by a standard or digital clock.	Make a list of things used in everyday life to tell time e.g.clock, calendar, sun and moon. Make a list of several day-time activities and write timeat which they are performed e.g. breakfast - 7:00a.m. Construct sun-dials. Take pupils on nature walk andhave them determine the time using a variety of simple sun-dials. Discuss why it is important to tell time (there are certain things we need to do at certain times). What might happen if people never knew what time it was? (People might be too late or too early). Brainstorm for words associated with time. Discuss the features of standard and digital clocks.	List things. List activities and the times at which these activities aredone. Ability to explain why time is important. Describe the features of a standard and a digital clocke.g. (face, number).

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Measure, Quantify and Calculate(Time)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
A digital clock shoes two sets of numbers – one set representing the hour, and one set representing the minutes. A standard clock shows two hands – a long and short. The short hand shows the hour and the long hand shows the minutes past or minutes to.	The hour hand is shorter than the minute hand. The digital clock has only numbers. Design and construct a standard clock, Use clocks to review telling time to the hour and halfhour. Brainstorm to find other words like half-past that are used to tell time (quarter to quarter past, quarter after).  Observe movement of minute hand from 12 to 3 to show concept of quarter past and from 6 to 9 to show quarter to. Show, read and write time to and past the quarter hour.  Observe movement of minute hand from 12 to 5 which shows 5 minutes between each number e.g. 12 to 1 is 5 minutes, 1 to 2 is another 5 minutes - so we have 25 minutes past 12.	Construct a standard clock with the features. Hourhand, minute, hand, numbers 1 to 12. Show, read and write time to the hour and half-past the hour. Show, read and write time to and past the quarter hour.

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Measure, Quantify and Calculate(Time)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Time can be written using numbers and also words. 1:20 – one-twenty, twenty past one	Draw hands on clock face to show minutes to. 20 minutes to one  1:20 – one twenty, twenty past one. 	Write time using numbers and words.

UNIT/THEME: Measure, Quantify and Calculate(Time)

UNIT/THEME: Measure, Quantify and Calculate(Time)

UNIT/THEME: Measure, Quantify and Calculate(Time)

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Measure, Quantify and Calculate(Time)**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT												
The calendar shows the number of days in a week, the number of weeks in a month, the number of months in a year. 1 week = 7 days 1 month = 4 weeks 1 year = 52 weeks 1 year = 12 months 1 year = 365 days (in leap year 366).	Collect calendars and discuss features e.g days , weeks, months and years. Read poems and discuss Thirty days has September April, June and November. All the rest have thirty-one Excepting February, all alone And that has twenty-eight days clear And twenty nine in each leap year. Copy and complete the table (using poems) using all twelve months e.g. <table><tr><td>Month</td><td>Days</td></tr><tr><td>January</td><td>31</td></tr><tr><td>February</td><td>28/29</td></tr><tr><td>March</td><td></td></tr><tr><td>April</td><td></td></tr><tr><td>May</td><td></td></tr></table>	Month	Days	January	31	February	28/29	March		April		May		Collect calendars and discuss features. Read poems and record number of days in each of the twelve months of the year.
Month	Days													
January	31													
February	28/29													
March														
April														
May														

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Measure, Quantify and Calculate(Time)**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
You can use a calendar to keep track of days, weeks, months and years.	Make a calendar for one month during the current school year. Show days of the week with special events marked. Record on calendar for the month, their birthdays, and birthdays of family/classmates. and special days. Display the completed calendar in the classroom. Find each missing number 4 weeks = _____ days 3 years = _____ months	Record on calendar for one month birthdays and special days. Checklist on criterion for construction of calendar.

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Measure, Quantify and Calculate(Distance)

AREA OF STUDY OUTCOMES

Pupils should:

M3a – Measure capacity, distance, weight and time using standard and non-standard measuring devices.

CROSS-CURRICULAR OUTCOMES

Pupils should:

CP1a – recognize an issue or a problem

CP1b – examine information related to problem/issue

SP2a – Take part in group activity

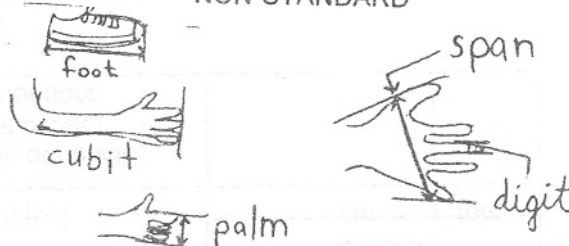
SP2f – help the group to achieve its goals

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Distance is the extent of space between interval and can be measured using non standard units and standard units.	Brainstorm and form web on word "distance" [Use questions to stimulate discussion] e.g. <pre> graph TD DISTANCE((DISTANCE)) --- Q1[What is it?] Q1 --- A1[Extent of Space between interval] DISTANCE --- Q2[Can it be measured?] Q2 --- A2[Yes] DISTANCE --- Q3[How?] Q3 --- A3[Direct measure] A3 --- A3_1[1. by applying appropriate unit to object being measured e.g. standard units e.g. cm, inch, yard, etc.] A3 --- A3_2[2. non standard units] DISTANCE --- Q4[Is it important?] Q4 --- Q4_1[When] Q4 --- Q4_2[Why?] Q4_1 --- A4_1[sports/races] Q4_1 --- A4_2[travelling] Q4_2 --- A4_3[preparation for physical activity etc.] Q4_2 --- A4_4[preparation for journey] Q4_2 --- A4_5[food, money, etc.] </pre>	Ability to give information accurately

AREA OF STUDY: MATHEMATICS

STANDARD 11

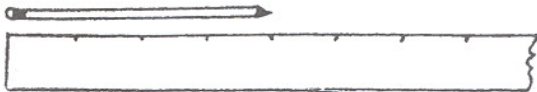
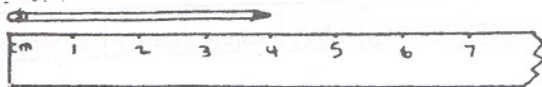
UNIT/THEME: Measure, Quantify and Calculate(Distance)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT												
	• Discuss non standard measurement using ancient Egyptian units of measure e.g. digit, span, palm,foot, cubit relate to body parts. • Group activity measure objects using non standard measure. E.g. • choose five objects in classroom, to measure and decide which non standard unit to use for each desk, book, blackboard. • Foot units pupils use cut out of his/her foot to measure tabletop (etc.) • Hand units • Paper clips (etc) • New pencil measurement pupils use'New pencils' to measure desk tops(etc)	articpation/cooperation in group activity-identifying non standard unit on chart. 2. Oral report on findings ANCIENT EQYPTIAN UNITS OF MEASURE NON-STANDARD  3. Measure objects using non-standard units and record data in tables e.g. <table><tr><th>Objects</th><th>Cubit</th><th>Palm</th><th>Digit</th><th>Foot</th><th>Span</th></tr><tr><td>Desk B/board</td><td>2</td><td>10</td><td>-</td><td>-</td><td>5</td></tr></table>	Objects	Cubit	Palm	Digit	Foot	Span	Desk B/board	2	10	-	-	5
Objects	Cubit	Palm	Digit	Foot	Span									
Desk B/board	2	10	-	-	5									

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Measure, Quantify and Calculate(Distance)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT														
Length of objects can be measured using metric units. - mm - cm - dm - m - km	Measure lengths of objects using teacher prepared - Rulers with unit mark only. Group activity - measure lengths of objects and record findings in cm or nearest cm. Measure - pens, pencils, books, desk, black board, etc. Group activity - use ruler, tape measure to measure objects and complete table-	Count units to measure lengths in whole numbers e.g. Ruler w/unit mark only.  Ans: pencil measures 4 units. Measure and record lengths of objects in cm.  Ans: pencil measures 4 cm. e.g. Measure objects to nearest mm, cm, e.g. <table border="1"> <thead> <tr> <th rowspan="2">Object</th><th colspan="2">Measure</th></tr> <tr> <th>cm</th><th>mm</th></tr> </thead> <tbody> <tr> <td>Length of pencil</td><td></td><td></td></tr> <tr> <td>Height of door</td><td></td><td></td></tr> <tr> <td>Width of door</td><td></td><td></td></tr> </tbody> </table>	Object	Measure		cm	mm	Length of pencil			Height of door			Width of door		
Object	Measure															
	cm	mm														
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AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Measure, Quantify and Calculate(Distance)[illegible]

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Measure, Quantify and Calculate(Distance)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Lengths of objects can be measured in customary units - inch - foot - yard - mile	Children select most appropriate unit to use to measure specified objects length.e.g. a. a river a. cm b. mm c. km a thumb a. mm b. km c. m c. length of classroom a. mm b. m c. km <u>Linguistic Activity</u> Children work in groups to locate and record definition for: milli, centi, deci, and kilo. Children discuss units of length with each and formulate a sentence with each in their Math journal. Brainstorm to identify customary units of measure/lengths. Group activity - pupils discuss in groups to list objects that are about one inch, one foot and one yard long or can be measured in these units.	• VWritten sentences within mathematical words in math journal e.g. kilo - denoting factor of 1,000- kilometer; The car travelled 50 kilometers an hour. • a circle customary units of length. <pre> graph TD CU([CUSTOMARY UNITS OF LENGTH]) --- Decimeter CU --- feet CU --- centimeter CU --- inch CU --- millimeter CU --- kilometer CU --- mile CU --- Meter CU --- Yard </pre>

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Measure, Quantify and Calculate(Distance)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT																		
Customary units of length can be converted from one unit to another. - To change from a large unit to a smaller unit if length, multiply. - To change from a smaller unit to a larger unit of length, divide e.g. 1 ft- 12 in. 8 ft = 8 x 12 = 96 Ans: 8 ft = 96 inches. Addition and subtraction can be applied to problems with metric and customary unit of length, (e.g. Add 6cm 2mm + 2cm 4mm.	Group activity - pupils discuss use of ruler, yardstick for measuring purpose - measure lengths of various objects in class and record and report. Discuss conversion table for "Customary Units. of Length" 1 ft = 12 in. 1 yd = 3 ft 1 mi = 5,280 ft - Discuss converting units of length from one to another.- Group activity converting units from one to another.- Individual activity similar exercises. - Choose appropriate units of length for given objects.- Order/compare units of length using >, < or =. - Group and individual work - pupils add and subtract units and convert where needed,	- a List objects that are about or can be measured in these units 1 inch - eraser, chalk, paper clips 1 foot - book, desktop, bags 1 yard - black board, door way, baseball bat, etc. - a Participation/cooperation in group. ability to estimate & measure lengths of objects, record data and report on findings. E.g. <table><tr><th>Objects</th><th>Estimate</th><th>Actual Measure</th></tr><tr><td>1. chalk</td><td>inches</td><td>inches</td></tr><tr><td>2. desk top</td><td>feet</td><td>feet</td></tr><tr><td>3. window</td><td>feet</td><td>feet</td></tr><tr><td>4. book</td><td>inches</td><td>inches</td></tr><tr><td>5. blackboard</td><td>yards</td><td>yards</td></tr></table> Convert units from one to another. E.g. 3ft = 1 yd. 21ft = 21 ÷ 3 = 7 21 ft = 7 yards Choose most appropriate unit of measure for the length of each e.g. 1 pencil - inc. Child - _____ in. or ft. Ball field - _____ ft. yd. Bus stop - _____ miles.	Objects	Estimate	Actual Measure	1. chalk	inches	inches	2. desk top	feet	feet	3. window	feet	feet	4. book	inches	inches	5. blackboard	yards	yards
Objects	Estimate	Actual Measure																		
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AREA OF STUDY: MATHEMATICS

STANDARD 11

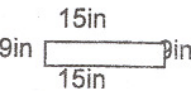
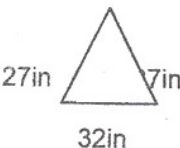
UNIT/THEME: Measure, Quantify and Calculate(Distance)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT								
The distance around something is its 'perimeter'.	• Discuss jumbled word 'rimeterpe'. • Pupils unscramble word, locate meaning in dictionary, discuss and record word and meaning in Math journal. 'rimetape' – <u>perimeter</u> – is the distance around something. • Discuss and form web on how perimeter may be used in real life situation. E.g. <u>What is it?</u> ↓ distance around something/figure <u>Times when it is helpful</u> ↓ - fencing a yard - buying wall paper border - putting lace on towels (etc) <u>who needs to know this?</u> - Carpenters - interior decorators	• Add and subtract metric and customary units of measure (e.g.) <table><tr><td>cm</td><td>mm</td></tr><tr><td>6</td><td>2</td></tr><tr><td><u>2</u></td><td><u>4</u></td></tr><tr><td>8 cm</td><td>6mm</td></tr></table> Ability to give information relating to real life experiences.	cm	mm	6	2	<u>2</u>	<u>4</u>	8 cm	6mm
cm	mm									
6	2									
<u>2</u>	<u>4</u>									
8 cm	6mm									

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Measure, Quantify and Calculate(Distance)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
To find the perimeter of a figure add the lengths of all sides or use the formula $\text{Perimeter} = (L \times W) \times 2$. Area is the number of square units that cover a figure. - To find area count the number of square units or multiply the length by the width and record area in square units.	- Group activity - discuss figures and method to find perimeter. Pupils find perimeter of figures/objects. - Group activity - use problem solving strategies to solve word problems. PROJECT - Science/craft connection - pupils build a windowbox with perimeter = 6 feet, [1ft + 2ft + 1ft + 2ft] fill with soil and plant flowers - pupils monitor care and growth of plant. - Arts/craft connection - pupils make cushion, place mats (etc) and find perimeter of these to attach lace or ribbon (etc) to the place mats. - Group activity – locate and discuss meaning of “area” in dictionary. - Group activity – pupils work in small groups to cut squares from boxes and use to measure surfaces. - Group and individual activity – discuss area using grid sheet.	- Add the measures of the sides or use the formula where appropriate to find perimeter e.g.   $\begin{array}{r} 27 \text{ in} \\ 27 \text{ in} \\ + 32 \text{ in} \\ \hline 86 \text{ in} \end{array}$ $P = (L \times W) \times 2$ $\begin{array}{r} 15 \\ + 9 \\ \hline 24 \\ \times 2 \\ \hline 48 \text{ in} \end{array}$ - Apply problem solving strategies to solve word problems/perimeter. E.g. Ann's garden is the shape of a rectangle, 3m wide and 5m long. How many meters of fencing will she need to go around the garden? - Record meaning of word "Area" in Math journal. Draw and cut out squares and measure surfaces specified, record findings e.g. _____ square unit of card board.'

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Measure, Quantify and Calculate(Distance)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	Use formula to find area of surfaces in the room (e.g.)black board (etc). Arts & Craft connection - pupils prepare square cardboard pieces and decorate with design of choice and use to construct place mats (etc). Solve problems involving area e.g. Find the area of a rectangle which measures 12 inches in length and 8 inches in width. Area = Length x width = 12 in x 8 in = 96 Ans = area - 96 sq. inches	

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Measure, Quantify and Calculate(Capacity)

AREA OF STUDY OUTCOMES

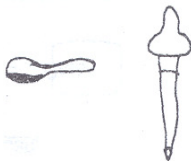
Pupils should:

M3a – Measure Capacity, Distance, Weight and Time, using standard and non-standard measuring devices.

CROSS-CURRICULAR OUTCOMES

Pupils should:

CP1b, SP2a, SP2e, SP2f

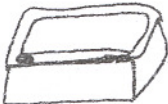
CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Capacity is the amount a container will hold when filled. Units of capacity are used in everyday measurements to describe how much a container will hold.	Brainstorm term "capacity" for meaning. Students use Dictionary to locate and compare meaning "capacity". Brainstorm to identify various units used in capacity both metric and customary units and to identify items solely based on capacity. - milliliter - cups - liter - pints - quarts - gallons	Competence in matching words and meaning e.g.capacity - a. length of a container, b. amount a container holds; c. width of a container. Observation, discussion, classification and drawing of objects based on appropriate unit of measure for each spoon - ML dropper – ML bathtub - L milk carton - ML, L, Pts disciclid - ML, L, gallonsoca - ML, L 

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Measure, Quantify and Calculate(Capacity)

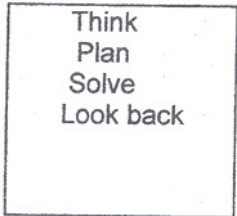
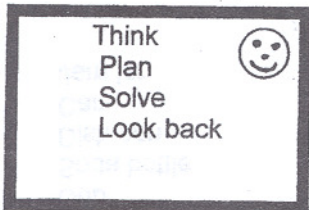
CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Non-standard units can be used to measure the capacity of containers	Teacher and students coiled cans of various sizes and.colour code" cans e.g. small can - blue, larger can - red. Discussion and measuring of cans using colour coded cans. - How many blue cans do you think we need to fill a red can? - How many blue cans will it take to fill a green can?- How many red cans will it take to fill a green can?	Record capacity of containers using "colour coded" cans. E.g. <u>Two blue cans equal one red can.</u> <u>Four blue cans equal one green can.</u> <u>Two red cans equal one green can.</u>

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT																					
Estimate – guess a likely answer, an approximate judgement (of number, amount, etc.)	Brainstorm term 'Estimate' for meaning and relevance to everyday living. What is it? - guess a likely answer Who uses it? housewife carpenters contractors Pupils teachers ESTIMATE Teacher and pupils collect variety of containers [Pre-lesson activity]. - Pupils estimate, measure and record capacity of various containers using medicine dropper, a liter bottle - [Orange squash bottle] measuringcup/cups. - Teaspoon- - Cup - Soda bottle- - Dish pan- - Can - Jam jar	Choose the best estimate for the capacity of each container e.g. Can of juice <u>825 ML</u>  • 825 ML • 825 L • 825 KL Bath tub <u>225 L</u>  • 225 ML • 225 L • 225 KL Complete table on estimate and capacity of containers. <table border="1"> <thead> <tr> <th>Container</th><th>Estimate</th><th>Actual measure</th></tr> </thead> <tbody> <tr> <td>Teaspoon</td><td></td><td></td></tr> <tr> <td>Cup</td><td></td><td></td></tr> <tr> <td>Jar</td><td></td><td></td></tr> <tr> <td>Soda bottle</td><td></td><td></td></tr> <tr> <td>Dish pan</td><td></td><td></td></tr> <tr> <td>Jam jar</td><td></td><td></td></tr> </tbody> </table>	Container	Estimate	Actual measure	Teaspoon			Cup			Jar			Soda bottle			Dish pan			Jam jar		
Container	Estimate	Actual measure																					
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AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Measure, Quantify and Calculate(Capacity)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT												
Problem solving strategies applied to the concept of capacity. 	Brainstorm and flow steps for problem solving.  Solve problem in groups Solve problems individually.	Solve simple problems based on capacity e.g. 1 gallon disciclin cost \$17.50. Find the cost of three gallons. 1 gal. Cost \$17.50 3 gallons will cost \$17.50 x 3 = <table> <tr> <td>\$17.50</td> <td>or</td> <td>\$17.50</td> </tr> <tr> <td>x3</td> <td></td> <td>\$17.50</td> </tr> <tr> <td>\$52.50</td> <td></td> <td>\$17.50</td> </tr> <tr> <td></td> <td></td> <td>\$52.50</td> </tr> </table> Ans: Three gallons will cost \$52.50.	\$17.50	or	\$17.50	x3		\$17.50	\$52.50		\$17.50			\$52.50
\$17.50	or	\$17.50												
x3		\$17.50												
\$52.50		\$17.50												
		\$52.50												

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Measure, Quantify and Calculate(Capacity)**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
CPI b - examine information related to the problem/issue SP2a - take part in group activities SP2e - lead and follow where appropriate SP2f - help the group to achieve its goals ELI a - use context clues to read a selection ELI c - read fluently with appropriate intonation, and expression for information and pleasure ELIJ - make inferences and draw conclusions ELI k - interpret and follow instructions/directions EL3a - demonstrate their ability to write grammatically correct sentences EL4a - express ideas and opinions M3a - measure capacity, distance, weight and time using standard and non standard, measuring devices M4a - make reasonable approximations based on relevant life experiences. M5a - collect, analyze and present data using charts, graphs, tables and diagrams. EAI g - explore and experiment to create visual images through the use of a variety of concrete materials in the environment.	• Guiding Children's Learning of Mathematics (Teacher Resources) • Exploring Mathematics - Scott Foresman and Co. • Addison - Wesley Mathematics • Silver Burdett and Ginn Mathematics • H.B.J. Mathematics. • Health in Mathematics (Longman) Teacher Resource) • Caribbean Primary Mathematics • Math Advantage - Middle School Teachers Edition - Volume II (Harcourt Brace) Teacher Resource

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Measure, Quantify and Calculate(Weight)****AREA OF STUDY OUTCOMES**

Pupils should:

M3a – Measure capacity, distance, weight and time using standard and non-standard measuring devices.

CROSS-CURRICULAR OUTCOMES

Pupils should:

CP1b, SP2a, SP2b, SP2e, SP2f, SP3a

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Vweight/Mass is how heavy something is. Ali objects can be weighed. Weight can be measured using non-standard, customary and metric units.	Brainstorm to find meaning of weight. Identify objects that can be weighed. Collect objects to be weighed e.g. can, stone, marbles, book, apple, ball and soap. Suggest other items that might have weights similar to these. Estimate weight using hands (light, lighter, lightest, heavy, heavier, heaviest). Construct balance scale to compare weights e.g. light, lighter/heavy/heavier. Compare weights e.g. light, lighter/heavy/heavier. Compare each other's weight for fun using see-saw. Use bathroom scale to weigh each other. Visit supermarket shops and clinics to identify types of scales used.	Ability to define 'weight'. Identification of objects. Collection of objects. Estimation of weights using hands and comparative language correctly. Construction of balance scale to compare weights. Compare each other's weight to find: - who is heavier or lighter - Who has the same weight? (use bathroom scale) Identify different types of scales to measure weight

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Measure, Quantify and Calculate(Weight)**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	Discuss features of a scale with customary units lb. And oz. Discuss the uses of the units e.g. oz - to measure light things lb. - to measure heavier things List things measured on a scale with customary units. Describe features of a scale with metric units e.g. grams, kilogram. Describe use of units grams used to measure light things and kilograms heavy units (since gram is a very small unit the kg. Was designated as the standard unit.) Weigh different things for their own purpose using kitchen and bathroom scales and balance board. Discussion to share ideas e.g. What are things measured in lb, And oz, and gram and kilogram?	Describe features of scale with customary units (oz; lb) and metric units (grams, kilograms) and explain use of the different units. Ability to weigh different things for their own purpose. Sharing of ideas through discussion.

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Measure, Quantify and Calculate(Weight)**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Daily life problems can be solved using one's own problem-solving strategy. <u>Skills</u> Measure, decision making, discuss, share, estimate, compare, collect, list, suggest, solve, select, report, apply, research <u>Attitudes</u> Share, cooperate, satisfaction, appreciate, show greater understanding, express interest in.	A small head of lettuce weighs 1 pound. How many ounces is this? Would you use ounces or pounds to weigh. • pair of glasses • bicycle • apple • watermelon	Solve problems on weight.

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Measure, Quantify and Calculate(Weight)**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
CPIb - examine information related to the problem/issue SP2a - take part in group activities SP2b - express their opinions and feelings in a socially acceptable way SP2e - lead and follow where appropriate SP2f - help the group to achieve its goals SP3a - Assess their needs/interest ELIa - use context clues to read a selection ELI c - read fluently with appropriate intonation, and expression for information and pleasure ELID - use context clues to interpret a selection ELI e - identify main ideas and supporting details ELI h - identify cause and effect relationship ELIJ - make inferences and draw conclusions EL 1 k - interpret and follow instructions/directions EL3a - demonstrate their ability to write grammatically correct sentences M3a - measure capacity, distance, weight and time using standard and non standard, measuring devices M4a - make reasonable approximations based on relevant life experiences. M5a - collect, analyze and present data using charts, graphs, tables and diagrams. EAlg - explore and experiment to create visual images through the use of a variety of concrete materials	• Guiding Children's Learning of Mathematics (TeacherResources) • Exploring Mathematics - Scott Foresman and Co • Addison - Wesley Mathemabcs • Silver Burdett and Ginn Mathematics• H.B.J. Mathematics. • Health in Mathematics (Longman) Teacher Resource) • Caribbean Primary Mathematics • Math Advantage - Middle School Teachers Edition - Volume 11 (Harcourt Brace) Teacher Resource

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Measure, Quantify and Calculate****AREA OF STUDY OUTCOMES**

Pupils should:

M3b – Use and convert coins and bills up to \$100.00

CROSS-CURRICULAR OUTCOMES

Pupils should:

CP1c – suggest ways of dealing with the problem: Team work and leadership

SP2a – take part in group activities

SP2e – lead and follow where appropriate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Coins and bills are worth different amounts.	Have various coins and bills in Beiiizean curb.Children identify and name various coins and bills. Brainstorm what item could be bought with these coins and bills. Make models of various coins and bills - pennies, nickles, dimes, quarters, half-dollar, dollar, two dollar, 20dollars, 50 dollar bills. Use coins and bills to buy items from class shop.	• Ability to identify and label various coins and bills. • Ability to place value on an item.

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Measure, Quantify and Calculate**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Money used by foreign countries like the U.S. and our neighbouring countries such as Mexico and Guatemala are different in value from ours. The U.S. dollar is value two of the Belizean dollar.	Use coins (printed by students as art work) and bills provided by teacher, in U.S., Mexican and Guatemala currency for children to observe and compare to our own. Discussion to name the currency used in other countries mentioned U.S. - dollar, Mexico - Peso, Guatemala - Quetzal Use maps of the various countries - Belize, Mexico, Guatemala, U.S. Use currency and insert to corresponding country. Display maps of countries and currency. Story 'The American Ten Dollar Bill'. Tell and discuss story to see how the U.S. dollar is compared to the Belizean dollar. (Teacher create a story). Use U.S. and Belize currency to equivalence to each other up to \$50.	Match currency with names of country that use each.

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
In real life experiences we calculate the cost of products we buy by adding. To calculate the change we subtract.	Use coins and bills and calculate amounts when puttogether e.g. $\text{\$1} + \text{\textcircled{25}} + \text{\textcircled{5c}} = \text{\$1.30}$ Write various amounts in figures. Select items from the children shop. Children show amounts needed to buy. Teacher give oral examples to convert ar'nounts of U.S.to Belize dollar and vice versa. E.g. what is the value of \$ 5 U.S. in Belize currencp. E.g. An item costing \$20 BZ cost how much in U.S. etc. Put items together and; calculate cost by adding prices up to \$50.00. Make change after paying for the items with coins and bills by subtracting. Price items from shod. Calculate to find change.	Teacher made test writing money in figure and words. Adding and subtracting money.

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
The value of money can be expressed as fractions. Knowing the cost of items can allow one to stay within a budget. <u>Skills</u> Record Calculate Solve Read Share Observe Discuss Match Identify Manipulate Draw/shade Label Compare Guess Budgeting	Use quarters and dollar coins to compare equal amounts. Use half dollar, nickle and quarters, five dollar to four dollar coins etc: Create money savers for coins and bills. Compare fractions on cards with their value in coins or bills. Brainstorm amounts of money people earn and how they would spend it. Children list what they are allowed to buy or spend. Investigate prices on items bought regularly. Create a budget of their own. Spend on items and giving change after spending a given amount. Play guessing game -'Price is right' on large items not costing more than \$50.00. Use play money not exceeding \$50. Buy from play shop. Calculate items they buy to stay with in budget. Observe how well children stay within a given budget. Take turn in running class shop using play money in order to practice calculating amounts and giving change.	Write fractions for the value of money and vice versa. Teacher made test. Problem solving to calculate total amount. Creation of a budget Ability to manipulate and calculate money giving change

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Measure, Quantify and Calculate**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Attitudes</u> Value Honesty Respect Fairness Cooperation Responsibility Honesty Courtesy Saving Appreciation	Crete a class business selling healthy snacks e.g. oranges bananas natural juices etc. in order to promote good nutrition. Observe children running classshop calculating, giving change and spending within a given budget.	

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
CP1b – examine information related to problem issue. SP1a - recognize the values associated with choices. SP2a – take part in group activities. SP2e – lead and follow where appropriate SP2h – accept major decisions SP3a – assess their needs/interest SP3b - assess progress in the relation to achievement of goals and Adjust goals or strategies as necessary.	Mathematics "The Path to Math Success' Silver Burdett Ginn.Count me In Book I Teaching Elementary School Mathematics - Charles D. Augustine/ C Winston Smith Jr. Math Power/Leaming math.Materials <u>Materials</u> Paper, pencil, pens, markers, bristol board, crayon, scissors, glue,maps.

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Measure, Quantify and Calculate

AREA OF STUDY OUTCOMES

Pupils should:

M3c – Add and subtract whole numbers to solve problems

CROSS-CURRICULAR OUTCOMES

Pupils should:

CP1a – Recognize an issue or a problem

CP1b – examine information related to the problem/issue

CP1c – suggest ways of dealing with the problem/issue

SP2a – take part in group activities

SP3b – access progress in relation to achievement of goals and adjust goals or strategies as necessary

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT													
Addition of whole numbers can be done without regrouping (0-999).	Rearrange and add whole numbers - $743 + 226 =$ 743 +226 Make a math bingo game to reinforce concept. Use the flow chartnumberline to add. <table><tr><td>10</td><td>25</td><td>43</td></tr><tr><td>60</td><td>78</td><td>85</td></tr><tr><td>22</td><td>97</td><td>295</td></tr></table> <table><tr><td>5+5</td></tr><tr><td>21+22</td></tr></table> <table><tr><td>2+13</td></tr><tr><td>43+35</td></tr></table> cards	10	25	43	60	78	85	22	97	295	5+5	21+22	2+13	43+35	Ability to show number values using manipulatives. Use the flow chart to add/subtract
10	25	43													
60	78	85													
22	97	295													
5+5															
21+22															
2+13															
43+35															

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Addition of whole numbers can be done with regrouping.	Number games e.g. Snake & Ladder The math mobile is like a Maya pyramid. You climb 78 steps and stop. Then you climb 50 steps to get to the top. How many steps did you climb? Use blocks, stoppers. Step 1 Add ones - $8 + 4 = 12$ ones. Regroup 12 ones as 1 ten and 2 ones. = Step 2. Add tens $1 + 7 + 5 = 12$ tens. Regroup 13 tens as 1 hundred - 13 tens. Set out problems. 72 +15 78 +54 Practice using blocks, stoppers. Reinforcement without use of stoppers.	Use of > or < signs in addition. Cooperation and performance/contribution within groups.Follow instructions in logical order. Make accurate comparison based on findings. Explain the use of each illustration. Discussion of activity (games Observation (chart)Illustrations. Drawing conclusions. Practice and demonstrate the steps to work out thecorrect answers. (Graded exercises)

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Subtracting whole numbers can be done without regrouping (0-999)	Choose the subtrahend that can be subtracted without regrouping and solve. $156 - 99$ 108 125 $\begin{array}{r} 156 \\ -125 \\ \hline 31 \end{array}$ Complete the flow chart Discussion Give practice work $173 - 51 \qquad 297 - 187$	Subtraction without regrouping - interaction of addition without regrouping - completion of activity and flow chart Discussion - expression of ideas - communication - establishing facts
Subtraction of whole numbers can be done with regrouping (0-999)	Now you're headed for the moon. It will take 62 hours to get there. If 3 hours have gone by, how many more hours are left? Set out the problem.	

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
The zero property as an additive states that the sum of a number and zero is that number.	62 - 39 Step 1 Since 2 < 9 regroup 1 tens as 10 ones. Then subtract the ones. 12 < 9 = 3 ones. Step 2 Subtract the tens 5 - 3 = 2 tens Give practice work. Identify the illustrations which identify the zero property and solve.   0 + 3 = 3	Subtraction practice. - ability to set up problem $27 - 14 = 27 - 14$ - collection of data from question - ability to solve questions by regrouping - accuracy of regrouping diagram Discussion - expression of ideas - communication

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
The commutative property states that changing the order of addends does not change the sum.	3 + 0 = 3 Give practice work. 7 + 0 = _____ 0 + 8 = _____ Group Children Children do makers of given numbers using block or straws. Makers of five. 0 + 5 = 5 5 + 0 = 5 1 + 4 = 5 4 + 1 = 5 2 + 3 = 5 3 + 2 = 5 Children rearrange, record and observe results. Establish order property. Fill in missing addends. 3 + 0 = + 3 10 + 5 = 5 +	Recognition of the identity property of zero. Identification of the commutative property.

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT						
The Associative Property states that changing the grouping of addends does not change the sum.	Explore Think about the situation – In Belize City some roads have overpasses so that students can cross safely. A traffic officer and a taxi driver watched for an hour and saw 25 girls, 18 boys and 5 teachers cross the overpass. To find the total number the traffice officer thought – I'll3 then "ill add 5 to get 48. $(25 + 18) + 5 = 48$ The taxi driver thought – I'll add 18 and 5 to get 23 then I'll add 25 to get 48 $(18 + 5) 25 = 48$. Talk about it. Which two numbers were grouped first in ech case? Did changing the grouping of the addends in each case? Did changing the grouping of the addends matter? Establish the grouping property. The grouping property helps when you have three addends. Group the addends and solve: <table><tr><td>$2 \times 3 + 4 =$</td><td>$5 + 9 + 2 =$</td></tr><tr><td>$(2 + 3) + 4 =$</td><td>$5 + (9 + 2) =$</td></tr><tr><td>$2 + (3 + 4) =$</td><td>$(5 + 9) + 2 =$</td></tr></table>	$2 \times 3 + 4 =$	$5 + 9 + 2 =$	$(2 + 3) + 4 =$	$5 + (9 + 2) =$	$2 + (3 + 4) =$	$(5 + 9) + 2 =$	Use of numberline to show Associative Property. Ability to identify the associative property of addition.
$2 \times 3 + 4 =$	$5 + 9 + 2 =$							
$(2 + 3) + 4 =$	$5 + (9 + 2) =$							
$2 + (3 + 4) =$	$(5 + 9) + 2 =$							

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Some problems have more than one operation. The problems can be solved by using the order of operation. The order of operation states that we must first solve what is in the bracket; second multiply and divide from left to right and third add and subtract from left to right. When order of operation is not used, add numbers with like signs and then solve.	Regroup the addends and solve: $(6 + 12) + 5 =$ $6 + (12 + 5) =$ $8 + (10 + 3) =$ $(8 + 10) + 3 =$ Examine this $90 - 3 + 4 = ?$ Children work given problems. Display working for both answers. $9 - 3 + 4 =$ which $9 - 3 + 4 =$ $9 - 3 = 6$ is $3 + 4 = 7$ $6 + 4 = 10$ correct? $9 - 7 = 2$ Introduce order of operation () x and Left to right + and – left to right Explain order of operation. Give practice work $(10 - 2) + 3$ $(3 + 9) - 5 =$ 8 + 3 = 12 - 5 = 8 - 1 + 6 = 7 + 6 = 13 Add numbers with like signs. $9 - 3 + 4 =$ $9 + 4 = 13$ $13 - 3 = 10$	Ability to follow and apply the order of operation.

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Measure, Quantify and Calculate**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Organizing Writing Observing Questioning Reading Arranging Adding Problem solving Grouping Discussing Exploring Ordering Comparing Collecting Interpreting Sorting Recording <u>Attitudes</u> Following instruction Cooperate Relate Confidence Sharing Respect Appreciation Achievement		

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Measure, Quantify and Calculate**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
Reading – EL1a, b, g, j, k	Silver Burdett Ginn Mathematics
Listening and Viewing – EL2b, c, d, e	Exploring Mathematics
Writing – EL3a, b, c, d, g, h	Addison Wesley Mathematics
Speaking – EL4a, c, d, e, g	Laidlaw Math Series 2000
Measure Quantity and calculate – M3c	Math Advantage
Estimate and make predictions – M4a	Health Mathematics
Data Handling Msa	Scott's Foresman Mathematics
Music	Today's Mathematics

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Measure, Quantify and Calculate****AREA OF STUDY OUTCOMES**

Pupils should:

M3c – Add and subtract whole numbers and decimals to solve problems

CROSS-CURRICULAR OUTCOMES

Pupils should:

CP1a – Recognize an issue or a problem

CP1b – examine information related to the problem/issue

CP1c – suggest ways of dealing with the problem/issue

SP2a – take part in group activities

SP3b – access progress in relation to achievement of goals and adjust goals or strategies as necessary

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Review</u> Whole numbers are numbers that follow one another. The first whole number is zero (0) The digits in a whole number each has a place value. (one thousand) When comparing numbers we try to find which number comes first when we count. The more than >, less than < or equal = signs are used when comparing numbers.	• List and name whole numbers at- random - first 5 etc. - within range e.g. between 20 - 25 • Identify whole numbers from group of fractions,whole numbers, ratios and ordered pairs. • Group objects as ones, tens, hundreds, thousands - chart showing blocks to represent each place valueand place value chart - insert numbers on place value chart. - Name - digits in given place value;- place value of given digits. - digits in given value chart	• Cooperation and performance witjin groups • Sorting and organizing whole numbers, place value of given digits, decimals. • Naming place value • Drawing conclusions. • Identification of whole numbers - a place value of given digits.

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Whole numbers can be added or subtracted to obtain a sum or a difference without grouping, Whole numbers can be added and subtracted to obtain a sum or a difference (4 digit with regrouping). Whole numbers can be added and subtracted to solve given word problems using different strategies: - guess and check - find a pattern - solve a simpler problem - act it out - write an equation - make a table.	• Compare numbers ($<$, $>$, $=$) • Use place value chart to compare numbers. • Count given numbers to compare them. • Order numbers from least to greatest or vice versa within groups. • Discussion of (a) activity; (b) observation; (c) place value and its significance. • Solve simple examples of adding and subtracting numbers. - add and subtract numbers with 4 digits to apply P. K. given 2 problems with answers (right and wrong) - explain why one is right etc. - practice work to reinforce concept. • Solve problems of 2 and 3 digit number. - test previous knowledge in addition and subtraction. - Practice in groups to solve 4 digit addition and subtraction problems - Oral discussion of practice activity. - Prove answers to subtraction problem by adding difference and subtrahend to get minuend. Make flow chart to add and subtract. • Read, discuss and interpret word problem. - Solve word problems - Reinforce exercise in groups. - Discussion of reinforcement exercises.	• Solving word problems • Ability to add and subtract oral presentations and explanation • Formulating questions and problems • Applying problem solving strategies

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Measure, Quantify and Calculate[illegible]

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Explain Practice Identify Write List Compare Order Use Calculate Apply Verify Analyse Listen Discuss actively Solve Speak Organize <u>Attitude</u> Cooperation Sharing Awareness Interest Respect Appreciation Belonging	- reinforce exercises in groups - flashcard on addition and subtraction of decimals - make a store - calculate cost of goods purchased at class store - word problems - chart of examples of addition and subtraction problems - discussion to show steps of solving word problems by reading, interpreting, gathering data and solving - practice exercise in pairs - make word problems for addition and subtraction of decimals.	Calculation of cost Purchase

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Measure, Quantify and Calculate**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
Reading – EL1a.b.g.j.k. Listening and Viewing – EL2b.c.d.e Writing – EL3a.b.c.d.g.h Speaking – EL4a.c.d.e.g Number – M1a.b.c. Measure, Quantify and calculate – M3b.c. Estimate and make predictions – M4a Data Handling M5a Music – EA1b Physical Exercise H4a	Scott Foresman – Mathematics Health Mathematics Houghton Mifflin Mathematics and The Mathematics Teachers Handbook Count Me in Grade 7 Silver Burdette Ginn Today's Mathematics Primary Mathematics for the Caribbean Bk. 5 Caribbean primary Maths Level 4 and 5

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Measure, Quantify and Calculate

AREA OF STUDY OUTCOMES

Pupils should:

M3e – Add, subtract, multiply and divide fractions to solve problems

CROSS-CURRICULAR OUTCOMES

Pupils should:

CP1a – Recognize an issue or a problem

CP1b – examine information related to the problem/issue

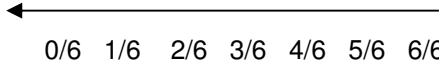
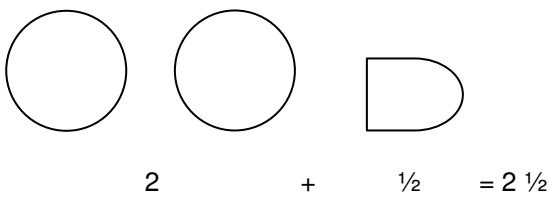
CP1c – suggest ways of dealing with the problem/issue

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
1. To add fractions with like denominators, add the numerators. Use the same denominator in the sum.	Divide various shapes into fractional parts.  $\frac{1}{4} + \frac{1}{4} = \frac{2}{4}$ 1. Divide objects into fractional parts e.g.  $\frac{2}{5} + \frac{1}{5} = \frac{3}{5}$ 2. Use a fraction strip to compute fractions with like denominators.  $\frac{3}{12} + \frac{4}{12} = \frac{7}{12}$	Demonstrate the ability to sort and categorize objects/shapes into fractional parts. Ability to illustrate the concept of fractional operations. Creation of a web to gather concept of fractional operations. Ability to use number line for addition of fractions with like denominators. Ability to apply the ruler for adding fractions with like denominators. Ability to identify fractions with like denominators.

AREA OF STUDY: MATHEMATICS

STANDARD 11

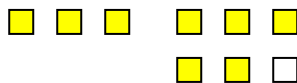
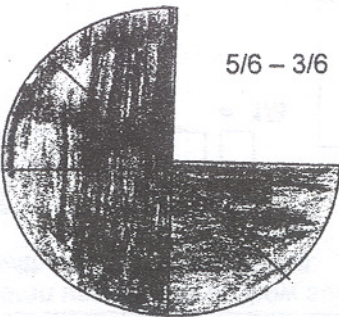
UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
A whole number can be added directly to a fraction.	3. Using the number line $1/6 + 2/6 = 3/6$  0/6 1/6 2/6 3/6 4/6 5/6 6/6 Quick Check - Folding shapes to get a fraction - Identifying people who use fractions in their everyday life: contractors, designers, salesclerk, stock brokers, insurance agents. - Web to state the use and main concepts of fractional operations Reinforcement – Display posters with steps for addition of fractions with like denominators. <u>Estimating answers</u> Have children use objects to show addition of whole number and fraction  2 + 1/2 = 2 1/2	The ability to estimate the sum of fractions with like denominators. The ability to use objects/shapes to add whole numbers to a fraction.

AREA OF STUDY: MATHEMATICS

STANDARD 11

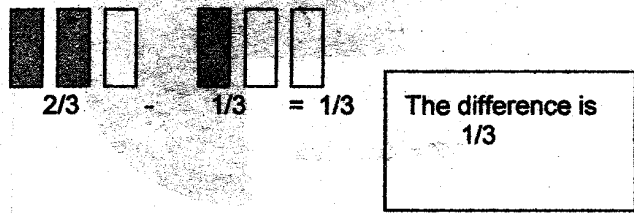
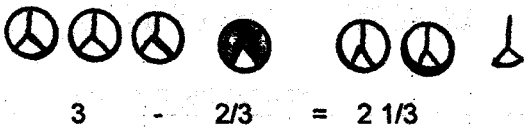
UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Daily life problems can be solved using one's own problem-solving strategy. 3. To subtract fractions with like denominators, subtract the numerators. Use the same denominator in the difference.	Using shaded shapes e.g.  3 + 5/6 = 3 5/6 Worted problems Jane bought 3 yards red lace and 2/3 yard blue lace. How many yards of lace did she buy? Have children use objects to show subtraction of fractions with like denominators e.g. (a pie divided into 6 pieces.  $5/6 - 3/6 = 2/6$	The ability to apply the concept of fractions to solve a problem.

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	Have children use objects to show subtraction of fractions with like denominators e.g.  1. Mechanical problems e.g. $3/9 - 1/9 = 2/9$ $5/8 - 1/8 = 4/8$ Worted Problems: Mary had $2/3$ pound of flour. She used $1/3$ of a pound. What fraction of a pound did she have left? Estimating answers: - children will estimate answers for given problems involving subtraction of fraction from a whole. - Have children use objects to show subtraction of fraction from whole numbers. 	The ability to use shapes to solve subtraction problem with like denomiantors. Ability to identify the correct fractional operation to solve a problem. The ability to use objects and shapes to subtract a fraction from a whole number.

UNIT/THEME: Measure, Quantify and Calculate**UNIT/THEME: Measure, Quantify and Calculate**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Discuss Life problems can be solved using one's own problem-solving strategy.	Using shaded shapes e.g. The diagram illustrates two methods for subtracting fractions from whole numbers using visual models: Method 1: Two large squares represent the number 2. A grid representing $\frac{4}{9}$ (with 4 out of 9 small squares shaded) is shown next to them. This represents the equation $2 - \frac{4}{9} = 1\frac{5}{9}$. Method 2: One large square represents the number 6. Next to it is a grid representing $\frac{1}{2}$ (with 1 out of 2 columns shaded). This represents the equation $6 - \frac{1}{2}$. Problems solving e.g. $4 - \frac{2}{5}$ $6 - \frac{1}{2}$ Worded Problems: Judy bought 3 lbs of flour. She used $\frac{3}{4}$ ilis to make a cake. How many pounds of flour remained?	The ability to use objects and shapes to subtract a fraction from a whole number. Demonstrate the ability to read and interpret worded problems.

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Identify Add Subtract Count Arrange Recognize Discover Compute Decision making Draw Discover Question Formulate Predict Estimate Value Critical thinking Create <u>Attitudes</u> Awareness, cooperation, enjoyment, interest, independence, pride/satisfaction, ability to use fractions, respect		

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Measure, Quantify and Calculate**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
Critical Thinking - CP1a.b.c. Reading EL1a.k. Speaking EL4e (English Language) Spanish Language SL4b Number M1f Measure, Quantify and Calculate – M3e Estimate and Make Predictions – M4a Craft – EA1g	Mathematics (Applications and Connections Course 1) pg. 238 – 239 Health Mathematics – Walter E. Rucker, Clyde A. Dilley, David W Lowry – p.19 – 198 Scott, Foresman mathematics – Grade 4 Silver Burdette Ginn Mathematics – Teachers' Guide – Grade 4 – Volume 2 Houghton Mifflin Mathematics – Teachers' Edition Edition Level 4

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Estimate and make Predictions****AREA OF STUDY OUTCOMES**

Pupils should:

M4a – make reasonable approximations based on relevant life experiences.

M4b – Use logical reasoning based on meaningful data to draw conclusions about the likely occurrence of an event

CROSS-CURRICULAR OUTCOMES

Pupils should:

CP1a – Recognize an issue or a problem

CP2a – suggest ways of dealing with problem/issue

CP2a – use pictures and diagrams

CP2c – handle real objects

SP2a – take part in group activities

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Good number sense enables one to estimate quantities. To estimate the sum/difference; alter the numbers to produce a more manageable problem. e.g. 28 $\longrightarrow$ 30 $\begin{array}{r} + 32 \\ \hline 60 \end{array} \longrightarrow \begin{array}{r} 30 \\ 60 \end{array}$	1a. Estimate quantities in the tens and ones, hundreds e.g. number of beans in a jar, number of people in church, scatter objects, observe and make an estimate. b. Write a story problem about the above estimations.	1a. Number sense b. Writing problems related to the estimation.

AREA OF STUDY: MATHEMATICS
STANDARD 11
UNIT/THEME: Estimate and make Predictions

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Estimation of sums and differences of 2 digit numerals develop computational competency e.g. $\begin{array}{r} 28 \quad \text{---} \quad 30 \\ + 32 \quad \text{---} \quad 30 \\ \hline 60 \end{array}$ Front end estimation of 2 digit numerals focusses on the left most or highest place value. Non standard units are traditional means of measurement and can be estimated to produce an answer.	2a. In groups discuss a story problem and predict answers/results. b. Estimate by rounding by 10's up and down. c. Prove estimations using a calculator. 3a. Play games using a place value chart. b. Introduce the front end estimation by identifying front/end numeral e.g. $\begin{array}{r} 28 \text{---} 20 \\ 29 \text{---} 50 \\ \hline 70 + 10 = 80 \end{array}$ Estimate and measure length – using paper clips, body parts, capacity – paper cups; time – sun Examine the results of measuring an object using several units. Record information in groups.	2a. Share/participate b. round by 10's and up and down c. add using the calculator – subtract 3. understand place value. ○ estimate by working with place value. 4a. Identify different non-standard units of measure b. record information ask questions

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Estimate and make Predictions**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Standard units are used as means of measurement, e.g. metre, units, inch, pound and can be estimated to get approximate measures.	Estimate and measure length using a ruler. Estimate and measure capacity mass using cups, pints, litres Estimate and measure time using a digital clock. Estimate and measure temperature using a thermometer. Predict weather. Write a report on different findings.	Measure using standard units - predict results by estimation - write reports
Any unit of measurement can be compared with another unit of measurement e.g. a metre can be compared to cm, inches, bottle taps.	In groups prepare questions on estimation - how many bottle taps would full a cup? - Record estimations and report in groups. - Draw a table to show relationship between a useful non standard unit and a standard unit. - Compare measurements.	Participation in groups - record information - able to report - draw tables - compare measurement

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Estimate and make Predictions

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT														
The probability that an event can happen can be predicted using adequate vocabulary e.g. not likely; very likely; certain; impossible Outcomes are a part of every probability experiment. Skills <table><tr><td>Collect</td><td>Manipulate</td></tr><tr><td>Observe</td><td>Predict</td></tr><tr><td>Match</td><td>Demonstrate</td></tr><tr><td>Compare</td><td>Record</td></tr><tr><td>Identify</td><td>Solve</td></tr><tr><td>Research</td><td>Display</td></tr><tr><td>Discuss</td><td></td></tr></table> Attitudes Cooperation Respect Share Responsibility Perseverance Enjoyment Good management	Collect	Manipulate	Observe	Predict	Match	Demonstrate	Compare	Record	Identify	Solve	Research	Display	Discuss		Familiarize through discussion of everyday situations various probability contextx which the words not likely; very likely; certain and impossible are used e.g. races. Describe events in which the probability changes with location e.g The probability of snow in a rainforest or at North Pole. Play games, record data. Conduct an experiment e.g. A spinner labelled 2,4,6,8,10,12. How many possible outcomes are there when you spin the spinner once? Predict and record the outcomes of the experiments in groups. N.B. This unit should be incorporated with the other math themes.	Discussion and participation working in groups to share using vocabulary in proper context. Describe the meaning of a choice. Record data Identify outcomes Experiment Make hypothesis
Collect	Manipulate															
Observe	Predict															
Match	Demonstrate															
Compare	Record															
Identify	Solve															
Research	Display															
Discuss																

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Estimate and make Predictions**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
SP3a – Assess their needs and interests SP2a – Help to create consensus SP2h – Accept major decision EL4a – Express ideas/opinions EL4e – Ask questions and give information M3a – Measure using standards and non-standard units M3b – use and convert coins and bills M3c – add and subtract whole numbers M3d – Multiply and divide whole numbers M3e – add and subtract fractions M5a – Collect, analyze and present data	Middle Grade Math Tools for Success – Teachers Edition Math Advantage Volume 2 Teachers' Edition Count Me In Teachers Book 1 Exploring Mathematics – Scott Foresman Guiding Children's Learning of Mathematics – teachers' Resources

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Data Handling****AREA OF STUDY OUTCOMES****Pupils should:****M5a – Collect, analyse, present data using charts, graphs, tables and diagrams****CROSS-CURRICULAR OUTCOMES****Pupils should:****SP2a - take part in group activities****CP1b – Examine information related to the problem issue****EL2d – Predict what will happen in a sequence of events****SP2g – Help to create consensus**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Information can be collect through - observation - research - reading - conducting - interviews - experiments	<u>Observation</u> • field trip to study the traffic – number of vehicles, kinds of vehicles, (cars, trucks, buses) colour of vehicles • study the weather – sunny, windy, cloudy, rainy days • use the pupils themselves – colour of hair, eyes, height, footweat, uniform <u>Research</u> (read) • provide reading materials: read/discuss information from newspapers, books, pamphlets • conducting interviews- - find a problem - make up questionnaire(s) - question pupils, teachers, other members of community using the questionnaire.	Observation • Ability to collect, interpret, analyse information. • Ability to make prediction • Ability to compare actual results with predictions. • Ability to work as partners. • Interaction in group • Cooperation • Ability to read data from tally boxes, charts, graphs • Ability to graph information • Creativity • Solve problems using coordinates and graphs. • Make up a questionnaire. • Carry out experiments, surveys. • Recognize/define the different kinds of graphs • Ability to construct graphs.

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Data Handling

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Information collected can be - Organized - Interpret - Analysed - Charts, graphs, tables diagrams can be used to organize data.	Experiment Work in small groups. Use spinner cards, pose a question(s). Repeat spins of pointer/record results. Process the activity.  Which is greater, the chance that the spinner will fall in the black area or the white area. - Collect or gather information. - Plot information gathered on tally boxes. - Interpret information from the tally boxes. - Graph information on a table or chart.	Creation and design of graphs

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Data Handling

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Interpretation/conclusions can be drawn from data or information.	Use tables, charts, diagrams graphs - Pictograph - Block graph - Bar graph - Line graph to discuss information Use information to answer specific questions based on - Tally boxes - Tables - Charts - Graphs Create problem-solving situations e.g. - Children are given a bag and told it contains 25 yellow and 5 M and M's. They are to guess what colour they would get if they drew one M and M without looking. They are to record their guesses. <u>Activity</u> - Pupils make work in groups - Each group make selection – record result. - Repeat selection several times – always replacing - The M & M and shaking the bag before repeating the progress. (repeat progress about 100 times).	Contribution to discussion. Formulate questions Answer questions accurately Solve problems in a logical manner. Formulate hypothesis.

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Data Handling

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	Group total - How many times they drew out a red – a yellow. - Describe observation. - Make predictions The data collected may be combined to get larger samplings. <u>Project</u> - Activity extended to 2-3 days to see if the results differ. - Activity repeated with equivalent amounts of each colour. - Groups re-examine their predictions for verification Create problem solving situation – carry out survey, analyse the data, make predictions – e.g. - Sale of ice cream at school fair. - Survey pupils' favourite flavours of ice-cream. Who will go to the fair? - Discuss result of survey - Make predictions - Compare actual results with prediction - Apply data to problem-solving activities	Description of observation Completion of project work Formulation of questions. - Organization of data using charts/labels - Accurate analysis of data using charts/tables.

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Data Handling**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Pictograph use pictures to show data. Block and bar graphs help you organize and compare data. Line graphs are used to show continuous data. A number pair can be used to graph a point on a grid.	Use a grid and data. Construct a line graph. Graph information – block graph; bar graph; pictograph Construct individual progress chart using graph paper, information on data based on self e.g. height, weight, grades, attendance, etc. Use the number line and play game reinforcing a concept. Use a digital clock and observe when the clock shows time in order form. Present and identify pairs that are exactly the same in a row e.g. (3,5) (9,0) (5,3) (9,0) (9,0)	Construction of a line data Accuracy and creativity of progress chart.

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Data Handling**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	Find number pairs for given points. - Use a grid and demonstrate how to graph points on it. - E.g. graph the point (2,3). - Start at 0. Move 2 units to the right, move 3 units up. Discuss the importance of the arrangement of the digits e.g. (2,3) is not the same as (3,2) Why. (They do not graph the same point on the grid.) Discuss the use of a grid showing ordered pairs on number line pair. - Work in pairs and graph shapes, list numbers pairs for each vertex, locate the points and name the shape. - Use grid paper, graph points, connect them in order. - Name the shape.	Show order pair on number line. Pair sharing and cooperation. Connect points in order using graphs.

AREA OF STUDY: MATHEMATICS

STANDARD 11

UNIT/THEME: Data Handling

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Collect Sort Observe Communicate Assemble Measure/estimate Create Combine Identify Recall Trace Follow directions <u>Attitudes</u> Confidence Appreciate Respect Responsibility Acceptance Willingness to persevere Share Sense of achievement Pride Satisfaction Enthusiasm		

AREA OF STUDY: MATHEMATICS**STANDARD 11****UNIT/THEME: Data Handling**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
SL1d – Follow instructions and directions EL2c – Predict what will happen in a sequence of events EL11 – Identify a sequence of events EL3f – Demonstrate the ability to use a variety of words and phrases to express thoughts and feelings M3a – measure using standard and non-standard devices M4a – Make reasonable approximations M4b – Use logical reasoning based on meaningful data to draw about the likely occurrence of an event.	Middle Grade Math – Tools for Success Course 1 Primary Mathematics for the Caribbean 5 Caribbean Primary Math Bk. 4 Math Advantage Middle School Teachers' Edition Exploring mathematics – Scott Foresman

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Place Value

STANDARD 111

AREA OF STUDY OUTCOMES

Pupils should:

M1a – Understand Place Value In Numbers up to Five Digits

CROSS-CURRICULAR OUTCOMES

Pupils should:

SP1b – Choose between alternatives based on values

SP2a – Take part in group activities

SP2f – Help the group to achieve its goals

SP2g – Help to create consensus

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
1a. Numbers can be read easily when grouped in sets of threes called periods. 1b. When identifying the periods, we begin at the right using commas to separate each period. 1c. The first period to the right is known as the ones and the second is referred to as thousands. 1d. When reading the numbers, start at the left. Read the digit within a period then say the name of the period.	1. Reading of numbers from flash cards up to five digits. • Use place value chart to establish the concept of periods. • With the help of flash cards, have children identify and name the periods. • Use place value chart to establish the concept of thousand. • Divide children into groups and have them play games to show their ability to read five digit numbers. • Writing of numerals in words.	1. Identify and name periods. 2. Read and write numbers up to thousand place. Cooperation and performance within groups.

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Place Value

STANDARD 111

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT																																															
2a.Numbers can be expressed in different forms to show place value.	Example: 1B <table><tr><td>T</td><td>Thous</td><td>Thous</td><td>Hun</td><td>Tens</td><td>Ones</td></tr><tr><td>7</td><td>6</td><td>3</td><td>5</td><td>4</td><td></td></tr></table>	T	Thous	Thous	Hun	Tens	Ones	7	6	3	5	4		Complete place value chart. Example: <table><tr><td>T</td><td>TH</td><td>Th</td><td>H</td><td>T</td><td>O</td><td></td></tr><tr><td>4</td><td>7</td><td>4</td><td>4</td><td></td><td></td><td></td></tr><tr><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td></td></tr><tr><td>6</td><td>3</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>—</td><td>—</td><td>2</td><td>0</td><td></td><td></td><td></td></tr></table> 47441 39675 63804 81208 T 1. Forty seven thousand four hundred forty one. 2. Thirty nine thousand six hundred seventy five. 3. State the value of the underline digit. Example: 5 4, <u>7</u> 63 Answer: Seven Hundred 4. Re-arrange three, four and five digit numbers in various ways. Example: 782; 2687; 18627	T	TH	Th	H	T	O		4	7	4	4				—	—	—	—	—	—		6	3						—	—	2	0			
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	Example 1C <table><tr><td colspan="3">Thousand Period</td><td colspan="3">Ones Period</td></tr><tr><td>T</td><td>Thous</td><td>Thous</td><td>Hun</td><td>Tens</td><td>Ones</td></tr><tr><td>7</td><td>6</td><td>3</td><td>5</td><td>4</td><td></td></tr></table> 1f.Seventy Six Thousand Three Hundred Fifty Four 2a.Play games with children using flash cards to show place value in various froms.	Thousand Period			Ones Period			T	Thous	Thous	Hun	Tens	Ones	7	6	3	5	4																															
Thousand Period			Ones Period																																														
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7	6	3	5	4																																													

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Place Value

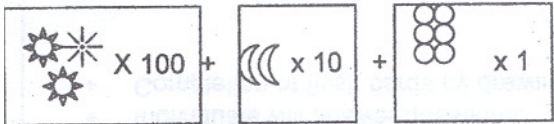
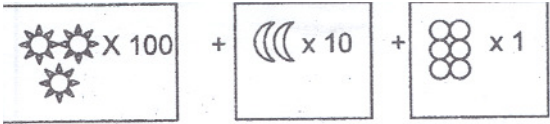
STANDARD 111

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT																																				
2b.The value of a digit depends on its position in a standard numeral. 2c.Play money can be used to understand five digit numbers. N.B. Note that #3 was skipped because it ties in with Concepts #2. 4a.The value of each digit in a standard numeral is shown by writing in expanded form. 4b.These are different ways to express a numeral in expanded form. Eg: 3856=3000 + 800 + 6 (3X1000)+(8X100)+(5X10)+6	Eg: <table><tr><td>TT</td><td>TH</td><td>H</td><td>T</td><td>O</td><td></td></tr><tr><td>8</td><td>8</td><td>6</td><td>7</td><td>9</td><td></td></tr><tr><td>4</td><td>6</td><td>9</td><td>8</td><td>7</td><td></td></tr></table> Use money to show place value by placing ones, tens, hundred and thousands using dollar bills. <table><tr><td>TTH</td><td>TH</td><td>H</td><td>T</td><td>O</td><td></td></tr><tr><td>\$10,000</td><td>\$1,000</td><td>\$100</td><td>\$50</td><td>\$1</td><td></td></tr><tr><td>\$10,000</td><td></td><td>\$100</td><td></td><td></td><td></td></tr></table> 2 1 2 5 1 1. Children will use building blocks to show numerals in their expanded form. 2.Pupils will write the standard numeral of numerals in expanded form. 3.Children will use flash card to complete expanded form of given numerals. Examples: 7,685=(7X?)+(?X100)+(8X?)+(?X5)	TT	TH	H	T	O		8	8	6	7	9		4	6	9	8	7		TTH	TH	H	T	O		\$10,000	\$1,000	\$100	\$50	\$1		\$10,000		\$100				1.Children will take turns as leaders to ask questions based on the (numbers) numerals on their chosen cards. • Individuals will answer questions. • Completion of flash cards by drawing objects.
TT	TH	H	T	O																																		
8	8	6	7	9																																		
4	6	9	8	7																																		
TTH	TH	H	T	O																																		
\$10,000	\$1,000	\$100	\$50	\$1																																		
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AREA OF STUDY: MATHEMATICS

UNIT/THEME: Place Value

STANDARD 111

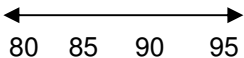
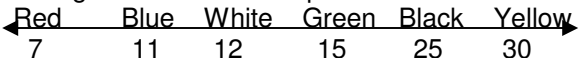
CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
5. Numbers can be compared to find which is greater or less. b. Numbers can be put in orderly size. c. You can use place value to compare numbers such as 7,289 and 7,294.	4. Children play games in small groups where the group leader calls a number and group members write the numeral in expanded form. The group that has the most correct answers wins. Leaders may be changed and the game starts again. Individual may take turns reading answers to the class and comparing with other groups. 1. Divide children into small groups. Give flash cards with numbers and ask them to stand in line and present numbers from large to small. Allow children to compare the numbers on the cards as directed. 2. Have flash cards with numbers. Children will take turns placing cards on numberline on chalk board in sequence.	Example:  Play games with cards they made in groups. Add cards to convert to standard form. Eg: Paul has + Steve has + Cards  (3×100) + (2×10) + (6×1) 300 + 20 + 6 A child will give the answer 326. Completion of task in logical order. Make accurate comparison based on findings.

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AREA OF STUDY: MATHEMATICS

UNIT/THEME: Place Value

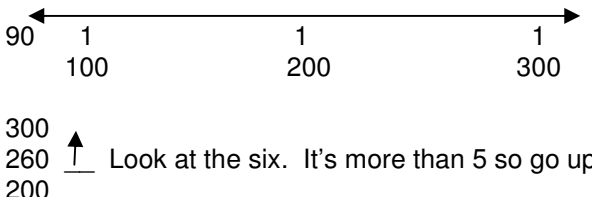
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CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
d.To compare, start at the left. Find the first place where the digit is equal, Compare the digit in that place. e.A numberline could be used to compare whole numbers.  f. The symbols > or < can be used to compare numbers.	3.Take children outside and have them observe passing vehicles in groups. Have them observe and list the number of blue, green, white or red cars which pass within a period of time. 4.Children will go back to their classroom and compare these numbers on the numberline. (There is need to show how this concept relate to strategies). Eg: During the fifteen minute period there were  Have children do group presentation Have children draw number line and make their own flash cards in attractive shapes. 2.Ask children to put numbers on their flash cards and put the flash cards in order on the number line. 3.Research number of houses that are of various types and compare. 4.Research the number of the various types of trees in an assigned area. Have them write reports and make presentation to the class. 5.Children will compare the number they come up with to that of other groups.	Make oral reports on observation of vehicles. Make accurate comparisons based on findings. Completion of flash cards in logical order. Make accurate comparison of houses & trees based on findings. Accuracy of comparison to sort and categorize.

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Place Value

STANDARD 111

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
6. Rounding off to the nearest Hundred. - When a quantity cannot be expressed accurately, we must give an appropriate figure to the nearest place value. This process is termed "rounding off of numbers". - To round off to the nearest hundred (100) use the digit in the tens place. - If the number in the tens digit is less than five, it is omitted and a (0) zero is put in its place. If the tens digit is five or more, the hundreds digit is increased by 1 and 0 is put in the	6. Have children compare the number of books in the Bible. Eg: Old Testament > New Testament $39 > 27$ or $27 < 39$ 1. Have children weigh, using a scale. Allow them to record weights and round off to the nearest ten. 2. Instruct children to use base ten blocks to show numbers. Eg: 329, 300, 400, 500 Ask: "What are the two multiples of hundreds that are closest to 329?" Allow children to examine the three numbers shown. Have them determine whether 329 is closer to 300 or 400. 3. Use number line to round off numbers eg: Round 260 to the nearest hundred. 	Accuracy of estimation. Ability to round to the nearest place value. Use of numberline to round off to the nearest place value.

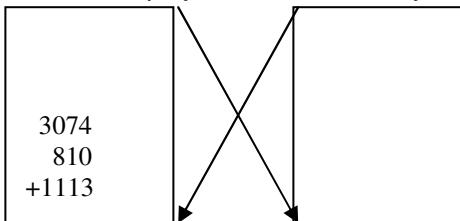
AREA OF STUDY: MATHEMATICS**UNIT/THEME: Place Value****STANDARD 111**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Ones digit place. - A numberline can be used to help in rounding off numbers. 7.Addition is the mathematical process of putting like numbers together. - The numbers added together are called addends and the answer is the sum. - To find the sum, add the addends downwards, to check add the addends upwards,	4.Ask children to do research by finding at least 5 adults, record their weights and round off to the nearest hundred. 5.Record the population of three neighbouring countries and round off to the nearest hundred. 6.Investigate number of bones in the human body and round off to the nearest hundred. 7.Children will record the ages of death of Bible characters. They will round off these nnumbers to the nearest hundred. 7.Use number to introduce addition of four digit numerals to children. Wheel contain numbers 0-9. Children take turns spinning the wheel to get a number for each place value, starting from ones place. After they have written their number in turns on the board, children will add the numbers and check the sum by following the rule.	Collect data and record findings. Gather information from Mayors, Chair persons and other community leaders. Completion and accuracy of given task. Observation of ability to set up the numbers acurately and ability to add correctly.

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Place Value

STANDARD 111

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
When adding, line up the digit in the correct column. You may need to re-group from one column to the (other) next. Eg: $\begin{array}{r} 328 \text{ addend} \\ 486 \text{ addend} \\ + 819 \text{ addend} \\ \hline 1,633 \text{ sum} \end{array}$ $\begin{array}{r} 1,633 \\ 328 \\ 486 \\ + 819 \\ \hline 1,613 \end{array}$ Check upwards. 8.Subtraction is the mathematical process of taking away like numbers. The number being subtracted is the subtrahend. The subtrahend is subtracted from the minuend. The answer is the difference.	- Instruct children on how to make dominoes using bristol board. Allow them to work in small groups. - Children will write problem and solve. Allow children to play with the cards they have made. Eg:  - Give puzzles for children to solve. - Have children do problem solving involving addition with and without re-grouping. 8. Using number wheel, have children practice subtraction. Have them choose two sets of numbers by spinning the wheel. Let them arrange the numbers correctly to subtract. - In small groups children will use flash cards or number cards to practice subtraction. They will take turns setting up the cards, while the others subtract and give the answers.	Follow instructions in logical order. Demonstrate ability to add. Cooperation and performance within a group. Practice and demonstrate the ability to add correctly. Practice and demonstrate the ability to subtract correctly.

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AREA OF STUDY: MATHEMATICS

UNIT/THEME: Place Value

STANDARD 111

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
To check a subtraction problem, add the subtrahend and the difference. The sum should be the minuend. Eg: 438 minuend $\begin{array}{r} -326 \text{ subtrahend} \\ 112 \text{ difference} \\ \hline 112 \\ +326 \\ \hline 438 \end{array}$ E.g. 62547 $\begin{array}{r} -41325 \\ \hline 21222 \end{array}$ 21222 $\begin{array}{r} -41325 \\ \hline \end{array}$	• Instruct children to make dominoes. Allow them to make up subtraction problems and answers. • Children will play dominoes to practice solving subtraction problems. • Give subtractions puzzles for pupils to solve. • Have children do word problem involving subtraction.	Ability to formulate questions. Sort and categorize numbers correctly

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Place Value

STANDARD 111

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Read Write Record Observe Count Collect Demonstrate Categorize Report Compare Manipulate Arrange Construct <u>Attitude</u> Cooperation Interest Respect for Others independence		

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AREA OF STUDY: MATHEMATICS**UNIT/THEME: Place Value****STANDARD 111**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
M3a – Measure weight and time M3b – Use coins and bills M3c – Add and subtract whole numbers M4b – Use logical reasoning based on meaningful data to draw Conclusions about the likely occurrence of an event SS2a – Understand how people use the natural resources of Belize.	Math Advantage – Middle School 1 Caribbean Primary Math Health into Mathematics Addison – Wesley Mathematics Exploring math – Scott Foresman & Co.

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Consecutive Sequence and Position of Numbers - Quantity****AREA OF STUDY OUTCOMES****Pupils should:****M1b – Understand the consecutive sequence and position of Numbers 3000-5999****M1c – Understand quantity in Numbers 3000-5999****CROSS-CURRICULAR OUTCOMES****Pupils should:****SP1a – Recognize values associated with choices****SP2e – Lead and follow where appropriate****SP3b – Assess progress in relation to achievement of goals**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Notation and numeration deals with writing numbers in figures and in words. It also deals with reading numbers in written forms.	- Students will research numbers between the values of 3000 and 5999. eg: phone numbers, populations of towns, population of voting area, license plate number, etc. - Numbers will be graphed and shown on place value chart to illustrate the quantity of each number. Students will create their personal abacus to illustrate position of numbers. Students will model numbers on the abacus and in written form. - Students would structure and re-structure patterns of their own and state the rules governing them	Ability to record & categorize data. Ability to understand and explain concepts of place value. Creation of place value chart. Ability to construct an attractive and usable abacus. Illustrate the use of the device. Identification of algorithm used to complete a pattern. Ability to create a pattern of their own.

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AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Consecutive Sequence and Position of Numbers - Quantity**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Numbers can be placed in series showing regular patterns when ordering numbers. Numbers may be compared and placed in consecutive order i.e. in terms of size and the use of the equality & inequality signs.	Students will construct practical problem using rules given to them and some they create on their own. Use manipulatives to create, arrange, re-arrange patterns. Make rules that govern patterns they make. Students will also be given a set of numbers (scramble) and order these from least to greatest.(or vice versa) Students will also be given a set of unitary digits that they must order to make a number; let's say the largest possible number eg: 4512 ans: 5,421 Students will order a given set of numbers on a number line. (Numbers must be of corresponding concepts) eg: date, weight etc. Teacher would create a little story to teach the rules of the inequality signs and how they are used. Students will subsequently create stories of their own.	Ability to use the concepts of practical forms. Recognition of the rules in patterns. Ability to analyze, interpret and express the order of numbers. Ability to examine various solutions to the problem and selecting the most plausible solution. Ability to create a number line and apply its use. Interpretation of rules.

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Consecutive Sequence and Position of Numbers - Quantity**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Research Create State Structure Re-structure Construct Arrange Re-arrange Order Analyze Recognize Interpret Identify Illustrate Record Categorize <u>Attitudes</u> Industriousness Willingness to participate Respect opinions of others		

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AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Consecutive Sequence and Position of Numbers - Quantity**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
M1a – Understand place value M5a – Collect, analyze and present data using diagrams SL4a – Express thoughts and feelings using simple structures and vocabulary SL4c – Use correct pronunciation, appropriate intonation and stress WT5b- Design a device to meet a need/solve a problem EL3h – Apply the “writing process” to their work EA1g – Explore and experiment to create visual images	

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Properties of Odd and Even Numbers****AREA OF STUDY OUTCOMES****Pupils should:****M1d – Understand the Properties of Odd and Even Numbers****CROSS-CURRICULAR OUTCOMES****Pupils should:****SP2 – Take part in group activities****CP1b – Examine information related to the problem****SP1c- Take action based on principled choice**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
1.An even number is one that can be divided exactly by 2.	1.Given objects eg: blocks, beads etc., Children will separate them according to pairs. If the objects can be separated without leaving an extra one, the children should explain that the number of objects represent an even number. Eg $\square \square \square \square \square \square = \square \square \square \square$ Even	1.Ability to describe and explain how to recognize an even number.
2.An odd number is a number which when divided by 2, leaves a remainder.	2.Children show blocks or other objects to represent odd numbers. Children pair off the objects and decide that when an (object) extra one is left from the group of objects, the total number of objects represent an odd number. Eg: 0 0 0 0 0 0 0 – 00 00 00 0 – odd.	2.Ability to describe and explain how to recognize odd numbers.

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AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Properties of Odd and Even Numbers

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
3.One way of recognizing odd and even numbers is by having the divisibility rule. If the ones digit is an even number, that number is divisible by 2. 4.Reading and writing sets of odd/even numbers may be done in sequence. 5.A numberline may be used to show odd and even numbers. $\begin{array}{ccccccccccc} 0 & 2 & 4 & 6 & 8 & 10 & 12 \\ \leftarrow & & & & & & \rightarrow \\ 1 & 3 & 5 & 7 & 9 & 11 \end{array}$ Pattern can be discovered in order to complete sequence.	On a chart with numbers from 1 –50, children take turns differentiating between odd and even numbers. 3.Use building blocks and charts to show divisibility rules, Children recognize odd and even numbers. - Children will set up blocks to explain divisibility rule. Eg: 1 Block + 2 Blocks= 3 Blocks Following teachers instructions, children will set up blocks to show sequence of odd/even number. Even Numbers = 2,4,6,8,10 Odd Numbers = 1,3,5,7,9 5.By drawing a numberline on chalkboard, all the children can take turns to complete it with odd and even numbers. - Individuals will take turn putting only even numbers above the numberline and odd numbers below. - Children will discuss the numberline in small groups and explain the pattern used.	Ability to differentiate between odd and even numbers. 3.Explain the use of diagrams. - Completion of task in logical order. - Following of instructions. Following of instructions. Correct sequencing of odd and even numbers. Identification of a pattern.

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Properties of Odd and Even Numbers**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Complete Explain Arrange Observe Discuss Identify <u>Skills</u> Cooperation Awareness <u>Attitude</u>	• Children may be given handouts with chart showing odd and even numbers. • Children can be instructed to complete the series of odd numbers or the series of even numbers by discovering the pattern. Allow children to give reasons for their answers.	Make accurate comparisons based on findings. Ability to complete a task. Expressions of ideas. Logical and accurate facts.

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AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Properties of Odd and Even Numbers**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
EL4.a – Express ideas and opinions. EL4.e – Ask questions and give information. M1b – Understand the consecutive sequence and position of numbers 1 – 9999 M5.a – Collect and analyze data.	1.New Progress in Mathematics 2.Scotts Forman Maths. 3.Math Advantage – Harcourt Brace. 4.Addison – Wesley Mathematics. 5.New Common Entrance Mathematics.

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Properties of Odd and Even Numbers

AREA OF STUDY OUTCOMES

Pupils should:

M1e – Understand the Properties of Prime and Composite Numbers

CROSS-CURRICULAR OUTCOMES

Pupils should:

SP2a – Take part in group activities

SP2f – Help the group to achieve its goals

SP2g – Help to create consensus

CP1b – Examine information related to the problem

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
1.A Prime Number is a number which has only two factors; itself and 1. It cannot be divided evenly by any other number. - Two is the only even Prime Number. - If a Prime number is used as a factor, it is called a prime factor. Example: $3 = 1 \times 3$ $7 = 1 \times 7$ $11 = 1 \times 11$ -3,7 and 11 are all prime factors.	1.Using a set building blocks, children will make rectangles. While making the rectangles, children will observe how many blocks are used to make the rectangles. They will be asked to explain what happens if two blocks are put together or if three (3) blocks are put together. Elicit information from children that when a set of blocks can make only one rectangle, the number of blocks stands for a prime number. 3 is prime this is not a rectangle (2 is prime)	1. Cooperation and perform within a group. - Sort and categorize. - Completion of task in logical orders. - Follow instructions in logical order.

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Properties of Odd and Even Numbers

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT																																																																								
2.While two numbers are multiplied together the result is called the product	Have children illustrate composite numbers by making rectangles with the blocks. They will observe that when the numbers of blocks used can make more than one rectangle, the number of blocks stands for a composite number. Example: (4 is a composite number) 1. Rectangle Not a Rectangle Children make a chart showing the number of blocks they use and how many rectangles were made for each set. They will discuss their chart and mark off as they go along. Example: <table><tr><td>Number of Blocks Used</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td><u>Number of One</u></td><td></td><td></td><td>√</td><td>√</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td><u>More Than</u></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td><u>Rectangles One</u></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	Number of Blocks Used	2	3	4	5	6	7	8	9	10	11	12							<u>Number of One</u>			√	√														<u>More Than</u>																		<u>Rectangles One</u>																		Practice and demonstrate use of blocks and rectangles made on chart erected.
	Number of Blocks Used	2	3	4	5	6	7	8	9	10	11	12																																																														
	<u>Number of One</u>			√	√																																																																					
<u>More Than</u>																																																																										
<u>Rectangles One</u>																																																																										
Elicit from children the definitions for Prime Number and composite number.																																																																										

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Properties of Odd and Even Numbers

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT																				
Each of the two is called a factor Example: Factor x Factor = Product 4 x 7 = 28 2 x 14 = 28 1 x 28 = 28 So 1,2,4,6,14,28 are called factor of 28 because 28 can be divided by 1,2,4,7,14,28 Without leaving a remainder. A number which is a factor of 2 or more given number is a common factor. 3.A number that has more than two factors is called a composite number. The number 1 is neither prime nor composite.	Have them differentiate between the two. Use the sieve of Eratosthenses to determine all prime numbers up to 50. Use the sieve of Eratosthenes to determine all prime. Using the sieve, they will be able to identify composite numbers up to 50. For Example: <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td></td><td></td></tr><tr><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td></td><td></td></tr></table> a)Cross out 1 b)Circle and cross out all multiples of 2. Using building blocks, elicit from children the concept of factors. Have them take turns making rectangles with given blocks and ask them to list the factors used. In small groups or individually, children may use construction paper to make flash cards with factors of given numbers.	1	2	3	4	5	6	7	8			11	12	13	14	15	16	17	18			2.Ability to recognize difference. • Ability to analyze. • Interpretation of sieve chart. Practice and demonstrate on sieve • Explain the use of diagrams. • Make accurate comparison based on findings. • Ability to follow instructions 3.Cooperation and performance within group. • Make self/group assessment. • Completion of task in logical order. • Use of initiative, creativity in designing.
1	2	3	4	5	6	7	8															
11	12	13	14	15	16	17	18															

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Properties of Odd and Even Numbers**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
$42 = 6 \times 7$ 3×14 21×2 42×1 42 is made of 2 or more factors: 42 is a composite number. 4. When counting and writing Prime Numbers begin with 2. Eg: 2, 3, 4, 5, 7, 11, 13 When counting and writing composite numbers begin with 4. Eg: 4, 6, 8, 9, 10, 12, 14 5. Prime and composite numbers can be written and read in sequential order. 6. A multiple is the product of two numbers.	4. Have children say all the prime numbers up to 50 and all the composite numbers up to 50. Divide children into groups and allow them to make charts showing prime numbers into sequence up to 50; and composite numbers up to 50. Children will be given handouts with a table showing numbers and they will list the factors of each number; then state whether they are prime or composite. Given instructions children will calculate and determine multiples on calculators.	Use of different methods to show prime and composites. The ability to describe and explain.

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Properties of Odd and Even Numbers

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT									
To find multiples of a number multiply the number by: 1,2,3,4 ... The smallest of the common multiples is called the L.C.M. or least Common Multiple.	Using a numberline, ask children to list multiples discovered. Have them show the relationship between multiples and factors. Ask children to list multiples of given numbers 2 and 3. Eg: 2 = 2,4,6,8,10,12 2 = 3,6,9,12,15 They may circle the common multiples and write down the least common multiple. Taking turns at chalk board, children will use prime numbers to come up with L.C.M. Eg: <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">2</td> <td style="padding: 5px;">2</td> <td style="padding: 5px;">3</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">3</td> <td style="padding: 5px;">1</td> <td style="padding: 5px;">3</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;">1</td> <td style="padding: 5px;">1</td> </tr> </table> $2 \times 3 = 6$	2	2	3	3	1	3		1	1	- Creation of a design on construction paper. - Make factual statements on prime and composite numbers or factors and multiples.
2	2	3									
3	1	3									
	1	1									

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Properties of Odd and Even Numbers**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
M1b – Understand the consecutive sequence and position of numbers M5a – Collect, analyze and present data using diagrams	Mathematics Applications and Connections Course 1 Silver Burdett Gill Mathematics Practice On My Own

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Rational Numbers - Decimals****AREA OF STUDY OUTCOMES****Pupils should:****M1f – Understand the concept of other rational numbers including percent, fractions, decimals, ratio and integers.****CROSS-CURRICULAR OUTCOMES****Pupils should:****CP1b – Examine information related to the problem.****Cp1c- Suggest ways of dealing with problems.**

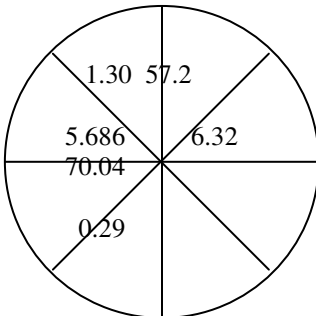
CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
A decimal is a common fraction with its denominator as a power of ten.	Draw squares and explain that it represents a whole. Identify and read numbers written as decimals around the environment. Draw lines down the square to represent tenths. Question class to find what each part is called. Demonstrate how one tenth can be written as $\frac{1}{10}$ or 0.1. Volunteers will use modles and shade some tenths: eg: six tenths and write it in three ways. Six tenths, $\frac{6}{10}$; 0.6. Use graph paper to demonstrate the hundredths and thousandths places.	Ability to write decimals showing tenths, hundreths and thousandths places. Ability to demonstrate a decimal in three ways. Write decimals in expanded form using the tenths, hundredths and thousandths places.

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AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Rational Numbers - Decimals

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT				
The value of each place in a decimal is ten times as large as the value of the place to its right.	Show the value of whole number digits on place value chart using numbers with four digits. Have children identify and say the th in the tenths, hundreths and thousandths. Write a decimal on the place value chart e.g. 0.25, 1.25. Children read decimals. Study place value of each digit on chart. Discuss how the value of digits decreases or increases. Given children cards with decimals. Write on place value chart. Use the spinning wheel, take turns spinning and give decimals shown in words. If answer is incorrect, volunteers recite the correct answer. 	Demonstrate skills in giving place value for a digit in decimal form. Teacher made test to assess children's ability to compare and order decimals through thousandths.				
Decemals can be compared and ordered from least to greatest	Give cards with decimals eg: <table><tr><td>0.10</td><td>0.01</td><td>0.1</td><td></td></tr></table>	0.10	0.01	0.1		Ordering of decimals from least to greatest and vice/versa.
0.10	0.01	0.1				

AREA OF STUDY: MATHEMATICS

STANDARD 111

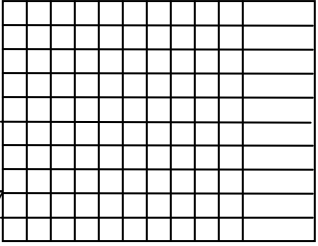
UNIT/THEME: Rational Numbers - Decimals

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
To add and subtract decimals, line up the decimals points then the digits will also be lined up correctly. Add and subtract as with whole numbers.	Ask students to identify the decimals that are not equal. Find cards with equal fractions. Mix up cards with decimals. Children arrange cards in order. Use models of 100 squares units. Ask children to show how 2.5 hundredths is less than seven tenths. Use place value to compare decimals. Line up decimal points of the two numbers. Start at the left comparing the digits 5.1, 5.8. The decimal with the greater value is the greatest. 1 tenth is greater than 8 tenths. So:- $5.1 < 5.8$ Have children add or subtract whole numbers. List decimals on board. Children read and copy lining up vertically. Watch for children who do not place decimals correctly. Show models such as this one. Line up Decimal → Add tenths rename → Add the whole number Add the decimals line up. Do the same for subtracting decimals. Choose addition to solve problems.	Ordering of decimals from least to greatest and vice/versa. Demonstrate skills in choosin addition and subtraction to solve problems. Ability to cooperate in groups to solve problems. Add and subtract a decimal accurately.

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Rational Numbers - Decimals

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
To multiply decimals, multiply as with whole number	Have children create models and use them to add/subtract. Assign group work. Children take 3 or 4 measurement such as width or height, bookcase, door etc. Other record groups choose addition or subtraction to answer questions such as How high is the bookcase? How much higher is the table? Multiply whole numbers with two and three digit numbers eg: 21 211 $\times 2$ $\times 15$ Use a model to multiply decimals 0.6×0.7 1 2 0.7  0.7 1 decimal place <u>0.6</u> one decimal place 0.42 2 decimal places 0.6 There are 42 squares shaded. Find products of some decimals with and without using models.	Interaction within group. Contribution towards group work. Multiplication of decimals accurately. Use of models to show multiplication of decimals.

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Rational Numbers - Decimals**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Decimals may be rounded to any place value position.	Ask children to explain rounding and tell when they use rounded number. Have them round numbers to the nearest tens, Hundreds, thousands. Ask children to state a rule tenths based on their knowledge of rounding whole numbers. (If there are five or more tenths round up. If there is 4 or less tenths round down.) Ask for rule for rounding hundreths to the nearest whole number (if there is 50 or more hundreths round up; If there is less round down. Do the same for thousandths. Give decimals to round off. Solve problems using rounded numbers. Collect performance of favorite athlete in sports and round off the average scores. Exchange with a pair and round off.	Examine decimals and present them in accurate rounding to tenths, hundredths or thousandths. Interpret and solve problems.

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Rational Numbers - Decimals

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Classift Convert Identufy Name Change Compute Demonstrate Estimate Compare Interpret Construct Solve Examine Write Order Apply Practice Measure <u>Attitudes</u> Understanding Participate actively Willing to share, Interact positively Interest in cooperative learning		

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Rational Numbers - Decimals**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
EL2d – Follow Instructions/Directions	Laidlow Mathematics.
EL3h – Apply writing process to their work.	Mathematics Today.
EL4a – Express ideas and opinions.	Mathematics Application and Connections.
EL4e – Express ideas and opinions.	Exploring Mathematics 5.
WT5a – Identify a simple problem.	Exploring Mathematics 4.
WT5b – Design a device to meet a need/solve problem.	Health Mathematics, Connections.
WT5d – Test a simple device to see if it meets a need/solves a problem.	Scott Foresman Math 6. Graph paper, pencils, markers, scissors, bristol board.

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Rational Numbers - Decimals

AREA OF STUDY OUTCOMES

Pupils should:

M1f – Understand the concept of other rational numbers including percent, fractions, decimals, ratio and integers

CROSS-CURRICULAR OUTCOMES

Pupils should:

CP1a – Recognize an issue or problem

CP1b – Examine information related to the problem

SP1a – Take part in group activities

SP2b – Accept major decisions

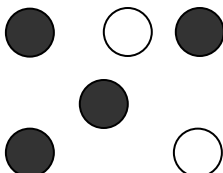
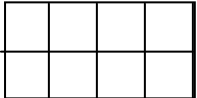
SP3a – Assess their needs/interest

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
A fraction is a unit subdivided into equal-sized parts/regions or a set subdivided into equal sized groups. Eg: <u>parts/regions</u>  - What part of the table top is painted dark green? 3 of the 4 parts of the table top are dark green. <u>3</u> Numerator 4 Denominator	Guided Discovery Method/Cooperative Learning -Set up stations – Pupils work in small groups to visit stations and complete activity/activities and record on paper/in books. Eg: Teacher sets up stations, 1,2,3 (etc). At each, pupils read instructions and complete activities and record findings. <u>Station 1</u> Materials – Typing sheets, rulers, pencils, crayons 1)Fold the paper in half and then in half again 2)Draw lines along the folds 3)Shade 1 region Answer these questions 1)How many pieces of paper do you have? 2)Into how many smaller regions did you fold the paper. 3)Is each region the same size? 4)Can you write a fraction to show what part is shaded? Not shaded?	- Small group activity. - Pupils participate and cooperate in groups to identify fractions of units and sets.

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Rational Numbers - Fractions

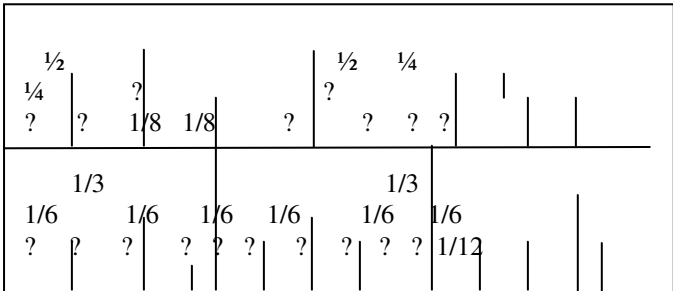
CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Set</u>  -What fraction of the tennis balls are green? 4 of the six are green. $\frac{4}{6}$	<u>Stations 2</u> Materials – small balls of various colours, toycars and trucks, star stickers various colours (etc) *Discuss in your groups and answer the following. (Choose one person to record and another to report) 1)How many balls are there? 5 2)How many are red? 2 out of 5 3)How many are blue? 3 out of 5 4)Write a fraction to show how many balls are blue. $\frac{3}{5}$ of the balls are blue (etc). <u>Station 3</u> Use numberline with questions (etc.) <u>Discussion</u> -Discussion findings from group work. Assign further group work, then individual work. Eg: 1)In the fraction $\frac{2}{3}$ which number shows the numerator? Which the denominator? 2)Look at the diagram. What fraction names the shaded part? The part not shaded?  1) $\frac{3}{8}$ 2) $\frac{5}{8}$ 3)Use the numberline. What fraction names the point labelled 0? Names the point labelled 1? The point labelled A?	• Small group activity. • Pupils participate and cooperate in groups to identify fractions of units and sets. • Group presentation • Write fractions to represent shaded portion of diagrams or parts of a set.

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	0 1 A 1) 0/10 2) 10/10 3) 7/10 3)What fraction of the bananas are red? - 4 5 - four fifths 4)Circle the diagram/figure that illustrates the fraction Two Thirds & Five Sixths.	

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Rational Numbers - Fractions

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Equivalent fractions are fractions that name the same amount.	Use fraction chart to find equivalent fractions  Use fraction chart to answer questions. e.g $\frac{1}{2} = \frac{\quad}{8}$ $\frac{2}{3} = \frac{\quad}{12}$ Children role play real life scenarios to solving problems involving fractions e.g. Sara, Gina and Gus had \$24.00 to divide among them. Sarah got $\frac{5}{12}$ of the money and Gina $\frac{1}{2}$ of the money. - What fraction did Gus get? - Who got the most money? - How much money did Sarah get? Practice Exercise using fractions e.g. Complete: $1\frac{5}{12}$ is greater than $\frac{1}{4}$ by $\frac{\quad}{\quad}$. 2. Complete these sequences: $4\frac{1}{5}, 3\frac{3}{5}, 3, \frac{\quad}{\quad}, \frac{\quad}{\quad}$.	Ability to complete fraction chart with accuracy. Demonstrate accuracy in finding equivalent fractions. Accuracy in working with fractions.

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Rational Numbers - Fractions

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Define Identify Compare Solve Cancel Find Match Order Compute Change Select Investigate Illustrate Apply Substitute Classify Share Analyze Demonstrate Draw Brainstorm Relate Insert Cooperate Express Convert <u>Attitudes</u> Willingness to participate Demonstrate willingness to share Respect towards others Cooperation		

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Rational Numbers - Fractions**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
EL1.a – Use context clues to interpret a selection.	Guiding Children Learning of Mathematics (Teacher's Resource)
EL1.b – Predict what will happen in a sequence of events.	Exploring Mathematics – Scott Foreman & Co
EL1.K – Interpret and follow direction.	Addition – Wesley Mathematics
EL4.a - Express ideas and opinions.	Silver Burdett & Ginn Mathematics
M1.f – Understand the concepts of fraction.	H.B.J. Mathematics
M5.a – Collect, analyze and present data using charts, tables and diagrams.	Health Into Mathematics (Longman) (Teacher's Resource)
	Caribbean Primary Mathematics
	Math Advantage – Middle School – Teacher's Edition – Volume 11
	(Harcourt Brace) (Teacher's Resource)
	Mathematics – Application & Connections. (Course 1)
	Count Me In (Teacher's Book) (Book 1)
	Math Tools For Success (Teacher's Ed)
	Bew Common Entrance Mathematics (Student Resource)

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Systems of Writing Numbers****AREA OF STUDY OUTCOMES****Pupils should:****M1g – Understand other system of writing numbers****CROSS-CURRICULAR OUTCOMES****Pupils should:****SP2a – Take part in group activity****SP2f – Help the group to achieve its goals.**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
A number system is characterized by a set of elements called numbers. Each system can be characterized by its own particular set of symbols and rules governing their use.	Read and write one, two, three and four digit numbers using the Hindu-Arabic System of Numeration. Dicussion to elicit the various systems of numeration. Roman, Hindu-Arabic, Mayan, Egyptian. Listen to stories on he history of these systems.	Write four digit numbers. Write given numbers in Roman, Hindu-Arabic, Mayan, Egyptian Creation and Accuracy of charts showing the various systems of writing numbers. Roman, Hondu-Arabric, Egyptian, Mayan up to 20.

AREA OF STUDY: MATHEMATICS

STANDARD 111

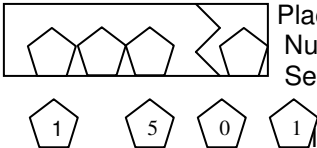
UNIT/THEME: Systems of Writing Numbers

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT																																												
	Teacher present chart with the various symbols for each system 1-10 Roman, Mayan, Egyptian. Hindu-Arabic. <table><tr><th>Hindu-Arabic</th><th>Roman</th><th>Mayan</th><th>Egyptian</th></tr><tr><td>1</td><td>I</td><td>.</td><td>1</td></tr><tr><td>2</td><td>II</td><td>..</td><td>11</td></tr><tr><td>3</td><td>III</td><td>...</td><td>111</td></tr><tr><td>4</td><td>IV</td><td>....</td><td>1111</td></tr><tr><td>5</td><td>V</td><td></td><td>11111</td></tr><tr><td>6</td><td></td><td>VI</td><td>.</td></tr><tr><td>7</td><td></td><td>VII</td><td>..</td></tr><tr><td>8</td><td>VIII</td><td>...</td><td>11111</td></tr><tr><td>9</td><td>IX</td><td>....</td><td>11111</td></tr><tr><td>10</td><td>X</td><td></td><td>1111</td></tr></table> Use symbols already given to write larger numbers up to 20. Write birthdates in Roman System. Write the current year in Mayan System. Create a Mayan Calendar as a part of group work	Hindu-Arabic	Roman	Mayan	Egyptian	1	I	.	1	2	II	..	11	3	III	...	111	4	IV		1111	5	V		11111	6		VI	.	7		VII	..	8	VIII	...	11111	9	IX		11111	10	X		1111	Complete a teacher made test using the additive and multiplication principles. Creativity of a Mayan Calendar Interpret a Mayan Calendar.
Hindu-Arabic	Roman	Mayan	Egyptian																																											
1	I	.	1																																											
2	II	..	11																																											
3	III	...	111																																											
4	IV		1111																																											
5	V		11111																																											
6		VI	.																																											
7		VII	..																																											
8	VIII	...	11111																																											
9	IX		11111																																											
10	X		1111																																											

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Systems of Writing Numbers

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT																
The Western world adopts a numeration system used by the Hindu and one developed by the Arabs. Thus WE ARE USING THE Hindu-Arabic numeration system. The Hindu system can be identified by the following characteristics: a base ten system, positional or place value, multiplication and additive principles, zero as a place holder. <u>Skills</u> <table><tr><td>Discuss</td><td>Display</td></tr><tr><td>Math</td><td>Create</td></tr><tr><td>Tell</td><td>Write</td></tr><tr><td>Discover</td><td>Manipulate</td></tr><tr><td>Demonstrate</td><td>Identify</td></tr><tr><td>Compare</td><td>Substitute</td></tr><tr><td>Recognize</td><td>Calculate</td></tr><tr><td>Listen</td><td>Interpret</td></tr></table>	Discuss	Display	Math	Create	Tell	Write	Discover	Manipulate	Demonstrate	Identify	Compare	Substitute	Recognize	Calculate	Listen	Interpret	Give place value for each digit in a four digit numeral. Children collect strip, write any four digit numeral on each. Tear out each digit so that holes are left on paper.  Place torn strips over those with Numbers. Give value of digits Seen. Collect objects eg: stones, straws, stoppers. Group to show the value of each digit in additive and multiplicative principle. Eg: $(7 \times 100) + (6 \times 10) + (5 \times 1) = 700 + 60 + 5 =$ 765 “Guessing Game” teacher give clues. Eg: “How many digits are there in the number <u>two hundred</u> ninety five?” “What is the value of 6 in the number three hundred <u>sixty four</u>?” Children give oral answers.	Contribution towards group work. Interaction within group. Ability to interpret and give value of a number in different systems.
Discuss	Display																	
Math	Create																	
Tell	Write																	
Discover	Manipulate																	
Demonstrate	Identify																	
Compare	Substitute																	
Recognize	Calculate																	
Listen	Interpret																	

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Systems of Writing Numbers**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Attitudes</u> Understanding Enjoyment Appreciating Sharing Participating Awareness		

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
SP2.a – Take part in group activity SP2.f – Help group to achieve goals. EL1.K – Interpret and follow Instructions EL3.d – Produce work that is legible and acceptable. EL4.a – Express ideas and options. WT4.a – Construct a simple device to meet a need. WT5.c – Identify an area of need.	Power Math For Elementary and Secondary School Count me in Bk 1 Learning Mathematics 4 th Edition. Elementary Mathematics 4 Paper, Glues, Scissors, Bristol boards, Markers, Available Materials, from the environment.

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Two and Three Dimensional Figures

AREA OF STUDY OUTCOMES

Pupils should:

M2a – Understand the geometric properties of some common two dimensional and three dimensional figures.

M2b – Understand how the position of two dimensional shapes is affected by movement.

CROSS-CURRICULAR OUTCOMES

Pupils should:

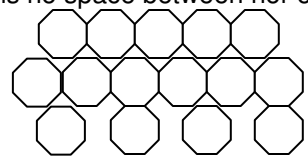
CP1b – Examine information related to the problem/issue

SP2a – Take part in group activities

SP2b – Express opinions and feelings

SP2e – Lead and follow where appropriate

SP2f – Help group achieve goals

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
A polygon is a closed figure all of whose sides are line segments. Polygons are named by their number of sides.  Triangles (3 sides)  quadrilateral (4 sides)  pentagon (5 sides)  octagon	Identify triangles, quadrilaterals, pentagon, hexagon, heptagon and octagon using picture and diagrams (Through labelling, matching, classification, comparing and contrasting). 2.Draw polygons. 3.Identify polygons in the environment eg. Traffic signs & architectural designs. 4.Use polygons to construct kites. 5.Make mosaic sing polygons. 6.Crete designs to show tessilation (set shapes so that there is no space between nor overlapping). Eg: 	Discuss, examine and record data. Label and classify polygons. Compare and contrast polygons.

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Two and Three Dimensional Figures

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT								
A triangle is apolygon which has three sides. Traingles can be classified by angle measures or by the number of congruent sides. An acute triangle has three angles each less than 90o. An obtuse triangle has one angle which measures between 90o and 180o. A <u>right angle</u> triangle has one of its angles measuring 90o. An <u>equilateral</u> triangles has three congruent sides. An <u>isosceles</u> triangle has two equal angles and two congruent sides. A <u>scalene</u> triangles has no congruent.	Present quadrilaterals on geoboard and give samples. Observe, examine and record characteristics of quadrilaterals (using the discovery method). Identify triangles through labelling, matching, classification comparing and contrasting. Construct and cut the various types of triangles. Identify and draw the various triangles in their environment. Use triangle to make designs eg: pyramids. Eg: Use table to check angles and sides of types of triangles. Eg: <table><tr><td>Triangles</td><td>Equal Sides</td><td>Equal Angles</td><td>Right Angle</td></tr><tr><td></td><td></td><td></td><td></td></tr></table> Use riddles to reinforce concepts about types of triangles	Triangles	Equal Sides	Equal Angles	Right Angle					Discuss, examine and record data. Label and classify triangles. Compare and contrast triangles. Practice and demonstrate drawing types of triangles. Distinguish types of triangles using given properties.
Triangles	Equal Sides	Equal Angles	Right Angle							

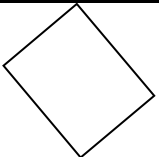
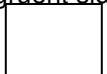
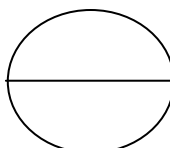
AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Two and Three Dimensional Figures**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
A quadrilateral is a four sided figure. Certain quadrilaterals have special names because they have characteristics that distinguish them from other quadrilaterals. A parallelogram is a quadrilateral with both pairs of opposite sides parallel.  A rectangle is a parallelogram with four right angles.  A rhombus is a parallelogram with four congruent sides.	Use Venn Diagrams to show the relationship of rectangles to parallelograms, rhombuses and squares. Use a Venn Diagram to show that squares are a subset of rhombuses which are a subset of parallelogram. Use quadrilaterals to make patterns/designs. Recognize quadrilateral on quilts and other fabrics.	Label and record characteristics of quadrilaterals. Compare and contrast quadrilaterals. Draw quadrilaterals using properties. Distinguish quadrilaterals in patterns.

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Two and Three Dimensional Figures

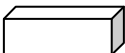
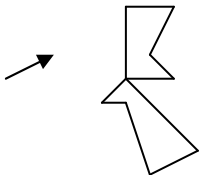
CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
 A square is a parallelogram with four right angles and four congruent sides.   A circle is the set of points in a plane that are the same distance from a given point, the centre. You name a circle by its center. A radius is any segment connecting the center to a point on the circle.	Use games to check and identify properties of polygons eg: No. of Sides, Equal Sides, Equal Angles, right angles etc. Use string to measure radius, diameter and circumference of circles. Draw circles of different sizes and insert radius, diameter and circumference. Use activities to prove that $2r = d$ or $\frac{1}{2}d = r$	Label and record properties of circles. Draw circles and insert radius, diameter, circumference. Measuring to prove given dimensions.

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Two and Three Dimensional Figures

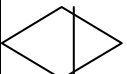
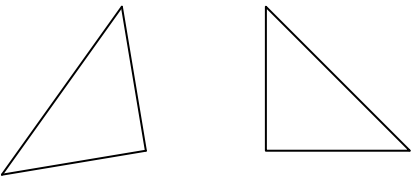
CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT												
A diameter is any segment that passes through the center and has both end points on the circle. (The diameter is twice the length of the radius). The distance around the circle is its <u>circumference</u>. Figuring a figure over a line is called a <u>reflection</u>. Both the position and location change.	Identify these shapes with classroom objects and buildings. Examine for special features: <u>Faces</u> <u>edges</u> <u>vertices</u> Use a table to record properties <table><tr><td>Solids</td><td>No of Faces</td><td>No of flat edges</td><td>No of Curved faces</td><td>No of Vertices</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	Solids	No of Faces	No of flat edges	No of Curved faces	No of Vertices								Compare and contrast properties of 3-d figures. Examine and record properties of solids.
Solids	No of Faces	No of flat edges	No of Curved faces	No of Vertices										

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
 Cube  Rectangular Prism  Sphere  Cylinder A movement that doesn't change the size or shape of a figure is a rigid transformation. Turning a figure round a point is called <u>rotation</u>. Both the position and location of the figure change.	Construct models of common solids using nets. Use Riddles 'What Am I' to name solids. Use containers to make objects: cups, planets, Kaleidoscope, telescope, caps etc. Demonstrate movement of 2-D shapes. Point of rotation 	Make models of solids using nets. Identify objects with their proper names. Explore changes through movement of figures. Ability to make judgement about which movement is possible.

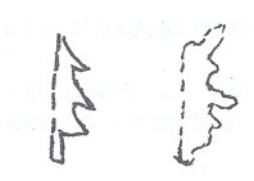
AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Two and Three Dimensional Figures

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Solid Shapes Solids are 3-dimensional shapes. Regular solids have specially defined properties by which they can be identified. Eg:  Cylinder  Cone  (Pyramid) A figure is <u>symmetric</u> if you can fold it and make the two parts match. The fold is a <u>line of symmetry</u>.	 Practice transformation using as many shapes as possible. Use mirror for demonstration of reflection. Children use cut out diagrams of polygons to explore for lines of symmetry. Children note that only congruent figure have line symmetry. Challenge children to find out that a polygon can have more than one line symmetry. Eg. How many lines of symmetry do these figure have? A square a triangle a pentagon a hexagon (Use cut out figures)	Concept of line symmetry Gain information from result of experiment.

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Two and Three Dimensional Figures**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	Children discover line symmetry in letters. Through exploration, children will note that some letters have no line symmetry. Use colorful material for children to use line symmetry to create pictures of objects and animals eg:  Allow children to create their own designs using line symmetry.	Information gathering. Analysis of information Ability to self-assess accuracy of information to follow instruction. Presentation of information. Creativity in using line symmetry.

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Two and Three Dimensional Figures**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Identify Label Match Classify Compare Contrast Create Draw Construct Apply Examine Record Observe Recognize Demonstrate Analyze Explore Judge Measure Distinguish <u>Attitudes</u> Industriousness Cooperation Share Respects opinion of others Interest Participation		

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Two and Three Dimensional Figures**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
M2.c – Understand degrees as a measure of turn M5a – Analyze and present data using tables EA1e – Explore and experiment to create visual images EL4b – Use correct pronunciation and appropriate and stress EL4e – Ask questions and give information	Math Advantage Middle School 1 – Middle School 1 Middle Grades – Math Tools for Success. Scott Foreman Mathematics Grade 5. Today's Mathematics Mathematics Education Module 10. –(Distance Education Program),

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Lines/Line Segments/Angles

AREA OF STUDY OUTCOMES

Pupils should:

M2C – Understand degrees as a measure of turn.

CROSS-CURRICULAR OUTCOMES

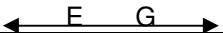
Pupils should:

SP2a – Take part in group activities

SP2p – Help the group achieve its goal

SP3b – Assess progress

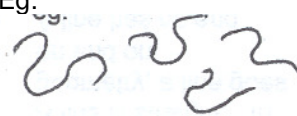
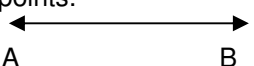
EL2b – Follow instruction and directions.

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Points • A point is represented by a dot • Points are often labelled to help you tell them apart. • Geometric figures are often named by their points. • Lines • A line is straight. In geometry, a line goes on and on. • A line has no end points. Line EG or Line GE 	Use a road map and 'travel' from point to point. Draw map of parts or sections of community – 'travel' from point to point. Connect dots in series – using letters, numbers, shapes. Create patterns using points. Use shapes – real objects, pictures of objects, identify, discuss, define. - straight - line segments - points	The ability to follow directions from point to point. Competence in connecting dots in series. Recognition of: - curved lines - straight lines - line segment - ray - point - angles - parallel lines - intersecting lines

AREA OF STUDY: MATHEMATICS

STANDARD 111

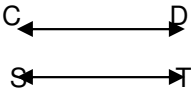
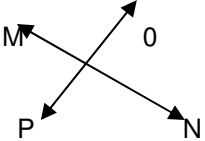
UNIT/THEME: Lines/Line Segments/Angles

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
- Capital letters are used to name lines, line segments, rays. - Lines can also curve Eg:  Line Segments - In polygons and other geometric figures, all the edges are segments. - A segment is part of a line. - A segment has two end points.  Segment AB or segment BA - Segments meet at point called vertices. Ray - A ray is also part of a line. - It goes on and on in one direction. - A ray has one end point.	Connect dots and form curve lines. Run/walk from point to point in a zig-zag and curve fashion. Work in pairs with flashlights and discuss rays, lines. Use the sun and discuss rays. Carry out experiment to create their own rays. Draw, label and name - a point - a line - a line segment - a ray Use streets in one community, the flow of traffic and discuss parallel lines. Search/find parallel lines in pictures in the immediate environment. Draw parallel lines. Use a map and locate villages at intersections. Locate streets in the community. Work cross-stiches. Use x's to make patterns. Draw intersecting lines.	-Ability to interact in groups. -Ability to work with partners. -Cooperation/performance in groups. -Make oral report on findings. -Understanding and explaining the different terms. -Measure and construct angles. -Classification of angles according to shape and size. -Match names to the different geometrical figures. -Competence in measuring and constructing lines. -Creative ability in using x's, circles and form patterns.

AREA OF STUDY: MATHEMATICS

STANDARD 111

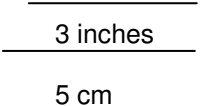
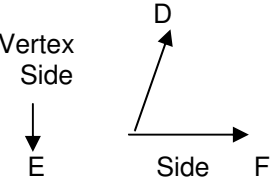
UNIT/THEME: Lines/Line Segments/Angles

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
 Ray XY The end point of a ray is always given first when naming a ray. Parallel Lines -are lines that never meet  Lines CD and ST are parallel lines Intersecting lines -are lines that meet at a point  Lines MN and PO are intersecting lines. They meet at a point (Point A)		

AREA OF STUDY: MATHEMATICS

STANDARD 111

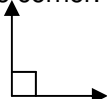
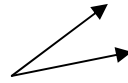
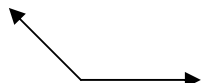
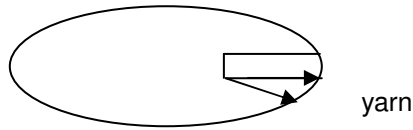
UNIT/THEME: Lines/Line Segments/Angles

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Lines can be measured in linear measure. Eg: yards, feet, inches. They can also be measured using the metric system. Eg: centimetres, metres.  Angles An angle is formed when 2 rays meet:-  • Ray ED and ray EF form an angle. • Both rays have the same end point. • Point E is the vertex of the angle. • The two rays are the sides of the angle. • Capital letters are used to name angles.	• Search/find intersecting lines – objects, pictures. Create patterns using intersection lines. • Use a ruler and measure lines using standard units of measure, metric units of measure, • Use a ruler, construct lines using standard and metric units of measures. • Visit resource personnel to discuss the use of line segments in field of work. Eg: builder, surveyor. Locate angles in the immediate environment. Search/find angles objects, pictures. Discuss -What is an angle -How an angle is formed. –Use diagrams of angles and name angles. Use clocks, diagrams of the points of the compass, shapes, identify and name. - right angles - acute angles	Presenting of data collected. Ability to measure lines accurately using standard and metric units. Describe aspects of measurement using standard and metric units. Organize details and information collected. Identify what they know about the topic. Collection and presentation of data. Organize information to make simple charts, webs, illustration. Describe key features. Identification of: - different angles - Key features - Specific details

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Lines/Line Segments/Angles

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
E.g. Angle DEF or angle FED or angle DEF or angle FED or angle E. Kinds of Angles -A right angle forms a square corner.  -An acute angle is smaller than a right angle  -An obtuse angle is larger than a right angle  The Unit used to measure an angle is degree. A protractor is used to find the measures of angles.	- Obtuse angles Discussions aided with diagrams: - formation of right angles. - size of – acute angles obtuse angles Constructing a circular disc, consisting of a permanent ray, a movable ray made of cardboard, string or yarn. Work in pairs using the ray to form – right, acute and obtuse angles. Use the string in yarn and specify which angle the partner must identify.  Construct a cardboard protractor and discuss its structure and use.	Accurate construction of rays. Interaction with partner cooperation. Ability to produce types of angles. Identify what they know about angles.

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Lines/Line Segments/Angles

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
A protractor is marked with 180 degrees. • A right angle measures 90° • An acute angle measures less than 90° • An obtuse angle measures greater than 90°, less than 180° Circle • Circle is a closed figure. • A circle measures 360°	Use diagrams of angles, identify the kind of angle, demonstrate how to measure them using the protractor. Discuss/describe the size of: - a right angle - an acute angle - an obtuse angle Search/find circular shapes. Draw/color different size circles. Use circles and make patterns or complete pictures of objects. Use the clock, diagram of the compass, a cross. A straight line, the pupils themselves and demonstrate and discover the number of degrees in a circle. Use diagrams of angles and measure and draw 45°, 90°, 180° Keeping a math journal.	Ability to measure circles using protractor. Ability to answer questions about the different types of angles. Sort and classify angles. Accuracy of information produced. Accuracy demonstration of finding. Interpretation of discovery. Organization of information in journal.

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Lines/Line Segments/Angles

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Draw Connect Create Label Locate Search Find Commjnicate Sort and classify Identify Construct Describe Organize Interpret Measure Collect Present Match Interact <u>Attitudes</u> Cooperation Willingness to participate/erform in groups. Demonsrtate willing to share ideas and opnions Respect ideas and opinions of others.		

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Weight****AREA OF STUDY OUTCOMES**

Pupils should:

M3a – Measure capacity, distance, weight and time using standard and non-standard measuring devices.

CROSS-CURRICULAR OUTCOMES

Pupils should:

CP1b – Examine information related to problem/issue

SP1a – Recognize values associated with choices

SP2a – Take part in group activities

SP2b – Express opinions and feelings

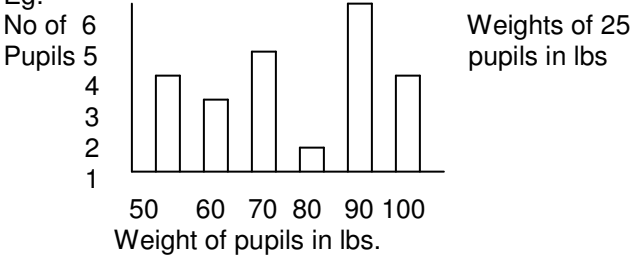
SP2f – Help the group to achieve its goals

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
1.Weight/Mass is how heavy something is. 2.All objects can be weighed using non-standard customary and metric units. Customary units of weights: 1 lb = 16ozs ton =2,240 lbs Metric Units of Mass: 1kg = 1000g 1 tonne = 1000kg	1.Use of dictionary to find meaning of weight. 2.Introduce customary units to measure weights eg: 1 lb = 16ozs; 1 ton = 2,240 lb. Introduce metric unit to measure mass: 1000g= 1kg Identify objects that can be measured using customaryand metric units. Estimate weight using no scale. Compare the weight of a pet to something with a weight you know eg: The cat is as heavy as this book. Construct a balance scale to compare weights eg: Light/lighter-heavy/heavier.	1.Use dictionary to find meaning of weight. 2.Introduce tables for customary and metric units. Estimate weight without the use of scale. Compare and contrast weights of objects. Construct balance scale to compare weight.

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Weight

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Units of weight can be converted from one unit to another. Problems can be solved using one's own problem solving strategies.	Use bathroom scale to weigh each other and round their weights in lbs. They will now put these weights on a bar graph. Eg:  Weights of 25 pupils in lbs Discuss data shown on graph. List types of scales used to measure weight. Customary units used to measure-lb and oz and metric measures gram and kilogram. Conversation of units eg: How many ozs in 2 lbs? The mass of the world's largest flower is 7000g. How many kg is that? One great white shark weighs 1,587 lb. How many lbs less than 1 ton is this? One watermelon weighs 3,000g. How many kg is this?	Compare each other's weight to find a) same weight, B) lighter, C) heavier. Discuss and analyze data shown on graph. List types of scales. Ability to convert one unit of measurement to another. Demonstrate and pattern solving problems involving weight.

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Weight

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT								
<u>Skills</u> Use Convert Illustrate Interpret Analyze Measure Identify Compare Find Discuss List Construct <u>Attitudes</u> Sharing Cooperation Participate Appreciate Assume responsibility Show Understanding Demonstrate Greater Awareness Show interest	If a watermelon weighs 13 lb. How much will 3 watermelons of the same size weigh? <table><tr><td>5kg</td><td>400kg</td><td>13 lb</td><td>14oz</td></tr><tr><td>- 3kg</td><td>850g</td><td>12 lb</td><td>8oz</td></tr></table>	5kg	400kg	13 lb	14oz	- 3kg	850g	12 lb	8oz	
5kg	400kg	13 lb	14oz							
- 3kg	850g	12 lb	8oz							

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Weight**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Convert Calculate Identify Apply Solve Decision Interpret Making find Analyze Measure Follow Direction Express Recall <u>Attitudes</u> Show pride in work Show appreciation Assume responsibility Demonstrate willingness Show interest Show greater understanding Demonstrate greater awareness of surroundings		

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Weight**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
EL1.a – Use context clues to read a selection.	Guiding childrne's Learning of Mathematics (Teacher Resources)
EL1.c – Read fluently with appropriate intonation, and expression for information and pleasure.	Exploring Mathematics – Scott Foreman and Co.
EL1.d – Use context clues to interpret a selection.	Addison – Wesley Mathematics
EL1.h – Identify, cause and effect relationship.	Silver Burdett and Ginn Mathematics
EL1.j – Make inferences and draw conclusions.	Health into Mathematics (Longman) (Teacher Resource)
EL1.k – Interpret and follow instructions/directions.	Caribbean Primary Mathematics
EL3.a – Demonstrate their ability to write grammatically correct sentences.	Math Advantage – Middle School 1
EL.a – Express ideas and opinions.	Teachers Edition – Volume 11 (Harcourt Brace) (Teacher Resources)
M3.a – Measure capacity distance, weight and time using standard measuring devices.	
M4.a – Make reasonable approximations.	
M5.a – Collect, analyze and present data using charts, graphs, tables and diagrams.	
EA1. – Explore and experiment to create visual images through the use of a variety of concreate materials in the environment.	

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Capacity

AREA OF STUDY OUTCOMES

Pupils should:

M3A – Measure capacity, distance, weight and time using standard and non-standard measuring devices.

CROSS-CURRICULAR OUTCOMES

Pupils should:

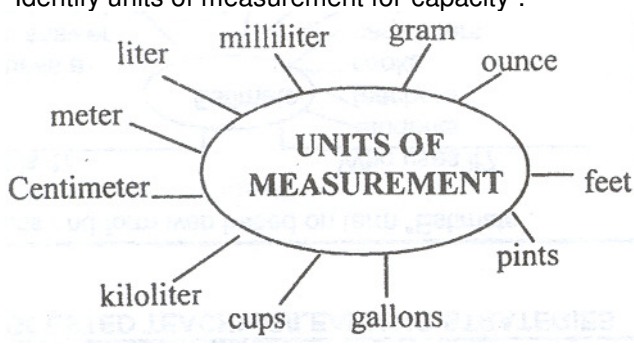
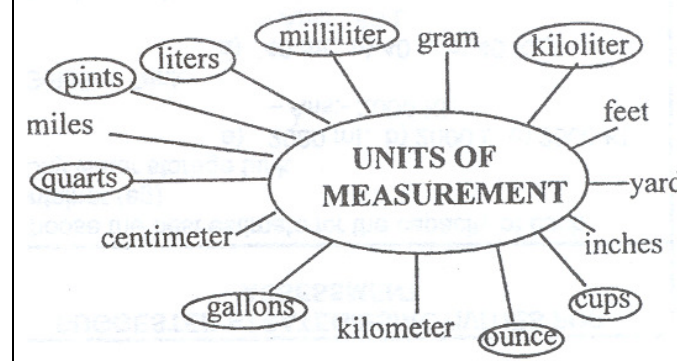
CP1b – Examine information related to problem/issue

SP1a – Recognize values associated with choices

SP2a – Take part in group activities

SP2b – Express opinions and feelings

SP3a – Assume their needs/interests

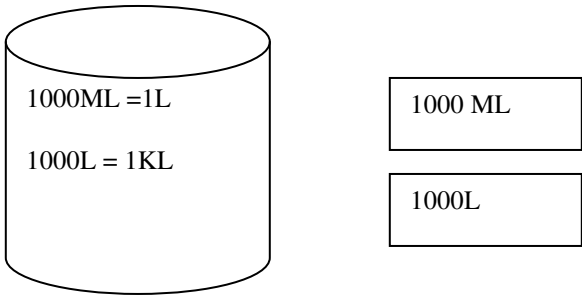
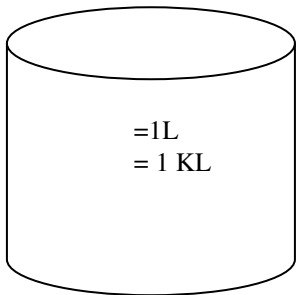
CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
1. Capacity is the amount a container will hold when filled. 2. Metric units of capacity are: -millileter -liter -kiloliter Customary units of capacity are: -ounces -cups -pints -quarts -gallons	1. Discuss jumped word “city paac” – arrange letters to form “capacity” 2. Recall meaning of “capacity”. 2. Brainstorm and form “web” for units of measurement. -Identify units of measurement for “capacity”. 	Children unscramble word to spell “capacity”. Children locate and recall meaning of capacity using dictionary. 2. Children identify and circle units of measurement/capacity 

UNIT/THEME: Capacity**UNIT/THEME: Capacity****UNIT/THEME: Capacity**

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Capacity

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Attitudes Cooperate Participate Appreciate Assume responsibility Demonstrate greater awareness Willingness to share Metric units of capacity are 1000 ml = 1L 1000 L = 1KL Metric units of capacity can be converted from one unit to another. -To convert large to small units-multiply 1L = 1000mL 5L = 1000mL x 5 = 5000 mL	 Complete chart by inserting card with correct answer Measure various containers using ml and L. Brainstorm and identify how to convert units from large to small. Group work converting units from large to small. Individual work on same.	 Insert card to complete table Children measure and record capacity of containers in ml. Or L eg: jam jar, bucket, cup, bottles (etc.) A squash bottle has 1 litre. Children convert L to mL eg: 1 liter= 1000 mL 7 liters= 1000 mL x 7 $\begin{array}{r} \times 7 \\ 1000 \\ \hline 7000 \end{array}$ L Ans = 7 L = 7000 mL

AREA OF STUDY: MATHEMATICS

STANDARD 111

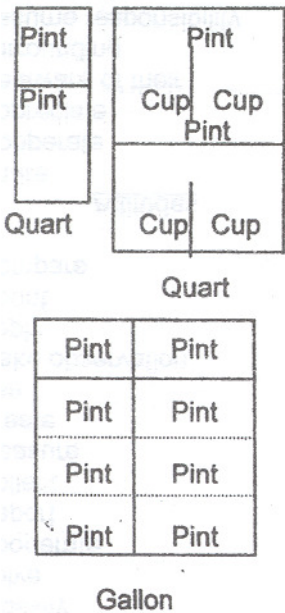
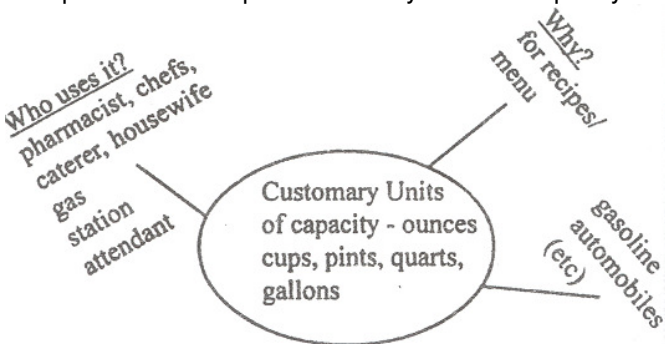
UNIT/THEME: Capacity

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Select Measure Record Share Classify Use Convert Solve Investigate Apply Follow Direction Express Insert <u>Attitudes</u> Share Cooperate Participate Appreciate Assume Responsibility Show greater understanding		

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Capacity

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
-Customary units of capacity can be converted from one unit to another.  Quart Quart Gallon	Complete web on topic 'Customary units' of capacity  b)Brainstorm and discuss converting units from one form to another using illustration.	Children identify and relate relevance of units of capacity 'customary' to everyday living e.g. -A chef uses cups, pints to measure liquid for recipes/menu. -A gas attendant serves oil for automobiles in quarts and gallons (etc.) b) Children convert units from one form to another. 1 gal = <u>8</u>pt 2 pt = <u>4</u>c 4c = <u>1</u> qt

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Capacity

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Skills Discuss Record Classify Solve Coooperate Report Collect Measure Create Use Make observation Apply Count Compare Attitudes Share Cooperate Appreciate Be aware of their surrounding Assume responsibility Show greater understanding Enjoyment Express interest		

AREA OF STUDY:

UNIT/THEME:

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
To convert small units to large units –divide $1000 \text{ mL} = 1 \text{ L}$ $8000 \text{ mL} = 8000 \div 1000 = 8 \text{ L}$ 2 tablespoons = 1 ounce 8 ounces = 1 cup 2 cups = 1 pint 2 pints = 1 quart 4 quarts = 1 gallon Skills Collect Record Insert Discuss Convert Measure List Identify Compare Draw Calculate Solve Find Cooperate	Discuss converting small units to large units. Group work to solve exercises based on same. Individual work based on same. Discuss and have pupils insert the 'answer card' to complete the table. b.measure various containers using customary units. 2 tablespoon 1 pint 1 cup 2 pints 4 quarts _____ = 1 ounce _____ = 8 ounce _____ = 2 cups 1 quart = _____ 1 gallon = _____	Children convert small units to large units. $9000 \text{ mL} = \underline{\hspace{1cm}} \text{ L}$ $1000 \text{ mL} = \underline{\hspace{1cm}} \text{ L}$ $9000 \text{ mL} = 9000 \div 1000 = 9 \text{ L}$ Children insert correct answer card to complete table. B) Measure and record capacity of various containers (eg) jam jar, dish pan etc.

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Capacity

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Attitudes</u> Share Cooperate Participate Appreciate Express interest in Assume responsibility Show greater Understanding Demonstrate greater awareness of their Surrounding. Write or to order metric and customary units of capacity. 1 liter 1 milliliter 2000 ml 3 L 1 tablespoon 1 ounce Problem solving strategies applied to the concept of capacity. • Question • Data • Plan • Answer • Check	Discuss sign . > < Group work and individual work using signs to order nits of capacity. Discuss checklist for pupils to follow when solving problems. -Group and individual work – Discuss and report on how to solve given task or new Math ideas. Collect and display with recipes reflecting units of capacity. Collect and organize booklet with recipes reflecting units of capacity to make (eg) Milk Shape.	Children insert > < to order units of capacity eg: 3000 ml 2 L 4000 ml 5 L 1 qt. 1 gal Children apply all five steps to solve problems based on capacity. (Customary and Metric) eg: Tim is making a fruit drink. He has 4 cups of orange juice, 2 pints of pineapple juice, 1 pint of apple juice and 1 quart of grapefruit juice. a)How many cups of juice does Tim have in all? b)How much does he have in pints?

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Capacity

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Convert List Brainstorm Apply Discuss Dramatize Demonstrate Select Identify Locate Relate Draw Measure Cut/Solve Compare Add Record <u>Attitudes</u> Cooperate Participate Work Show satisfaction Assume responsibility Demonstrate greater awareness Enjoyment Appreciation Sensitivity for other people's feelings Willingness to share	Organize trip Coke Factory for observation of work involving capacity.	

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Capacity**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Select Measure Record Share Compare Analyze Locate Identify Make decisions Find Follow directions Insert Write Circle <u>Attitudes</u> Cooperate Participate Demonstrate willingness Show understanding Assume responsibility		

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Capacity**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
EL1.a – Use context clues to read a selection. EL1.c – Read fluently with appropriate intonation and expression for information and pleasure. EL1.d – Use context clues to interpret a selection. EL1.e – Identify main ideas and supporting details. EL1.K – Interpret and follow instructions/directions. EL3.a – Demonstrate their ability to write grammatically correct sentences. M4.a – Express ideas and opinions. M3a. – Measure capacity distance, weight and time using standard and non-standard measuring devices. M4.a – Make reasonable approximation based on relevant life experiences. M5.a – Collect analyze and present data using charts, graphs tables and diagrams. Ea1.g – Explore and experiment to create visual images through the use of a variety of concrete materials in the environment.	Guiding children's Learning of Mathematics (Teacher Resource) Exploring Mathematics – Scott Foreman and Co. Addison – Wesley Mathematics. H.B.J. Mathematics. Health into Mathematics (Longman) (Teacher Resource) Caribbean Primary Mathematics Math Advantage – Middle School 1 Teachers Edition – Volume 11 (Harcourt Brace) (Teacher Resource)

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Time****AREA OF STUDY OUTCOMES**

Pupils should:

M3a – Measure capacity, distance, weight and time using standard and non-standard measuring devices.

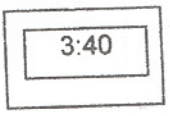
CROSS-CURRICULAR OUTCOMES

Pupils should:

CP1a – Recognize a problem

CP1b – Examine information related to the problem

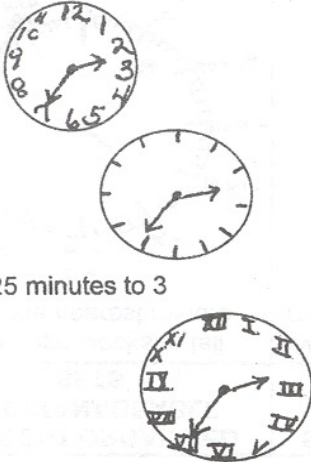
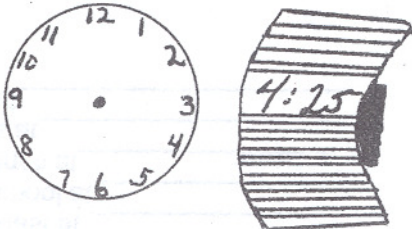
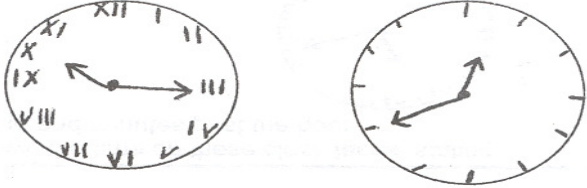
SP2a – Take part in group activities

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
A device used to measure time is a clock There are two types of clocks. A standard clock and a digital clock.	Observe standard and digital clocks and tell time shown on them. Standard  20 minutes to four or 20 to 4 Digital  3:40 In pairs, one student writes a digital time and the other draws a clock face with hands to match the digital time. (Student switch places)	Observe and compare times using standard and digital clock.

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Time

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Faces on clocks may vary- eg: Arabic numbers, Roman Numerals and thick marks representing numbers.  25 minutes to 3	 DRAW CLOCK HANDS TO SHOW THE TIME Write Roman Numerals from 1 to 12. State time shown on clocks below numbers and words. <u>15 minutes past 10</u> 10:15 <u>20 minutes to 1</u> 12:40 	Ability to work with and tell time clocks with numbers. Roman Numerals and thick marks representing numbers.

UNIT/THEME: Time**UNIT/THEME: Time****UNIT/THEME: Time**

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Time

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
9:00 a.m. means 9 o'clock in the morning. 9:00 p.m. means 9 o'clock at night. A.M. means before midday, that is, between midnight and midday (noon). P.M. means after midday, that is, between midday and midnight. Time is measured and recorded by numerous devices. The calendar is used for measuring days, weeks months and years. 24 hours = 1 day 7 days = 1 week 4 weeks = 1 month 12 months = 1 year 52 weeks = 1 year 365 days = 1 year 366 days = 1 leap year	Use problem solving strategies to solve the following: 1.How many hours is there between 6:30 a.m. and 11:30 a.m? _____ 2.What is the time 5 hours after 2:30 p.m? _____ hrs 15 mins during the afternoon. How much time do we spend in clas for the day? _____ Read poem and answer questions on it. Thirty days have September, April, June and November. And just for fun, all the rest have 31. except February. February alone doesn't hod the line. For 3 years it has 28 and in the fourth year 29. Questions: 1.How many days are there altogether in month with 30 days? _____ 2.How many days are there in the months of January and February (leap year)? _____	Ability to use problem solving skills to solve problems? Use and interpret calendar.

UNIT/THEME: Time**UNIT/THEME: Time****UNIT/THEME: Time**

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Time

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT															
4 weeks = 1 month (mth) 12 months = 1 year (yr) 52 weeks = 1 year 365 days = 1 year 366 days = 1 leap year A time-line is useful for working out how many years later things happen.	A bus left terminal at 11:15 a.m. and arrived at its final stop at 2:26 p.m. How long did the journey take? <table> <tr> <td></td><td>Hr</td><td>Min</td></tr> <tr> <td>11:15 a.m. to 12 noon =</td><td>0</td><td>45</td></tr> <tr> <td>12 noon to 2:26 p.m. =</td><td>2</td><td>26</td></tr> <tr> <td>time for journey 45 min + 2 hrs 26 mins</td><td>3</td><td>11</td></tr> <tr> <td>=</td><td>3 hrs 11 mins</td><td></td></tr> </table> Miss Arnold arrived at work at 7:56 a.m. and left at 4:45 p.m. How long did she work that day.(including lunch-time)? Use this time-line to work out answers. Joan went to Primary School Joan went to Secondary School eg: a)How many years did Joan spend in primary school? b)Three years before Joan went to Secondary school was _____		Hr	Min	11:15 a.m. to 12 noon =	0	45	12 noon to 2:26 p.m. =	2	26	time for journey 45 min + 2 hrs 26 mins	3	11	=	3 hrs 11 mins		Ability to use and interpret a TIME-LINE
	Hr	Min															
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=	3 hrs 11 mins																

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Time**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
M1g – Understand other Systems of Writing M4b – Use logical reasoning based on meaningful data to draw conclusions M5a – Analyze data using graphs EL2b –Identify a sequence of events EL2c –Predict what will happen in a sequence of events EL2d – Follow instructions/directions EL2e – Interpret and respond appropriately to messages conveyed through visual images EL4e – Ask questions and give information SL1c –Identify a sequence of events SL1d – Follow instructions and directions	Health into Math (Longman Teacher Resource) Caribbean Primary math Math Advantage Teachers Edition – Volume 11 H.B.J. Mathematics Addition – Wesley Math Exploring Math – Scott Foresman & Co.

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Distance****AREA OF STUDY OUTCOMES**

Pupils should:

M3a – Measure capacity, distance, weight and time using standard and non standard measuring devices.

CROSS-CURRICULAR OUTCOMES

Pupils should:

CP1a – Recognize an issue or a problem

CP1b – Examine information related to the problem

SP1b – Choose between alternatives based on values

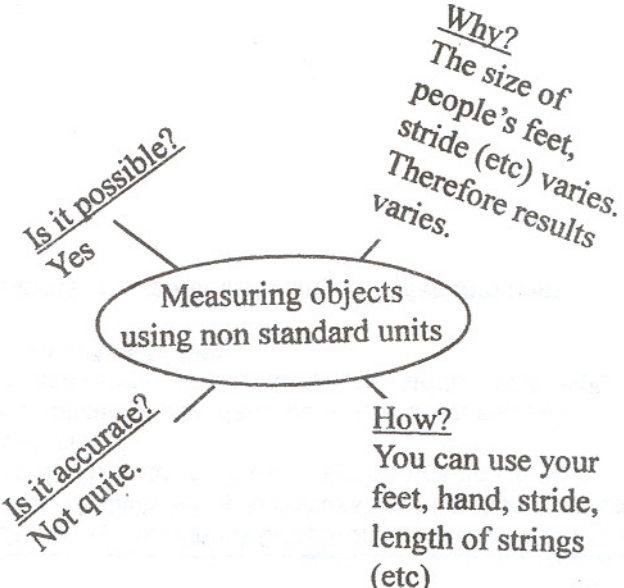
SP2a – Take part in group activities

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
The extent of space between interval is distance, it can be measured using non-standard and standard units.	Discovery Learning & Cooperative Learning Strategies Group activity –Pupils discuss mathematical, related words. Locate, select and record meaning in Math journal. Eg: distance, standard, perimeter area, estimate, measurement, appropriate, pace, stride, cubit, digit, spn, unit, side (etc). Discuss measurement using non-standard units.	-Group cooperation in selecting and recording suitable meaning for math related words in math journal  Express ideas opinions to form a web or given topic. • Group presentation

AREA OF STUDY: MATHEMATICS

STANDARD 111

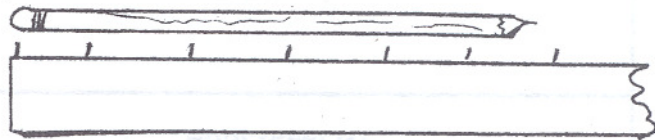
UNIT/THEME: Distance

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	[Use questions to stimulate discussions and form a web] eg:  Cooperative Learning –Discuss and select non-standard units for measuring objects in the classroom. Invent a non-standard unit of their own and use to measure various objects in the class E.g.	

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Distance

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES		SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT												
	<table><tr><th>Non-Standard Unit</th><th>Object Measured</th></tr><tr><td>1. palm 2. stride 3. straw 4. paper clip 5. match</td><td>book 3 palm length of class - stride wide of desk - straw pencil – paper clip shoe –match unit</td></tr></table> -Individual work using non-standard unit to measure some objects in class. (eg) <table><tr><th>Objects</th><th>Paper Clip</th><th>Stride</th><th>Span</th></tr><tr><td>1.broom stick 2.table top 3.width of classroom 4.hallway</td><td></td><td></td><td></td></tr></table> Measure lengths of objects using teacher prepared rulers Both C M and Meter stick <u>with unit mark only</u>	Non-Standard Unit	Object Measured	1. palm 2. stride 3. straw 4. paper clip 5. match	book 3 palm length of class - stride wide of desk - straw pencil – paper clip shoe –match unit	Objects	Paper Clip	Stride	Span	1.broom stick 2.table top 3.width of classroom 4.hallway					Explain the use of a non-standard unit “that they” invented and the item that they measured using this non-standard unit. - Measure and record things on a given table. Count units to measure lengths in whole numbers. Eg: Length of a pencil Length of a blackboard [meter stick] Length of classroom (etc) [meter stick]  Ans: The pencil measures <u>7</u> units.
Non-Standard Unit	Object Measured														
1. palm 2. stride 3. straw 4. paper clip 5. match	book 3 palm length of class - stride wide of desk - straw pencil – paper clip shoe –match unit														
Objects	Paper Clip	Stride	Span												
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AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Distance

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Length of objects can be measure using metric units. - mm - cm - dm - m - km Each unit of length in the metric system has a value and can be compared with another unit.	• Discovery Learning/Cooperative Learning • Group activity – measure lengths of objects and record measurement, in mm, cm, and m. • Individual work measure line segments and record findings. • Group activity – discuss that metric measurement uses the base 10 number system. The relationship in the metric system and place value position is the same. Each unit is 10 times greater than the preceding unit. • Children compare and order metric units of length using $>$, $<$ or $=$ Eg: a) $1\text{m} > 10\text{ cm}$ b) $300\text{m} < 1\text{ km}$ (etc) c) $1\text{m} = 100\text{ cm}$ • Children select most appropriate unit to measure specified lengths.eg: a) Belize River a) cm b) km c) mm b) Width of classroom a) mm b) cm c) m etc.	• Draw lines according to measurement given. Eg: Draw a line segment 5cm. • Measure line segment given eg:  Ability to select and compare, appropriate units to complete worksheet.

AREA OF STUDY: MATHEMATICS

STANDARD 111

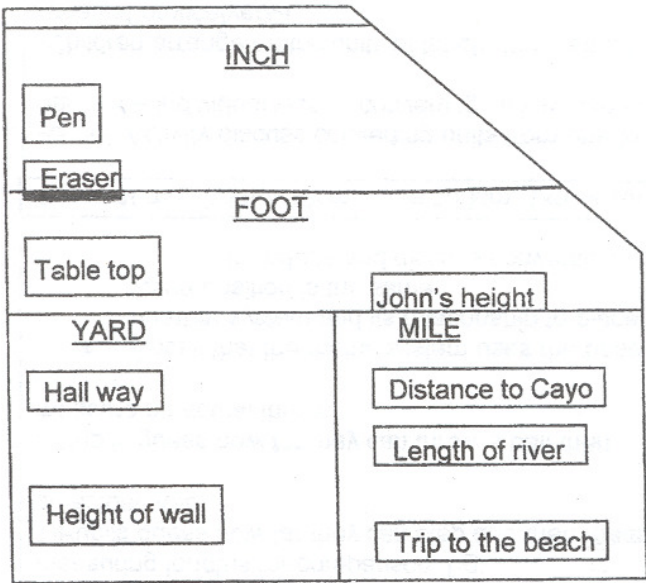
UNIT/THEME: Distance

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT					
Unit of length in the metric system can be estimated and measured. Metric Units of length can be converted from one unit to another. -To change from a larger unit to a smaller unit- multiply. -To change from a smaller unit to a larger unit divide. Lengths of objects can be measured in customary units. -inch -foot -yard -mile	Group Activity and Individual Work estimating then measuring lengths for comparison. Eg: 1)Pupils guess how far they can step and then measure an actual step. 2)Pupils guess how far they can throw a ball then measure an actual throw. - Recall that the metric system uses the base 10 number ystem and its relationship to place value position is the same. - Introduce and discuss conversion table. <table><tr><td>1cm = 10mm, 1d = 10cm, 1m= 100cm, 1km=</td></tr></table> -Group Activity discuss converting units from one to another-individual work –converting similar exercises. -Children arrange metric units of legths from least to greatest or vice/versa. - Discuss and recall customary units of lengths [inch, foot, yard, mile] - Group activity – Game “Measure Your Knowledge”.	1cm = 10mm, 1d = 10cm, 1m= 100cm, 1km=	- Group presentation on findings estimating, measuring and recording information on tables. <table><tr><td>1 step</td><td>estimate _____ cm actual measure _____ cm</td></tr><tr><td>2.Ball Thrown</td><td>estimate _____ m actual measure _____ m</td></tr></table> - Convert units from larger to smaller and vice versa. [cm – m] - Cooperation and participation in group activity to convert given units. Eg: 1m = 100 cm 8m = 8 x 100 = 800 8m = 800cm Check list to evaluate children’s ability to participate and cooperate in groups [see example below] - Construct a game board using creativity/design - Categorize objects/events under most suitable customary unit of length.	1 step	estimate _____ cm actual measure _____ cm	2.Ball Thrown	estimate _____ m actual measure _____ m
1cm = 10mm, 1d = 10cm, 1m= 100cm, 1km=							
1 step	estimate _____ cm actual measure _____ cm						
2.Ball Thrown	estimate _____ m actual measure _____ m						

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Distance

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT						
	Objective: to categorize objects or events under most suitable unit of measure. Materials – bristol board, index cards. 1) Teacher and pupils create a design using a sheet/bristol board (eg) 	CHECKLIST <table border="1"> <thead> <tr> <th>NAME:</th><th>DATE:</th><th>CLASS</th></tr> </thead> <tbody> <tr> <td colspan="3"> -Rate the student using the following 1)Excelent 2)Very Good 3)Good 4)Satisfactory 5)Unsatisfactory a.Willingness to share ideas/materials 1 2 3 4 5 b.Respect each other 1 2 3 4 5 c.React positively to suggestion 1 2 3 4 5 6 d.Use individual skills/initiative 1 2 3 4 5 6 e.Support and encourage each other </td></tr> </tbody> </table> 1) Construct a game board using creativity/design. Categorize objects/events under most suitable customary unit of length	NAME:	DATE:	CLASS	-Rate the student using the following 1)Excelent 2)Very Good 3)Good 4)Satisfactory 5)Unsatisfactory a.Willingness to share ideas/materials 1 2 3 4 5 b.Respect each other 1 2 3 4 5 c.React positively to suggestion 1 2 3 4 5 6 d.Use individual skills/initiative 1 2 3 4 5 6 e.Support and encourage each other		
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AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Distance

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT									
	2)Write four units of length customary – on the b/board. 3)Using index cards – pupils discuss, identify and write as many objects/events that can be measured using the units (eg.) Pen hallway John’s height Distance to Cayo eraser 4)Pupils exchange their game board and cards with another group. 5)Pupils place cards with writing face down and shuffle cards. 6)Players et turn to select a card and place under correct category of measure. [See game board – pg.6] 7)Group that finishes with all cards placed under correct category “wins”. Group and individual work – Discuss and select objects in class. Estimate, measure and record findings on a table.	Small group activity. Estimate, measure and record data on a table (eg) <table border="1"> <thead> <tr> <th>OBJECT</th><th>ESTIMATE</th><th>MEASURE</th></tr> </thead> <tbody> <tr> <td>1.MY HEIGHT</td><td><u>? ft ? in</u></td><td><u>? inch</u></td></tr> <tr> <td>2.Width of classroom</td><td><u>? ft ? yd</u></td><td><u>? ft ?yd</u></td></tr> </tbody> </table>	OBJECT	ESTIMATE	MEASURE	1.MY HEIGHT	<u>? ft ? in</u>	<u>? inch</u>	2.Width of classroom	<u>? ft ? yd</u>	<u>? ft ?yd</u>
OBJECT	ESTIMATE	MEASURE									
1.MY HEIGHT	<u>? ft ? in</u>	<u>? inch</u>									
2.Width of classroom	<u>? ft ? yd</u>	<u>? ft ?yd</u>									

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Distance

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
To convert customary units of length from a large unit to a smaller unit – multiply. -To change small units to larger customary units of length – divide.eg: 1mi = 5280 ft 3mi = 3 x 5280 = 15,840 3m = 15,840 ft. addition and subtraction can be applied to problems with metric and customary units of lengths. (eg) Add 10cm, 2mm & 3cm, 7 mm Perimeter is the distance around a closed figure. To find the perimeter of a figure, add the lengths of all sides or use the formula $P = (L+W) \times 2$ Or $P=2(L +W)$	Pupils observe and discuss table for customary units of length.Eg: 1ft = 12 inches 1yd = 3 ft 1yd = 36 inches 1mile = 5280 ft -Group work – discuss and measure lengths of objects in large unit and convert these. -Individual work. Convert using similar exercises. Pupils add and subtract units and convert where needed [in groups & individually] Recall definition of perimeter. Pupils discuss in groups then select objects and trace its perimeter. Eg: trace around a desk, book, black board, or walk the perimeter of the class. Pupils discuss in groups relevance of perimeter to daily living eg: yard, garden, etc. Pupils construct a window box [for plants].	- Small group activity – measuring, recording and converting lengths. - Convert units from larger to smaller and vice versa/customary units of length. Eg: 3ft = 1yd 18 feet = 18/3 = 6 18 feet = 6 yds. Add and subtract metric and customary units of measure eg: cm mm 10 2 + 3 7 13 cm 9mm pupils recall the meaning of a math word “perimeter” from Math Journal and use in sentences. Trace perimeter of concrete objects. Create a rap song on “Perimeter” Find perimeter of model made.

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Distance

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
The perimeter of a circle is its circumference. Circumference of objects can be measured.	-Group and individual activity – finding perimeter of figures. -Apply problem solving strategies to word problems/perimeter. *Draw a diagram $\begin{array}{c} 36\text{ft} \\ \boxed{\text{Garden}} \\ 24\text{ft} \quad 24\text{ft} \end{array}$ $ \begin{array}{r} 36 \text{ ft} \\ \text{Perimeter} = (L + W) \times 2 \\ (24+36) \times 2 \text{ ft} \\ 24+36) \times 2 \text{ ft} \\ 24 \\ \underline{+ 36} \\ 60 \\ \underline{\times 2} \\ 120 \text{ ft} \end{array} $ Ans: She needs 120 ft of fencing Conduct brainstorming to identify perimeter of circle. [use questions to stimulate discussion]. Eg: Do you think a circle has a perimeter? Why? Etc.	- Apply problem solving strategies to word problem/perimeter. Eg: Mrs Collins has a rectangular garden that is 24 feet long and 36 feet wide. How much fencing does she need to put around her garden - Questioning technique -Answer questions orally in complete sentences.

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Distance

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Circumference is one property of a circle. A circle has other properties of: -center -chord -diameter - radius	Group discussion and activity – pupils measure the perimeter/circumference – using tape measure: cup, head, waist, ankle, wrist etc. - Pupils trace circles on paper. Place a piece of string around the edge of the circle. Cut the string and measure it to find the circumference. - Pupils do activity comparing diameter and circumference measurement with string [several examples] to identify that the circumference is approximately three times the diameter. - Discussion on the parts of a circle to identify various parts. The calculate the diameter based on radius and radius based on diameter (eg)  <u>Center</u>  <u>Chord</u>  <u>Radius</u>  <u>Diameter</u>  <u>Circumference</u>	- Measure circumference using a tape measure Recording measurement/findings. - Measure circumference of circle [using strip & ruler/tape measure] and record circumference of circle. - Express the circumference of circles based on length of diameter. - Label a circle and solve problems to find radius and diameter. Eg: The radius of a circle measure 3 inches. What is its diameter? Answer= 6 inches

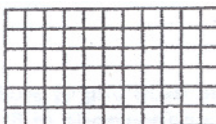
AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Distance**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Area is the number of square units needed to cover a surface. -The area of a figure can be found by multiplying length x width, or by counting square units of (eg) a rectangle, it is recorded in sq. units	Social studies link/project Organize field trip to (eg) “New River Enterprise” or other lumber company. Pupils observe circumference of tree trunks – discuss this as it relates to age of trees. Pupils compile booklet with chips of various hardwood and uses eg: pine, cedar, mahogany, zericote. - Record popular lengths of lumber: 8' x, 10'x, 14'x, and uses. Moulding [perimeter of ceiling] decorative finishing of house interior. (etc) Art/Craft link/project - Construct picture frames using variety of material (eg) tongue depressors, “paletas stick”, moulding strips, card board strips etc.[doing so to specified perimeter 5” x 7” x 5” x 7” or to measurement of choice]. - Group and individual activity. Discussion and solving for “Area” of figures – use problem solving strategies where/if needed. Record and share answers in group. Individual work independently.eg: Group Activity – copy the table – use grid paper to draw rectangles and squares according to specification. Apply formula and or count squares to find area and record (eg).	- Gather information from field trip. - Describe and explain the words used for lumber. - Complete booklets illustrating various types of wood and relevant information. - Follow instruction in logical order to construct a picture frame. - Solve problems involving area, applying the formula and counting of squares.

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Distance

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT																														
Area=Length x Width 4in x 5in =20in Area = 20 sq inches Skills <table><tr><td>Express</td><td>Identify</td></tr><tr><td>Locate</td><td>Write</td></tr><tr><td>Select</td><td>Observe</td></tr><tr><td>Record</td><td>Convert</td></tr><tr><td>Invent</td><td>Trace</td></tr><tr><td>Measure</td><td>Draw</td></tr><tr><td>Compare</td><td>Solve</td></tr><tr><td>Estimate</td><td>Braintorm</td></tr><tr><td>Arrange</td><td>Calculate</td></tr></table> Compile Construct Share Apply Depict Attitudes Cooperation Industriousness Participation Respect opinions of others Assume responsibility Demonstrate enthusiasm Sensitivity to feelings of others appreciation	Express	Identify	Locate	Write	Select	Observe	Record	Convert	Invent	Trace	Measure	Draw	Compare	Solve	Estimate	Braintorm	Arrange	Calculate	<table><tr><th>Length</th><th>Width</th><th>Area</th></tr><tr><td>6</td><td>4</td><td>24 sq units</td></tr><tr><td>5</td><td>10</td><td></td></tr><tr><td>12</td><td>6</td><td></td></tr></table>  eg: Find the area of a floor which measures 12 feet in width and 10 feet in length. - Pupils do home activity to find area of their favorite room at home (parent assist with measuring). - Pupils prepare booklet depicting collection of arious materials usedto cover area of floors, walls etc;(eg)tiles, marie, carpet and draw a model of a floor, wall etc. cover with bits of materials where possible.	Length	Width	Area	6	4	24 sq units	5	10		12	6		Gather information and pictures to make a booklet
Express	Identify																															
Locate	Write																															
Select	Observe																															
Record	Convert																															
Invent	Trace																															
Measure	Draw																															
Compare	Solve																															
Estimate	Braintorm																															
Arrange	Calculate																															
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AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Distance**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
M2a – Understand the geometric properties of some common two-dimensional and three-dimensional shapes M3d – Multiply and divide whole numbers to solve problems M3e – Add, subtract, multiply and divide fractions to solve problem M4a- Make reasonable approximations based on relevant life experiences M5a – Collect, analyze and present data using charts, graphs, tables and diagrams SS2c – Understand how people use the natural resources of Belize EA1g – Explore and experiment to create visual images through use of a variety of concrete materials in the environment. EL4a – Express ideas and opinions EL4e – Ask questions and give information	Guiding Children's Learning of Math Exploring Math – Scott Foresman and Co. Addison – Wesley Mathematics H.B.J. Mathematics Caribbean Primary Mathematics

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Volume****AREA OF STUDY OUTCOMES**

Pupils should:

M3a – Measure capacity, distance, weight and time using standard and non-standard measuring devices

CROSS-CURRICULAR OUTCOMES

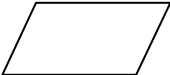
Pupils should:

CP1b – Examine information related to the problem

CP1c – Suggest ways of dealing with the problem

SP2a – Take part in group activities

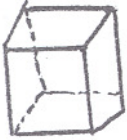
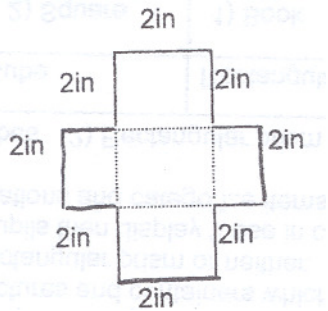
SP3b – Assess progress in relation to achievement of goals

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
A Prism is a polyhedron with 2 parallel and congruent bases. The shape of the base name the Prism.	• Discussion Models of cubes and rectangular, prisms help to identify properties of each. Pupils observe and discuss shapes and name each as either square, rectangle or neither (on a chart) (eg)  Square Rectangle Neither Cooperative Learning -Pupils use grid paper and construct models based on instruction/guide by the teacher. Pupils then discuss and compare their models with information on chart to identify if first model is a cube. Pupils then construct a second model this time a cube. Pupils then discuss and identify properties of a cube. (eg) Chart	• Name shapes orally • Construct models of cube through cooperation and performance within groups.

AREA OF STUDY: MATHEMATICS

STANDARD 111

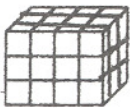
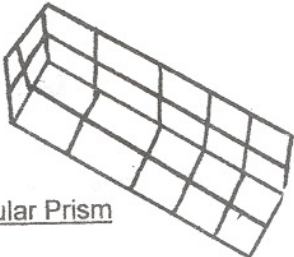
UNIT/THEME: Coins and Bills

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
 Rectangular Prism  Square Prism (Cube)	1) a cube is a figure with six flat square sides called faces. Activity/Instruction -Draw a figure like this one, with the measures shown on a grid paper.  Discuss-"If we cut out the figure will it be a cube?" Cut it out to prove. What do we need to do to make it one? [Add another square] -Pupils then prepare and cut out second figure and fold to show. [a cube] • Discuss/Group Activity	Select and label cube from amongst rectangular prism on work sheet. Small group activity

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Coins and Bills

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT						
	-Pupils observe shapes of several rectangular prism and discuss to identify that a cube is a rectangular prism also but acube's length, width and height are equal, the <u>others</u> are not (eg) <u>others are not</u> (eg)  <u>Cube</u>  <u>Rectangular Prism</u> Cooperative Learning -Pupils form groups and then research to find pictures and containers which are like a cube. Rectangular prism or neither. Pupilsthen display these in class and groups visit stations and categorize items into groups of 1) Cubes 2)Rectangular prism or neither (eg) <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Cube</th><th>Rectangular Prism</th><th>Neither</th></tr> </thead> <tbody> <tr> <td>2) Square building block</td><td>1) Book</td><td>1) Cup</td></tr> </tbody> </table>	Cube	Rectangular Prism	Neither	2) Square building block	1) Book	1) Cup	- Group cooperation and participation - Small group activity. -Group presentation -Classify solid figures under correct column.
Cube	Rectangular Prism	Neither						
2) Square building block	1) Book	1) Cup						

AREA OF STUDY: MATHEMATICS

STANDARD 111

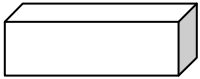
UNIT/THEME: Coins and Bills

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
The volume of a solid figure is the number of cubic units it contains. To find the volume of a figure, count the number of cubes that will "fill" the figure.	Discussion -Present sentence strips with the word "volume" used to imply different meanings. Pupils use dictionary to locate word meaning and discuss for each case. Pupils identify volume as it relates to Mathematics Concept and record in Math Journal and formulate sentences. (Math related) • Discussion -Stimulate thinking with questions (eg) "What is the difference between volume and area?" "How is area expressed?" "How do you think volume is expressed". - Eg: Volume is expressed in cubic units. Cooperative Learning -Pupils use building blocks or cuisenaire cubes to count and find volume of small boxes. (eg) gift box. -Pupils count squares and give volume of figures shown on work sheet. Eg: 12 cu. in. (etc)	• Use the word volume as it relates to Mathematic concept – in Math Journal. • Ability to give information. Small group activity • Count squares to find volume and record on work sheet

AREA OF STUDY: MATHEMATICS

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UNIT/THEME: Coins and Bills

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
The volume of a solid figure is the Length x Width x Height. Eg: Find the volume of this rectangular prism 5 cm 3cm  4cm $L \times W \times h = \text{volume}$ $5 \times 3 \times 4 = 60$ cubic centimeters	- Conduct Brainstorm – Use questions to stimulate thinking eg: Can you recall what volume is? How can we find volume? Why would you need to know the volume of solids? Do you think there is another method to use to find volume? (etc) - Cooperative Learning Pupils work in groups to find volume of rectangular prisms using the formula. Discuss problems and use strategies to solve (eg 1) Find the volume of a rectangular prism with Length =9 inches, width = 5 inches Height= 3 inches. 2) Will 4,000 cubic inches of packing material fit into a box 20 inches long, 18 inches wide and 9 inches high? 3)Each box of computer paper is 11 inches long and 10 inches wide. The volume of each box. (etc) Pupils then work independently or similar activities. Art Link - Pupils make cubes and cut out pictures of various shapes and paste these on cubes and display inclass. Project/Integrate Spanish - Pupils compile booklets with Mathematical words and research and recent record these words in Spanish. Write at least five sentences in English and Spanish using any five words/of choice	- Give information orally in complete sentences. Small group Activity - Apply problem solving strategies to solve problems relating to volume and record findings on work sheet. - Analyze and solve problems on volume on work sheet/books. - Construct cubes, cut out pictures and paste on cubes for display. - Compile English/Spanish word bank of Mathematical words.

AREA OF STUDY: MATHEMATICS
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UNIT/THEME: Coins and Bills

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Observe Display Cooperate Locate Construct Count Compare Find Identify Brainstorm Draw Compile Prepare Categorize Cut Research Fold <u>Attitudes</u> Cooperation Respect feelings and opinions of others Industriousness Interest Acceptance of responsibility Willingness to share		

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
M2a – Understand the geometric properties of some common two-dimensional and three-dimensional shapes M5a –Collect, analyse and present data using diagrams and tables EA1e-Explore and experiment to create visual images SL2b – Write short sentences EL3a – Demonstrate ability to write grammatically correct sentences EL4a – Express ideas and opinions EL4e – Ask questions and give information	Scott Foresman Math 6 Exploring Math 4, 5 Math Applications and Connections Mathematics Today Laidlow Mathematics

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Coins and Bills****AREA OF STUDY OUTCOMES**

Pupils should:

M3b – Use coins and bills up to \$100.00

CROSS-CURRICULAR OUTCOMES

Pupils should:

Critical Thinking

- CP1b – Examine information related to problem/issue
 - CP1c – Suggest ways of dealing with problem
- Teamwork and Leadership
- SP2a – Take part in group activities

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Money used by foreign countries have different features from ours.	Display coins and bills of various countries, U.S., Mexico, Guatemala and Belize. Children observe and discuss then compare these.	Identify and match currencies with names of countries.
Coins and bills of different countries have different values.	Use coins and bills of U.S. and Belizean currency Discuss their value. Have children identify priced items that can be bought using U.S. and Belizean currency.	Give orally the value of given amounts in Belize currency to U.S. currency up to \$75. E.g. \$25 Belize converted to U.S. is? And vice versa.
When you count money you use basic Math operations. When you check your change on a purchase you subtract. When you share cost with someone you divide.	Show different amounts using coins and bills. Give children play money bills e.g. \$20, \$5, \$10, \$1, \$50 up to \$75. Children make a shopping list using prices from play shop. Calculate cost of items on their list by addint. Use subtraction to make change. Share the calculated cost by dividing it among 3, 4, 5 people.	Use U.S. and Belize currency. Convert and write different amounts not exceeding \$75. Ability to give change after shopping.

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Coins and Bills

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT												
Identify additional information is needed to solve difficult word problems.	Use play money to share in groups equally using division. Solve simple word in $(+ - \div) \times$	Copy and complete using a table like the following. <table border="1"> <thead> <tr> <th>Total Cost</th><th>Cash Given</th><th>Change</th></tr> </thead> <tbody> <tr> <td>\$15.38</td><td>\$20.00</td><td>?</td></tr> <tr> <td>\$ 1.89</td><td>\$ 2.00</td><td>?</td></tr> <tr> <td>\$ 4.55</td><td>\$ 5.00</td><td>?</td></tr> </tbody> </table>	Total Cost	Cash Given	Change	\$15.38	\$20.00	?	\$ 1.89	\$ 2.00	?	\$ 4.55	\$ 5.00	?
Total Cost	Cash Given	Change												
\$15.38	\$20.00	?												
\$ 1.89	\$ 2.00	?												
\$ 4.55	\$ 5.00	?												
The value of money can be expressed as fractions.	Read and discuss problems. Find out what problems are asking. Use card with problems to read and solve. Student exchange problems with each other. Find fractions of coins and bills e.g. $\frac{1}{4}$ of \$1.00 = \$0.25, $\frac{1}{2}$ of \$1.00 = \$0.50, $\frac{3}{4}$ of \$1.00 = \$0.75.	Teacher made test solving word problems.												
Budgeting give you the control you need to limit spending.	Find fractions of various amounts of money not exceeding \$75 e.g. what is $\frac{1}{2}$ of \$50? $\frac{1}{3}$ of \$75? Etc. Children price items in playshop. Take turns reading/identifying prices on shop items. Dicuss on budget. Who is budget? Why do we budget? Create money savers for quarters and half dollars, dimes and nickels. Buy from class shop keeping within their budget.	Convert coins and bills to fractions vice/versa.												

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Coins and Bills**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Name Converting Identifying Accepting Completing Calculate Choosing Computing Discovering Estimate Combine Create Construct Managing Solve Testing Write Share <u>Attitudes</u> Understanding Willingness to share, Participate Awareness Ability to use Interest In	Use given amounts of play money, calculate cost of items they want to buy. Spending within the amount budget. Children create their budget using their own weekly allowances. Play Game: "How Much do I have". Use real money from allowances to buy from school shop keeping their budget. Show items, give prices on each of four or five item, calculate to see if they have exceed their given amount.	Ability to budget accurately and wisely. Creation of money savers. Ability to calculate and spend an amount of money.

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Coins and Bills**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
CP1b – Examine information related to a problem/issue CP1c – Suggest ways of dealing with problem/issue SP1a – Recognize the values associated with choices. SP2a – Take part in group activities SP2e – Lead and follow where appropriate SP2h – Accept major decisions SP3a – Assess their needs and interest EL2d – Follow instructions EL3a – Demonstrate their ability to write EL4a – Express ideas and opinions	Math Power 2 Health Mathematics Connections – Level 4 Mathematics: The Path to Math Success – Silver Burdett Teaching Elementary School Mathematics Real Money (Coins and Bills) Play Money Word cards Pencil, ruler, available materials from environment

AREA OF STUDY: MATHEMATICS

STANDARD 111

UNIT/THEME: Coins and Bills

AREA OF STUDY OUTCOMES

Pupils should:

M3c – Add and subtract whole numbers to solve problems

CROSS-CURRICULAR OUTCOMES

Pupils should:

CP1b – Examine information related to problem

CP1c – Suggest ways of dealing with problem

SP2a – Take part in group activities

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT															
Addition of whole numbers can be done without regrouping (0-9,999)	Review addition without regrouping up to three digits. <table> <tr> <td>25</td><td>117</td><td>205</td></tr> <tr> <td><u>61</u></td><td>80</td><td>41</td></tr> <tr> <td>86</td><td>2</td><td>122</td></tr> <tr> <td></td><td>199</td><td><u>430</u></td></tr> <tr> <td></td><td></td><td>738</td></tr> </table> Complete the worm by making segments that can be added to the head to get a sum without regrouping. 	25	117	205	<u>61</u>	80	41	86	2	122		199	<u>430</u>			738	Identification of add ends that do not require regrouping (worm completion). Use of place value chart to show understanding of regrouping when adding. Ability to add with regrouping (practice exercise) Ability to subtract without regrouping - identify number represented by letters - completion of flow chart Subtraction with regrouping - identification of missing numbers - exercise on subtraction with regrouping
25	117	205															
<u>61</u>	80	41															
86	2	122															
	199	<u>430</u>															
		738															

AREA OF STUDY: MATHEMATICS

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UNIT/THEME: Coins and Bills

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT												
Addition of whole numbers can be done with regrouping.	<u>Build Understanding</u> On Monday Jason repackaged nails to be sold at his father's hardware store. Explain how he regrouped the nails. How many nails did he have in all?	6. Property of numbers - solve and identification of properties - naming examples of properties												
	<table><tr><td>Cases</td><td>Boxes</td><td>Packs</td><td>Singles</td></tr><tr><td>Thousands</td><td>Hundreds</td><td>Tens</td><td></td></tr><tr><td>Ones</td><td></td><td></td><td></td></tr></table>	Cases	Boxes	Packs	Singles	Thousands	Hundreds	Tens		Ones				7. Order of operation - identification of correct order (True or False) - use of order to solve problems
	Cases	Boxes	Packs	Singles										
	Thousands	Hundreds	Tens											
	Ones													
			8. Cooperation within groups											
<table><tr><td>Cases</td><td>Boxes</td><td>Packs</td><td>Singles</td></tr><tr><td>Thousands</td><td>Hundreds</td><td>Tens</td><td>Ones</td></tr><tr><td>3</td><td>17</td><td>5</td><td>6</td></tr></table>	Cases	Boxes	Packs	Singles	Thousands	Hundreds	Tens	Ones	3	17	5	6	9. Performace within groups	
Cases	Boxes	Packs	Singles											
Thousands	Hundreds	Tens	Ones											
3	17	5	6											
		10. Written and oral teacher made test												
<table><tr><td>Cases</td><td>Boxes</td><td>Packs</td><td>Singles</td></tr><tr><td>Thousands</td><td>Hundreds</td><td>Tens</td><td>Ones</td></tr><tr><td>4</td><td>7</td><td>5</td><td>6</td></tr></table>	Cases	Boxes	Packs	Singles	Thousands	Hundreds	Tens	Ones	4	7	5	6	11. Presentation of information	
Cases	Boxes	Packs	Singles											
Thousands	Hundreds	Tens	Ones											
4	7	5	6											
	He had 4756 nails <u>Enrichment Exercise</u> 1477 + 227 + 1056													

AREA OF STUDY: MATHEMATICS

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UNIT/THEME: Coins and Bills

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Subtraction of whole numbers can be done without regrouping	Review subtraction without regrouping up to three digits. $\begin{array}{r} 349 \\ 238 \\ 111 \end{array} \quad \begin{array}{r} 974 \\ 671 \\ 303 \end{array}$ Replace A,B,C and D with numbers that will correctly complete the exercise. $\begin{array}{r} D \ 8 \ B \ 1 \ 4 \ 9 \ 7 \ D \ A \\ - \ 3 \ 2 \ 1 \ 0 \ C \ B \ 3 \ 2 \ 4 \\ \hline 1 \ 6 \ C \ 1 \ 3 \ A \ 4 \ A \ 5 \end{array}$ <u>Critical Thinking</u> Complete the flow chart $\boxed{8892} \rightarrow \boxed{-1217} \rightarrow \text{Oval}$ $\boxed{4725} \rightarrow \boxed{-3614} \rightarrow \text{Oval}$	Demonstrate ability to subtract up to three digits whole numbers without regrouping. Observation of use of critical thinking skills in the completion of the flow chart.

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UNIT/THEME: Coins and Bills

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Subtraction of whole numbers can be done with regrouping.	Logically Reasoning Copy each problem and supply the missing digits. 5 6 1 0 2 8 4 9 2 7 6 1 1 2 7 4 3 5 6 9 1 8 Reinforcement e.g. Circle the letter with the correct multiple choice. 1574 - 26 87 - 79 1900 - 139 a. 1525 a. 17 a. 1760 b. 1548 b. 6 b. 1761 c. 1550 c. 8 c. 1771 Practice Work 9472 8034 - 7659 - 2017 <td>Observe use of critical thinking skills and demonstrate ability to add and subtract to supply missing digits.</td>	Observe use of critical thinking skills and demonstrate ability to add and subtract to supply missing digits.

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UNIT/THEME: Coins and Bills

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Properties of Addition</u> The Commulative Property states that changing the order of addends does not change the sum. The Associative Property states that changing the grouping of addends does not change the sum. The Zero Property as an additive states that the sum of a number and zero is that number.	Solve and name the property used. $20 + 5 = 7 + 20 \qquad 15 + 0 = 7 + 15$ $(7 + 8) + x = \qquad 7 + (8 + 3)$ Write examples for the property given. Zero Property _____ Commutative Property _____ Associative Property _____ Practice Work: $7 + 6 = \qquad (3 + 4) + 6 =$	Ability to distinguish the various properties i.e. Commutative, Associative, Zero.

AREA OF STUDY: MATHEMATICS
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CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Some problems have more than one operation. The problems can be solved using the order of operation. Skills Complete Review Analyze Arrange ability to Classify Compare Calculate Discuss Draw Explore Identify Make connection Solve use Attitudes Understanding Interest in Appreciate Cooperate Respect Enjoyment Awareness Willingness to participate	Solve. (Guided Practice) $7 + (4 + 16) = x$ $8 - 5 + 9 = x$ $\square + 10 = x$ $3 + \quad = x$ $\square = x$ $\quad = x$ <u>Challenge</u> Tell whether each is true or false. $17 - 4 + 6 = 7$ $9 + 6 = 15$ $18 + 5 - 7 = 16$ <u>Practice Work</u> $7 - 5 + 4 =$ $6 + 8 + 10 =$ $(15 - 9) + 4 =$ $8 + (2 - 1) =$	Ability to solve problems using the order of operations.

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Coins and Bills**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
Reading EL1d, e, g, h, i, j, k Listen and Viewing EL2a, c, d, e Writing EL3a Speaking EL4a, e, f Data Handling M5a Crafts EA1g Arts EA1e Product and Technology WT2a	Exploring Math Laidlaw Maths Addison-Wesley Mathematics Silver Burdette Ginn Mathematics Math Advantage Mathematics Application and Connections Course 1 New Common Entrance – Second Edition

AREA OF STUDY: MATHEMATICS

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UNIT/THEME: Coins and Bills

AREA OF STUDY OUTCOMES

Pupils should:

M3D – Multiply and Divide Whole Numbers and Decimals to solve problems

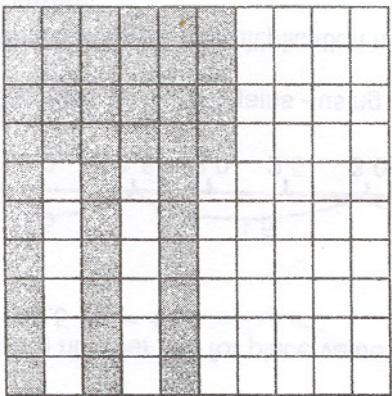
CROSS-CURRICULAR OUTCOMES

Pupils should:

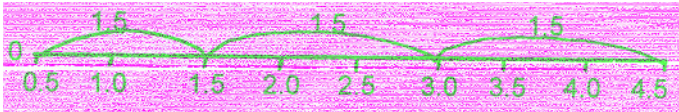
CP1b – Examine information related to problem/issue

CP1c – Suggest ways of dealing with problem

SP2a – Take part in group activities

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Whole numbers up to 999,999 can be multiplied by decimals. To multiply whole numbers by decimals, multiply as with whole numbers. Then place the decimal point in the product so that there are as many decimal places as the sum of the numbers of decimal places in the factor. e.g. $0.24 \longrightarrow$ 2 decimal places $\begin{array}{r} \times 6 \\ 01.44 \longrightarrow \end{array}$ $ \longrightarrow$ 2 decimal places	a. Modeling decimal multiplication using Decimal Square/Grid Lock  $0.14 \times 3 = 0.42$ b. Identifying decimals using money e.g. $\\$1.12 \times 9$	Ability to multiply decimals Ability to recognize value of decimals. Ability to followm describe and explain pattern in multiplying decimals e.g. $4.7 \times 5 = 23.5$ $1.2 \times 3 = 3.6$

UNIT/THEME: Coins and Bills**UNIT/THEME: Coins and Bills**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Multiplication of a decimal number by a whole number can be pictured on a number line. Decimals can be multiplied by 10, 100, 1000. e.g. $9.12 \times 10 = 91.2$ 1 zero move decimal point one place to the right. $9.12 \times 100 = 912.0$ move 2 zeros decimal point 2 places to the right	c. Expressing decimals as dollars and cents e.g. $19.3 = \\$19.30$ $2.727 = \\$2.73$ Using number line for place value e.g. $2.5 \times 3 = 4.5$  Shopping to find bargains – using a school shop. Story telling using multiplication methods to find answers. Using number cards to show that decimals can be multiplied by 10, 100, 1000. e.g. i) $1.4 \times 10 = 14.0$ ii) $1.4 = 140.0$ Decimals using money $100 \text{ ten cents} = 0.10 \times 100 = \\10.00	Demonstrate the ability to use the decimal point accurately. Use of number line to demonstrate multiplication of decimals. Ability to compare quantities and prices. Ability to analyze and solve multiplication problems with decimals. Ability to use and move the decimal point when multiplying by powers of 10s. e.g. $4.5 \times 10 = 45.0$ $7.8 \times 10 = 78.0$ $3.62 \times 10 = 36.20$ $4.5 \times 100 = 450.0$

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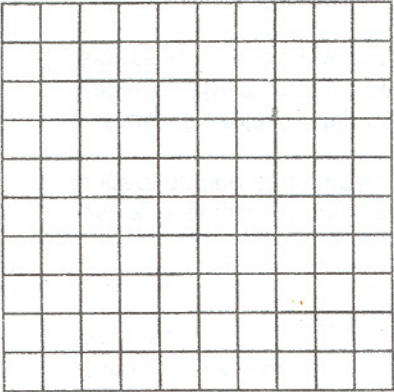
UNIT/THEME: Coins and Bills

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
9.12 x 1000 = 9120 2 zeros move decimal point 3 places to the right	Multiplying decimals by 10, 100, 1000 in problems e.g. 96.4 96.4 $\begin{array}{r} \times 10 \\ 96.4 \\ \hline 964.0 \end{array}$ $\begin{array}{r} \times 100 \\ 96.4 \\ \hline 96440.0 \end{array}$ Estimate products when multiplying by 10, 100, 1000. Have students multiply decimals mentally by powers of 10. Quick Check Complete the pattern 100 90 80 _____ 50 _____ 360, 160 _____ 20, 10 Use a calculator to help students apply their understanding of decimals. Discuss the relationship between multiplication and addition. Have children write a multiplication expression for this additional expression.	Ability to estimate products when multiplying by powers of 10. Ability to use the decimal point accurately. Ability to count accurately by 10, 100, 1000 e.g. 350 360 370..... 4000 5000 6000..... Ability to use calculator to understand decimals.

AREA OF STUDY: MATHEMATICS

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UNIT/THEME: Coins and Bills

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Decimals can be multiplied by decimals. To find the product when multiplying decimal by decimal multiply as with whole numbers. Add two numbers of decimal places in the product. 0.8 1 decimal place x0.11 2 decimal places 0.088 3 decimal places	Use decimal squares to find the product of 2 decimals e.g. 0.6 X 0.2  Shade 6 columns blue for 0.6. Shade 2 rows yellow for 0.2 The area in which the shading overlaps shows the product or 0.2 of 0.6 = 0.12 Have students model decimal multiplication. Then make the transition to multiplying without models. Talk about the Decimal Squares in activity above. e.g. The first factor is rows the second factor is columns. The product is less than the factor. Estimate a product before finding the exact product.	The ability to multiply decimals The ability to multiply using grid lock/decimal square. The ability to use the decimal point accurately. The ability to read and interpret decimal problems.

AREA OF STUDY: MATHEMATICS

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UNIT/THEME: Coins and Bills

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Multiplying decimals involving special cases with zero in the multiplicand. To multiply decimals with zero in the multiplicand Daily life problems can be solved using one's own experiences – solving strategy.	Mechanical problems $0.5 \times 0.3 = 0.15$ Worded problems. Mechanical Problems e.g. $3.05 \times .23$ Place the decimal point 3 decimal places Worded Problems e.g. The Middle School is having a car wash for a fund raiser. They charge \$4.05 for each car. If they wash 45 cars, how much money will they earn? Place the point 2 decimal places.	1 Ability to overcome the zero difficulty in the multiplicand. 2 Ability to place the decimal point accurately. 3 Ability to read and interpret worded problem. 4 Practice and demonstrate multiplying decimals with zero in the multiplicand. 5 Develop a rule for multiplying by 0 in the multiplicand.

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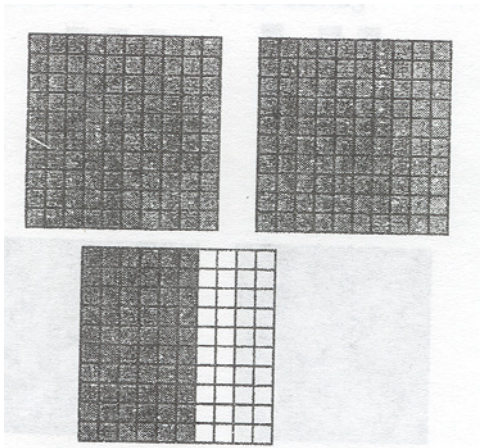
UNIT/THEME: Coins and Bills

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
The product of decimals can be estimated to the nearest 10s, 100s, 1000s/10th, 100ths, 1000ths.	Making rules for rounding 10ths, 100ths, 100ths to the nearest whole number (If there are 50 or more 10ths, 100ths, 1000ths, round down) e.g. Problem solving e.g, 3.8×3.5 $\begin{array}{r} 3.8 \\ \times 3.5 \\ \hline 190 \\ 1140 \\ \hline 13.30 \end{array}$ 13.30 round down = 13.0 Worded Problems	The ability to estimate products. The ability to round off accurately. Ability to analyze and solve worded problems. Ability to use decimal point accurately. Ability to read decimal numbers.

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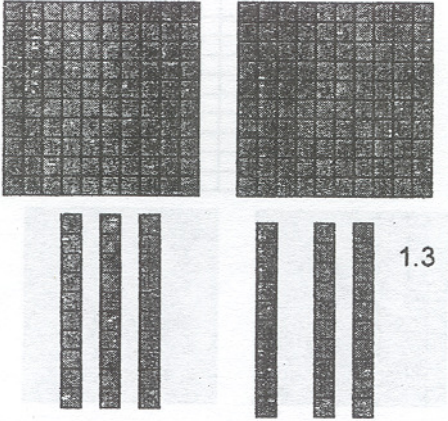
UNIT/THEME: Coins and Bills

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Decimal can be divided by 1 digit whole numbers. To find the quotient – before dividing set down decimal point under decimal point. Divide as with whole numbers.	Working with partners using Decimal Squares $2.6 \div 2 =$ Shaded 2.6 decimal squares  Divide the shaded squares into 2 equal groups. Cut out each of the 6 tenths in the partially shaded decimal square.	Ability to recognize value of decimals. Ability to follow pattern in dividing decimals Ability to work and cooperate with partners.

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UNIT/THEME: Coins and Bills

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	 What decimal name each group? What is the quotient? - 1.3 Divide using money e.g. $\begin{array}{r} \$1.40 \\ 4 \overline{) \$5.60} \end{array}$ The price of tennis balls is 4 for \$3.40. What is the price of one ball?	Ability to divide money using decimals. Ability to analyze and divide problems with decimals.

AREA OF STUDY: MATHEMATICS
STANDARD 111
UNIT/THEME: Coins and Bills

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Before dividing, the divisor is first changed to a whole number. Move the decimal point in the divider the number of places that was moved in the divisor. Divide as with whole numbers. Decimals can be divided by 10, 100, 1000. To divide by 10 the figure move one place to the left e.g. $4.6 \div 10 = 0.46$. To divide by 100 the figures move 2 places to the left. Eg. $6.57 \div 100 = 0.0657$ To divide by 1000 the figures moves 3 places to the left e.g. $15.1 \div 1000 = 0.0151$. Or, in other words move the decimal point one place to the left for each zero.	Mechanical and Worded Problems e.g. $\begin{array}{r} 03.8 \\ 4 \overline{)11.4} \end{array}$ Use activities from section 6. Using number cards to show that decimals can be divided by 10, 100, 1000. e.g. I) $2.5 \div 10 = 0.25$ $\boxed{2} \boxed{.} \boxed{5} = \boxed{0} \boxed{.} \boxed{2} \boxed{5}$ II) $2.5 \div 100 = 0.025$ $\boxed{2} \boxed{.} \boxed{5} = \boxed{0} \boxed{.} \boxed{0} \boxed{2} \boxed{5}$ Rule – when you divide a decimal by a power of 10, the decimal point moves 1 digit to the left for each power of 10. Decimals using money dividing by 10s, 100s, 1000s. E.g. $\begin{array}{r} \\$0.55 \\ 10 \overline{) \\$5.50} \end{array}$ $\begin{array}{r} \\$0.055 \\ 100 \overline{) \\$5.500} \end{array}$ rounded off = 0.060	Ability to use and move the decimal in dividing by powers of 10. Ability to use decimal point accurately in dividing decimals by powers of 10. Ability to divide by powers of 10 using money. Ability to use decimal point accurately.

UNIT/THEME: Coins and Bills**UNIT/THEME: Coins and Bills**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Dividing decimals involving special cases of zero in the quotient. Write zero in the quotient whenever the divisor is greater than any of the partial dividends. When the divisor is greater than the next partial dividend, put a zero in the quotient and bring down the next digit.	Mechanical Problems e.g. $7.015 \div 23$ $ \begin{array}{r} 30.5 \\ 23 \overline{) 7.015} \\ \underline{69} \\ 11 \\ \underline{- 0} \\ 115 \\ \underline{- 115} \\ 0 \end{array} $ Word Problems On March 30, Delbert Flowers somersaulted backward 4,908 yards in 1.2 seconds. How many yards per second did he somersault? $ \begin{array}{r} 4.09 \\ 1.2 \overline{) 4.908} \\ \underline{48} \\ 10 \\ \underline{0} \\ 108 \\ \underline{108} \\ 0 \end{array} $	Ability to solve division problems accurately. Ability to read and interpret worded problems.

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Coins and Bills**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Skills Identify Divide Multiply Count Arrange Recognize Decision making Critical thining Compute Express Discover Value Question Support Problem solving Compare/contrast Formulate Predict Estimate Attitude Awareness Cooperation Share Leadership respect Interest Independence Enjoyment Ability to use decimal point Ability to use calculator Appreciate Pride/satisfaction		

AREA OF STUDY: MATHEMATICS**STANDARD 111****UNIT/THEME: Coins and Bills**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
Reading – ELa, b, g, j, k Listening and Viewing – EL2b,c Writing – EL3a, b,c,d,g,h Speaking – EL4 a,c,d,e,g Number – M1a, b,c,d,e,g Measure, Quality and Calculate M3a – e Estimate and Make Predictions M4a, b Data Handling – M5a Music – EA1b Physical Exercise – H4a	Scott Foresman Mathematics – Grade 5 Heath Mathematics Houghton Mifflin Mathematics Level 4 The Mathematics Teachers' Handbook Count Me In Grade 7 Silver Burdett Ginn – Mathematics (Teacher Guide) Grade 4 Vol. 1 Today's Mathematics Caribbean Primary Mathematics 4, 5 Primary

AREA OF STUDY: MATHEMATICS

STANDARD III

UNIT/THEME: Add and Subtract Whole Numbers

AREA OF STUDY OUTCOMES

Pupils should:

M3e – Add, subtract, multiply and divide fractions to solve problems.

CROSS-CURRICULAR OUTCOMES

Pupils should:

CP1b – Examine information related to problem.

SP2a – Take part in group activities.

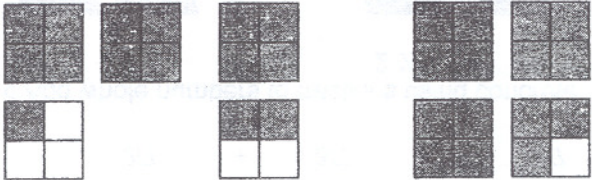
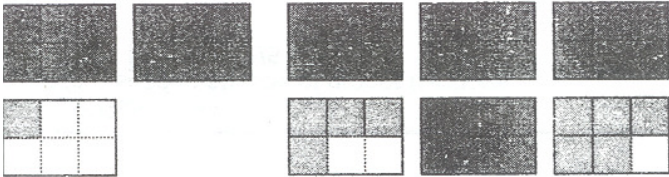
CP1c – Suggest ways of dealing with problems

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
To add mixed fractions with like denominators a.add whole numbers b.add the numerators c.use the same denominator in the sum d.combining whole numbers with fraction e.g. I) $4 \frac{1}{5} + 3 \frac{2}{5} = 7 \frac{3}{5}$ II) $4 \frac{1}{5} + 3 \frac{2}{5} = 7 \frac{3}{5}$ III) $4 \frac{1}{5} + 3 \frac{2}{5} = 7 \frac{3}{5}$	Quick Check (Review) a. Adding shaded shapes of proper fractions  e.g. $\frac{2}{5} + \frac{1}{5} + \frac{3}{5}$ b.Dividing concrete object into fractional parts to add  e.g. $\frac{2}{7} + \frac{3}{7} = \frac{5}{7}$ c.Add whole numbers to fractions using concrete objects e.g. $2 + \frac{1}{2} = 2 \frac{1}{2}$ 	The ability to sort and categorize objects into fractional parts. Ability to illustrate the concept of fractional operations. Ability to describe and explain orally the operation.

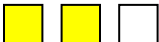
AREA OF STUDY: MATHEMATICS

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UNIT/THEME: Add and Subtract Whole Numbers

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	Have children shade shapes to add mixed fractions with like denominators. e.g. $2 \frac{1}{4} + 1 \frac{2}{4} = 3 \frac{3}{4}$  Adding objects (e.g. soda biscuits) e.g. $2 \frac{1}{6} + 1 \frac{4}{6}$  $2 \frac{1}{6} + 1 \frac{4}{6} = 3 \frac{5}{6}$ $2 \frac{1}{6} + 1 \frac{4}{6} = 3 \frac{5}{6}$ Mechanical Problems $1 \frac{1}{6} + 1 \frac{4}{6} = 2 \frac{5}{6}$	Ability to add mix numbers.

AREA OF STUDY: MATHEMATICS
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UNIT/THEME: Add and Subtract Whole Numbers

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Daily life problems can be solved using ones own experiences. To subtract mixed fractions with like denominators. subtract the fractions with like denominators. e.g. $\begin{array}{r} 1 \frac{3}{8} \\ - 1 \frac{1}{8} \\ \hline 2/8 \end{array}$ $\begin{array}{r} 2 \frac{3}{8} \\ - 1 \frac{1}{8} \\ \hline 1 \frac{2}{8} \end{array} \rightarrow \text{Write } 2/8 \text{ in lowest terms} = \frac{1}{4}$	Worded problems Mrs. Smith took $2 \frac{1}{5}$ hours to travel from Orange Walk Town to Belize City and $1 \frac{2}{5}$ hours from Belize City to Belmopan. How many hours was the entire journey? Quick Check (Review) Subtracting shaded shapes of proper fractions. e.g. $\frac{5}{6} - \frac{3}{6} = \frac{2}{6}$ or   $\begin{array}{r} 5 \\ 6 \\ - 3 \\ \hline 2 \\ 6 \end{array}$ Using objects/shapes e.g. chocolate bars, soda biscuits to demonstrate etc. Mechanical $2 \frac{3}{8} - 1 \frac{1}{8} = 1 \frac{2}{8}$ Problems $\begin{array}{r} 2 \quad 3/8 \\ 1 \quad 1/8 \\ 1 \quad 2/8 \end{array} \leftarrow \text{write } 2/8 \text{ in lowest term} = 1 \frac{1}{4}$	Ability to identify the application of the use of fraction in everyday life. Observe the ability to sort and categorize objects into fractional parts. State the use/concept of fractional operation.

CONTENT ORGANIZED INTO	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR
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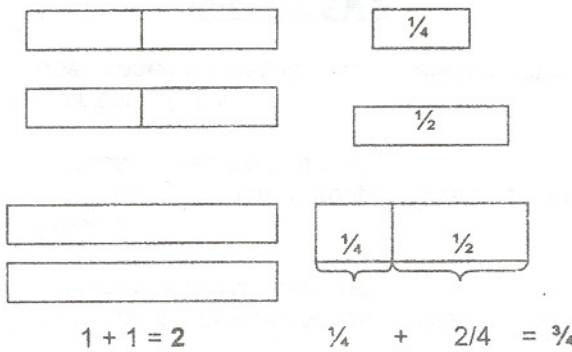
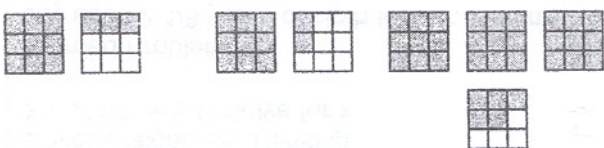
UNIT/THEME: Add and Subtract Whole Numbers

MANAGEABLE SETS		ASSESSMENT
To add mixed numbers with unlike denominators: Write equivalent fractions. Add the fraction, add the whole number. (If necessary, regroup fractions greater than). e.g. $3 \frac{1}{3} = 3 \frac{2}{6}$ $+ 2 \frac{1}{6} = 2 \frac{1}{6}$ $\hline 5 \frac{3}{6}$ $3 \frac{1}{3} = 3 \frac{2}{6}$ $+ 2 \frac{1}{6} = 2 \frac{1}{6}$ $\hline 5 \frac{3}{6}$	Worded Problems e.g. John had $5 \frac{2}{3}$ yards of string. He used $3 \frac{1}{3}$ yards to make his kite. How many yards did he have left? $\frac{2}{3} - 3 \frac{1}{3} = 2 \frac{1}{3}$ yds $\begin{array}{r} 5 \quad \frac{2}{3} \\ - 3 \quad \frac{1}{3} \\ \hline 2 \quad \frac{1}{3} \end{array}$ Quick Check: using shaded shapes $1 \frac{1}{5} =$ $3 \quad \frac{4}{5}$	Contribution towards group work Pair interaction.

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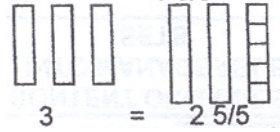
UNIT/THEME: Add and Subtract Whole Numbers

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	Work in pairs using fraction strips to add mixed fractions with like denominators  Have children draw diagrams to find the sum $2 \frac{3}{9} + 1 \frac{2}{9} =$ 	Ability to find the sum using diagrams.

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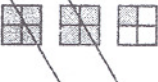
UNIT/THEME: Add and Subtract Whole Numbers

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Subtracting a mixed fraction from a whole number – trade a whole number for a fraction before you can subtract. e.g. $3 = 2 \frac{5}{5}$ $1 \frac{2}{5} - 1 \frac{2}{5}$ 	Adding Mixed Numbers 1. $1 \frac{1}{5} + 1 \frac{1}{10}$ b. $2 \frac{1}{6} + 3 \frac{1}{4}$ Develop algebraic Thinking. $X = 2 \frac{1}{6} + 3 \frac{1}{4}$ Solve for X Worded Problems Joy used $2 \frac{1}{8}$ yards of cloth for her costume and Tami used $4 \frac{1}{2}$ yards for her costume. How many yards of fabric did they use together? Have children write about how adding mixed numbers is different from adding fractions. Write about how seamstress, tailors, and construction workers use mixed numbers. Group activity: Divide class into three groups. Give each group objects to measure, record and add. Motivating Activity: Use shaded shapes to rename whole numbers. $1 = \frac{?}{5} =$  $3 = 2 \frac{2}{2}$ 	

AREA OF STUDY: MATHEMATICS

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UNIT/THEME: Add and Subtract Whole Numbers

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Subtracting mixed fractions with unlike denominators. E.g. $8\frac{3}{5} - 1\frac{1}{2}$ a. Find the L.C.M. or common denominator to rename both fractions. b. Subtract the fractions then subtract the whole numbers. Solve $7\frac{3}{8} - 1\frac{5}{8}$	Use shaded shapes to subtract mixed fractions from whole. $3 - 2\frac{1}{4}$ Step 1 =  Step 2  =  Ans: $1\frac{1}{2}$ Have children write story problems relevant to topic: e.g. Mother made 6 loaves of bread. The family used $2\frac{3}{4}$ loaves at breakfast. What fraction of the loaves remain? Teachers made worded problems. Quick check (Review) Subtract fractions with like denominators Step 1  Step 2  = 	Demonstrate the ability to use everyday situations to make and solve fractional operations in worded problems. Demonstrate the ability to sort and categorize objects into fractional parts.

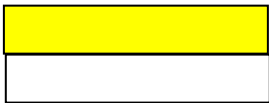
AREA OF STUDY: MATHEMATICS**STANDARD III****UNIT/THEME: Add and Subtract Whole Numbers**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	Problems: a. $7\frac{3}{5} - 2\frac{1}{2}$ b. $6\frac{1}{4} - 3\frac{4}{5}$ Worded problems/Critical Thinking. Brad's car weighed $4\frac{1}{2}$ ounces without wheels and $4\frac{3}{4}$ ounces with wheels. How much did the wheels weigh? Think and discuss:- Think about $2\frac{3}{8} - 1\frac{1}{8}$. Do you need to rename before you subtract? Explain. Think about $3\frac{2}{5} - 1\frac{4}{5}$. Do you need to rename before you subtract? Explain. Think about $5\frac{1}{2} - 3\frac{5}{6}$. Do you need to rename before you subtract? Explain. Use fraction bar to subtract e.g. $3\frac{1}{2} - 1\frac{3}{5}$.	Solve given problems using given format. Ability to describe and explain information orally and written in solve worded problems.

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UNIT/THEME: Add and Subtract Whole Numbers

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
To multiply fractions by fractions a. multiply the numerators b. multiply the denominators.	Use of folded paper to show multiplication of fractions. Find $\frac{2}{3} \times \frac{1}{2}$.  Fold a paper into two equal parts. Colour 1 part to show $\frac{1}{2}$.  Fold the paper into thirds. Colour $\frac{2}{3}$ of the paper. Of the 6 parts 2 are shaded twice. These parts represent $\frac{2}{3} \times \frac{1}{2} = \frac{2}{6}$. Fraction strips. $\frac{1}{3} \times \frac{3}{4}$ - use three $\frac{1}{4}$ strips. Put them into 3 equal groups and pick up one group. Product = $\frac{1}{4}$. Have student model other problems.	Demonstrate the ability to use shapes to draw conclusions and solve problems.

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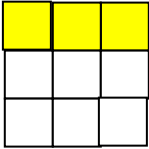
UNIT/THEME: Add and Subtract Whole Numbers

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Multiply fractions by whole numbers. e.g. $\frac{3}{4} \times 9$. Write whole number as a fraction. Multiply the numerators. Multiply the denominators.	Independent practice: $\frac{1}{4} \times \frac{2}{7}$; $\frac{1}{2} \times \frac{1}{2}$; $\frac{6}{7} \times \frac{7}{8}$ Complete multiplication sentences. $\frac{2}{5} \times \frac{?}{3} = \frac{4}{15}$; $\frac{1}{4} \times \frac{3}{8} = \frac{9}{32}$ Worded Problems. Of the people in North America, 1.6 live in Mexico. $\frac{1}{4}$ of Mexico's people are Indians. What fraction of North American people are Indians who live in Mexico? Recording – Have children write a journal entry that describes why models are useful for learning to multiply fractions. Use illustrations to reinforce their arguments. Quick Check Multiplying fractions by fractions $\frac{1}{2} \times \frac{3}{4}$. Multiplying fractions by whole numbers using shaded shapes or objects. $\frac{1}{2} \times 8$  $\frac{1}{2} \times 8 = 4$ 	Follow instructions to illustrate and describe use of models to multiply fractions. Demonstrate the ability to use shapes to multiply fractions. Identify the procedures to solve problems.

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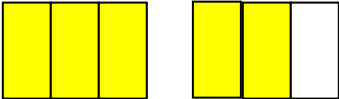
UNIT/THEME: Add and Subtract Whole Numbers

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Write the answers as a fraction or a mixed number. $= \frac{3}{4} \times 9$ $= \frac{3}{4} \times \frac{9}{1}$ $= \frac{27}{4}$ or $6 \frac{3}{4}$	$\frac{1}{3} \times 9$  $\frac{1}{3} \times \frac{9}{1} = 3$ Solve $\frac{2}{3} \times 16$ $2 \times \frac{6}{7}$ $\frac{1}{6} \times 30$ Worded problems. Christina runs 9 times around the $\frac{3}{4}$ mile track. What is the distance she runs? Children make stories using fraction of whole numbers.	Draw pictures to assist in recognizing and solving problems. Ability to use information to form statements and solve problems. Demonstrate the ability to create stories using problems given.

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UNIT/THEME: Add and Subtract Whole Numbers

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Multiplying Mixed Fractions by Whole Numbers. E.g. $1 \frac{1}{5} \times 4$. Change mixed fraction to improper fractions. Follow steps as in multiplying fractions by whole numbers. $1 \frac{1}{5} \times 4$ $= \frac{6}{5} \times \frac{4}{1} = 2 \frac{4}{5}$ $= \frac{24}{5}$ $= 4 \frac{4}{5}$ Multiplying fraction by mixed numbers. e.g. $\frac{5}{6} \times 1 \frac{3}{10}$ Change mixed fraction to improper fractions. Multiply numerators. Multiply denominators. e.g. $\frac{5}{6} \times 1 \frac{3}{10}$ $\frac{5}{6} \times \frac{13}{10} = \frac{65}{60}$ $= \frac{65}{60}$ or $1 \frac{5}{60}$	Use activities as in multiplying fraction by fraction. Quick check (Review) Using objects/shaded shapes to change mixed fraction to improper fraction. $1 \frac{2}{3} =$  $\rightarrow \frac{5}{3}$ Use activities as in multiplying fraction by fraction.	Demonstrate the ability to follow procedures to solve problems. Ability to use objects and shapes to solve problems. Ability to follow procedures to solve problems. Demonstrate the ability to apply previous knowledge to solve problems in teacher made test.

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CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Multiplying mixed fractions by mixed fractions. e.g. $1\frac{1}{4} \times 2\frac{1}{2}$. Change both mixed fractions to improper fractions. Multiply numerators. Multiply denominators. Write answers as fractions. e.g. $1\frac{1}{4} \times 2\frac{1}{2}$ $\begin{array}{c} \downarrow \quad \downarrow \\ 5/4 \times 5/2 = 25/8 \end{array}$ Ans. $25/8$ or $3\frac{1}{8}$	Quick Check (Review) Change mixed numbers to improper fraction and vice versa $2\frac{3}{5} / 14/3$ Making equivalent fractions $2/3 = ?/15$. Multiplying fractions by fractions $2/3 \times 4/5$. Multiplying fractions by whole numbers $3/4 \times 6$. Multiplying mixed fractions by fractions $3\frac{1}{2} \times 5/6$. Have children explain method of working sum $1\frac{1}{4} \times 2\frac{1}{2}$ Use activities as in multiplying fractions by fractions. Finding area of rectangle. e.g. $5\frac{1}{2} \times 3\frac{3}{4}$	Ability to recognize and follow sequence to solve problems. Ability to use format/steps to solve problems. Ability to solve problems independently.

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UNIT/THEME: Add and Subtract Whole Numbers

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	An Assessment Activity for Multiplication of fractions. <u>Colour Fractions</u> $\frac{2}{5}$ $\frac{3}{4}$ $1\frac{1}{2}$ 3 Here's how X $\frac{2}{5}$ X $\frac{3}{4}$ = $\frac{6}{20}$ = $\frac{3}{10}$ 	Ability to use cards effectively to multiply fractions.

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CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Dividing whole numbers by fractions. Dividing a number by a fraction less than 1 is the same as multiplying by a number greater than 1 e.g. $6 \div \frac{1}{3}$. Make whole number 6 a numerator by writing 1 as its denominator e.g. $\frac{6}{1}$. Change division sign to multiply e.g. $\frac{6}{1} \div \frac{1}{3} = \frac{6}{1} \times \frac{3}{1}$ Invert fractions behind the sign you change e.g. $\frac{6}{1} \div \frac{1}{3}$. Multiply numerators = $\frac{6}{1} \times \frac{3}{1}$. Multiply denominators.	Using fraction circle to find $3 \div \frac{1}{2}$ or the number of halves in 3 wholes. E.g.  Trace 3 whole circles in your paper. Model $3 \div \frac{1}{2}$ by tracing $\frac{1}{2}$ circle pieces on the 3 circles. One whole equals two halves. How many halves are in 3 wholes? Ans. 6. <u>Think and Discuss</u> Why does $3 \div \frac{1}{2} = 6$? There are 6 halves in 3. Problems (Use fraction circles to model each problem.) a. $3 \div \frac{1}{3}$ b. $4 \div \frac{1}{4}$ c. $6 \div \frac{1}{5}$	Demonstrate the ability to use objects/shapes to divide fractions. Ability to explain problems. Ability to solve problems independently.

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UNIT/THEME: Add and Subtract Whole Numbers

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	Recall that dividing a number by 2 gives you the same result as multiplying that number by $\frac{1}{2}$. e.g. $8 \div 2 = 4$ $8 \times \frac{1}{2} = 4$ Have children describe the relationship between multiplication and division for fractions through given examples. $9 \div 3 = 3$ $9 \times \frac{1}{2} = 3$ Question children to identify. - the pattern - relationship between the dividend in the division and the first factor in the multiplication problem - relationship between the quotient and the product. - Relationship between the divisor in the division problems and the second factor in the multiplication problem.	Ability to identify patterns and relationship between the parts of a problem.

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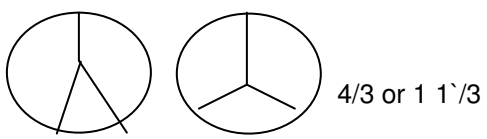
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CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
When you rewrite the problem you exchange the numerator and the denominator of the divisor. The new number is called the Reciprocal of the divisor. The product of a number and its reciprocal is 1. e.g. $2 \div \frac{2}{3} = 2 \times \frac{3}{2} \leftarrow \frac{3}{2}$ is the reciprocal of $\frac{2}{3}$ because $\frac{2}{3} \times \frac{3}{2} = 1$	Worded Problems. Gary has 4 ft. of string and needs $\frac{4}{5}$ to tie to each tomato plant to a stake for support. How many tomato plants can Gary stake up? $4 \div \frac{4}{5} \text{ Divide 4 by } \frac{4}{5}.$ $= 4 \times \frac{5}{4} \text{ Multiply 4 by the reciprocal of } \frac{4}{5}.$ $= \frac{4 \times 5}{1 \times 4} = 5$ Gary can stake 5 tomato plants. What is a reciprocal? It is the number that when multiplied by a given number yields 1. To divide by a fraction, you can multiply by the reciprocal of the divisor.	Demonstrate the ability to analyze and solve problems. Demonstrate the ability to apply new concept to solve problem.

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UNIT/THEME: Add and Subtract Whole Numbers

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
To divide fraction by a fraction is the same as multiplying fraction by its reciprocal of the order fraction. $2/3 \div 3/4 = 2/3 \times 4/3 = 8/9$	Quick check (Review) Dividing fractions by a whole number using fraction circles and mechanical problems. Use fraction circles to divide fractions br fractions e.g. $2/3 \div 1/2 = 2/3 \times 2/1$ (2/1 is the reciprocal of 1/2) $2/3 \times 2/1$  4/3 or 1 1/3 Have children make up story problems using fractions divided by a fraction. Mechanical problems: $5/8 \div 1/4$; $6/9 \div 3/5$	Demonstrate the ability to create their own worded problems.

AREA OF STUDY: MATHEMATICS**STANDARD III****UNIT/THEME: Add and Subtract Whole Numbers**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	Worded Problems Samuel is cutting cloth into pieces. The cloth is $\frac{3}{4}$ yd. Long. How many $\frac{1}{8}$ yd. Pieces can be cut? Group Activity applying all the steps in dividing fractions. Have children work in groups of four. Each group member copies a different one of the following expression on a sheet of paper. Have them complete the activity in round-robin format. Each group member does one step, then passes the paper to the group member to the right. $\frac{1}{4} \div \frac{2}{4}$; $\frac{2}{8} \div \frac{1}{5}$; $\frac{5}{9} \div \frac{2}{3}$; $\frac{2}{7} \div \frac{3}{12}$ Steps. Find the reciprocal to the divisor. Multiply the reciprocal to the divisor. Multiply the reciprocal by the dividend. Simplify if you can. Multiply the numerators and denominators. Write answers in simplest form. $\frac{1}{3}$; $1 \frac{1}{4}$; $\frac{5}{6}$; $1 \frac{1}{7}$	Demonstrate the ability to follow steps accurately to solve problems in groups.

AREA OF STUDY: MATHEMATICS

STANDARD III

UNIT/THEME: Add and Subtract Whole Numbers

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Divide mixed number by a fraction. e.g. $5 \frac{1}{3} \div \frac{1}{9}$ Change mixed number to improper fraction $5 \frac{1}{3} = \frac{3 \times 5 \times 1}{3} = \frac{16}{3}$ Follow other steps as in dividing fraction by fraction.	Quick Check (Review) Problems involving dividing a fraction by a fraction. $\frac{1}{4} \div \frac{3}{4}, \quad \frac{3}{8} \div \frac{4}{5} \quad \frac{5}{6} \div \frac{2}{3}$ Use activities as in dividing fraction by fraction.	Demonstrate the ability to apply skills to solve to made problems.

AREA OF STUDY: MATHEMATICS

STANDARD III

UNIT/THEME: Add and Subtract Whole Numbers

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Divide mixed number fraction by whole number and whole number by fraction. e.g. $2 \frac{1}{3} \div 7$ Change mixed number to improper fraction. Put whole number over 1 to become a fraction. Write the reciprocal of the divisor. Follow steps as in dividing fraction by fraction. e.g. $2 \frac{1}{3} \div 7$ $= \frac{7}{3} \div \frac{7}{1} =$ $\frac{7}{3} \times \frac{1}{7} \left(\begin{array}{l} 1/7 \text{ is the} \\ \text{reciprocal of} \\ 7/1 \end{array} \right)$	Quick check (review) Mechanical and worded problems involving division of mixed numbers by fractions e.g. $2 \frac{1}{2} \div \frac{2}{3}$; $\frac{4}{5} \div \frac{6}{7}$ Use activities as in other previous activity involving division of fractions.	Ability to describe/explain operations orally. Ability to solve problems following operation given.

AREA OF STUDY: MATHEMATICS

STANDARD III

UNIT/THEME: Add and Subtract Whole Numbers

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
To divide mixed numers by mixed numbers – Change mixed numbers to improper fraction. Change division sign to multiplication. Write reciprocal of the divisor. Follow steps as in dividing fraction by fraction.	Quick Check (Review) Mechanical and worded problems involving division of mixed numbers by fraction. Mechanical and worded problems involving dividing mixed numbers by mixed numbers. $1 \frac{1}{3} \div 2 \frac{1}{2}$ $\frac{4}{3} \div \frac{5}{2}$ $\frac{4}{3} \times \frac{2}{5} = \frac{8}{15} \left(\frac{2}{5} \text{ is the reciprocal of divisor } \frac{5}{2} \right)$ Ans: $\frac{8}{15}$	Ability to use information to solve problems. Demonstrate the ability to use format to solve problems accurately.

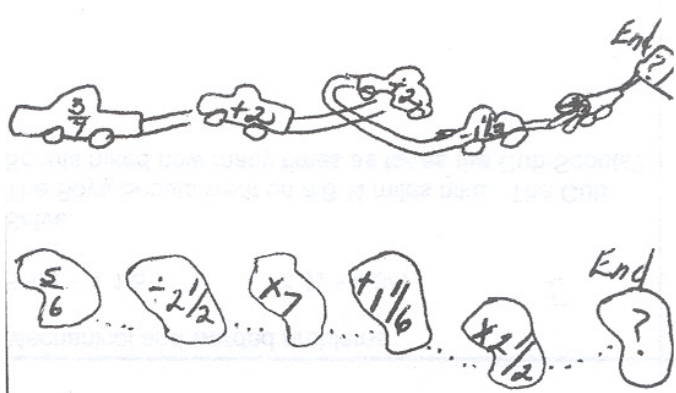
AREA OF STUDY: MATHEMATICS
STANDARD III
UNIT/THEME: Add and Subtract Whole Numbers

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
When the dividend of divisor is named by a mixed number, rename each as a fraction, then perform the division. e.g. $2\frac{2}{5} \div 1\frac{1}{3}$ Rename the mixed number as improper fraction. $= 12/5 \div 3/4$ Multiply by the reciprocal of the divisor $= 9/5$ Multiply $= 1\frac{4}{5}$ simplify	Mechanical and worded problems $6\frac{1}{3} \div 1\frac{1}{6}$ $1\frac{3}{4} \div 4\frac{3}{8}$ Solve: The Boys Scouts went on a $6\frac{1}{4}$ miles hike. The Cub Scouts hiked how many times as far as the Cub Scouts? Assessing the topic Dividing Fractions Skills practice: Find the quotient $4/5 \div 2/3,$ $4 \div 6/7;$ $3\frac{1}{2} \div 2/3$ $3\frac{1}{4} \div 2\frac{1}{2}$	The ability to use format effectively to solve problems. Practice skills in solving problems.

AREA OF STUDY: MATHEMATICS

STANDARD III

UNIT/THEME: Add and Subtract Whole Numbers

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	Rules Have children make, explain and display charts in groups showing rules for: - dividing fraction by fraction - dividing whole number by a fraction - dividing mixed number by mixed number. Activity – to reinforce all four operations Start  The diagram shows two paths of math problems leading to 'End'. The top path starts with $\frac{3}{4}$, followed by $+2$, $\div \frac{2}{3}$, $-1\frac{1}{2}$, and $\times \frac{1}{2}$, ending at 'End?'. The bottom path starts with $\frac{5}{6}$, followed by $\div 2\frac{1}{2}$, $\times 7$, $+1\frac{1}{6}$, $\times \frac{1}{2}$, and ends at a box with a question mark, labeled 'End'.	

AREA OF STUDY: MATHEMATICS
STANDARD III
UNIT/THEME: Add and Subtract Whole Numbers

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
To cancel a fraction means to reduce to its lowest term. e.g. $2\frac{1}{2} \times 1\frac{3}{5}$ Write mixed numbers as fraction $\frac{5}{2} \times \frac{8}{5}$ cancel Ans. 4 $1\frac{1}{4} \div 1\frac{1}{8}$ Write mixed numbers as fractions $= \frac{5}{4} \div \frac{9}{8}$ Write the reciprocal of the divisor $= \frac{5}{4} \times \frac{8}{9}$ cancel $= \frac{10}{9}$ write as a mixed $= 1\frac{1}{9}$ numbers	Cancellation of fractions is applied in all four operations of fractions. e.g. $\frac{2}{9} \div \frac{4}{9} = \frac{6}{9} = \frac{2}{3}$ (Divide by 3 because 3 is a factor of both.) $\frac{7}{12} - \frac{5}{12} = \frac{2}{12} = \frac{1}{6}$ (Divide by 2 because it's the factor of both numbers) $\frac{5}{6} \times \frac{2}{3} = \frac{5}{9}$ $\frac{5}{9} \div \frac{2}{3}$ $\frac{5}{9} \times \frac{3}{2} = \frac{5}{6}$	Practise and demonstrate the cancellation of fractions in all four operations.

AREA OF STUDY: MATHEMATICS

STANDARD III

UNIT/THEME: Add and Subtract Whole Numbers

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Draw Discuss Compare Display Estimate Write Explain Visualize Identify Record Describe Recognize Practice Analyze Formulate Predict Examine Differentiate Solve Apply Take steps Express View questions Follow directions Generalize Use <u>Attitudes</u> Participate Share Interact Cooperate Tolerate Willingness Understand Enjoyment Awareness Interest Independence		

AREA OF STUDY: MATHEMATICS**STANDARD III****UNIT/THEME: Add and Subtract Whole Numbers**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
CP1a,b,c – Critical thinking SP2a,b,e,f,g,h – Teamwork and Leadership SP3a – Self Evaluation EL2d – Listening and Viewing EL3a, d – Writing EL4a, e – Speaking M1f – Number M3e – Measure, quantify and calculate M4a,b – Estimate and make predictions M5a – Data Handling EA1e – Art WT5a – Design and Technology	Count Me in Grade 7 (Teacher's Resource) Houghton Mifflin Mathematics – Teacher's Edition Math Advantage – teacher's Edition – Volume Two Middle School (Harcourt Brace) Math Tools for Success – Course 1 – teacher's Edition – Prentice Hall Middle Grades Health Mathematics 4 – Walter E Rucker, Clyde A Dilley, David W. Lowry. Scott Foresman Mathematics Health Mathematics – Walter Rucker/Clyde Dilley Carlong Revision Guide for Junior Mathematics by Joyce McKenzie/Yvonne Solomon

AREA OF STUDY: MATHEMATICS

STANDARD III

UNIT/THEME: Estimate and Make Predictions

AREA OF STUDY OUTCOMES

Pupils should:

M4A – Make reasonable approximations based on relevant life experiences

M4b – use logical reasoning based on meaningful data to draw conclusion about the likely occurrence of an event

CROSS-CURRICULAR OUTCOMES

Pupils should:

CP1b – Examine information related to problem/issue

CP1c – Suggest ways of dealing with problem/issue

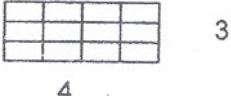
SP2a – Take part in group activities

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Length can be estimated using non standard and standard units.	1a. Measure length of objects using paper clips and record e.g. object estimate measure ?? pen 9 paper clips 6 paper clips b. Use standard units to estimate and measure e.g. the centimetre. Record estimations and measurement. c. Make a stack of 10 – 5cent coins. Measure the height of the stack. Estimate the approximate thickness of the 5 cent coins. 2a. Cover an area using pieces of cardboards. Estimate the number of pieces that will cover the area. - cardboard can be substituted with hands, small squares, different shapes.	Estimate and measure. Ability to report. Work in groups. Find area and perimeter.

AREA OF STUDY: MATHEMATICS

STANDARD III

UNIT/THEME: Estimate and Make Predictions

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	b. Arrange squares to form a square region Estimate area  c. Estimate perimeter of different objects using cm & ins.	
CONTENT ORGANIZED	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR

AREA OF STUDY: MATHEMATICS
STANDARD III
UNIT/THEME: Estimate and Make Predictions

INTO MANAGEABLE SETS		ASSESSMENT
1.Sums and differences of 3 digit numerals can be estimated by rounding to the nearest tens or hundreds. 2. Sums can be estimated by using compatible numbers e.g. 50 25 45 35 80 57 3. Average can be estimated by observing and adding numbers that are close in value.	1a. Create real life situations to estimate sums and differences. b. Practice in groups rounding off the nearest tens or hundreds to estimate sums & differences. 2a. Estimate numerals that add up to 100 and group them. Product sum by adding groups groups of 100. b. Prove by using a calculator. 3a. Cluster numerals that are close to each other in value e.g. $29 + 32 + 34 + 27 + 28 + 33$ 30 30 30 30 30 30 Average 30 b. Make a survey of children's age and find average.	1a. Creating orally telling a short story. b. Estimate to the nearest ten and to the nearest hundred. 2a. Combine numerals to make a 100. b. use a calculator. 3a. Round up and down. b. Interview classmates. c. Estimate average of children's age in their class

CONTENT ORGANIZED	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR
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AREA OF STUDY: MATHEMATICS**STANDARD III****UNIT/THEME: Estimate and Make Predictions**

INTO MANAGEABLE SETS		ASSESSMENT
1. Probability contributes to the development of problem solving skills. 2. Relative frequency can be used to estimate probability.	1. Discuss everyday events e.g. weather. Predict weather and collect information e.g. How many students think it will rain today? 2. Compare predictions at the end of the day. 3. Have students explain their predictions. 2a. Play the game "The great Race" Roll 2 dices and add up the 2 numbers to get a total. The runner whose number is the total can be moved forward one square. b. Play the game twice and observe. Does the same number always win? Is the game fair?	Ask questions Record Data Cooperate Predict

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number

AREA OF STUDY OUTCOMES

Pupils should:

M5a – Collect, analyse, present data using charts, graphs, tables and diagrams.

CROSS-CURRICULAR OUTCOMES

Pupils should:

SP2a – take part in group activities

CP1b – Examine information related to the problem/issue

EL2c – Predict what will happen in a sequence of events.

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Number pairs can be used to graph points on a grid.	• Use a grid showing number pairs and find the number pairs. • Use a grid, given number pairs and draw shapes e.g. squares, rectangles, triangles and objects e.g. boats, lamps, enlarge or draw shapes/objects in two sizes. • Observe digit clock (Exploring Math pg. 461) for a time shown in order form. • Discuss the use of a grid showing number pairs or ordered pairs. • Discuss the importance of the arrangement of the digits e.g. (0.5) is not the same as (5;0) why? They do not graph the same point on the grid.	• Ability to find/read number pairs using a grid. • Ability to use a grid, plot points to draw shapes and objects and to enlarge the drawings • Ability to recognize ordered numbers using a digital clock. • Describe the use/importance of number pairs.
CONTENT ORGANIZED	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number

INTO MANAGEABLE SETS		ASSESSMENT
Information can be collected through - observation - research – reading - interviews, experiment	Observation Project - Observe daily weather conditions, record findings, construct a chart using the findings. - Observe the traffic to find out kinds of vehicle in number and colour Research - Provide reading materials – pamphlets, newspapers, books. Conducting interviews - Find a problem - Make up questionnaire (s) - Question other pupils, teachers, other members of community using the questionnaire (s) Experiment - Work as pairs or small groups - Explore with the computer or spinner cards the number of times the spinner would land on any two colours.	Observation Ability to collect information Ability to make up a questionnaire Ability to conduct an interview Ability to work as partners. Ability to work in groups.

CONTENT ORGANIZED	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR
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AREA OF STUDY: MATHEMATICS
STANDARD IV
UNIT/THEME: Number

INTO MANAGEABLE SETS		ASSESSMENT
Information collected can be - organized - interpreted - analysed Charts, tables, diagrams and graphs can be used to organize data. Implications/conclusions can be drawn from data or information. Some information can be used to make predictions.	Collect or gather information. Draw tally boxes and graph information. Interpret information from tally boxes. Graph information from tally boxes on a table/chart, graphs. Read/discuss information from tables, charts, diagrams, graphs – pictograph - blocks/bars graphs - line – horizontal; vertical Use information to answer specific questions based on different kinds of graphs. Create problem-solving situations. Perform activities or experiments to solve the problems. Carry out surveys. Analse the data, make predictions.	Ability to use information and graph it on a tally box. Ability to interpret information from tally boxes. Ability to graph information from tally boxes on tables, charts, graphs. Ability to read information based on graphing. Ability to answer questions using information from graphs. Ability to identify problems. Ability to solve problems. Ability to carry out a survey. Ability to make predictions and compare results with predictions.

CONTENT ORGANIZED	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR
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AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number

INTO MANAGEABLE SETS		ASSESSMENT
Pictograph uses pictures to show data.	Compare actual results with predictions. Re-examine predictions for verification. Apply data to problem-solving activities e.g. - Sale of ice cream at school fair. - Survey to find out the pupils favourite flavours of ice cream and who will go to the fair. - Discuss results of survey - Make predictions - Compare actual results with predictions. - Problem-solving.	Ability to re-examine predictions. Ability to use information in order to solve problems.
	Use pictures to read and compare data. Use pictures to organize data. Use information and make pictographs. Use pictograph to solve problems.	Ability to read, compare and organize data using pictographs.

CONTENT ORGANIZED	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR
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AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Number**

INTO MANAGEABLE SETS		ASSESSMENT
Block and bar graphs help you organize and compare data. Line graphs are used to show continuous data.	Use grid paper, data and construct line graphs. Read about people who invented graph e.g. Rene Descartes. Invite and talk with personnel who work with graphs e.g. weather officers.	Ability to graph information on block and bar graphs. Ability to construct line graphs.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
2a. Numbers can be expressed in different forms to show place value.	- Children may play Bingo using words in place of letters and re-placing two digit numerals with larger ones. Eg: The caller may say “Addend – 7845” or “Minuend – 85,304” or “Subtrahend – 759” etc. - Given symbols to represent digit 0 –9, children will decode and make larger numbers then write the same words. Eg: 0 =  ; 1 =  ; 2 = X; 3 =  4 =  42,301 =  X,     = Forty-two thousand, three hundred and one. - Play flash card game having numbers in front and letters behind. Put number cards in sequential order then read the word formed from the letters behind. Say the word. Have children copy the words in their note-books. Ask them to define the words and make sentences. - Play games with children using flash card to show place value in various forms.	- Cooperation and performance within groups - Accuracy of place value chart.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT																															
2b. The value of a digit depends on its position in a standard numeral. 2c. Play money can help you understand four digit numbers.784	<table border="1"><thead><tr><th>Ten thousand</th><th>Thousand</th><th>Hund.</th><th>Tens</th><th>Ones</th></tr></thead><tbody><tr><td></td><td>4</td><td>3</td><td>5</td><td>6</td></tr><tr><td></td><td>5</td><td>6</td><td>3</td><td>4</td></tr><tr><td></td><td>6</td><td>5</td><td>4</td><td>3</td></tr><tr><td></td><td>3</td><td>4</td><td>6</td><td>5</td></tr></tbody></table> Use money to show place value by placing thousands and ones in their respective places. <table border="1"><tr><td>\$20,000</td><td>\$5,000</td><td>\$100</td><td>\$100</td><td>\$10</td><td>\$1</td></tr></table> \$20,000 + 5,000 + 100 + 100 + 10 + 1 3a. Using cards with numerals and signs, children will change the expanded form to standard numerals and vice versa. Eg: A child may have a card marked 4,000 another can hold the plus sign and other children hold 300; 80; 5. Children would then add the numerals to get 4385. Signs may be then changed to expand multiplication. Ask children to expand the given numeral in another way and elicit from them the idea of (4x1,000)+(3 x 100) + (8x10) + (5x1)	Ten thousand	Thousand	Hund.	Tens	Ones		4	3	5	6		5	6	3	4		6	5	4	3		3	4	6	5	\$20,000	\$5,000	\$100	\$100	\$10	\$1	2. Categorize money according to value on place value chart. 3a. Ability to expand numerals in a variety of ways.
Ten thousand	Thousand	Hund.	Tens	Ones																													
	4	3	5	6																													
	5	6	3	4																													
	6	5	4	3																													
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AREA OF STUDY: MATHEMATICS

STANDARD IV

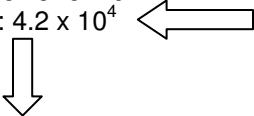
UNIT/THEME: Number

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Eg: $43,856 = 40,000 + 3,000 + 800 + 50 + 6$ $(4 \times 10,000) + (3 \times 1000) + (8 \times 100) + (5 \times 10) + (6 \times 1)$ 3c. Numbers maybe expressed in scientific notation. - Scientific notation is a way of writing large numbers in a shortened form. - A number written in Scientific Notation is shown in the product of a number between 1 and 10 and the power of 10. Eg: 1-10 Standard Numeral ↓ → ↓ $42,000 = 4.2 \times 10^4$	Allow children to ask question about the Lesson and take turns answering. Do several examples. - The teacher will discuss with children what is Scientific Notation. Have children take turns at chalk board writing numbers to illustrate scientific notation. - Ask children to state where decimal point should be in numeral 42000 eg: 42000. Discuss with them that since a number written in scientific notation is shown as the product of a number between 1 and 10 and a power of ten, the number must be higher than 0 and lower than 10. - Have children write 42000 in scientific notation and explain their answers. Elicit from them that 42000 would be 4.2×10^4 in scientific notation.	- Respond to questions in a clear logical manner. - Take part in group activities 3c. Ability to follow directions and to inperpret information presented.

AREA OF STUDY: MATHEMATICS

STANDARD IV

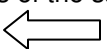
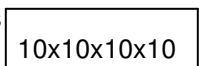
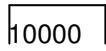
UNIT/THEME: Number

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
3d. The numeral 42,000 maybe written in scientific notation by recording the number between 1 and 10 which is 4.2 and multiply by a power of 10. Eg: 4.2×10^4  Power of ten To write a number in scientific notation: Move the decimal point to the left to show a number between 1 and ten. Multiply by the power of ten that corresponds to the number of places the decimal point was moved. $30700 = 3.07 \times 10^4$  number of places. Move 4 places.	- Discuss the decimal point being moved to the left to show number between 1 and 10. Eg: $42000 = 4.2$ - Have them count the number of places the decimal point was moved to and ask them to correspond that number to the power of ten.	3d. Children's ability to accurately write numbers in scientific notation.

AREA OF STUDY: MATHEMATICS

STANDARD IV

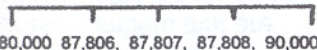
UNIT/THEME: Number

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
3e. An exponent is a number that tells how many times a number, called the base, is used as a factor. Exponents are used to express numbers that are products of the same factor. Eg: 10^4  exponent Base 10 used 4 Times  = 4 zeros  3f. 10^4 is read: "ten to the fourth power." 10^3 is read: ten to the third power or ten cubed.	3e. Now teacher will introduce exponents. Discuss using examples that 4.2 is the sum between 1 and 10 and that 10 is actually $10 \times 10 \times 10 \times 10$ with 10 as the base and 4 as the exponent. 3f. Allow children to take turns doing exponents on the chalk board. - Have children do group work to test understanding of exponents. They may be given flash cards with standard numerals and all groups members write scientific notation, that give numerals. The group that completes the task getting the most correct within a given time wins. - Ask children to explain their answers.	3e. ability to write and interpret numbers in exponential form. 3f. Ability to follow directions. Take part in group activities.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
4a. Numbers can be compared to find which is greater or less. 4b. Numbers can be put in order by size. 4c. You can use place value to compare numbers such as 47,368 and 47,683. 4d. To compare, start at the left. Find the first place where the digits are equal. Compare the digit in that place. 4e. A number line could be used to compare whole numbers. 	Divide children into small groups. Give flash cards with numbers and ask them to stand in line and present numbers from large to small. Allow children to compare the numbers on the cards as directed. Give flash cards with numbers. Children will take turns placing cards on number in sequence. Divide children into small groups. Ask them to measure the different classroom, and compare with their own. In groups children may measure houses in various areas of the community and compare sizes. Allow children to form conclusions on why in some areas of the community there are more large houses than in other areas. Have children write report on their observation during Summer or other holidays. They will compare the number of people in household in sections of the community. They may observe that during the Summer, there tend to be a large number of people in a certain area than in another area. Allow then to form conclusions.	Cooperation and performance within groups. Make accurate comparison based on findings. Accuracy of data and chart. Expressions of Ideas Gather information from Newspapers, field trips, and other people.

AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Number**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
4f. The symbols $<$ and $>$ can be used to compare numbers. 5. Rounding left to the nearest thousand. When a quantity cannot be expressed accurately, we must give an appropriate figure to the nearest place value. This process is termed as "Rounding off". To round off to the nearest thousand (1000) used the digit in the hundreds place.	They may decide that people in one area go on vacation because they have the means while others return home from working in other communities or from school. Have children do art project where they will construct models and measure lengths/width/height etc. They will record and compare measures. Children may collect newspaper clippings and make a booklet showing comparisons. Have the record and give reasons for the larger/smaller of advertisement under sports/business to penpal/personal. 1. Instruct children to use base ten blocks to show numbers: eg: 4697, 3000, 4000, 5000. What are the two models of thousand that are closest to 4,697? Allow children to examine the numbers shown. Have them determine whether 4,697 is closer to 3,000 or 4,000. Ask them if it is closer to 4,000 or 5,000. Have them explain their answers. 2. Use numberline to round off numbers; eg: Round (off) 75,600 to the nearest thousand.	Cooperation/performance within groups. Ability to formulate questions when doing research work. Creativity of design. Follow instructions in logical order. Make accurate comparison based on findings. Use of initiative/creativity in designing. Accuracy of estimation. Express Ideas

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
If the numbers in the hundreds place is less than five, it is omitted and a zero (0) is put in its place. If the hundred digit is five (5) or more, the hundred digit is increase by 1 and (0) zero is put in the other places to the right. Eg: 47,843 Round to the nearest thousand. Look at the hundreds place 8 is greater than 5, so 7 which is in the thousand place is increased by 1 and becomes 8 then all the other numbers become 000. 47,843 = 48,000 3,206 = 3,000 3,602 = 4,000 A number line maybe used to help round off numbers.	Have children construct numberline and make their own flash cards in attractive shapes. Ask children to put numbers on their flash cards and put the flash cards in order on the numberline. Children may research number of houses in an assign area and record them rounding off to the nearest thousand, hundred or tens as indicated. Ask children to research on the current population of villages or towns. Allow them to choose a number of towns or villages having very large population and round off to the nearest thousand. They may round population of small communities to nearest hundred or tens. They may research and present to class.	Explain use of diagrams. Make factual statements. Ability to recognize place values. Ability to formulate questions when doing research. Gather information from Community Leaders.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
6. Addition is the mathematical process of adding one number or quantity to another. The numbers added together are called the addends and the answer is the sum. To find the sum, add the addends downwards. (To check, add the addends upward.) When adding, line up the digits in the correct column. You may need to regroup from one column to the other. 7. Subtraction is the mathematical process of taking away one number or quantity from another, finding the difference between two numbers or quantities.	Use the number wheel to introduce addition of four digit numerals to children. Children may take turns spinning the wheel containing numbers 0 – 9 in order to get a number for each place value up to thousands. After writing numbers in turns on chalkboard, children will add following the rules. Children may make card games with addition problems. Sums on one card, addends on another. Putting cards face down, children will take turns to pick up and associate cards – addends with sums respectively. Eg: 2,465 1,706 12,008 16,179 Using number wheel, have children practice subtraction. Have them choose two sets of numbers by spinning the wheel – Instruct them to arrange the numbers correctly and subtract.	Cooperation and performance within groups. Assess application of problem solving strategies. Follow instruction in logical order. Creativity of design Follow instructions Completion of Task Sort and categorize Follow instruction in logical order. Demonstrate ability to add.

AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Number**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT										
The numbers being subtracted is the subtrahend. The subtrahend is subtracted from the minuend . The answer is the difference or remainder. To check subtraction problem, add the subtrahend and the difference. The sum is the minuend. <u>Skills</u> <table><tr><td>Identify</td><td>Manipulate</td></tr><tr><td>Record</td><td>Sort</td></tr><tr><td>Discuss</td><td>Decode</td></tr><tr><td>Report</td><td>Classify</td></tr><tr><td>Solve</td><td></td></tr></table> <u>Attitudes</u> Cooperation Tolerance Interest Awareness	Identify	Manipulate	Record	Sort	Discuss	Decode	Report	Classify	Solve		In small groups children may use flash cards or number cards to practice subtraction. They may take turns setting up cards, while others subtract and give answers. They could make memory games on cards and play in small groups to practice subtraction. Give subtraction puzzles for children to solve. Have children do word problems.	Cooperation and performance within a group. Practice and demonstrate the ability to subtract correctly. Ability to formulate questions. Sort and categorize numbers correctly.
Identify	Manipulate											
Record	Sort											
Discuss	Decode											
Report	Classify											
Solve												

AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Number**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
SP2a. Take part in Group Activities F13h. Apply the writing process to their work F14a. Express ideas and opinion. F14e. Ask questions and give information. M1a. Collect, analyse and present data using chart.	1. New Common Entrance Math 2. Progress in Mathematics 3. Addison – Wesley – 4. Health Mathematics 5. Middle Grade Math – Tools for Success – Course 1 6. Active Mathematics 7. Caribbean Primary Math

AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Number****AREA OF STUDY OUTCOMES**

Pupils should:

M1b – Understand the Consecutive Sequence and Position of Numbers 6000 – 9999

M1c – Understand Quantity in Numbers 6000 - 9999

CROSS-CURRICULAR OUTCOMES

Pupils should:

SP2f – Help the group achieve its goal

SP2a – take part in group activities

SP1a – Recognize an issue or a problem

SP2e – Lead and follow where appropriate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Notation and numeration deals with writing numbers in figures and in words. It also entails the reading of numbers. Reading and writing of whole numbers requires the placement of such numbers under the headings (thousands, hundreds, tens, units) Numbers can be placed in series showing regular patterns (sequence) when Listing numbers.	Given numbers with a maximum value of 9999. Students will state the value of randomly selected numbers. (Place Value) Students will research numbers within the given quantity on their own. Eg: phone numbers, population, license plates numbers etc. Students would illustrate the value of these numbers on place value chart, bar graph and pie chart. Numbers would be dictated to them and they will be required to write them down. The teacher would give a few complex patterns eg: using 2 different signs in the pattern. Students will identify the remaining numbers.	Labelling place value of numbers. Gathering and recording data. Ability to create the charts etc. and represent information on them accurately. Ability to listen and reproduce the data. Ability to analyze and understand the data. Being able to interact with peers.

AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Number**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Numbers maybe compared and placed in consecutive order ie: in terms of size, and the use of equality and inequality signs.	Students will be placed in groups to create their own patterns. The other groups will try to figure out the pattern. Use games/puzzles to reinforce patterns. Students would be given a set of numbers randomly. They will rewrite the numbers from least to greatest (vice versa). Students will be given unitary digits and they will unscramble them to create the largest or smallest possible number e.g.: 7891 and 9871 or 1789. Students would order a given set of numbers on number line or bar graph to show the size ie: using dates, weight, Review the previously learnt concept of the inequality signs. They would then be given number to compare.	Create patterns of their own. Solve other patterns. Ability to interpret and classify in order. Analyze the digits to create an answer. Ability to create graph. Record and reproduce data. Ability to understand and use signs effectively.

AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Number**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Identity Classify Discuss Order Sort Compare Describe Arrange Observe <u>Attitudes</u> Cooperation Willing to interact within a group. Develop an interest in numbers. Appreciate each others ideas and opinions. Use numbers in a variety of ways.		

AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Number**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
M4a – Make reasonable approximations based on relevant life experiences. EL4a – Express ideans and opinions EL1k – Interpret and follow instructions/directions EL1j – Make inferences and draw conclusions SP3a – Assess their needs/interest	Guiding Children's Learning of Mathmatics (Teacher Resources) Exploring Mathematics – Scott Foresman and Co. Addison – Wesley Mathematics Math Advantage – Middle School

AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Number****AREA OF STUDY OUTCOMES****Pupils should:****M1d – Understand the Properties of Odd and Even Numbers****CROSS-CURRICULAR OUTCOMES****Pupils should:****SP1a – Recognize an issue or a problem****SP2a – take part in group activities****SP2e – Lead and follow where appropriate****SP2f – Help the group achieve its goal**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
1. An even number is one that can be divided exactly by 2.	1. Discuss odd and even number with children. Individuals may give examples of even number and odd numbers. • Divide children into groups and have leaders flash cards with even numbers or odd number.	Expression of ideas. Cooperation and performance within groups.
2. An odd number is a number which when divided by 2, gives the remainder 1.	2. Children will be divided into groups and construct trees to represent odd and even. Children will cut out leaves and number them from 1 – 100. Children may play games putting the leaves on their respective trees.	Completion of task in logical manner.
3. A graph may be used to show odd and even number.	Divide children into groups and have leaders flash cards with even numbers or odd numbers.	Ability to identify and differentiate between odd and even numbers.

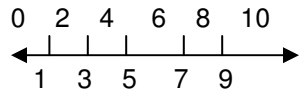
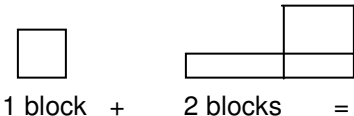
AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Number**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
1. One way of recognizing odd and even numbers is by using the divisibility rules.	• On the graph paper they should shade all the squares with the same colour marker/crayon, counting by two. If there is an extra square, children or teacher should use a different colour for that one. By looking on the squares, children will compare with the number on flash cards and decide if the number is odd or even. • Encourage children to record in their journals, the methods they used to determine odd and even numbers, then evaluate the methods. • Ask children to describe the advantage of the strategies and to explain why the strategies worked. • They may display their journals in class for others to read and assess each other's work. Using building blocks and chart, showing divisibility rules, children will be able to recognize odd and even number.	Use of graph to recognize odd and even numbers. Describe and express facts. Recording and drawing conclusions. Describe and explain their findings. Ability to interpret written information.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
If the ones digit is an even number, that number is divisible by 2. Reading and writing sets of odd and even numbers may be done in sequence. A number line maybe used to show odd and even numbers.  Pattern can be discovered in order to complete sequence.	Following teachers instructions, children can se up blocks to explain divisibility rule Eg:  1 block + 2 blocks = 3 blocks Following teachers instructions, children can set up blocks to show sequencing of odd and even numbers. Eg: Even Numbers 2, 4, 6, 8, 10 Odd Numbers 1, 3, 5, 7, 9 By drawing a number line on chalkboard, all the children can take turns to complete the odd and even numbers. Individuals will take turns putting odd/even numbers in their respective places, or number line. Children may discuss the number line in small groups and explain the pattern used. Children maybe given hand out with charts showing odd and even numbers.	Demonstrate and apply the divisibility rule. Completion of task in logical order. Use of number line to show odds and evens

AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Number**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Observe Compare Explain Record Describe Arrange <u>Attitudes</u> Cooperation Awareness Satisfaction Confidence	• Children can be instructed to complete the series of odd numbers of the series of even numbers by discovering the patterns. • Allow children to give reasons for their answers.	Make accurate comparison based on findings Expression of ideas

AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Number**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
SP2f. Help the group achieve its goal. Sp2a. Take part in group activities. E14f. Express ideas and opinion S14b. Ask questions for information and understanding.	1. New Progress in Mathematics 2. Scotts Foreman Math 3. Middle Grade Math Food for Success – Course 1 4. Math Advantage – Harcourt Brace 5. Addison – Wesley Mathematics

AREA OF STUDY OUTCOMES

Pupils should:

M1c – Understand the Properties of Prime and Composite Numbers**CROSS-CURRICULAR OUTCOMES**

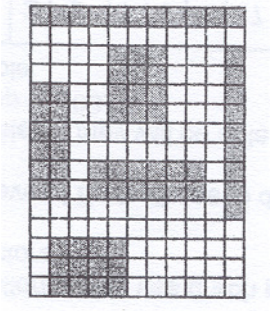
Pupils should:

SP2a – take part in group activities**CP1a – Recognize an issue or a problem****CP1b – Examine information related to the problem/issue****SP2e – Lead and follow where appropriate****SP2f – Help the group achieve its goals**

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
1. A prime number is a number which has only 2 factors, itself and 1. It cannot be divided by any other number. Two is the only even Prime Number. If a Prime Number is used as a factor, it is called a Prime Factor.	1. Given graph paper, children will be asked to show how many rectangles can be made from specified number of squares. 	• Children's ability to identify prime numbers • Make inferences based on finding • Present ideas in a clear logical order

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT																						
Example: 3 = 1x3 7 = 1x7 11= 1x11 3, 7 and 11 are all Prime Factors When two numbers are multiplied together the result is called a product. Each of the two is called a <u>factor</u>. Factor x Factor x Factor = Product Example: 4x7 = 28 2 x 14 = 28 1 x 28 = 28	Use the number of squares on the graph paper to determine prime and composite numbers. Have children play bingo game in order to identify prime and composite number. Children may use graph paper to determine factors. Use the sieve of Eratosthese to detemine all prime numbers. Using the sieve, they will be ablt to identify composite numbers up to 100. For Example: (a) <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td></td><td></td></tr><tr><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td></td><td></td><td></td></tr></table> (b) Cross out 1 (c) Circle and cross out all multiples of 2. Children will be able to follow given instruction.	1	2	3	4	5	6	7	8	9			11	12	13	14	15	16	17	18				Interpersonalrelationship among peers. Ability to recognize prime and composite numbers. - Sort and categorize - Completion of task in logical order. Follow instructuions in logical order.
1	2	3	4	5	6	7	8	9																
11	12	13	14	15	16	17	18																	

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT			
Sp 1, 2, 4, 7, 14 are called factors of 28 because 28 can be divided by 1, 2, 4, 7, 14 and without leaving a remainder. A number with a factor of 2 or more numbers is a common factor To find the highest common factor of a set of number. Write each number as a product of its Prime Factors.	Review the concept of factors. Using flash cards that were previously made, children can list the factors of given numbers. Have children identify the common factors. Elicit from children the highest common factor. Example: <table><tr><td>6 1x6 2x3</td><td>8 1x8 2x4</td><td>12 1x12 2x6 3x4</td></tr></table> 1,2,3,6 1,2,4,8 1,2,3,4,6,12	6 1x6 2x3	8 1x8 2x4	12 1x12 2x6 3x4	Sort and categorize numbers Completion of task in logical order The ability to describe and explain how to determine the highest common factor.
6 1x6 2x3	8 1x8 2x4	12 1x12 2x6 3x4			

AREA OF STUDY: MATHEMATICS

STANDARD IV

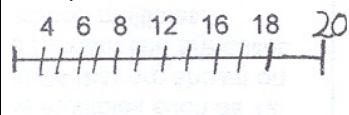
UNIT/THEME: Number

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
3. A number that has more than two factors is called a composite number. The number 1 is neither prime or composite. 42-6x7 3x14 21 x2 42x1 42 is made up of two or more factors: 42 is a composite number. 4. When counting and writing Prime numbers begin from 2. Example: 2,3,4,5,7,11,13	Children will list all the factors 1,2,3,4,6,12 List the → common factor 1,2 List the → highest 2 Using building blocks, elicit from children the concept of factors. Have them take turns making rectangles with given blocks and ask them to list the factors used. In small groups or individually, children may use construction paper to make flash cards with factors of given numbers. 5. Have children say all the Prime number up to 100 and all the composite numbers up to 100. 6. Encourage children to work in peers or triads and each take turns listing a range of given prime numbers. Each child is awarded a point for correct responses.	Identification of factors Accuracy of information presented. Completion of task Ability to identify factors of numbers in small groups. Identifying the sequence of prime numbers. Cooperation within groups.

AREA OF STUDY: MATHEMATICS

STANDARD IV

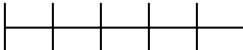
UNIT/THEME: Number

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
When counting and writing composite number, begin from 4. Example: 4,6,8,9,10,12,14 5. Prime and composite numbers can be written and read in sequential order. 6. A multiple is the product of two numbers. To find multiples of a number multiply the number eg: 1,2,3,4 This number line shows multiple of 4 and 5. Multiples of 4 	Divide children into groups and allow them to make charts showing Prime Numbers into sequence up to 101 And composite numbers up to 100. Children will be given handouts with a table showing number and they will list the factors of each number. Then state whether they are prime or composite. Given Instructions children will calculate and determine multiples on calculators. Using a number line, ask children to list multiples discovered. Have them show the relationship between multiples and factors. Ask children to list multiples of given numbers 2 and 3. Eg: 2 = 2,4,6,8,10,12 3 = 3,6,9,12 They may circle the common multiples and write down the least common multiples.	Cooperation and contribution towards group work. Identification of prime and composite numbers Use of the calculator to determine multiples

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Multiples of 6  The multiples such as 12 and 24 that are shown on the number line are called common multiples. The smallest of the common multiples is called the least common multiples (L.C.M.)	Taking turns at chalkboard, children will use prime numbers to come up with the L.c.M. 2 2 3 4 2 1 3 1 3 1 3 1 1 1 1 3x2x2 = 12 L.C.M. = 12	Find the L.C.M. of a number

AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Number**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Explain Communicate Descriminate Distinguish Observe Draw Compare Manipulate <u>Attitude</u> Cooperation Pride of Achievement Tolerance Confidence		

AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Number**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
Sp2a. Take part in group activities EI1k. Interpret and follow instructions M5a. Collect and analyze Sp2f. Help the group to achieve its goals CP1b. Examine information related to the problem S14b. Ask questions for information and understanding	1. Middle Grade Mathematics – Course 1 2. Math Advantage – Harcourt Brace 3. Scotts Foreman Math 4. New Common Entrance Mathematics 5. New Progress in Mathematics 6. Addison – Wesley Mathematics

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(fractional)

AREA OF STUDY OUTCOMES

Pupils should:

M1f – Understand the concept of other rational numbers including Percent, Fractions, Ratio and Integers

CROSS-CURRICULAR OUTCOMES

Pupils should:

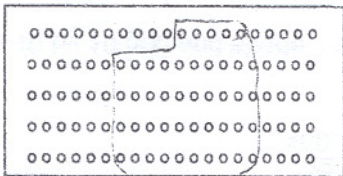
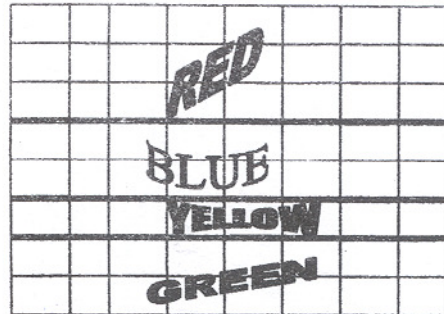
CP1a – Recognize an issue or a problem

CP1b – Examine the information related to the problem/issue

CP1c – Suggest ways of dealing with the problem/issue

SP2a – Take part in group activities

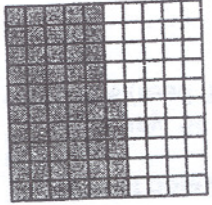
SP2f – Help the group to achieve its goals

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Percent means per one hundred or hundredths. We use percent when we want To compare a number with one hundred. The symbol for percent is %	Use 100 dots to make this diagram.  The ratio of dots inside the loop to all dots is 54 to 100 (54) 100 We say: 54 percent of the dots are inside. We write 54% (read fifty-four percent)	Draw and use diagrams to illustrate percentages. Draw a 10 by 10 grid. Write a ration and a percent to name the shaded part. 

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(fractional)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
You can write any fraction or decimal as a percent and vice-versa.	Draw a 10 by 10 grid and have students tell what part is shaded.  Shaded $\frac{55}{100}$ Total $\rightarrow$ $\frac{55}{100} = 55\%$ Display a 10 by 10 grid and shade 4 square 4 of 100 are shaded. $\frac{4}{100}$ are shaded: 4% are shaded The fraction $\frac{3}{5}$ is brought to a percent by changing $\frac{3}{5}$ to a decimal	Interpret the concept of percentage. Compare fraction or decimals as percent and vice versa. Identify percentage using a variety of objects or materials.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(fractional)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT															
A percent can be written as a fraction (in its lowest terms) or as a decimal.	0.6 5 3.0 = 0.6 0.6 is 60% Use this method to write a percent as a fraction. Multiply the fraction by 100. 20 3/5 x 100 = 60% The decimal 0.05 is 5 hundredth. It can be expressed 5 as 100 which is 5% A decimal can be written as a percent by moving the decimal point two places to the right and adding % signeg: 0.225 = 22.5% Briefly review the procedure for reducing a fraction to its lowest term. Have student then write each percent as a fraction (in its lowest term)- Eg: 25 2 5% = 100 = 1/4	Teacher made test; for example: Observation On April 24th Grackles (Blackbirds) 15 Pigeons 24 Swallows 12 Total 60 1. What fraction of birds were grackles? 2. What percent were grackles? 3. Write the percent as a decimal Complete the table below <table><tr><th>Fraction</th><th>Decimal</th><th>Percent</th></tr><tr><td>1/2</td><td>0.5</td><td>-</td></tr><tr><td>-</td><td>0.2</td><td>20</td></tr><tr><td>3/5</td><td>-</td><td>60</td></tr><tr><td>1/8</td><td>0.125</td><td>-</td></tr></table> Children's ability to make inferences from one data.	Fraction	Decimal	Percent	1/2	0.5	-	-	0.2	20	3/5	-	60	1/8	0.125	-
	Fraction	Decimal	Percent														
1/2	0.5	-															
-	0.2	20															
3/5	-	60															
1/8	0.125	-															

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(fractional)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	Explain that a percent can be changed to a decimal by moving the decimal 2 places to the left. Eg: 95% = 0.95. Give students similar examples to the one above. Explain to students that to write percents greater than 100% as decimals, follow the same procedures as with percents less than 100% eg: 12% = 1.20 = 1.2 <u>TEAM-UP-PROJECT</u> Students find a painting or picture of a group of people. They write statements containing fractions, decimals and percents that compare members of the group.  There are five persons in picture 3 girls and 2 boys $\frac{3}{5}$ are girls – 60% are girls – 0.6 are girls. Students use statements to write a description of the group in the painting or picture.	Ability to write and change percent to fractions and percents to decimals. Students reinforce concept using a variety of examples. Write each percent as a fraction in its lowest terms. (a) 27% (b) 13% (c) 50% (d) 45% (3) 4% (f) 250% (g) 300% Write each percent as a decimal (a) 28% (b) 39% (c) 53% (d) 2% (e) 7% Clear factual statements

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(fractional)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
A percent of a number can be found by using a fraction or using a decimal.	In spanish students give description of the group in picture or painting eg.- Hay cinco personas en pintura.Tres son ni6as. Students can find a percent of a number by using a fraction or decimal, A survey of 32 children showed that 25% of them were afraid of the dark. How many ofthe children were afraid of the dark? To solve this problem: 25% of 32 (a) use a fraction $\frac{25}{100} \times 32 = 8$ $25\% = \frac{25}{100} = \frac{1}{4} - \frac{1}{4} \times 32 = 8$ (b) Use a decimal - 25% of 32 $\begin{array}{r} 32 \\ \times 0.25 \\ \hline 160 \\ 64 \\ \hline 8.00 \end{array}$ 8 of the 32 children were afraid of the dark. Students then find the percent of numbers, moneymass. Example: - Find 40% of 75 - What is 88% of 154? - Find 60% of 20kg	Ability to express one's self orally in spanish using numbers. Ability to use concept fro finding percent of a number. Use the clue given to form the word described. Example: In theword lesson '50% of the letters spell the name of a family member (son). In the word 'sport' 60% of the letters spell the word for the opposite of bottom (top). Students are divided into pairs. One student finds percent of a number by using a fraction, the other finds percent by using a decimal. Answers are compared to make sure they are the same. John has 20 marbles 25% of them are green How mayare green? $\begin{array}{r} 25 \quad 20 \quad 20 \\ 100 \times 1 = 5 \text{ or } \frac{25}{100} \\ \frac{25}{100} = 5 \\ \frac{40}{100} \\ 5.00 \end{array}$

AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Number(fractional)**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	The Sales tax on a \$20,000 car is 5%. What is the amount of the tax? During the basketball season, Paula shot 175 free throws. She made 20% of them. How many free throws did she make? The number of calories per day in a diet is 2,000. If 30% of the total number of calories is fat, how much fat is this? In a class of 40 students, 20% speak spanish. How many students speak spanish?	Ability to solve problems in numbers, money and mass using per cent. Ability to relate Math concept to real-life situation.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(fractional)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
A circle graph is a kind of graph useful for presenting a certain set of information and showing how numerical quantity is distributed using percentage. Estimation can be done when working with percent.	Direct student's attention to the section labelled 'Channel 5' in the circle graph above. What part of the circle represents 'Channel 5'? ($\frac{1}{4}$) What percent is this? (25%) Is the part that represents Channel 3 more or less than 50%? (Less) After the Discussion of the questions. Students then answer questions on graph. Examples: About what percent preferred Channel 3? (a) 46% (b) 55% (c) 40% About what percent named Channel 4? (a) 15% (b) $37\frac{1}{2}\%$ (c) 25% Students draw circle graphs using a compass. Placing projector on center-point, they divide circle into angles showing different degrees.	Ability to interpret information on a circle graph. Make reasonable conclusion. Make reasonable estimate. Checklist Criteria Graphs are checked for accuracy and neatness

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(fractional)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	A circle graph (pie chart) divided into five sectors. The sectors are labeled with their respective categories and percentages: 'Food 30%' (top-left), 'Rent 25%' (top-right), 'Clothing' (bottom-right), 'Others 10%' (bottom-left), and 'savings' (middle-left). The sectors are separated by thin black lines. Use circle graph to calculate the money spent on food, rent, savings etc. Students study the graph above. It illustrates how the money earned by a man for a year is spent. (The whole circle represents 100%) If the man earns \$36,000 for this year, find how much he spends on food, clothing, rent, savings and others using the graph above. Students research information on population, budget, ethnic groups, and construct circle graphs that use percent to present information.	Ability to collect information from given graphs and interpret information accurately.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(fractional)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Observing Discussing Comparing Identifying Drawing Sharing Organizing Estimating <u>Attitudes</u> Understand the use of percent Sharing and contributing to group work Understanding the importance of estimating		

AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Number(fractional)**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
EL1g – create visual images SS2a – understand weather changes and the factors which affect these different parts of Belize. ST8a – understand the natural process which supports the environment SL2b – write short messages EL3f – express thoughts and feelings EL1k – interpret and follow instruction	Mathematics Unlimited 2nd Edition Elementary Mathematics 4 Active Mathematics Caribbean Primary Math

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(Integers)

AREA OF STUDY OUTCOMES

Pupils should:

M1f – Understand the concept of other rational numbers including percents, fractions, ratios and integers.

CROSS-CURRICULAR OUTCOMES

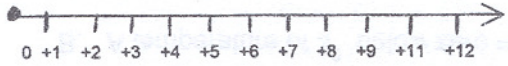
Pupils should:

CP1a – Recognize an issue or a problem

CP1b – Examine the information related to the problem/.issue

SP2a – Take part in group activities

CP2f – Help the group to achieve its goals

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Integers include all whole numbers, their opposites and zero. Positive and negative whole numbers are sets of Integers that can be presented on a number line. Zero is neither negative nor positive.	Discuss with pupils the sets of numbers that make up sets of Integers. Example: Positive and negative whole numbers and the original 0 (zero) A number line is used to further explain, compare and identify positive and negative whole numbers.  Numbers to the right of the origin zero '0' are called. 	Contribution to the discussion. Identify numbers that make up the sets of integers. Explain Integers and compare integers using a number line.

UNIT/THEME: Number(Integers)**UNIT/THEME: Number(Integers)****UNIT/THEME: Number(Integers)**

AREA OF STUDY: MATHEMATICS

STANDARD IV

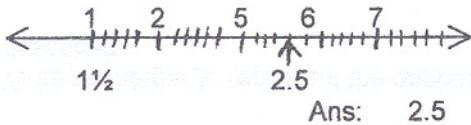
UNIT/THEME: Number(Integers)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Every Integer except zero has an opposite. Integers are numbers that can show going in opposite directions.	Read: The absolute value of negative four is four Write: $1 + 4 = 4$ Read: The absolute value of positive four is four Motivate pupils by using this activity to develop students understanding of opposites. Read each situation then ask students to describe an opposite situation. - Raise the flag <u>Lower the flag</u> - Save \$40. <u>Spend \$40</u> Go up to the fifth floor. <u>Come down to the fifth Floor.</u> Write an integer to represent the opposite situation described. - Moving forward 4 spaces on a game board. 4 moving backward 4 spaces -4	Identifying the absolute value of positive and negative numbers. Read, describe and write opposite situations. Describe oppoiste situations and write integer to represent it.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(Integers)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
The number line can be used to compare and order integers. The $<$, $>$ signs can be used to order integers. Two-colour counters can be used to add integers.	- Going up 3 flights of stairs 3; going down 3 flights -3. Use the number line to compare and order integers from least to greatest and vice versa. Tell which integer is greater $1\frac{1}{2}$ or 2.5  Use the inequality symbol for less than and greater than ($<$, $>$) to arrange integers from least to greatest and vice versa. $0 > -5$ $2 < 6$ Modelling Addition of integers to keep track of points during a game. Ann and Mark are using yellow counters to represent positive points, or points gained and red counter to represent negative points, or points lost.	Order and compare integers using the number line Compare using the inequality signs. Compare integers using the less than/greater than signs.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(Integers)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
When two negative integers are added, add the numbers without their sign. Use the sign of the numbers.	Explore: In the first round, Ann earned 5 points. In the second round, she earned 3 points. Use yellow counters to model Ann's total score. First-round points/Second-round points $\begin{array}{ccc} 0 & 0 & 0 \\ 5 & + & 3 = 8 \end{array} \quad \leftarrow \quad \begin{array}{ccc} 0 & 0 & 0 \\ & & \text{Total Scores} \end{array}$ Marla lost 3 points in the first round. Then she lost 4 points in the second round. Use red counters to model Marla's total scores, First Round Points Second Round Points $\begin{array}{ccc} 0 & 0 & 0 \\ -3 & + & -4 = 7 \end{array} \quad \begin{array}{ccc} 0 & 0 & 0 \\ & & \text{Total Score} \end{array}$ Explore: Jacques gained 9 points in the first round and lost 4 points in the second round. To find his total score, Jacques paired points gained with points lost. Each point gained that is paired with points lost. Each points gained that is paired with a point lost equal 0. Use yellow and red counters to model Jacques's total score.	Modelling addition of integers using colour counters.

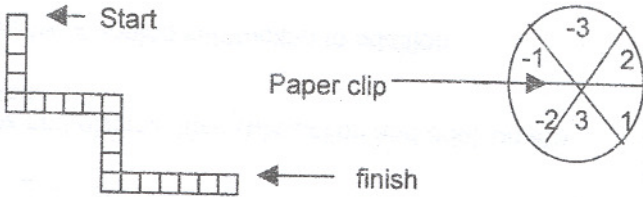
AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Number(Integers)**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
EL1k – Interpret and follow instructions/directions EL3d – Produce work that is legible and acceptable M5a – Collect, analyze and present data using charts, tables and diagrams CP1c – Suggest ways dealing with the problem/issue	Mathematics Unlimited – Molt, Rinehart and Winston Active Math

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(Integers)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Addition of integers have an inverse relationship to the subtraction of integers.	Grey 000 000 000 White 0000 = $9 + 4 = 5$ Grey ● White ○ = ○ Never-Ending Game The game can be played by one to four players. Everyone takes turns spinning the pointer and moving their game piece along the board. Positive number move forward and negative number move backward. You cannot go further backward than start. The object is to be first to reach the end or to go past it,  Red and yellow counters are used to model subtraction of integers.	• Make a check-list to assess cooperation and performance within group. • Calculating Integers.

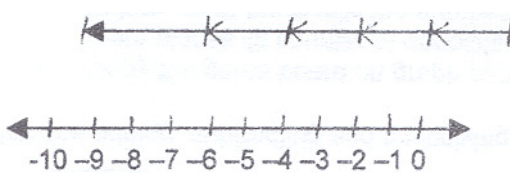
AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(Integers)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	Use a model to find $-8 - -2$ Take away the 3 yellow counters 0 0 0 0 0 0 0 0 $-8 - -2 -6$ 0 0 0 0 0 0 0 0 0 0 $-8 + 2 -6$ Think and discuss how subtraction and addition are related. Solve by changing subtraction to addition. Example: $5 - -3 = 5 + 3 = 8$ $-6 - -3 = -6 + 3 = -3$ Solve: The temperature at the top of the mountain is -30°F. What is the difference in temperature? $-32 - -7 = -32 + 7 = -25^{\circ}$	Change subtraction of integers to its related addition using inverse operations. Finding differences between integers to solve problems involving temperature.

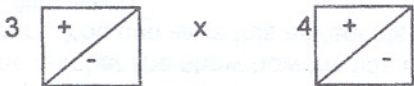
UNIT/THEME: Number(Integers)**UNIT/THEME: Number(Integers)**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
The concept of integers can be used to solve problems.	Discuss with students their knowledge of tides. If you live near a large body of water, a local newspaper may include a table of the low and high tides for the week. Solve the problems The tide is changing at a rate of -2 feet per hour. What is the change in the tide after 5 hours?  The number line shows how the tide changes -2 ft. per hour. You can write this as repeated addition or as multiplication. Eg: $-2 + -2 + -2 + -2 + -2 = -10$ or $5 \times -2 = -10$	Applying concept to real life situations. Use of student self Assessment checklist.
The product of a negative integer and positive integer is a negative integer.	Solve the tide changed by -10 ft. Find the product of $-6 \times 4 = -24$ Have students solve the problem involving multiplying integers. In 1968, John Gruener and Neal Watson broke the world's scuba-diving record with a dive of about -400 ft.	Solving problems with multiplying integers. Calculating the product of two unlike integers.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(Integers)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
The product of two negative integer is a positive integer. Games can be used to practice adding subtracting and multiplying integers.	The record of the deepest submarine dive is held by U.S. Navy Vessel Sea Cliff. In 1985 the Sea Cliff made a dive 50 times as deep as Gruener and Watson's dive. - About what depth was the Sea Cliffdive? - About -20,000 ft. Find the product of $-8 \times -9 = 72$ The calculator sequence can be used to find $-3 \times -4 = 12$.  Practice adding, subtracting and multiplying integers. - Copy the game board on graph paper. Each team places its counter at opposite goal lines. In turn, each team rolls the number cubes. - Even number are positive. Odd numbers are negative. Multiply the two numbers rolled. If the number is negative move backward that anumber of spaces. Do not go past your starting line. The first team to reach the opposite sidemakes a touch down to win.	Make inferences from data. Calculate the product of two negative integers. Ability to follow instruction. Apply rules for subtracting, adding and multiplyingintegers. Construction of game.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(Integers)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
If two integers have unlike signs there quotient is negative. If two integers have like signs there quotient is positive. On your mark get set, go fifty six is a game that can reinforce operations with integers.	Find the quotient of the following: $27 \div -3 = 6$ <u>Solve:</u> In 8 hours the temperature fell 24°. If it fell the same number of degrees every hour, how many degrees did it change every hour? $-24 \div 8 = -3^{\circ}\text{F}$ (a) -16°F (b) -3°F (c) 3°F (d) 16°F Practice operating with integers $+ - \times \div$	Ability to operate with integers and calculate quotients with accuracy. Reading, understanding and solving problems with diving integers. Use of 4 operations with integers. Ability to work integers.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(Integers)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT																														
Skills Estimating Predicting Sorting Drawing Comparing Attitudes Appreciation of each other's ideas Cooperation Awareness Understanding and sharing	<table border="1"><tr><th colspan="6">ON YOUR MARK GET SET GO 56</th></tr><tr><td>ROUND</td><td>-14</td><td>7</td><td>-35</td><td>10</td><td>8</td></tr><tr><td>ROUND</td><td>2</td><td>10</td><td>-4</td><td>-14</td><td>28</td></tr><tr><td>ROUND</td><td>-2</td><td>-4</td><td>6</td><td>8</td><td>-24</td></tr><tr><td>ROUND</td><td>10</td><td>-10</td><td>-6</td><td>2</td><td>25</td></tr></table> Each player uses all five numbers to make 56. You can add, multiply, subtract and divide. Some can be used more than once. The first player to find a solution earns one point. The person with the most points after 4 rounds win.	ON YOUR MARK GET SET GO 56						ROUND	-14	7	-35	10	8	ROUND	2	10	-4	-14	28	ROUND	-2	-4	6	8	-24	ROUND	10	-10	-6	2	25	
ON YOUR MARK GET SET GO 56																																
ROUND	-14	7	-35	10	8																											
ROUND	2	10	-4	-14	28																											
ROUND	-2	-4	6	8	-24																											
ROUND	10	-10	-6	2	25																											

AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Number(Integers)****AREA OF STUDY OUTCOMES****Pupils should:****M1f – Understand the concept of other rational numbers, including percent, fractions/decimals, ratio and integers****CROSS-CURRICULAR OUTCOMES****Pupils should:****CP1a – Recognize an issue or a problem****CP1b – Examine the information related to the problem/issues****Sp2b – Take part in group activities****SP2f – Help the group to achieve its goal**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
A fraction may be written as a decimal or vice versa when the whole is divided into equal parts in multiples of ten.	- Teachers would provide shaded shapes and the students can discover the value as decimal or fraction. Teachers would state value and student would produce a figure. Teachers would emphasize that the denominator is the same as the amount of parts the whole is divided into. Students shall write decimals & fractions for a given object or problems eg: 5 cents is what fraction of \$1.00, \$10.00, \$100.00. - Students can also be given additional problems to find missing number and state the place value of each. Ex: $23.45678 + 14.6 - 9 = 38.10257$.	- Ability to recognize and interpret - Listening, comprehending and then reproducing. Ability to retain and synthesize. - Analyzing the problem and reproducing in a different form. - Interpreting and categorizing problem to solve. Practicing and demonstrating the use Of decimals.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(Integers)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Decimals can be placed in a specific order showing an escalation or a decline in value. Decimals can be rounded off. The number that determines this is the one to the right. Multiplying decimals The number of decimal places in the product equals the sum of the decimal places in the factor.	Doing overage to see how decimals are derived. - Students can create number lines or bar graphs to illustrate researched figures. Eg: How many children in class has a gold ring on student who are 11 yrs. (using calculator in some cases) - Students can rank figures from least to greatest. Students can pair numbers and use inequality to signs to show order. - Students can use calculators to divide several large numbers. The answer would be rounded off. - Example: $\frac{476}{3745} = .227652 = .2277$ - Round off and then order - Solve problems with money eg: currency exchange US\$1 = BZ\$1.987 change \$67 BZ to US (Round off answer). Needs warm up review. Have children do multiplication they already can do.	Making a visual report and recording data. Classifying the data. Ability to compare and contrast data. Ability to use other sources to acquire data. Interpreting the rule and retaining it. Ability to apply several rules/instructions to a problem. Linking real life experiences. Analyzing problem, making rational guess, proving answer.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(Integers)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
A decimal is the same as any proper fraction/mix number and they can be converted from one to the other.	Students will be given 2 decimals to be multiplied along, with several estimated answers. The student will select an estimate then solve to see if their estimate made sense. Students would research price of gasoline/gallon. Calculate at certain prices. Eg: (gas/gallon) \$4.89 x16.25 gallons = price or shares in company. Multiplying decimals with multiples of 10 (10, 100, 1000) in the short and long forms. Multiply using decimals to find area of circle, square, rectangle etc. Teacher would demonstrate by converting mix numbers/fraction to decimal; vice versa. Students would use calculators to convert fraction to decimals and then prove it with their own work. Eg: 3113 Given decimals, students would convert to fraction and reduce.	Collecting and recording data. Also ability to calculate and report findings. Labelling multiples of 10, analyzing problem implementing rule. Identifying Figure, stating Formula for area, solving Ability to listen, comprehend, synthesize. Use of technological resources and mental skills acquired. Interpretation and restating using rules. Accuracy of interpreting chart and converting pictorial data to numeric data.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(Integers)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Discuss Distinguish Express Identify Order Record Apply Create Interpret Calculate Compute Estimate Demonstrate Produce Name Analyze Categorize Compare Formulate Solve Recognize <u>Attitudes</u> Understanding Awareness Willingness to Share Participate Interact Interest in Ability to Use		

AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Number(Integers)**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
EL1k – Interpret And follow instructions/directions EL3d – Produce work that is legible and acceptable SL4b – Ask questions for information and understanding SS1a – Understand some aspects of the social and economic conditions in Belize	Active Math – Caribbean Primary Math Exploring Mathematics Silver Burdette Ginn Mathematics Math Advantage Mathematics Application and communications Course 1.

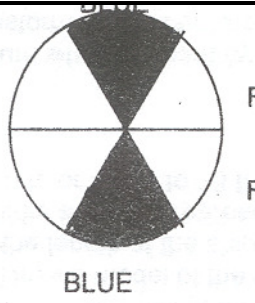
AREA OF STUDY: MATHEMATICS**UNIT/THEME: Number(Integers)****AREA OF STUDY OUTCOMES****Pupils should:****M1f – Understand the concept of other rational numbers including percent, fractions, ratio and integers****STANDARD IV****CROSS-CURRICULAR OUTCOMES****Pupils should:****CP1a – Recognize an issue or a problem****CP1b – Examine the information related to the problem/issue****SP2a – take part in group activities****SP2f – Help the group to achieve its goal**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
A ratio shows a comparison between two quantities. Diagrams can be used to illustrate meanings of ratios.	Of the 10 members on the team, 2 are girls. What is the ratio of girls to all the members? 2:10 To boys? 1:5 Read and write ratio in three ways. Read: one to seven Write: 1 to 7, 1:7, 1/7 Read: four to three Write: 4 to 3, 4:3, 4/3 Use diagrams to illustrate meaning of ratio.	Use problems to compare ratio. Read and write ratio in three ways.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(Integers)

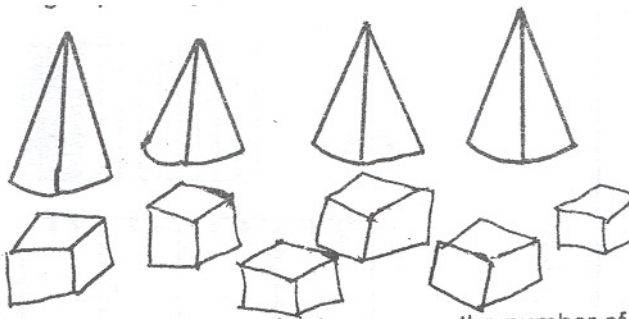
CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Scale models are often described with ratios. A ratio is a comparison of two numbers. A ratio can be written in three ways. a) 1 to 64b) 1 : 64c) $\frac{1}{64}$	 Find the ratio of blue sections to all the sections. Then write three equivalent ratios. Introduce lesson with a discussion of scale models. Have volunteers describe models they have built.	Draw diagrams to illustrate given ratios. Discuss scale models. Describe models being built. Write a ratio to compare two objects. Relate a model or amount to actual size it represents.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(Integers)

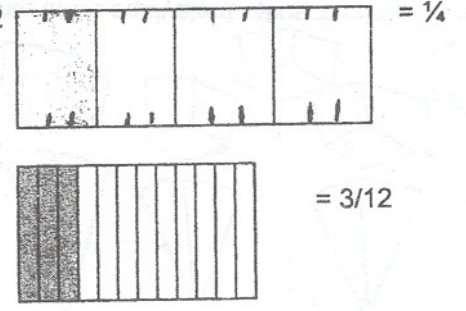
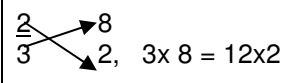
CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
People often use odds to describe how likely it is that something will occur. Odds are ratios.	Discuss the information. The ratio 1:64 means that 1 in. of the model car equals 64 in. of the actual car. Scale 1:64 ins. $\frac{64}{2} \times 7 = 224$ ins → 3 1/2 : 224 ins ← ← actual A ship is 375 ft. long. Draw a model of the ship that is 18 ft. long. Compare the length of the ship and the length of the model. Write a ratio to represent the model for example, 375 ft.: 18 ft. or 375 ft to 18 ft. Draw diagrams to picture what is meant by odds. The ratio reports brainstorm to find our "the odds against rain today: Ans: 2 to 1	Calculate the scale for a model to be constructed. Draw illustrations to picture odds. Follow a pattern to complete a ratio.

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT						
Group of objects can be divided into ratios.	You can draw a diagram like this showing:- 1. "rain for every 2 "no rains". <table border="1"> <tr> <td colspan="3">What are odds?</td></tr> <tr> <td>Rain</td><td>No Rain</td><td>No Rain</td></tr> </table> There is a chance of rain, but it is twice as likely that it won't rain. The odds are 2:1 against rain and 1:2 for rain. Arrange pupils into groups. Ask them to compare and divide groups of objects into ratios.  Write three equivalent ratios to compare the number of pyramids with the number of cubes. Possible answers:- $\frac{4}{6}$, $\frac{2}{3}$ and $\frac{12}{18}$	What are odds?			Rain	No Rain	No Rain	Estimate what the ratio would likely be and write it.
What are odds?								
Rain	No Rain	No Rain						

AREA OF STUDY: MATHEMATICS

STANDARD IV

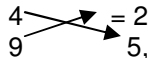
UNIT/THEME: Number(Integers)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Equivalent ratios are ratios that name the same comparison. Ratios can also be written in fraction form. Equivalent fractions have equal cross products.	Have students show equivalent by shading rectangles. The model shows that: $\frac{1}{4} = \frac{3}{12}$  Compare cross products to determine whether two fractions are equivalent. Does $\frac{2}{3} = \frac{8}{12}$?  Yes, because $24 = 24$ So, $\frac{2}{3} = \frac{8}{12}$	Determine if two fractions are equivalent, using the cross product method. Identify equivalent fractions. Distinguish between equivalent and non equivalent fractions.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(Integers)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	Does $4/9 = 2/5$  $9 \times 2 = 5 \times 4$ No, because $18 \neq 20$ So, $4/9 \neq 2/5$ Complete the fraction by putting in the missing term to make them equivalent ratios. $1/2 = \quad /8 = 4/8$ $7/25 = \quad /100 = 28/100$ Brain storm what is rate. Set up a shop in the class and place stickers on the items. Eg. Pops cereal \$3.28 20 ozs. .016 per/gal Pops Cereal \$2.50 14 ozs. 0.18 per /gal	Teacher made test to identify children's ability to: Identify equivalent fractions. Solve for the missing term to make the ratios equivalent. Choose the better buy by comparing unit rates. Write rates and find units rates.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(Integers)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	Arrange pupils into groups to work in the shop to write a ratio in fraction form for each rate. In some grocery stores stickers on shelves tell the prices per pound or per ounces. Students can use this information to see which size of a product is the better buy. Which box of cereal is the better buy? How can you tell? $\begin{array}{ccc} & \text{Price} & \\ \text{Rate} & \xrightarrow{\quad} & \$3.28/20 \text{ oz} \\ & \text{Number of ounces} & \end{array}$ Unit rate: $\\$3.28/20 \text{ oz} = \\$33.28/20 /20/20$ $= \\$0.16/ 1\text{oz}.$ Then the 20 oz box; because the price per ounce is less.	Locate products in the supermarket departments and make a list of the best buy and show the rates. Each student will be given a set budget to spend Eg. \$20.00 All students to choose which department they would like to purchase from.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(Integers)

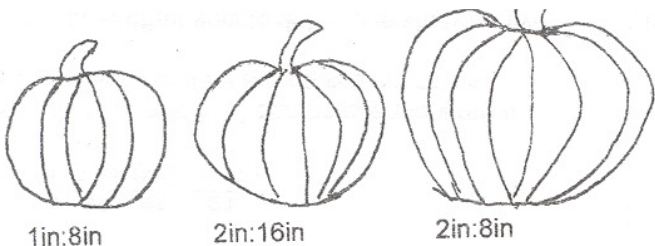
CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Many road maps and atlas show driving distances and rate of speed.	Write a ratio to compare miles to hours. Divide both terms by a common factors Write an equivalent ratio with 300 as the first term. The Howards are on a 300 – mls trip. They have travelled 180 mi. in 8 hrs. Find the unit rate of speed. At this rate how many hours will it take to go 300 miles? <u>Miles – 180</u> <u>Hours – 3</u> $\frac{180}{3} = \frac{180}{3} \div 3 = \frac{60}{1} \text{ unit rate}$ So, the unit rate of speed is 60 mi per hour. $\frac{60}{1} = \frac{60}{1} \times \frac{5}{5} = \frac{300}{5} \text{ miles}$	Read problems to determine ratios write the ratios. Find unit rates. Divide terms to make the second terms. Write an equivalent ratio.

UNIT/THEME: Number(Integers)**UNIT/THEME: Number(Integers)****UNIT/THEME: Number(Integers)**

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(Integers)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
A pumpkin can be drawn to show the relationship between equivalent ratios and proportions.	Jim Keller bats 350! Introduce students to the concept of proportion. Copy these drawings and scales on board. Tell students that all the drawings are of the same pumpkin. Ask what scales were used to draw each pumpkin.  1 in: 8 in 2 in: 16 in 2 in: 8 in Ask why are the first two pumpkins the same size, even though they were drawn to different scales. Ans: . . . because the scales are equivalent ratios. Ask why is the third pumpkin larger?	Find equivalent ratio from a proportion. Determine scales used for drawings: Ability to reorganize if ratios of scales are proportional.

UNIT/THEME: Number(Integers)**UNIT/THEME: Number(Integers)****UNIT/THEME: Number(Integers)**

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(Integers)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	$\frac{2}{3} = \frac{8}{12} \qquad \frac{2}{3} = \frac{9}{16}$ $= 2 \times 12 = 8 \times 3 \qquad 2 \times 16 = 3 \times 9$ $24 = 24 \qquad 32 = 27$ Is a proportion not a porportion Discuss the purpose of mixing certain metals; e.g. one of the most popular metals to make jewellery is gold. Pure gold weighs 24 barats, but is as soft that other metals are Frequently mixed with it to make it more durable. Take a 14 karat gold and 10 karats of other metals. Have pupils write a ratio of the weight of gold in a 14 – karat gold ring to the total weight of the ring. 14/24 or 7/12 Then have them write this ratio as a percent 58.3%	Ability to give information and formulate questions on the concept. Ability to show a ratio. Change the ratios to percent. Ability to identify that objects and often made up of a ratio or proportion of other materials.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(Integers)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Cross products can be used to determine the ratio of expansivity of certain qualities.	<u>Project Work</u> Have children mix substances. Report procedures used. Show and explain with the use of a chart the ratio used for the mixture. Write the ratio that shows how pasta expands. (cultural link) The most popular lunch dish served in Italy is pasta. As pasta cooks, it expands. One cup of uncooked pasta expands to about 2.25 cups of cooked pasta. Take <u>1 cup</u> a. cups Then have them cross products to determine if $\begin{array}{ccc} \frac{1 \text{ cup}}{2.25 \text{ cups}} & \begin{array}{c} \nearrow \\ \searrow \end{array} & \frac{2 \text{ cups}}{4.5 \text{ cups}} \end{array}$	Clarity and accuracy of information presented. Ability to apply the application of proportion to cultural concepts.

AREA OF STUDY: MATHEMATICS

STANDARD IV

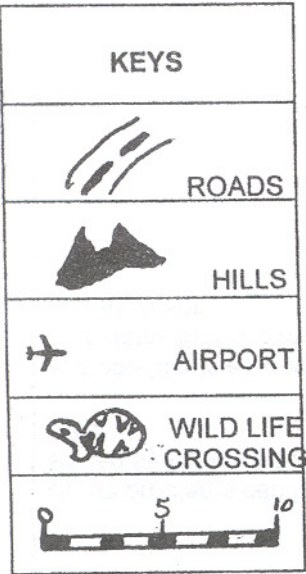
UNIT/THEME: Number(Integers)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT										
Some problems can be solved by finding equivalent ratio. A proportion is an equation that states that two ratios are equivalent.	For a proportion $\frac{1}{4.5} = \frac{2}{2.25}$ $\frac{4.5}{4.5} = \frac{4.5}{4.5}$ Read the problem and write a proportion to solve the problem. Renata went to a Science Museum One of the exhibits shows that a person who weighs 60 lb on earth would weigh 10 lb on the moon. Renata weighs 75 lb. What would she weigh on the moon? Solve: Write a proportion <table><tr><td>Weight in earth</td><td>60</td><td>=</td><td>75</td><td>Renate W. on earth</td></tr><tr><td>Weight on moon</td><td>10</td><td></td><td>n</td><td>Renate W. on moon</td></tr></table> 60 10 = 75 n $60 \times n = 75 \times 10$ $60 \text{ in } = 750$ $\frac{60 \text{ n}}{60} = \frac{750}{60}$ $n = 12.5 \text{ lb.}$ So Renata would weigh 12.5 lb. On the moon.	Weight in earth	60	=	75	Renate W. on earth	Weight on moon	10		n	Renate W. on moon	Write a proportion to solve problems. Write and compare ratios. Interpret information and follow instructions.
Weight in earth	60	=	75	Renate W. on earth								
Weight on moon	10		n	Renate W. on moon								

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(Integers)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
The actual distance from one point to another can be calculated from the scale of a map. The key shows what the may symbols mean KEYS  ROADS HILLS AIRPORT WILD LIFE CROSSING 0 5 10	Reading Road Maps Use the map to answer each questions. Locate the map scale 1 inch = 2 miles A driver marked his route on a road map. He planned to travel from Belize City to the International Airport. How could the driver find the actual distance in miles? Write the equal to the scale ratio: $\frac{1}{2} = \frac{6}{12}$. The actual distance to the airport is 12 miles. 	Use map to answer questions to calculate actual distances using the map scale. Locate the map scale. Measure distances on the map Write ratios equal to the scale ratio Understand and use information presented in the key.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(Integers)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Solve Discuss Record Identify Brainstorm Explain Convert Compare Classify Write Analyze Define Apply Find Express Use Compute Read Insert Locate Contribute Develop Report Describe Communicate Order Express Draw Evaluate Discover Demonstrate Recall <u>Attitudes</u> Willingness to share Show sensitivity for other people's feelings Show pride in work Demonstrate a willingness to share		

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Number(Integers)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Skills Discuss Identify Explain Compare Write Define Find Use Read Locate Develop Describe Order Compare Arrange Model Estimate Interpret Match <u>Attitudes</u> Understand and sharing Participation Cooperation Appreciation Awareness Tolerance Interest Responsibility Interest in fraction Ability to use fraction Enjoyment		

AREA OF STUDY: MATHEMATICS**UNIT/THEME: Number**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
CP1c. Suggest ways dealing with the p[roblem/issue	Guiding Children's Learning of Mathematics (Teacher's Resource)
SP1a. Recognize the value associated with choices	Exploring Mathematics – Scott Foresman and Co.
SP2f. Help the group to achieve its goal.	Addison – Wesley Mathematics
SP2a. Take part in group activities.	Silver Burdett and Ginn Mathematics
EL1k. Interpret and follow instructions/directions	H.B.J. Mathematics
EL3d Produce work that is legible and acceptable.	Health into Mathematics (Longman) (Teacher's Resource)
EL4e. Ask questions and give information.	Caribbean Primary Mathematics
SL1d. Follow instructions and directions	Math Advantage – Middle School 1 Teacher's Edition – Volume 11 (harcourt Brace) (teacher's Resource)
SL4b. Ask questions for information and understanding.	Mathematics – Applications and Connections (Course 1)
M.f Understand the concept of other rational numbers including percent, fractions ratio, and integers.	Count Me in (Teacher's Book) (Book 1)
M5.a Collect analyze and present data using charts, tables and diagrams.	Math Tools for Success (Teachers' Ed)
EA1.a Sing rounds.	Exploring Mathematics (Teachers' Edition)
SL1.a Identify correct pronunciation, introduction and stress.	New Common Entrance Mathematics (Student Resource)

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Number

AREA OF STUDY OUTCOMES

Pupils should:

M1G – Understand other systems of writing numbers

CROSS-CURRICULAR OUTCOMES

Pupils should:

Critical Thinking

CP1c – Suggest ways of dealing with the problem

Self evaluation

SP3b – Assess progress in relation to achievement of goals and adjust goals or strategies as necessary

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT												
A number system is characterized by a set of infinite elements called numbers. Each system can be characterized by its own particular set of symbols and rules governing their use.	Read given hindu arabic numerrals. Write any five digit numerals. Interpret the given numerals. Discuss the uses of these numerals. Have children do research then brainstorm and share stories of how people of ancient times used to how numbers using various symbols:-	Assess children ability in writing number Teacher made test to write numbers given in the various systems. Write numerals for symbols given Eg: <table><tr><td>Hindu Arabic</td><td>Egyptian</td></tr><tr><td>9</td><td>-</td></tr><tr><td>Roman</td><td>Hindu Arabic</td></tr><tr><td>XX1</td><td>-</td></tr><tr><td>Egyptian</td><td>Roman</td></tr><tr><td>@</td><td>-</td></tr></table>	Hindu Arabic	Egyptian	9	-	Roman	Hindu Arabic	XX1	-	Egyptian	Roman	@	-
Hindu Arabic	Egyptian													
9	-													
Roman	Hindu Arabic													
XX1	-													
Egyptian	Roman													
@	-													

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Number

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
The western world adopts a numeration system used by the Hindu and one developed by the Arabs thus we are using the Hindu Arabic numeration system.	Hindu Arabic, Roman, Mayan, Egyptian, Babylonian and Chinese. Use any Chinese Child to help interpret the Chinese System. Children create chart with some symbols in the various systems. Write symbols to show numbers in the various systems between 1 – 100. Play games and use puzzles to help identify various symbols. Eg: Bingo. Insert digits for numbers given in a place value box provided. Example:- Write numbers in expanded form using using 2,3,4,5 digits numerals and vice versa.	Write in expanded notation using the various number systems. Group work to construct abacus use in future assessment. Evaluate cooperation in group. Children give the correct numeral for each picture using the abacus. Assess accuracy in work. Children use work card with numerals up to 7 digits identifying which is greater or less in value. Assess ability to write large numbers. Write numerals called expanded form up to million.

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Number

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
The Hindu Arabic system can be identified by the following characteristics:- 1. A base ten system 2. Positional or place value multiplication and additive principle. 3. Zero as a place holder <u>Skills</u> List Discuss Interpret Calculate Listening Substitute Construct Writing Estimate <u>Attitudes</u> Understanding Enjoyment Appreciation Sharing Participating Awareness	Show the value of each digit using the additive and multiplicative principle. Example: $(7 \times 1000) + (3 \times 100) + (3 \times 100) + (5 \times 10) + (6 \times 10) = 7356$ Use cards with 2,3,4,5 digits. Group and discuss the value of each digit.	Use teacher made tests to apply the additive and multiplicative principle.

AREA OF STUDY: MATHEMATICS**UNIT/THEME: Number**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
SP2a. Take part in group activities. SP2.f. Help group achieve goals. Reading EL1.k Interpret and follow instruction Writing – EL3.d Produce work that is legible and acceptable\ EL4.a Express ideas and opinion Ea1.e – Explore and experiment to create images through use of a variety of artistic tools. WT4.a Construct a simple device to see if it meets a need. WT5.3 Identify an area of need	Power Math for Elementary and Secondary Schools Count Me In Book 1 – Elementary School – Mathematics Series Book 5 Learning mathematics Today's Mathematics 4th Edition Elementary Mathematics 4 Paper, crayons, work sheets and work cards, available materials from the environment, glue, scissors.

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Spatial Relationships

AREA OF STUDY OUTCOMES

Pupils should:

M2a – Understand the geometrics properties of some common two dimensional and three dimensional shapes.

M2b - Understand how the position of two dimensional shapes is affected by movement

CROSS-CURRICULAR OUTCOMES

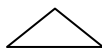
Pupils should:

CP1a – Recognize an issue or a problem

CP1b - Examine information related to the problem/issue

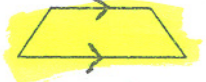
CL1c – Suggest ways of dealing with the problem/issue

SP2a – Take part in group activities

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
A polygon is a closed figure all of whose sides are line segments. Polygons are named by their number of sides.  Triange  Square  Pentagon  Hexagon  Octagon	Review the various polygons through labelling and matching. Encourage children to draw and cut out different polygons. Encourage peer of children to name a poygon and place the shape on the desk. Each child assess as his or her partner's knowledge of polygons. Child define the property of each polygon used.	List names of polygons. Draw polygons and list their properties. Identify the properties of polygons.

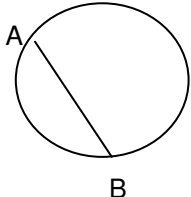
AREA OF STUDY: MATHEMATICS

UNIT/THEME: Spatial Relationships

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
A monagon is a plain figure with nine sides and angles. A decagon is a plain figure with ten sides and angles. A quadrilateral is a four sided figure. A trapezoid is a quadrilateral with exactly one pair of opposite sides parallel.  A tangram is an ancient Chinese puzzle which consists of seven (7) pieces cut from a square.	Draw and label polygons. Compare decagon figure with \$1. Coin. Make chart showing all polygons up to ten sides. Use games and riddles to name polygons using their properties. Review quadrilaterals. Examine and record properties of quadrilaterals. Grouping: Use geoboard to create a trapezoid. Examine and record properties of a trapezoid. Use tangram pieces to form quadrilaterals. Record all possible ways tangram pieces can be used to form a parallelogram, rectangle, rhombus, square and trapezoid.	Identify polygon by the prefixes in their names. Identify and draw quadrilaterals. Ability to record the names and properties of quadrilaterals.
CONTENT ORGANIZED	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR

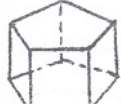
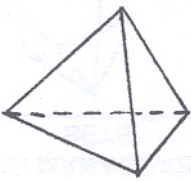
AREA OF STUDY: MATHEMATICS

UNIT/THEME: Spatial Relationships

INTO MANAGEABLE SETS		ASSESSMENT
 <u>Circle</u> A Chord is a segment whose points are on the circle. AB is a chord. Tessellations are repeated geometric designs that covers a plane with no gaps or overlaps. Properties of 3 – Dimensional figures can be identified and constructed using tables and nets.	Organize results in a table. Compare results with other groups. Review properties of the circle radius, diameter, circumference. Draw circles of different sizes. Identify for tessellation using polygons and circles. Construct tessellations using 2 dimensional shapes. Test for three types of transformation in the movement of 2-D figures. Review 3-dimensional figures: cube, sphere, rectangular prism, cone, cylinder, pyramid.	The ability to name the properties of a circle. Draw circles and insert 4 properties. Identify polygons in 3-d figures.
CONTENT ORGANIZED INTO MANAGEABLE	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT

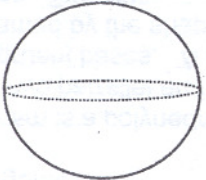
AREA OF STUDY: MATHEMATICS

UNIT/THEME: Spatial Relationships

SETS		
Polyhedron: 3-d figures are made up of flat surfaces called faces. The faces are polygons. A prism is a polyhedron with two parallel and congruent bases. A prism is named by the shape of its bases.  Example: Triangular prism  Pentagonal prism A pyramid is a polyhedron that has a polygon for a base and three or more triangles for its faces. Ex:  Triangular pyramid	Examine and classify figures that are polyhedrons. Check for number of faces, edges and vertices. Record on a table. Identify polygrams in polyhedrons using diagrams. Support concepts with proof of findings.	Ability to distinguish prisms from pyramids. Name prisms and pyramids by the shape of bases. Ability to work within a group. Ability to apply knowledge to understand new concepts.

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Spatial Relationships

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
 Rectangular pyramid  Hexagonal pyramid Three dimensional figures with curved surfaces are not polyhedrons. For example a sphere has a surface that is at all points the same distance from its center. 	Discover and make a checklist of properties of polyhedrons. Distinguish polyhedrons among other 3-D figures. (True and False) Enter names and definitions of 3-d shapes in journals. Writing of properties for 3-d and sharing information in groups. Draw and discuss properties of solid figures e.g. cylinders, cones, spheres.	Children's ability to identify, draw and name other solid figures such as cylinders, cones and spheres.

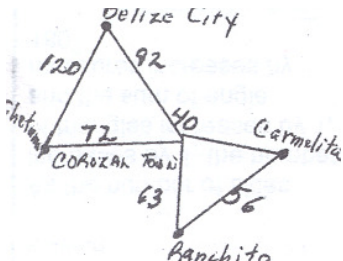
AREA OF STUDY: MATHEMATICS

UNIT/THEME: Spatial Relationships

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
 Cone  Cylinder Recognizing a pattern can be extended to problem solving. As the number of sides increases by 1, the number of triangles increases by 1, and the sum of angle measures increases by 180°.	Make and display models of 3-d figures. Find the sum of measures of the angles in an octagon. Try to find a pattern. Use this pattern to complete the table. Encourage children to look for alternate approaches. Present information to class. Have students discuss and develop description of each 3-d figure.	Recognition of pattern to solve a problem. Identify degrees and triangles. Clarity of information presented to the class.

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Spatial Relationships

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
You can show the distances between several places or things on a network. A network graph is a graph with vertices and edges.  Network helps to find the shortest & longest route between two locations.	Have children create nets eg: Routes taken when going to school. Draw a network connecting 4 towns in your country (Bridges, City Parks etc.) Find the shortest/longest distances. Discuss the use of road maps. Lead the discussion from networks of roadways towards mathematical network. Use a road map in discussion.	Students prior knowledge of networks. Understanding of the concepts. Finding the differences and sum between routes.

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Spatial Relationships

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
A figure has line symmetry if it can be reflected so that the two parts of the figure match. A figure has rotational symmetry when it can be rotated less than 360° around a central point or point of rotation and still match the original figure.	Explain by using a mirror. Use questions to stimulate discussions. Do you see yourself exactly as others see you? Discuss the concept of reflection in math. Challenge students to fold and cut figures into two identical figures. Have children find line symmetry in given or created figures. Have children explore the fact that all diagonal lines are not lines of symmetry. Have students explore rotational symmetry. Trace the figure Place the pencil point at the point of rotation. Rotate the figure until it looks like the original figure. In the early twentieth century, Herman Rorschach, a Swiss, developed the inkblot test to analyze personalities. These examples are good examples of design with line symmetry.	Concept of line symmetry. Draw lines of symmetry. Hypothesis on an experiment. Results of experiment. Identification of fractions and angles. Creation of Designs.

AREA OF STUDY: MATHEMATICS**UNIT/THEME: Spatial Relationships**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Skills Classify, collect, arrange, review, match, discover, differentiate, assemble, compare/contrast, analyse, formulate, express, explain, encourage, display, identify, infer, make connections, name, organize, participate, practise, recall, record, construct, create, communicate, justify, draw diagram. Attitudes Awareness, interest, share, ability to use, pride and satisfaction, appreciation, enjoyment, responsibility, interaction, understanding, willingness to show.	Masks are good examples of designs. Have students make masks using cross cultural tales.	

AREA OF STUDY: MATHEMATICS**UNIT/THEME: Spatial Relationships**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
M5a – Collect, analyze and present data using charts, tables and diagrams. EL4e – Ask questions and give information. CP1c – Suggest ways dealing with the problem/issue. EL1k – Interpret and follow instruction.	H.B.J. Mathematics – Caribbean Primary Math Mathematics – Application and Connections (Course 1) Math Tools For Success (teacher's Ed) Mathematics Unlimited – Holt Rinehart Winston.

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Spatial Relationships

AREA OF STUDY OUTCOMES

Pupils should:

M2c – Understand degrees as a measure of turn

CROSS-CURRICULAR OUTCOMES

Pupils should:

CP1a – Recognize an issue or a problem

CP1b – Examine information related to the problem/issue

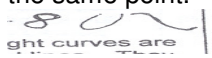
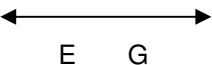
CP1c – Suggest ways of dealing with the problem/issue

SP2c – Take part in group activities

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Point - A point is a location and is represented by a dot. - A point has no dimension – take up no space. - Points are often labelled to help you tell them apart. - Geometric figures are often named by their points.	- use dots to create own patterns - use maps and 'travel' from point to point - make map of sections of community and 'travel' from point to point. - Explain on a piece of paper – draw any two lines that cross - Find the point - Use a grid. Place dots on it and connect to form curves and closed curves.	Creativity in making designs or patterns using - Dots - Lines - X's Follow instructions to perform experiments Recognition of: - Lines - Rays - Line segments - Points - Angles Report on findings.

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Spatial Relationships

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Lines: - A line can be curved. - It is made up of a set of points that have no starting point and no ending point - A closed curve is a path that starts and ends at the same point.  - Straight curves are called lines. They go on forever in both directions. - A line has no end point Eg: 	- Use a grid. Place dots in it. Connect the dots with lines. - Use straight edge shapes and make patterns. - Search/find lines in the immediate environment Explain: - On a piece of paper mark two separate points. - Use a straight edge to connect the points. - Explain what you have drawn (line segment) - Describe what it consist if (two end points and all the points in between). - Use the sun, flash lights. Pupils to demonstrate and describe a ray.	The ability to find out information. Understanding and explaining the different terms. Match names to different geometrical figures. Measure/construct angles. Classification of angles according to size/shape. Competency in using measuring devices. Calculate the sums of angles based on triangle and circles.

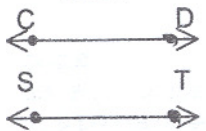
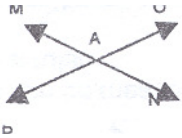
AREA OF STUDY: MATHEMATICS

UNIT/THEME: Spatial Relationships

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
- Curves that are straight and have two end points are called line segment. A ————— B - A straight curve with only one end point is called a ray. X —————→ Y Ray XY - Lines are named - Capital letters are used to name lines, line segments, rays - Segments meet at points called vertices. - The end point of a ray is always given first when naming a ray.	Children draw and describe segment in their own words. Encourage children to make segments using strips of bristol board. Children follow the same procedure for making rays. Use streets in the community, the flow of traffic, telephone/electrical lines and discuss parallel lines. Search/find parallel lines in pictures in the immediate environment. Draw parallel lines. Use a map and locate villages at intersection.	Identify line segments. Clarity of the description of a line segment. Ability to explain qualities of a segment orally to the class. Identify use of rays and segments in the community or environment.

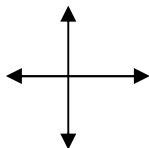
AREA OF STUDY: MATHEMATICS

UNIT/THEME: Spatial Relationships

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
- Parallel Lines - Are lines that never meet  Lines CD and ST are parallel lines. Intersecting Lines  Lines that meet in a point. Line MP and Line ON are intersecting lines. They meet at a point (Point A)	Locate streets which intersect in the community. Draw intersecting lines. Use X's to make patterns. Work embroidered cross-stitches. Use pictures to search/find intersecting lines. Children create diagram using parallel and intersecting lines. Use diagram of the points of the compass and discuss perpendicular lines.	Ability to identify parallel lines. Creativity in using parallel lines to create a diagram.

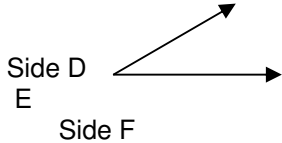
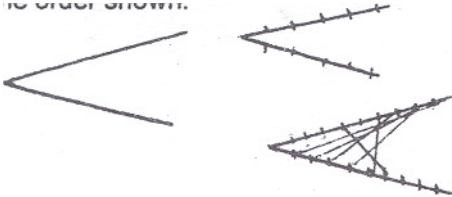
AREA OF STUDY: MATHEMATICS

UNIT/THEME: Spatial Relationships

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Perpendicular lines: - Intersecting lines that form right angles are called perpendicular lines  Lines can be measured using the metric system. Example: centimetres, metres. Angles: - An angle is formed when 2 rays meet. - The two rays are the sides of the angle.	Use pictures and search/find perpendicular lines. Make designs with points/lines. Use a ruler and measure lines using standard units of measure and metric unit of measure. Use a ruler and construct lines using standard and metric units of measure. Research personnels who use lines/line segments in field of work: Eg: builder, surveyor. Report findings. Measure given lines in standard/metric units. Record the measurements. Use body parts and form angles. Draw diagrams of angles, put on them dots, connect the dots and form objects: Eg: - Draw an angle - Use a ruler and mark off equally spaced dots on each side of the angle.	Ability to discuss and differentiate between perpendicular and parallel lines. Use of standard units of measurement. Creativity of ideas. Competency in connecting dots accurately. Willingness to follow through a process in logical sequence.

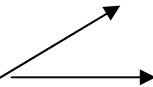
AREA OF STUDY: MATHEMATICS

UNIT/THEME: Spatial Relationships

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
- The point is the vertex - Both rays have the same end point. - Capital letters are used to name the angles.  Side D E Side F Angle DEF or angle FED, LDEF or L FED or LE Kind of Angles - Angles are measured in degrees. - A protractor is used to measure angles. - A protractor is marked with 180 degrees	Use a sharp pencil and straight edge to connect dots in the order shown.  - Design and draw your own segment art. You may wish to work with more than one angle. Use diagrams of angles and a protractor and measure angles. Discuss/describe the size of:- - Right angle (90^0) - An acute angle (less than 90 degree) - An obtuse angle (more than 90 degree) (less than 180 degree)	Ability to complete a task. Demonstrate of independent work. Accurate interpretation of diagrams. Identification of key features. Ability to use instrument to present accurate data.

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Spatial Relationships

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
- A right angle forms a square corner and measures 90°  An acute angle is smaller than a right angle and measure less than 90°  An obtuse angle is greater than a right angle but less than 180° A straight angle measures 180° An angle whose measure is more than 180° and less than 360° is called a reflex angle.	A reflex (more than 180°) Angle (less than 360°) Use a ruler and protractor and construct, measure and compare angles. Solve worded problems involving the calculation of angles. - Right - Acute - Obtuse - Reflex - Congruent angles	Ability to identify properties of different angles. Proper use of a protractor. Understanding and solving problems. Teacher – made test

AREA OF STUDY: MATHEMATICS**UNIT/THEME: Spatial Relationships**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Congruent Angles can be found in congruent figures. Two angles with the same measure are said to be congruent. Circle A circle is a closed figure A circle measures 360°	Use cut-outs of shapes. Eg triangles. Use a grid showing shapes of various sizes, positions. Use diagrams of angles. Use intersecting lines. Construct congruent angles. Using ruler/protractor. Use the clock, diagram of the points of the compass, a cross, a straight line, pupils and demonstrate the number of degrees in a circle. Games & commands using directions eg: right turns, about turns. Keeping a math journal.	Gather data Observe to detect and make connection between angle and lines Ability construct congruent angles. Explain their findings. Creation of a journal. Organization of items in journals.

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Spatial Relationships

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Draw Compare Estimate Explain Identify Describe Practice Formulate Discuss Display Write <u>Attitudes</u> Participate Share Interact Cooperate Tolerate Value Enjoyment Awareness		

AREA OF STUDY: MATHEMATICS**UNIT/THEME: Spatial Relationships**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
EL1k – Interpret and follow instruction. EL3d – Produce work that is legible and acceptable EA1e – Explore and experiment to create images through use of a variety of artistic tools WT4a – Construct a device to see if it meets a need M3a – Measure distance using standard and non-standard devices	Power math for Elementary and Secondary Schools Learning Mathematics Today's Mathematics 4 Active Math – Caribbean Primary Math Bristol Board, Scissors, rulers

UNIT/THEME: Measure, quantify and calculate (Time)

M3a – Measure capacity, distance, weight and time using standard and non-standard devices

CP1a – Recognize an issue or a problem
 CP1c – Suggest ways of dealing with the problem/issue
 SP2a – Take part in group activities
 SP2f – Help the group to achieve its goals

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AREA OF STUDY: MATHEMATICS

UNIT/THEME: Measure, quantify and calculate (Time)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
When it is exactly 12 noon or 12 midnight, it is neither a.m or p.m. Times before 12 o'clock midday or noon are a.m. times 8 o'clock in the morning is 8 a.m. Times after 12 o'clock midday are p.m. times. 7 o'clock in the evening is 7 p.m.	4hours = minutes 5days = hours a) Min Sec (b) days hours 2 25 2 18 + 3 40 + 5 16 c) Hrs Mins 7 20 - 3 45 <u>Write a.m. or p.m. for each time</u> Formulate discussion to distinguish between time in a.m. and p.m. 9:00 10:15 9:30 School recess bedtime begins 11:00 Late show Encourage children to write statements using time in a.m. and p.m. example: I ate my breakfast at 7:00 a.m. I coompleted my assignments at 7:00 p.m.	Creativity of designs with different activities writing a.m. or p.m. beside the activities. Clarity of information written. Adequate distintion of time a.m. and p.m.

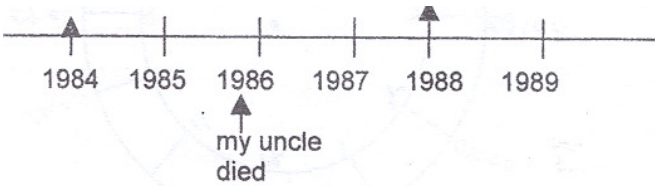
AREA OF STUDY: MATHEMATICS

UNIT/THEME: Measure, quantify and calculate (Time)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Elapsed time is how long it takes to do something. Getting a drink of water at a tap will have a short elapsed time measured in secs. While riding in a car to travel a great distance will have a long elapsed time measured in hours and days.	Discuss this: The annual cross-country cycle race began a 5 a.m. on Holy Saturday and the winner crossed the finish line at 11:30 a.m. How long did it take the winner to ride this race? (To find out, count on from 5 a.m.) It took the winner 6 hours and 30 minutes. This was the <u>Elapsed Time</u> Use question to find elapsed time. Joseph's bus is scheduled to leave Belize City at 6:00 a.m. and arrive in Chetumal at 9:15 a.m. What is the elapsed time? 6 a.m. to 9:15 a.m. is 3 hours and 15 minutes. The elapsed time is 3hr. 15 mins. Orlando's piano lesson started at 4:45 p.m. and ended at 5:30 p.m. How long was his lesson (count on to find elapsed time) Elaine leaves home at 7:00 a.m. and returned home at 5:30 p.m. How much time did she spend away from home? Encourage children to develop their own word problems. Children then discuss and solve with a partner.	Present scenarios where groups will find the elapsed time. Student, peer and self assessment to determine their ability to identify elapsed time.

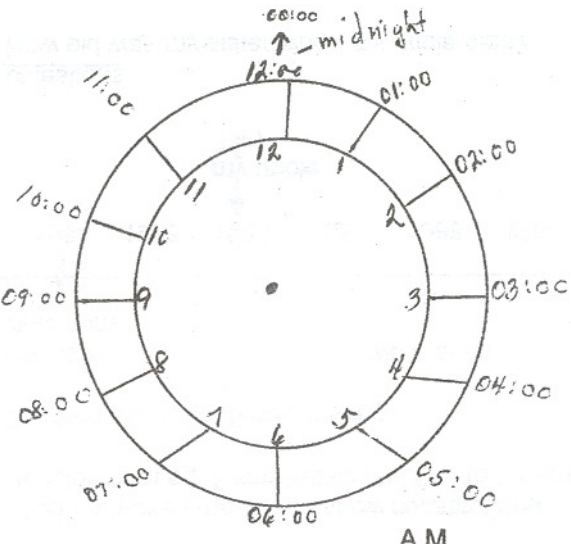
AREA OF STUDY: MATHEMATICS

UNIT/THEME: Measure, quantify and calculate (Time)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT												
A time line shows important events with the dates at which they happened.	Complete Table <table border="1"> <thead> <tr> <th>START</th><th>ELAPSED TIME</th><th>FINISH</th></tr> </thead> <tbody> <tr> <td>3:00pm</td><td>4 hours</td><td>7:00pm</td></tr> <tr> <td>7:00pm</td><td>4 hr. 45 min</td><td>11:45 am</td></tr> <tr> <td>10:40 am</td><td>7 hr. 30 min</td><td>9:35 pm</td></tr> </tbody> </table> Brainstorm to find meaning of time-line Children gather dates and information about arrivals of different ethnic groups and make time-line. Children make time-line to show constitutional Development eg: From Public Meeting to Independence. Children use other time-runs e.g.  <u>Questions</u> How old was my dister when my uncle died?	START	ELAPSED TIME	FINISH	3:00pm	4 hours	7:00pm	7:00pm	4 hr. 45 min	11:45 am	10:40 am	7 hr. 30 min	9:35 pm	Design time-lines demonstrating information gathered. Ability to gather information from time-line
START	ELAPSED TIME	FINISH												
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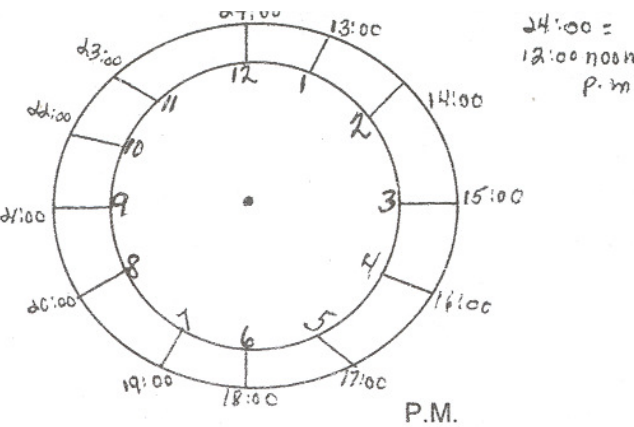
AREA OF STUDY: MATHEMATICS

UNIT/THEME: Measure, quantify and calculate (Time)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Time can be expressed in the a.m. using the 24-hour clock. 4:00 a.m. would show 04:00 7:00 a.m. would show 07:00 11:00 a.m. would show 11:00 4 minutes past midnight means 12:05 a.m. which is written as 00:05 hours. Note that each 24-hour time is represented by 4 numbers. Two figures represent the hours and two represent the minutes.	 Time showing after 12:00 midnight – 00:00 to 12:00 noon	Ability to read and write times using the 24 hour clock. Write the following as 24-hour times: 6 a.m. = _____ 8 a.m. = _____ 10 a.m. = _____

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Measure, quantify and calculate (Time)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Time can be expressed in the p.m. using the 24-hour clock. 3:00 a.m. would show 15:00 8:00 a.m. would show 20:00 11:00 a.m. would show 22:00 5 minutes past 12 noon means 12:05 a.m. which is written as 12:05 hours. Note that each 24-hour time is represented by 4 numbers. Two figures represent the hours and two represent the minutes.	 Time showing after 12:00 noon to 12:00 midnight - 00:00 Have children create models of the 24 hour clock and use them to show various times in a.m. and p.m.	Ability to read and write times using the 24 hour clock. Write the following as 24-hour times:- 5 p.m. = _____ 9 p.m. = _____ 11p.m. = _____ Checklist criteria for 24-hour clock construction as regards neatness, accuracy etc.

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Measure, quantify and calculate (Time)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Organizing Discussing Observing Describing Follow directions Insert Report Apply <u>Attitudes</u> Share Co-operate Shoe responsibility Express interest Sensitivity		

AREA OF STUDY: MATHEMATICS**UNIT/THEME: Measure, quantify and calculate (Time)**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
SS – Culture of Belize EL4a – Express ideas and opinions EL4c – Ask questions and give information M5a – Collect, analyze and present data using charts, graphs, tables and diagrams WT5a – Identify a simple problem/issue M4a – Make reasonable approximations based on relevant life experiences	Mathematics Today – Math Power2 Teaching Elementary School Mathematics Clock, paper, bristol board, scissors

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Measure, quantify and calculate (Distance)

AREA OF STUDY OUTCOMES

Pupils should:

M3a – Measure capacity, distance, weight and time using standard and non-standard devices

CROSS-CURRICULAR OUTCOMES

Pupils should:

CP1a – Recognize an issue or a problem

CP1b – Examine information related to the problem/issue

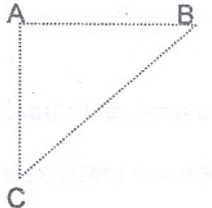
SP1a – Recognize the values associated with choices

SP2a – Take part in group activities

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT																																																					
To measure length, we count the number of units required from one point to another. e.g. A  B AB = 7 units 	Students observe and discuss various items and recall how these can be measured (eg) apples, oranges, milk, line segment, water, string etc. Complete a table eg: <table><tr><th>Items</th><th>Capacity</th><th>Weight</th><th>Length</th></tr><tr><td>Apples</td><td></td><td>✓ lbs, oz. Grams</td><td></td></tr><tr><td>Milk</td><td>✓ oz, cup, Pt, qt, gal Ml, l</td><td></td><td></td></tr><tr><td>Line Segment</td><td></td><td></td><td>✓ count units mm, cm, inch, etc</td></tr></table> Students work in groups to count units & measure line segments and record findings. (Cooperative learning strategy). Students work individually to measure line segments and record findings/units.  Ab = 6 units	Items	Capacity	Weight	Length	Apples		✓ lbs, oz. Grams		Milk	✓ oz, cup, Pt, qt, gal Ml, l			Line Segment			✓ count units mm, cm, inch, etc	Sort and categorize items on a given table to recall different areas & units of measurement. Evaluate the pupils' cooperation and performance within group – using checklist. (See example below) <table><tr><td>Name:</td><td>Date:</td><td>Class:</td></tr><tr><td colspan="3">Rate the student using the following:</td></tr><tr><td>1. Excellent</td><td>2. Very good</td><td>3. Good</td></tr><tr><td>4. Satisfactory</td><td colspan="2">5. Unsatisfactory</td></tr><tr><td colspan="3">A. Willingness to share ideas/materials.</td></tr><tr><td colspan="3">B. Respect each other.</td></tr><tr><td colspan="3">C. React positively to suggestion.</td></tr><tr><td colspan="3">D. Use individuals skills/initiative.</td></tr><tr><td colspan="3">E. Support & encourage each other.</td></tr><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr><tr><td colspan="5">etc</td></tr></table>	Name:	Date:	Class:	Rate the student using the following:			1. Excellent	2. Very good	3. Good	4. Satisfactory	5. Unsatisfactory		A. Willingness to share ideas/materials.			B. Respect each other.			C. React positively to suggestion.			D. Use individuals skills/initiative.			E. Support & encourage each other.			1	2	3	4	5	etc				
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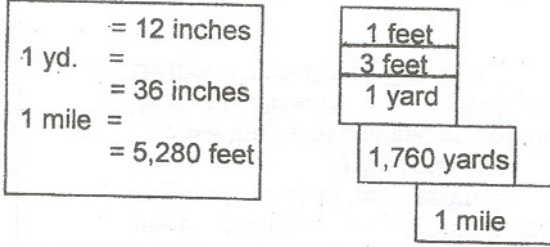
AREA OF STUDY: MATHEMATICS

UNIT/THEME: Measure, quantify and calculate (Distance)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Customary units of length are: Inches (in) Feet (ft) Yards (yd) Miles Length of objects/distances can be estimated and measured using the most suitable unit of measure.	Pupils discuss & recall customary units of length. (Length method & cooperative learning strategy). Group activity-discuss objects and estimate length of each, then use ruler, yard stick, tape measure to measure these and record findings (eg) - length of hallway, width of room, length of table - height of standing fan – estimate _____ ft actual measure _____ ft - Choose the most suitable unit of measure. (1) width of sidewalk – (a) in (b) ft (c) mi (2) distance from Belize City to Belmopan (a) ins (b) ft (c) miles <u>Physical Education Link</u> Pupils work in groups to discuss, estimate and measure distances for games.	Measure line segments using units. Recall and record customary units of measure. Group presentation. Provide children with concrete objects and have them choose the most appropriate unit of length to measure them by. Have children demonstrate the psychomotor skill of throwing and their ability to follow instructions logically by throwing bean bag, soda straw etc from specified points.  Measure distance covered.

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Measure, quantify and calculate (Distance)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
To convert customary units of length from a large to a smaller unit multiply. To change small units to larger customary units of length – divide (eg) 36 inches = 1 yd 396 inches = 396/36 396 incles = 11 yards	Teacher and pupils discuss term “Mini Olympics”. Explain that pupils will use skill of hthrowing from point A to B, then measure distance of throw and record and compare with estimate. Games are:- (1) Soda-straw – javelin (2) Cotton-ball – Put (shot put) (3) Paper-plate-Discuss (4) Standing Broad Jump (5) Bean-bag throw Pupils discuss and complete table on customary units of length (eg)  Group work – discuss and convert units units from one to another. Individual work – convert similar exercise (eg)	Insert correct answer for customary units of length. Convert units from smaller to larger and vice versa.

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Measure, quantify and calculate (Distance)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT										
Computing with customary measures using the four operations., (eg) Subtract <table><tr><td>Yd</td><td>Ft</td></tr><tr><td>5</td><td>2</td></tr><tr><td>-1</td><td>1</td></tr><tr><td colspan="2"> </td></tr><tr><td>4 yd</td><td>1 ft</td></tr></table>	Yd	Ft	5	2	-1	1			4 yd	1 ft	Convert 52 yards-feet 3ft = 1 yd 52 yds = 52 x 3 52 yd = 156ft Challenge Covert 7040 yds to miles 1760 yds = 1 mile 7040 yds = $\frac{7040}{1760}$ Convert 36 inches = yd 36 inches = 1 yd 396 inches = 396/36 Convert 4 ft 6 inches Convert 16 ft to yd and ft Group discussion and activity Discussion computing customary measures using the four operations and times when converting units is useful. Individual work based on similar exercise (eg)	Insert correct answer for customary units of length. Convert units from smaller to larger and vice versa. Group presentation. Group discussion and presentation. Computing customary measures of length using the four operations.
Yd	Ft											
5	2											
-1	1											
4 yd	1 ft											

UNIT/THEME: Measure, quantify and calculate (Distance)

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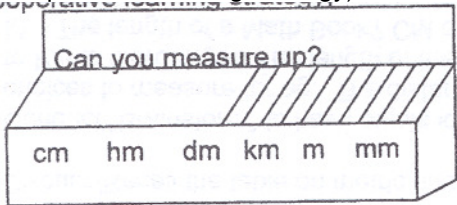
AREA OF STUDY: MATHEMATICS

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Eg: A car travelled at an average speed of 80 miles per hour for 4 hours. How far did it travel? In 1 hour car travelled 80 m.p.h. In 4 hours car travelled 80 miles x 4 = 320 miles Answer 320 miles Distance travelled – 320 miles Length of objects can be measured using metric units. The metric system of measurement is based on powers of 10.	 *Discuss and recall steps for problem solving strategies. Pupils work in groups to solve similar problems then work individually and apply formula to solve other problems involving distance (time & average speed) Eg: (1) Distance = Speed x Time (2) Time = Distance/Speed (3) Average Speed = Distance/Time Discuss/Recall the table on metric units of length. Conduct “brainstorm” to have pupils identify appropriate choices to measure for eg: The distance from Corozal to Punta Gorda: Km The length of the Principal’s room? M – The length of a Math Book? CM etc. Recall proper usage of ruler & tape measure to measure Lengths/objects.	Demonstrate steps for problem solving through worksheet activity. Apply formula to solve relevant problems involving distance, time and speed. Match symbols to prefix Explain choices for units of measure selected. Group presentation on findings Measure lengths of objects and record metric units of length.

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	Group activity – pupils select cards and discuss items then take turns measuring and recording measurement of items. Pupils then work on similar activity independently. *Teacher prepares list of items and instruction on index cards and store in a box. From this box, pupils will make their selections and carry out measuring activity. (Cooperative learning strategy). *Teacher prepares list of items and instruction on index cards and store in box. From this box, pupils will make their selections and carry out measuring activity. (Cooperative learning strategy)  - Box for storing activity cards and materials eg: Activity Cards 1) Draw a line 7 cm long 2) Draw a line 4.5 (4 ½) cm long 3) Measure and record the length of the blue string in the box. 4) Measure and record the length of the red ribbon to the nearest metre (from the box) 5) Measure the length of the paper clip (in the box) 6) Measure the length of your shoe to the nearest c. etc.	Ability to measure objects using standard units of measurement.

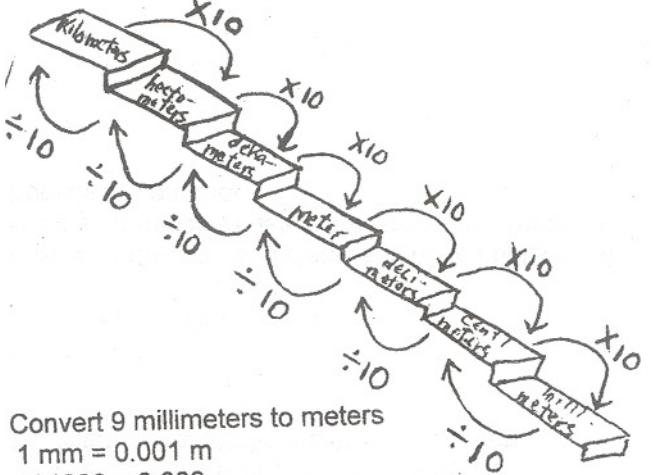
AREA OF STUDY: MATHEMATICS

UNIT/THEME: Measure, quantify and calculate (Distance)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Metric Units of length can be converted from one unit to another. To change from a larger unit to a smaller unit, multiply. To change from a smaller unit to a larger unit divide.	Select five items in the classroom. Estimate their measurement. You and a partner then do an actual measure for each and record. Discuss to recall that the metric system of measurement is based on powers of 10. Through discussion, pupils identify for example – Units larger than a meter (km, Hm, Dam) – Units smaller than a meter (Mm, Cm, Dm). Children compare and order metric units of length using $>$, $<$, or $=$ Eg: a) 1m $>$ 1mm b) 2Km $<$ 2000m Choose the most suitable unit of measure. 1) Distance from School to Wesley Church (a) Km (b) Cm (c) Mm 2) Width of a nail (a) Km (b) Cm (c) Mm Present data/chart and discuss to have pupils recall or identify operation to use when converting, metric units from one to another.	Questioning technique Compare metric system and that of Place Value Work sheet evaluation Complete work sheet by selecting appropriate units and comparing/ordering of units. Interpretation of data/chart and comparison of units to identify correct operation to use.

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Measure, quantify and calculate (Distance)

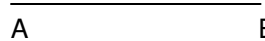
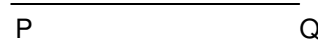
CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Eg: 3.2 m to cm $1\text{m} = 100\text{ cm}$ $3.2 \times 100 = 320$ $3.2\text{ m} = 320\text{ cm}$ (To multiply by 100, move the decimal point 2 places to the right)	 Convert 9 millimeters to meters $1\text{ mm} = 0.001\text{ m}$ $9/1000 = 0.009$ $9\text{ mm} = 0.009$ (To divide by 1000 move the decimal point 3 places to the left). - Convert 4 meters to centimeters $1\text{m} = 100\text{cm}$ $4\text{m} = 100 \times 4$ $4\text{m} = 400\text{cm}$ - convert 5000m to Km $1000\text{m} = \text{Km}$ $500\text{m} = 5000/1000 = 5\text{Km (etc)}$	Convert units from larger to smaller and vice versa.

UNIT/THEME: Measure, quantify and calculate (Distance)

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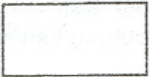
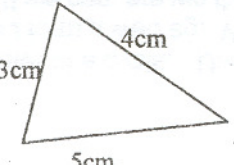
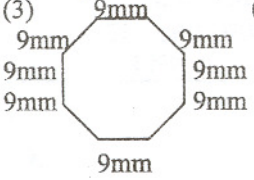
AREA OF STUDY: MATHEMATICS

UNIT/THEME: Measure, quantify and calculate (Distance)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
A scale can be used to determine metric measures of length. Eg: Using the scale 1cm=9m what is the length in m of the following line?  Scale 1cm = 9cm AB measures 8cm $1\text{cm} = 9\text{m}$ $8\text{cm} = 9 \times 8$ $= 72\text{m}$ AB = 72 meters	Discuss and recall relevance of scale drawing to real life situation. Group activity-discuss various scale and work in groups to apply scale to situation and solve eg: Scale 1 cm = 10Km  PQ measures 7.5 cm $1\text{cm} = 10\text{Km}$ $7.5\text{cm} = 10 \times 7.5$ $= 75\text{ Km}$ Social Studies/art link Pupils discuss and work in groups to construct a model of their classroom based on a suitable scale/for representation. Pupils may choose to apply similar concept *construct a model of a community using suitable scale.	Apply scale given to measure lines and compute lengths based on scale. Ability to measure and construct a clear structured model.

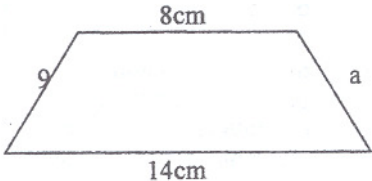
AREA OF STUDY: MATHEMATICS

UNIT/THEME: Measure, quantify and calculate (Distance)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
The perimeter of a figure can be found using addition method or the formula: - Perimeter = (L+W)x2	Discuss to recall what perimeter is and its relevance to real life situation. Pupils draw a picture to show this. Group activity-discuss various polygons and find perimeter of these – using either method as appropriate on work sheet. Pupils then work independently Eg: Find the perimeter of each polygon. 21mm (1)  11mm $P = (L + W) \times 2$ $= (21 + 11) \times 2$ $= 32 \times 2$ $P = 64\text{mm}$ (2)  3cm 4cm 5cm $3\text{cm} + 4\text{cm} + 5\text{cm} = 12\text{cm}$ (3)  9mm 9mm 9mm 9mm 9mm 9mm 9mm 9mm (a) 9mm or) all sides are the same lengths so $9 \times 8 = 72$ P = 72	Questioning technique. Explain perimeter through diagrams. Complete work sheet in groups to find perimeter. Draw diagrams/polygons and apply appropriate procedure to solve for perimeter of each.

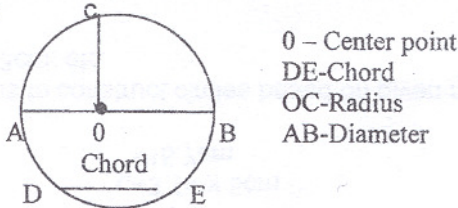
AREA OF STUDY: MATHEMATICS

UNIT/THEME: Measure, quantify and calculate (Distance)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
The perimeter or distance around a circle is called the circumference. Circumference is one property of a circle. A circle has other properties which are:	Discuss various problems involving perimeter. Pupils solve in pairs/or groups then work similar exercises independently. Eg: 1) The perimeter of this shapr is 32cm. Find the measurement of the sides marked a.  2) The perimeter of a rectangle is 40cm. If the length is 12cm, what is its width? 3) The perimeter of a square of 280 cm. What is the length of each side? Group activity Discuss finding the perimeter of a circle. Use questions to stimulate discussion and form a web eg: We find the distance around circles. If we can, are we then finding the perimeter of this circle?	Demonstrate cooperation within groups. Teacher evaluates thisusing check list. Solve problems involving perimeter. (worksheet/books) Present findings to the questions relating to perimeter of a circle.

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Measure, quantify and calculate (Distance)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
- center - chord - diameter - radius The circumference of a circle can be found using a formula:	What do we call the distance around a circle? How can we measure this? - Pupils work in groups to measure around cups, bucket, fan, bicycle, wheel (etc.) Use string to measure and then place against ruler or meter stick to determine measurement of each. - Pupils observe diagrams and identify properties of circle and label with 1) Center 2) chord 3) diameter 4) radius Eg:  0 – Center point DE-Chord OC-Radius AB-Diameter Discuss and relate radius and diameter to real life situations. Eg: have pupils match terms radius and diameter to correct statements. Eg: From the center of an orange to the rind Radius Between 3 and 9 on the face of a circular clock face Diameter	Measure circumference of objects using string and ruler to determine measurement. Label properties of a circle. Match flash cards to correct statements.

AREA OF STUDY: MATHEMATICS

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	Group work pupils discuss and solve for radius if given Diameter and diameter if given radius. Eg: The diameter is 9cm, find the length of radius. Group activity – discuss and apply formula to find circumference. Pupils then work on similar exercises independently. Eg: Find the circumference of the circle whose diameter is 5cm. Let π be $3\frac{1}{4}$ $d = 5\text{cm}$ $= 3.14$ $c = \pi d$ $c = 3.14 \times 5\text{cm}$ $= 15.7 \text{ cm}$ Use a compass to construct circles based on given radii. Eg: 1cm, 2cm, 3cm, etc. <u>Art Link</u> Pupils conduct "Colour Wheel: using a compass and depict – Primary, Secondary and Tertiary Colours.	Group participation and cooperation to solve for radius and diameter of circles using worksheets. Find circumference of circles by applying formula. Construct circles based on given radii. Construct colour wheel and depict colours.

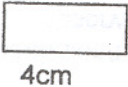
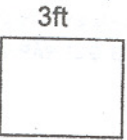
AREA OF STUDY: MATHEMATICS

UNIT/THEME: Measure, quantify and calculate (Distance)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
The area of a circle can be found using the formula: $A = \pi \times r^2$ (eg) Find the area of a circle with a radius of 15m (use 3.14 for π) $A = \pi \times r^2$ $A = 3.14 \times (15)^2$ $A = 3.14 \times 225 = 706.5$ $A = 706.5\text{m}^2$	Discussion: Class discuss and recall parts of a circle. Pupils label diagram on chart showing Center, Radius, Diameter and Chord. Pupils discuss and relate geometric shapes to the environment (eg) Sports – basketball hoop, circles on basketball courts, glass tiles/blocks etc. Cooperative/Learning Pupils observe and discuss ways the area of a circle may be found. Pupils then discuss formula $A = \pi r^2$. Pupils then calculate areas of given circles using this formula. Pupils then work independently on similar exercises. (eg) Estimate the area of the circle. Then use the formula to calculate area. *Find the area of a circle that has a radius of 4cm. Use 3.14 for π. *Estimate $3 \times 4^2 = 3 \times 16 = 48$. *Check/Calculate $A = \pi \times r^2$ $A = 3.14 \times (4)^2$ $A = 3.14 \times 16 = 50.24 \text{ cm}^2$ Find the area of a circle with a diameter of 28 in. Find the area of a circle with a radius of 6 cm. etc	Ability to give information Label diagram of a circle Pupils cooperate and participate in group work to calculate area of circles using formula. Calculate area of circles using formula (independently, using worksheet/books)

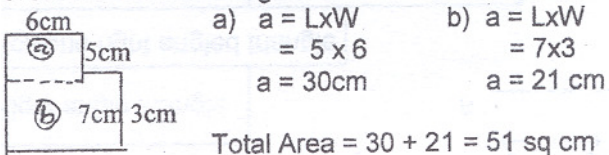
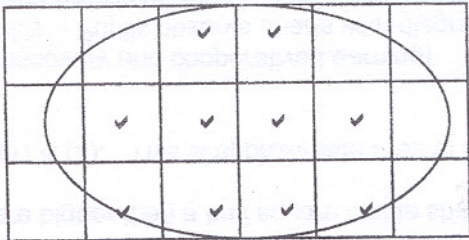
AREA OF STUDY: MATHEMATICS

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CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
The formula for area can be applied to regular shapes. The formula for regular shapes is $A=L \times W$	John must find the area of a circular window that has a 12 in radius. What is the area? A circular frame that is 1 in wide surrounds a circular window that has a diameter of 12 in (not including the frame). What is the area of the frame? Recall definition of area and methods for finding area through discussion. (Cooperation, Learning and Discovery Method) Group activity – Pupils discuss finding area of a large piece of cardboard using small piece of square cardboard or a square tile. Group activity – Pupils discuss diagrams and find areas for each (eg): 1)   $G = L \times W$ $A = 3 \times 3$ $A = 9 \text{ sq ft.}$	Match definition of word “area” and methods for finding area correctly on a chart. Find area of cardboard using a small piece of cardboard and or tile. Find area of regular shapes using formula/

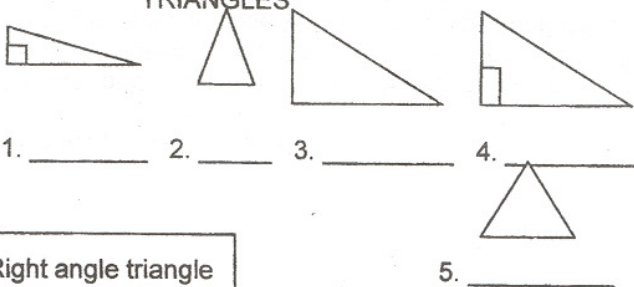
AREA OF STUDY: MATHEMATICS

UNIT/THEME: Measure, quantify and calculate (Distance)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Approximate areas of irregular shapes can be found using grid paper.	Individual work based on similar exercise (eg) Find the area of the shaded region  $a) a = L \times W$ $= 5 \times 6$ $a = 30 \text{ cm}$ $b) a = L \times W$ $= 7 \times 3$ $a = 21 \text{ cm}$ Total Area = $30 + 21 = 51 \text{ sq cm}$ Guided discovery method. Teacher and pupils discuss term "Irregular shapes". Discuss "Stations" set up in classroom. Pupils visit these stations and observe irregular shapes and discuss possible ways to find areas of these (Group activity) Use grid paper to find approximate area of irregular shapes (eg) 	Group Reporting. Ability to make inferences from data. Count squares to find approximate area.

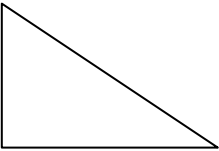
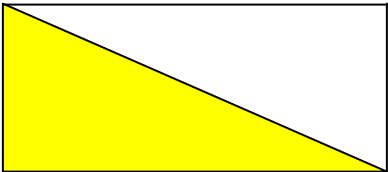
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CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Problem solving strategies can be applied to find area of Parellograms, Triangles, Borders and shaded parts eg: The area of a triangle is equal to $\frac{1}{2}$ the base (b) times the height (h). $A = \frac{1}{2} \times b \times h$ Area of parallelogram is: $A = b \times h$	1. Count number of whole squares inside shape. 2. Count number of half squares or squares which are bigger than a half square inside shape. Add (1) & (2). This is approximate area of shape. Art Link (Guided discovery and cooperative Learning) Group ability – Pupils observe charts with diagrams of triangles and parallelograms. Pupils use wires to create models of these. Discuss chart and match examples of models to the triangles on the chart (eg) of chart: TRIANGLES  1. _____ 2. _____ 3. _____ 4. _____ 5. _____ Right angle triangle Scalene right angled triangle Isosceles triangle Scalene triangle Equilateral triangle	Create models of triangles Match names of triangles to diagrams on chart.

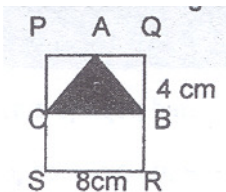
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CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	Pupils match flash cards to name the triangles. Group activity – Pupils work in groups to cut out shapes of various triangles and parallelograms, identify each and find the area of the shapes and share findings with the class (eg)  22cm 20 cm $A = \frac{1}{2} \times b \times h$ $= \frac{1}{2} \times 20 \times 22 = 220$ Answer 220 sq cm/220 cm² This is a <u>Right Angle</u> triangle Pupils solve problems (eg) Find the length of each side of a square if the area is 81cm² Find the area of the shaded part. 	Cut out shapes of triangles and parallelograms. Name the various triangles Apply formula and solve to find area of triangle and parallelograms. Solve various types of problems relating to area of square, triangles (etc.)

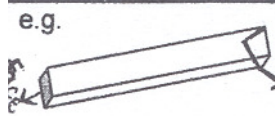
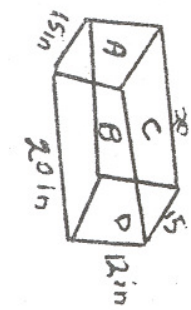
AREA OF STUDY: MATHEMATICS

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CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Surface area of a prism can be found by adding areas of faces e.g. Find the surface area of this triangular prism.	How many tiles 6cm by 6cm would it take to cover a square floor whose sides are 360 cm long. Find the area of the shaded triangle.  *PQRS is a square of side 8cm, A,B and C are the mid points of 3 sides of the square. Etc Art Link Pupils collect photos or drawings of interesting shapes and explain why it might be important to know the area of that shape. Pupils create posters to display shapes. Discussion: Use questions to stimulate thinking/recall various shapes of prisms and formulas for area of a square and a rectangle. Have pupils then lookat diagrams & various boxes eg: Colgate box, Cornflakes box etc. to relate these objects to solid shapes. Have pupils then recall/identify number of faces & vertices for each figure.	Explain importance of knowing of knowing area of various shapes. Construct posters depicting various shapes. Questioning technique. Ability to recall information.

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Measure, quantify and calculate (Distance)

CONTENT ORGANIZED INTO MANAGEABLE SETS		SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT																
Face	Area of Figure (in cm^2)	e.g.  Cooperative Learning/Discovery method. Have pupils get in groups and discuss ways surface area of a rectangular prism can be found. Pupils present ideas to class. Class then discuss correct method. Pupils then regroup themselves and find surface area of given prism. Pupils then work independently. Eg: Find the surface area of the following:-  <table><thead><tr><th>Face</th><th>Area of face (sq. inches)</th></tr></thead><tbody><tr><td>-A</td><td>$15 \times 12 = 180$</td></tr><tr><td>-B</td><td>$20 \times 12 = 240$</td></tr><tr><td>-C</td><td>$20 \times 15 = 300$</td></tr><tr><td>-D</td><td>$15 \times 12 = 180$</td></tr><tr><td>-E</td><td>$20 \times 12 = 240$</td></tr><tr><td>-F</td><td>$20 \times 15 = 300$</td></tr><tr><td colspan="2">Total area = 1,440 sq. ins.</td></tr></tbody></table> A 12 D 15 C 20 B 12 E 20 F 20	Face	Area of face (sq. inches)	-A	$15 \times 12 = 180$	-B	$20 \times 12 = 240$	-C	$20 \times 15 = 300$	-D	$15 \times 12 = 180$	-E	$20 \times 12 = 240$	-F	$20 \times 15 = 300$	Total area = 1,440 sq. ins.		Group cooperation and participation. Calculate surface area of prism.
Face	Area of face (sq. inches)																		
-A	$15 \times 12 = 180$																		
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-C	$20 \times 15 = 300$																		
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AREA OF STUDY: MATHEMATICS**UNIT/THEME: Measure, quantify and calculate (Distance)**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Draw Compare Estimate Describe Explain Discuss Examine Question Follow directions Demonstrate Use Generalize <u>Attitudes</u> Interact Independence Willingness Sharing Enjoyment Participate Cooperate		

AREA OF STUDY: MATHEMATICS**UNIT/THEME: Measure, quantify and calculate (Distance)**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
EL4a – Express ideas and opinions. EL1j – Make inferences and draw conclusion EA1e – Explore and experiment to create images through the use of a variety of artistic tools. WT4a – Construct a simple device to see if it meets a need/ solve a problem	Scott Foresman Mathematics Active Mathematics Count Me In Grade 7 (Teacher's Resources) Silver Burdett Ginn Mathematics Teacher Guide Grade 4 Volume 2 Grid Paper Scissors Rulers Bristol Board Paper

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Measure, quantify and calculate (Capacity)

AREA OF STUDY OUTCOMES

Pupils should:

M3a – Measure Capacity, distance, Weight and time using standard and non-standard measuring devices

CROSS-CURRICULAR OUTCOMES

Pupils should:

CP1a – recognize an issue or a problem

CP1b – examine information related to problem/issue

SP2a – take part in group activity

SP2e – lead and follow where appropriate

SP2f – help the group to achieve its goals

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Models can be used to determine volume.	Discussion Lead pupils to realise that space refers to three dimensions and not to floor area alone. Use questions to stimulate thinking e.g. questions pupils ask if they share a room with a brother/sister. How much space does each of you have? “Why do bunk beds make a shared room seem to have more room space?” Discovery Methods Collect in advance empty food storage or other small boxes, cubes. Label each box 1, 2, 3 and so on. Set up a table with a variety of boxes. Students guess how many cubes fill a given box and then test the guess by filling the box and counting the cubes. Pupils record guess and actual measure. Pupils discuss other way/ways they could have determine the volume of the boxes without using all the cubes. (NOTE: Enough cubes should be available for pupils to use).	Ability to give information. Use models to find volume of boxes, record estimate actual volume.

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Measure, quantify and calculate (Capacity)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	Cooperative Learning/Guided discovery (Materials = Unit cubes) - Have pupils work in pairs to construct as many prism as possible using exactly 8 unit cubes. - Have them compare the volumes and the surface areas. (Volume of all prisms is 8 cubic units; surface area varies; a prism: a. 4 units long x 1 unit wide x 2 units high or b. 2 units long x 1 unit wide x 4 units high has a surface area of 28 square units; c. a prism 8 units long x 1 unit wide x 8 units high has a surface area of 34 square units; a cube with dimensions 2 units x 2 units x 2 units has a surface area of 24 square units) e.g.  (use cubes 8) build the following and compare surface area.	Construct prism using cubes only. Find area and compare. Group cooperation and participation.

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Measure, quantify and calculate (Capacity)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	4 sq. units 2sq. units 2 sq. units 8 sq. units 2 sq. units 4 sq. units 8sq. units 2sq. units 2sq. units 4 " " 4 " " 8 " " 8 " " 28 sq. units 4 sq. units 4 " " 2 " " 2 " " 8 " " 8 " " 28 sq. units	

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Measure, quantify and calculate (Capacity)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
The volume of solid can be found using formula: $\text{Volume} = L \times W \times H$ e.g. Find the volume of a prism with L – 12 cm, W – 5cm, H – 10cm $V = L \times W \times H$ $V = 12 \times 5 \times 10$ $V = 600\text{cm}^3$ Problem solving strategies can be applied to concept of volume.	Cooperative Learning Have pupils work in groups to find volume of various prisms and share findings with the class. Class discuss and corrections if/where needed. Pupils then find volume pf prisms independently e.g. find the volume of each prism. a. L – 8cm b. L – 6m c. L – 5.1m W – 3 cm W – 6m W – 5.1m H – 5cm H – 5m H – 5.1m <u>Cooperative Learning</u> Have pupils work in groups to recall problems solving strategies and apply to solve word problems relating to volume. Pupils then work independently on similar exercises. 1. A doghouse is 3 feet by 4 feet by 4 feet. Find the volume. Is the volume more or less than a doghouse with a volume of 1 cubic yard? 2. Find the volume of a rectangular water tank 5m long, 4m wide and 80cm deep. Give the answer in cubic meters. (Volume – $5\text{m} \times 4\text{m} \times 0.5\text{m}$ ($100 = 1\text{m}$) Volume – 16.0m^3)	Group cooperation and participation to calculate volume of prisms given. Find volume of given prism independently. Group cooperation and participation. Apply problem solving strategies to solve and find volume (worksheet/books)

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Measure, quantify and calculate (Capacity)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	3. The volume of a cuboid is 60m^3. If the length is 5cm and the width is 4cm, what is the height? $(H = V \div (L \times W))$ $H = 60\text{cm}^3 \div (5\text{cm} \times 4\text{cm})$ $= 60\text{m}^3 \div 20\text{cm}^2$ $= 3\text{cm}$ 4. The volume of a rectangular block of wood is 600m^3. If the width is 8cm and the height is 5cm, what is the length? (Length = $V \div (W \times H)$). 5. Mr. Smith wants to find how much space is contained in a storage shed. Complete this statement "Mr. Smith, you must find the _____ of a rectangular prism. You can use the formula _____" (ans – volume: $V = L \times W \times H$) Social Studies Link (Export/Import) Organize Field Trip to Port Authority – pupils observe unloading of containers – note if refrigerated or dry goods, size (etc). Pupils interview relevant personnel to answer questions on volume of container, price, shipping dates, departure from foreign port, arrival to Belize Port – duration? (etc.) Pupils complete questionnaire correctly.	Gather information from field trip Complete questionnaire.

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Measure, quantify and calculate (Weight)

AREA OF STUDY OUTCOMES

Pupils should:

M3a – Measure Capacity, Distance, Weight and time using standard and non-standard measuring devices

CROSS-CURRICULAR OUTCOMES

Pupils should:

CP1c – Suggest ways of dealing with a problem or issue

SP2e – Lead and follow where appropriate

SP2f – Help group to achieve its goal

SP3a – Assess their needs/interest

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT												
A unit of measurement can be estimated with another unit of measurement eg: Ounces, pounds, tons, grams, kilograms etc.	The weights of different objects are estimated. Objects are compared to exact weights. Make a table to record measurements. Estimate the weight of each object and record estimate on table – Weigh each object with a kitchen scale and write down weight on table. <table><tr><th>Object</th><th>Estimated Weight</th><th>Accurate weight</th></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table> Talk about how good you were at estimating.	Object	Estimated Weight	Accurate weight										Ability to estimate weights of different objects. Compare and contrast estimates to exact weights.
Object	Estimated Weight	Accurate weight												

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Measure, quantify and calculate (Weight)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Units of weight can be converted from one unit to another. <u>Customary Units of Weight</u> 1 lb = 16 ozs. 1 ton = 2,240 lbs <u>Metric Units of Weight</u> 100 centigrams (cg) = 1 gram (g) 1000 milligram(mg) = 1 gram (g) 1000 grams(g) = 1 kilogram (kg) 1000 kilograms (kg) = 1 tonne (t) 1 kilogram (kg) = 2.2 lbs	Why were some things easier to estimate than others? Objects that weights one pound and one that weights an ounce held in either hand so that their weights can be sensed and can be compared. How are pounds and ounces related. (1 pound is heavier than 1 oz – 16 ounces = 1 pound) Have children collect a variety of items to be weighted eg: feather, spongem stones, sand, books etc. Use both customary and metric scales to weigh and list their findings (units). Introduce both customary and metric scales to weigh and list their findings (units). Introduce both customary and metric units of weight. (tables) Convert kilograms to grams – multiply by 1000. Convert grams to kilograms – divide by 1000. Convert lbs to ozs – multiply by ozs. Convert ozs to lbs – divide by 16 ozs.	Observe and analyse the relationship of weights. Collection of a variety of items to be weighed. Use of both customary and metric scales and list findings. Use of customary and metric units of weight (tables). Conversion of units of weight.

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Measure, quantify and calculate (Weight)

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Problems can be solved using different units of weight. Skills Estimating Predicting Measuring Sorting Describing Attitude Sharing Cooperating Enjoyment Familiarity with different measurements. Usage of different units of measurement.	A bowling ball weighs about 7 kilograms, how many grams does the ball weigh? If a boy's body <u>mass</u> is 20kg, what would be his weight in lbs? Jane bought 32ozs of beef. Lily bought 2 lbs of pork. Who bought the most meat? The weight of 1 book is 2kg. What is the weight of 6 of these books? Choose the most appropriate unit of measure. Write g or kg. A watermelon = kg A coin = g A ladder = kg A baseball = g	Ability to make accurate predictions. Convert one unit of measurement to another. Teacher made test to examine student's strengths and weakness.

AREA OF STUDY: MATHEMATICS**UNIT/THEME: Measure, quantify and calculate (Weight)**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
EL4a – Express ideas and opinions El1g – Make inferences and draw conclusions SP2e – Lead and follow where appropriate SS1a - Understand some aspects of Economic Conditions CB1b – Examine information related to a problem	Mathematics Today Teaching Elementary School Mathematics Active Mathematics Caribbean Primary Math Scale Paper

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Capacity

AREA OF STUDY OUTCOMES

Pupils should:

M3a – Measure capacity, distance, weight and time using standard and non-standard measuring devices

CROSS-CURRICULAR OUTCOMES

Pupils should:

CB1b – Examine information related to problem

SP2a – take part in group activities

SP2c – Lead and follow where appropriate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Capacity is the amount a container will hold when filled.	Discuss meaning capacity in groups. Discuss and record meaning of other mathematical words on strips (eg): estimate, calibrating, recipes, calibration, survey, quantities. Discuss units of capacity - Metric and customary/imperial - Ounce, liter, gallons, cups, militer, quarts, pints, kiloliter, half gallons, teaspsoon, tablespoon.	Locating meaning of Mathematical words and record on a strip. Pupils in groups present meaning strip and discuss as a class (eg): Capacity – is the amount a container will hold Discussion and arrangement of units of capacity on a chart from least to greatest or vice versa. Metric units of Capacity Milliliter Liter Kiloliter Customary. Imperial Units of capacity Teaspoon Tablespoon Fluid ounce

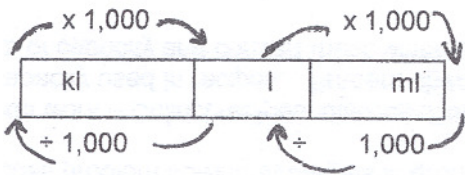
AREA OF STUDY: MATHEMATICS

UNIT/THEME: Capacity

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT																		
Capacity of containers can be estimated and measured in customary/imperial units and metric units.	Group discussions on estimating and its relevance to daily living. Observation and discussion of display of calibrated containers to select most appropriate one to measure a particular container. Group work – pupils visit “stations” and estimate capacity of various containers; then measure and record actual measure of containers. Pupils compare findings.	Cup Pint Quart Half Gallon Gallon Ability to recognize situations where estimating is useful. Eg: A visit to the store or shop for goods, estimate total cost of items to establish if all can be purchased based on money on hand. Cooperation as a group to observe, record, measure and report findings e.g. <table border="1"> <thead> <tr> <th>Containers</th><th>Estimate</th><th>Actual Measures</th></tr> </thead> <tbody> <tr> <td>Cup</td><td></td><td>- ml</td></tr> <tr> <td>Bucket</td><td></td><td>- gal</td></tr> <tr> <td>Dish pan</td><td></td><td>- pts</td></tr> <tr> <td>Spoon</td><td></td><td>- ml</td></tr> <tr> <td>Bottle</td><td></td><td>- ml</td></tr> </tbody> </table>	Containers	Estimate	Actual Measures	Cup		- ml	Bucket		- gal	Dish pan		- pts	Spoon		- ml	Bottle		- ml
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AREA OF STUDY: MATHEMATICS

UNIT/THEME: Capacity

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Metric units of capacity can be converted from one to another. 100mL = 1L 1mL = 0.001L 1000 L = 1 kL 1L = 0.001 kL To change a larger to a smaller unit – multiply and to change from a smaller to a larger unit –divide. Customary Units of measure can be converted from one to another.	Discuss conversion table and converting one unit to another.  Group work – discuss converting units and complete exercises based on conversion. Group work – conduct a survey of liquids on sale at the stores. Record the name of some products and the capacity of the container. Convert the units from one to the other. Discuss situations where capacity are not exact mL or L Discuss why? Discuss conversion table. Group work – discuss converting units from one to another. Convert several in groups. Individual work.	Conversion of units from larger to smaller and vice versa (eg) a) 3L = <u>3000</u> mL b) 0.250 kL = <u>250</u> L c) 0.750 L = <u>750</u> mL d) 476 L = <u>0.476</u> kL a) 1L = 1000 mL 3L = 1000 mL x 1000 = 3000 mL b) 1L = 0.001 kL 476L = 476 L / 1000 = 0.476 kL a) Children prepare a chart and list each customary unit of capacity.

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Capacity

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT												
1 (tbsp) = 3 (tsp) 1 (c) dry = 1.6 (tbsp) 1 (c) fluid = 8 (fl. Oz) 1 (pt) = 2 (c) 1 (qt) = 2 (pt) 1 (1/2 gal) = 2(qt) 1 (gal) = 4 (qt) To change large units to smaller multiply and to change smaller units to larger units divide e.g.: 1 gal = 4 qt 8fl.oz = 1c 2 gals = 2x4 32fl.oz = 32/8 8quarts = 4 cups Problem solving strategies can be applied to the concept 'capacity'. Question Data Plan Answer check	Dicuss and choose appropriate units of capacity (eg) Washing the car (gal) Taking medicine (tsp) Making lemonade (gal,qt.pt.) Discuss and have children order customary units of capacity eg: 1 pt > 1 cup 3 pts > 1 qt 6cups = 3 pts 1 quart < 1 gallon Discuss problem solving strategies in groups. Group work – Collect recipes, discuss customary units of capacity used in recipes. Prepare chart – highlight units of capacity and convert these where appropriate.	Identify appropriate units of cpacity. Conversion of units from one unit to another (eg) Convert 4 qt to pt 1qt = 2pt 4qt = 4x2 = 8pt (etc) Children prepare a chart and list each customary unit of capacity (e.g.) <table><tr><th colspan="4">Customary Units of Capacity</th></tr><tr><td>1 tbsp. 1 tablespoon = 3 teaspoon</td><td>1 c 1 cup (c) = 16 tablespoon</td><td colspan="2"> 1 c 1 cup (c), fluid = 8 fluid ounces</td></tr><tr><td>1 pt.  1 pint (pt) = 2 cups (c)</td><td>1 qt.  1 quart (qt.) = 2 pints (pt)</td><td> ½ gal. 1 half gal. = 2 quarts (qt)</td><td> 1 gal. 1 gal. = 4 quarts (qt)</td></tr></table>	Customary Units of Capacity				1 tbsp. 1 tablespoon = 3 teaspoon	1 c 1 cup (c) = 16 tablespoon	 1 c 1 cup (c), fluid = 8 fluid ounces		1 pt.  1 pint (pt) = 2 cups (c)	1 qt.  1 quart (qt.) = 2 pints (pt)	 ½ gal. 1 half gal. = 2 quarts (qt)	 1 gal. 1 gal. = 4 quarts (qt)
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AREA OF STUDY: MATHEMATICS

UNIT/THEME: Capacity

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Skills Discuss Record Estimate Measure Calculate List View Compare Define Locate Analyze Present Describe Classify Insert Identify Report Relate Communicate Write Apply Find Dramatize Follow direction Attitudes Share Cooperate Take pride Appreciate Show responsibility Demonstrate awareness Express interest Participate Show understanding Enjoyment Sensitivity	Group work and individual work to solve word problems using strategies. Science Connection Each fish in a bowl needs about one gallon of water to live. How many fish can you put in a fish bowl that holds thirty-two cups of water? 2 fish; $3 \frac{2}{4} = 8 \text{ qt}$, $8/4 = 2 \text{ gal}$; 1 gal per fish, therefore 2 fishes.	Application of problem solving strategies to solve word problems (capacity) e.g. The Living Seas Aquarium filters water at 600 gallons a second. How many quarts are filtered each second?

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Capacity

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
CP1a – Recognize issue or a problem CP1b – Examine information related to the problem/issue SP1a – Recognize the values associated with choices. SP2a – take part in group activities SP2b – Express their opinions and feelings in asocially acceptable way SP2e – Lead and follow where appropriate SP2f – Help the group to achieve its goal SP3a – Assess their needs/interest EL1a – Use context clues to read a selection EL1c – Read fluently with appropriate intonation and expression for information and pleasure EL1d – Use context clues to interpret a selection EL1e – Identify main ideas and supporting details EL1h – Identify cause and effect relationship EL1j – Make inferences and draw conclusion EL1k – Interpret and follow instructions/directions EL3a – Demonstrate their ability to write gramatically correct Sentences EL4a – Express ideas and opinions M3a – Measure capacity, distance, weight and time using standard and non-standard measuring devices M4a – Make reasonable approximations based on relevant life experiences M5a – Collect, analyze and present data using charts, graphs, tables and diagrams EA1g – Explore and experiment to create visual images through the use of a variety of concrete materials in the environment	Guiding Children's learning of Mathematics (Teacher Resources) Explaining Mathematics – Scott Foresman and Co. Addiosn – Wesley Mathematics Health into Mathematics (Longman) (Teacher Resource) H.B.J. Mathematics Caribbean Primary Mathematics Math Advantage – Middle School – Teachers Edition – Volume 11 (Harcourt Brace) (Teacher Resource) Count Me In Book 1 – (Teacher Book Grade 7)

AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Measure, Quantify and Calculate****AREA OF STUDY OUTCOMES**

Pupils should:

M3b – Use and Convert coins and bills up to \$100

CROSS-CURRICULAR OUTCOMES

Pupils should:

Capital Thinking

CP1b – examine information related to problems

CP1c – suggest ways of dealing with the problem

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Money used by foreign countries have different features from ours.	Use coins and Bills of various countries US, Mexico, Britain, Guatemala and Belize, Discuss and compare features, sizes etc. Name the various currencies for each country. Peso, Quetzal, Dollar, US dollar, Pound Sterling. Play guessing game using currency names and countries. Listen and discuss 'The Trip To Chetumal' story. Locate these countries on a world map. Belize, Mexico, Guatemala and US. Research and list names (of places in each) country that uses, peso, quetzal, US dollar, Pound Sterling. Teacher accompany class on a trip to any of the commercial banks to investigate exchange rates of these currencies. Discussion on US Dollar, Peso, Quetzal equivalence to the Belize Dollar.	Identify coins used by different countries. Compare value of one currency with another. Use foreign currency.

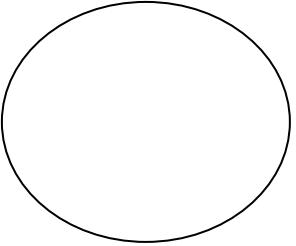
AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Measure, Quantify and Calculate**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
When you calculate money you use basic Math operations.	Conversion of various currencies to Belize Dollar and vice versa. Display currencies notes and coins from various countries. Children identify currency and give equivalent value of each to the Belize Dollar. Use money, coins and bills. Calculate amounts and give total value up to \$100.00. Using a (play/real) \$100 bill, children will calculate a given shopping list to find total cost and change you should receive. Use money to show given amounts. Write various amounts of money in words and figures. Use a calculator and have various children get turns in calculating money using the math operations. Children make a list of what they buy for the week and calculate the amount of money they spend.	Clarity of display. Ability to accurately calculate total sums of money. Play game "Supermarket Sweep) Items priced and place around classroom.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Cheques are used to represent any amount of money. Money can be expressed in percent.	Calculate what they spend for one month. Show these amounts using play money. Teacher have cheques available for children. In groups have them observe and discuss what they see. Teacher help to elicit when, why we use cheques. Using cheques on display children create cheques of their own. Fill out writing money in figures and words. Write the percent sign. Write given percentage. Eg: 25%; 10%; 30% Read word problem from work cards – What percent of \$50 is \$1 Discuss what problems tell us and what they are asking. Teacher give examples of steps to solve. Practice solving other problems. Give oral and written answers.	Children will check prices, and calculate quickly to spend money given not exceeding the given amount. Teacher made test to convert from one currency to the other. Eg: (1) Find the amount of Belize Dollars equivalent to \$60.00 US. (2) Convert 200 pesos to Belize Dollar etc. Fill out cheques. Use play coins and bills and have children take turns in reading and giving cash to the value of cheque. Make and show percentage on a circle graph using word problem.  Eg: Paul earns \$80 in a week. He spends \$10 on food, \$20 on school supplies, \$15 for bus fares. Saves \$36. Show his spending on the graph in percentage.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Budgeting give you the control you need to limit spending. <u>Skills</u> Naming Converting Identifying Accepting Calculating Choosing Computing Sharing Solve Managing Creating Combining Discovery Estimating Writing <u>Attitudes</u> Understanding Willingness to Share Participate Awareness Ability to Use Interest in	Discussion where children tell what is budgetin- Listen to budget speech recorded. List prices of items they are familiar with. Share play money that each person gets a sum of money as his/her own not exceeding \$1 00. Use prices they have listed. Select items they want to spend on. Calculate to see if items are within their budget.	Observe children spending their own allowances. Create their own budget Complete a bar graph to show spending for a week Solve more difficult word problems.

AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Measure, Quantify and Calculate**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
CP1.b - Examine information related to a PrODIeM.	Mathematics Today
SP1.a - Recognize the values associated with choices.	CXC Mathematics
SP2.a - Take part in group activities	Math Power 2
SP2.e - SP2.h SP3. a	Tape Recorder
EL2.d - Follow Instructions	Teaching Elementary School Mathematics
EL3.b - Apply common rules of spelling to their written work.	Silver Burdette Ginn Math
EL3.d - Produce work that is legible and acceptable	Exploring Mathematics
EL3.a - Demonstrate their ability to write	Math Advantage
SSI.A - Understand some aspects of Economic Condition SS3.a	Mathematics Application and Communication Course 1
ELI g - make inferences and draw conclusions	Real and Play Money (coins and bills, work cards, pencils, ruler, available materials from environment).
EL4a - Express ideas and opinions	
EL4c - Ask questions and give information	
SL4b - Ask questions for information and understanding	
CP1c - Suggest ways of dealing with the problem/issue	

AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Measure, Quantify and Calculate****AREA OF STUDY OUTCOMES****Pupils should:****M3C – Add and subtract whole numbers to solve problems****CROSS-CURRICULAR OUTCOMES****Pupils should:****CP1.b – Examine information related to the problem/issue****CP1.c – Recognize an issue or a problem****SP2.a – Take part in group activities****SP2.b – Express their opinions and feelings in a socially acceptable way**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Addition of whole numbers can be done without regrouping (0-99,999)	<u>Speed and Accuracy</u> Add the following: 182 7643 520 + 14 +12 6 +279 Find n $70426 + 9133 = n$ $144230 + 1258 = n$ $200511 + 81243 + 1034 = n$ $35692 + n = 56897$	<u>Create Worksheet</u> Combining addition with and without regrouping. Accuracy of answer sheet. Appropriate level of chosen problems <u>Written Test</u> Speed and Accuracy Computational Skills
Addition of whole numbers can be done with regrouping (0-99,999)		

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT																				
	<u>Practice Work</u> Complete the following <table><tr><td>$\begin{array}{r} 36853 \\ + 2498 \\ \hline \end{array}$</td><td>$\begin{array}{r} 57986 \\ + 8347 \\ \hline \end{array}$</td><td>$\begin{array}{r} 79407 \\ + 62943 \\ \hline \end{array}$</td><td>$\begin{array}{r} 98752 \\ + 73688 \\ \hline \end{array}$</td></tr></table> Why do you go to school? Find the sums. To solve the riddle match each letter to its answer below the banks. Some answers are not used. <table><tr><td>$\begin{array}{r} 1354 \\ 1827 \\ \hline 3181 \text{ E} \end{array}$</td><td>$\begin{array}{r} 4625 \\ 2319 \\ \hline 6944 \text{ O} \end{array}$</td><td>$\begin{array}{r} 9873 \\ 1828 \\ \hline 11701 \text{ C} \end{array}$</td><td>$\begin{array}{r} 2731 \\ 9743 \\ \hline 12474 \text{ A} \end{array}$</td></tr><tr><td>$\begin{array}{r} 1237 \\ 38328 \\ 39565 \text{ Y} \end{array}$</td><td>$\begin{array}{r} 2456 \\ 1527 \\ 3983 \text{ H} \end{array}$</td><td>$\begin{array}{r} 10307 \\ 24549 \\ 34856 \text{ G} \end{array}$</td><td>$\begin{array}{r} 8171 \\ 9445 \\ 17616 \text{ U} \end{array}$</td></tr><tr><td>$\begin{array}{r} 1247 \\ 8519 \\ 9766 \text{ T} \end{array}$</td><td>$\begin{array}{r} 1375 \\ 5418 \\ 6793 \text{ N} \end{array}$</td><td>$\begin{array}{r} 3232 \\ 1490 \\ 4722 \text{ D} \end{array}$</td><td>$\begin{array}{r} 5893 \\ 3072 \\ 8965 \text{ T} \end{array}$</td></tr><tr><td>$\begin{array}{r} 381 \\ 4762 \\ 7539 \\ 12682 \text{ O} \end{array}$</td><td>$\begin{array}{r} 761 \\ 2837 \\ 8497 \\ 12095 \text{ C} \end{array}$</td><td>$\begin{array}{r} 3471 \\ 309 \\ 3867 \\ 7647 \text{ T} \end{array}$</td><td>$\begin{array}{r} 1465 \\ 389 \\ 3034 \\ 4888 \text{ O} \end{array}$</td></tr></table>	$\begin{array}{r} 36853 \\ + 2498 \\ \hline \end{array}$	$\begin{array}{r} 57986 \\ + 8347 \\ \hline \end{array}$	$\begin{array}{r} 79407 \\ + 62943 \\ \hline \end{array}$	$\begin{array}{r} 98752 \\ + 73688 \\ \hline \end{array}$	$\begin{array}{r} 1354 \\ 1827 \\ \hline 3181 \text{ E} \end{array}$	$\begin{array}{r} 4625 \\ 2319 \\ \hline 6944 \text{ O} \end{array}$	$\begin{array}{r} 9873 \\ 1828 \\ \hline 11701 \text{ C} \end{array}$	$\begin{array}{r} 2731 \\ 9743 \\ \hline 12474 \text{ A} \end{array}$	$\begin{array}{r} 1237 \\ 38328 \\ 39565 \text{ Y} \end{array}$	$\begin{array}{r} 2456 \\ 1527 \\ 3983 \text{ H} \end{array}$	$\begin{array}{r} 10307 \\ 24549 \\ 34856 \text{ G} \end{array}$	$\begin{array}{r} 8171 \\ 9445 \\ 17616 \text{ U} \end{array}$	$\begin{array}{r} 1247 \\ 8519 \\ 9766 \text{ T} \end{array}$	$\begin{array}{r} 1375 \\ 5418 \\ 6793 \text{ N} \end{array}$	$\begin{array}{r} 3232 \\ 1490 \\ 4722 \text{ D} \end{array}$	$\begin{array}{r} 5893 \\ 3072 \\ 8965 \text{ T} \end{array}$	$\begin{array}{r} 381 \\ 4762 \\ 7539 \\ 12682 \text{ O} \end{array}$	$\begin{array}{r} 761 \\ 2837 \\ 8497 \\ 12095 \text{ C} \end{array}$	$\begin{array}{r} 3471 \\ 309 \\ 3867 \\ 7647 \text{ T} \end{array}$	$\begin{array}{r} 1465 \\ 389 \\ 3034 \\ 4888 \text{ O} \end{array}$	Demonstration of ability to solve riddle by addition of whole numbers.
$\begin{array}{r} 36853 \\ + 2498 \\ \hline \end{array}$	$\begin{array}{r} 57986 \\ + 8347 \\ \hline \end{array}$	$\begin{array}{r} 79407 \\ + 62943 \\ \hline \end{array}$	$\begin{array}{r} 98752 \\ + 73688 \\ \hline \end{array}$																			
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AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT																												
Subtraction of whole numbers can be done without regrouping. Subtraction of whole numbers can be done with regrouping.	Because the school <table><tr><td>C</td><td>A</td><td>N</td><td>T</td><td>C</td><td>O</td></tr><tr><td>12005</td><td>12474</td><td>6793</td><td>8965</td><td>11201</td><td>12682</td></tr></table> M F T O Y O U <table><tr><td>3983</td><td>3181</td><td>7647</td><td>4888</td><td>39565</td><td>6744</td><td>17616</td></tr></table> <u>Practice Work</u> 3764 8999 23499 <u>- 2513 -1299 - 12076</u> Make work cards for subtraction without regrouping. Exchange workcards as practice work. <u>Practice Work</u> Subtract across - Subtract down <table><tr><td>33230</td><td>1818</td><td>31412</td></tr><tr><td>752</td><td>269</td><td>483</td></tr><tr><td>32478</td><td>1549</td><td>30929</td></tr></table> Make work cards for subtraction with regrouping	C	A	N	T	C	O	12005	12474	6793	8965	11201	12682	3983	3181	7647	4888	39565	6744	17616	33230	1818	31412	752	269	483	32478	1549	30929	<u>Creative Works</u> Magic Squares Work Cards Clarity Neatness Instructions <u>Group Work</u> Peer Work Cooperation Task Completion
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AREA OF STUDY: MATHEMATICS
STANDARD IV
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CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Properties of Addition</u> The commutative property states that changing the order of addends does not change the sum. The associative property states that changing the grouping of addends does not change the sum. Zero property as an additive states that the sum of a number and zero is that number,	In a Puzzle square, the sum of the numbers in any row column or along a diagonal is the same. Look at each puzzle square and circle the one that is a puzzle square. <u>Create Your Own</u> Make puzzle squares of your own. <u>Working with Addition Properties</u> Find each No. Name the Property Used. $(5+3)+2=5+(3+2)$ $14+n=14$ $n=2$; associative $n=0$, identity $6+0+n=6+2+0$ $n+(5+7)=(6+5)+7$ $n=2$; commutative $n=6$; associative $9+4=n+9$ $n+0=81$ $n=4$; commutative $n=81$; identity	<u>Group Work</u> Notes of Lesson Teaching Activities - Motivation Capacity, Preparation, Delivery Culminating Activities - Appropriateness, Effectiveness Individual Work Property of Addition Mobile Creativity Accuracy of information

AREA OF STUDY: MATHEMATICS

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UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Some problems have more than one operation. The problems can be solved using the order of operation.	<u>Solve</u> Yvonne, Angela and Jerry want to play a game of marbles. Yvonne has 13 marbles. Angela has 18 marbles. Jerry has 11 marbles, Will it change the total marbles if Yvonne and Angela combine their marbles before they put them with Jerry's instead of combining everyone's at one time? Explain, Answer: No, grouping the total will be the same. Complete the puzzle so that every number sentence is correct	<u>Application</u> Word Problems Application of properties through word problems. Complete the flowchart.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Ask Apply Commnuca compare Read Create Represent complete suggest Contribute Solve Discuss Take steps Explain View Express Write Formulate Help Interact Listen Make Connections Order Offer Practise QuestionReview <u>Aftitudes</u> Demonstrate Understanding Awareness Willingness to: Participate, interact, communicate Ability to use: previous knowledge, Instructions Enjoyment		MATH WORD PUZZLE Associative Identity Property Commutative Math Difference Minnuend Addend Subtrahend Zero Sum

AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Measure, Quantify and Calculate**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
Reading: EL1.j,k Listening and Viewing: EL1.d,e Writing: EL3.h Speaking: EL4.a,c,e,g Art: EA1.e Crafts: AE1.g	Silver Burdette Ginn Mathematics Exploring Mathematics Addison Wesley Laudlaw Maths Math Advantage Mathematics Application and Communication New Common Entrance (second edition)

AREA OF STUDY: MATHEMATICS**UNIT/THEME: Measure, Quantify and Calculate****STANDARD IV****AREA OF STUDY OUTCOMES**

Pupils should:

M3d – Multiply and Divide Whole Numbers and Decimals to Solve Problems

CROSS-CURRICULAR OUTCOMES

Pupils should:

CP1a – Recognize an issue or a problem

CP1b – Examine information related to the problem/issue

SP2a – Take part in group activities

SP2b – Express their opinions and feelings in a socially acceptable way.

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Whole numbers up to seven digits can be multiplied by a decimal (9 999 9999) To multiply a whole number by a decimal, follow the rules for multiplication then count the number of decimal points in the factor and then add the same number of decimal point to the product.	1 -Brainstorm and web the definition of decimals. 2. Have students find examples of decimals and make a list of the different uses for decimals they find eg: price tags, sports, report cards. Present findings. 3. Review decimal table using place value chart. 4. Have children write word problems from decimal numbers given eg: Children can describe their favourite athlete giving their average score. 5. Students will work in groups of four or five to select the best ten problems.	Accuracy of facts. Organization of findings on charts, webs, illustration. Accurate presentation of decimal table using place value chart. Cooperation and performance within groups.

AREA OF STUDY: MATHEMATICS

STANDARD IV

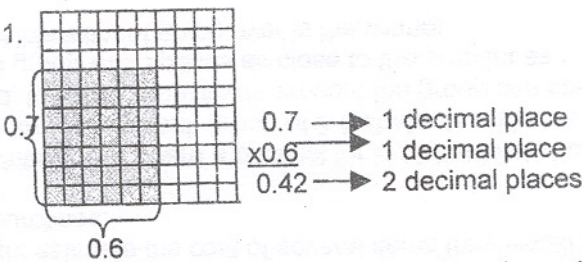
UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Decimals can be multiplied by 10, 100, 1000 When multiplying by powers of ten, move the decimal point the same number of places to right of its original position, as there are zeros in the multiples of ten multiplier.	6. Group will prepare a clean copy of these selected problems to share with the others in class. 7. Shopping to find bargains eg.- visiting shops, supermarkets. 8. Estimate by rounding each factor to the nearest whole number eg: 3.95×12.5 $4 \times 13 = 52$ 9. Use calculator. 10. Guided practice to show multiplication of whole numbers by decimals. 11. Have students in groups of 2 or 3 find sums of various addends, involving decimals. Eg: Add 0.3 ten times or one hundred times. 12. Stress the correct position for the decimal point in the product by counting from right to left.	Compare and contrast selected problems. Make accurate comparison based on findings. Ability to estimate by rounding each factor to the nearest whole number. Demonstrate using calculator. Multiplication of whole numbers by decimals accurately. Cooperation and participation within groups. Solve to find product. Ability to recognize the correct position of decimal point in the product. Ability to use another method to find a product.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Decimals can be multiplied by decimals. Multiply as with whole numbers then count the number of decimal points in the factors and add to the product.	Encourage students to use the shortcut method of multiplying a decimal and a power of ten. A decimal point can be moved from left to right the appropriate number of places eg: $10 \times 3.9 = 39.0$; $100 \times 81.4 = 8140$; $0.6 \times 1000 = 600$. 4. Have students explain the rule in their own words the procedure for multiplying decimals by 10, by 100, by 1000. 5. Multiply with a number line eg: $1.5 \times 2 = 30$. 0.5 1 1.5 2.0 2.5 3.0 3.5 4.0  Draw diagrams to show that decimal can be multiplied by decimal. 2. Use the numbers in this figure to find the answers to the exercises.	The ability to apply the rule for multiplying decimals by 10, 100, 1000 Demonstrate using the number line in multiplying decimals. Multiplication of decimals using diagrams. Teacher - made test.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
The product of decimals can be estimated to the nearest 10s, 100s, 1000s and 10ths, 100ths, 1000ths. To round off the product of decimals, one can employmental computation by estimation. The end result though the answer is approximation rather than the accurate result	3.Decimal Bingo Each player makes a 5- by -5 card and writes decimal numbers on it. The numbers can be in any order. With one number in each square. 1.Ask students to give examples of times when they might estimate the cost of several items they would want to purchase. 2.Write on the board a pricelist for 8-10 items at a lunch counter. Give each group of 3-5 students an index card, telling the maximum amount the group can spend. The group who spends as close to the amount as possible without going over is the winner. 3.Have students verify that all of the data are necessary for solving the problem. 4.Stress the importance of round as a general principle. 5.Students can devise their own methods of recording important information. 6.Discuss with students situations in which an exact answer, not an estimate, is needed eg: grading a test.	Use of initiative creativity in designing game on decimal numbers. Cooperation and participation within groups. Ability to estimate sum of money. Accuracy of data. Use of initiative/creativity in designing their own methods recording important information. The ability to analyze situations.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Decimals can be divided by two-digit whole numbers. To divide a decimal by a two-digit whole number. 1. Place the decimal point in the quotient just above the decimal point in the dividend. 2. Divide as you would with whole numbers.	7. Students may form small groups for brainstorming strategies for solving problem. 8. Have students summarize the main point of this lesson in one sentence. 1. Discuss sport events or athletic contests in which decimals are used to show ratings or winning times. 2. Discuss with students how to divide a decimal by two-digit whole numbers 3. Use the calculator to divide decimal by two-digit whole numbers. 1. Use a calculator to divide decimal by two-digit decimal divisor. 2. Use paper and pencil with guided practice. Decimal can be divided by a two-digit divisor. 1. Count the number of decimal places in the divisor.	Application of problem solving strategies. Oral reports on findings. Division of decimals by two-digit whole numbers with/without calculator. Divide decimals by two-digit decimal divisor, Demonstrate division of decimal by two-digit decimal divisor.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
2. Move the decimal point in the dividend to the right that number of places. 3. Place the decimal point in the quotient. 4. Divide as usual. Decimals can be divided by 10, 100, or 1000. Move the decimal point as many places to the left as there are zeros in the divisor. $44.87/10 = 4.487$ $44.87/100 = 0.4487$ $44.87/1000 = 0.04487$ $\begin{array}{r} 04.487 \\ 10 \overline{)44.70} \end{array}$ $\begin{array}{r} 0.4487 \\ 100 \overline{)44.8700} \end{array}$ $\begin{array}{r} 0.04487 \\ 1000 \overline{)44.87000} \end{array}$	Write examples on the board. Ask how each quotient compare with the dividend. Have children compare the generalization for division and multiplication (/left, x right) Ask children to use multiplication to check placement of decimal points. Have students summarize the lesson on how to divide by 10, 100 or 1000.	Ability to divide decimals following guided instruction. Differentiate between quotient and dividend. Compare and contrast principle for division and multiplication. Demonstrate the use of multiplication to check placement of decimal points. Make written reports on how to divide by 10, 100 or 1000.

AREA OF STUDY: MATHEMATICS
STANDARD IV
UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Dividing decimals involving special cases of zero in the quotient. Write zero in the quotient whenever the divisor is greater than any of the partial dividends. $\begin{array}{r} 0.31 \qquad .095 \\ 5 \overline{)155} \quad 1.5 \overline{)1425} \\ \underline{-15} \qquad \underline{-0} \\ 5 \qquad 142 \\ 5 \qquad \underline{-135} \\ 75 \qquad 75 \end{array}$ $\begin{array}{r} 10.5 \qquad .056 \\ 24 \overline{)2520} \quad 225 \overline{)12600} \\ \underline{-24} \qquad \underline{-0} \\ 12 \qquad 1260 \\ \underline{-0} \qquad \underline{-1125} \\ 120 \qquad 1350 \\ \underline{-120} \quad \underline{-1350} \end{array}$	1. Display newspaper or magazine ads that show items sold in multiples eg: a package of 6 T-Shirts. 2. Ask children how to determine the cost of a single item in one of these packages. 3. Point out the use of a zero in the tenths place of the quotient. 4. Have children demonstrate the procedure through group presentation. 5. Have students tell where the decimal point should be placed in the quotient. 6. Ask them to explain what happens when the decimal point is moved to the left and zeros are added in the dividend.	Classify items sold in multiples. Examine to determine the cost of a single item in given packages. Oral explanation of the use of a zero in the tenths place if the quotient. Demonstrate procedure through group presentation. Oral explanation of where decimal point should be placed in the quotient. Make oral reports and explain what happens when the decimal point is moved to the left and zeros added in the dividend,

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Identify Divide Multiply arrange recognize critical Thinking Formulate List Describe Write Compute express Discuss Summarize Problem Solving Compare/Contrast Draw classify Organize Prepare <u>Attitudes</u> Understanding Willingness to share, participate, interact Interest Appreciation Enjoyment Respect Ability to use calculator cooperation Leadership Pride/Satisfaction		

AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Measure, Quantify and Calculate**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
CPI.A - Recognize an issue or a problem.	Scoft, Foreman Mathematics - Grade 6Heath Mathematics
CPI.B - Examine information related to the problem/issue.	Houghton Mifflin Mathematics Level 4
CPI.C -Suggest ways of dealing with the problem/issue.	The Mathematics Teachers' HandbookCount Me In Grade 7
SP2.a -Take part in group activities.	Silver Burdett Ginn-Mathematics (Teachers' Guide - Grade 4)Todays Mathematics
SP2.b -Express their opinions and feelings in a socially acceptable way.	Caribbean Primary Mathematics 5,6
SP2.d -Respond to the feeling of others.	Primary Mathematics for the CaribbeanProgress In Mathematics.
SP2,c -Lead and follow where appropriate.	
SP2.h -Accept major decisions.	
SP3.b -Assess progress in relation to achievement of goals and adjust goals or strategies as necessary.	
ELI.A - Use context clues to read a selection.	
ELI.c - Read fluently with appropriate intonation and expression for information and pleasure.	
ELI.D - Use context clues to interpret a selection	
ELI.e - Identify main ideas and supporting details	

AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Measure, Quantify and Calculate**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
ELI.I - Identify a sequence of events ELI.J - Make inferences and draw conclusions ELI.K - Interpret and follow instructions.directionsEL2.d - Follow instructions/directions EL2.e - Interpret and respond appropriately to messages conveyed through usual images and tone of voice. EL3.a - Demonstrate their ability to write grammatically correctsentences. EL3.b - Apply common rules of spelling to their written work. EL3.c - Demonstrate the ability to punctuate and capitalize writtenwork EL3.d - Produce work that is legible and acceptable. EL3.g - Demonstrate unity and coherence in their writing EL4.a - Express ideas and opinions. EL4.e - Ask questions and give information	

AREA OF STUDY OUTCOMES

Pupils should:

M3e – Add, Subtract, Multiply and Divide Fractions to Solve Problems

CROSS-CURRICULAR OUTCOMES

Pupils should:

CP1.a – Recognize an issue/problem

CP1.b – Examine information related to the problem/issue

CP1.c – Suggest ways of dealing with the issue/problem

AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Measure, Quantify and Calculate**

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
To add mixed fractions with like denominators:- 1.Add whole numbers 2.Add the numerators 3.Use the same Denominator 4.Combining whole number with fraction eg: $12 \frac{2}{5} + 8 \frac{1}{5} = 20$ $12 \frac{2}{5} + 8 \frac{1}{5} = 20 \frac{3}{5}$ Some recipes can be used to reinforce the concept of adding mixed fractions.	Quick Check 1.Adding shaded shapes of proper fractions. 2.Dividing objects into fractional parts – Pronounce basic fractional part in Spanish. 3.Add whole numbers to fraction. 4.Have children shade shapes to add mixed fractions with like denominators. 5.Casandra is baking two cakes for the bake sale. One cake mix calls for $2 \frac{2}{4}$ cups of flour. The other mix calls for $2 \frac{1}{4}$ cups of flour. How many cups of flour does she need in all?	The ability to sort and categorize objects into fractional parts. Ability to create a diagram showing the concept of fraction. Ability to describe and explain oral operation Identify the format to solve problem Ability to identify and use operations with fractions Ability to analyze data.

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To subtract mixed fractions with like denominators:- 1.Subtract the fractions 2.Then subtract the whole number 4 $5/9 - 2 \frac{2}{9} = 3/9$ 4 $5/9 - 2 \frac{2}{9} = 2 \frac{3}{9} = 2 \frac{1}{3}$ write $3/9$ in lowest term To add mixed numbers with unlike denominators: 1.Write equivalent fractions 2.Add the fraction 3.Add the whole number(if necessary:regroup fractions greater than one) 4.Simplify	1.Subtracting shaded shapes of proper fractions. 2.Mechanical problems- 3.Using objects/shapes eg: soda biscuit 4,Worded Problems The mountain's snow-covered peak takes up $8 \frac{1}{8}$ of the painting. In all the mountain takes up $10 \frac{6}{18}$ of the painting. How much of the painting is taken up by the snowless part of the mountain? $10 \frac{6}{18} - 8 \frac{1}{8} = 2 \frac{5}{18}$ Quick Check: Use shaded shapes $1 \frac{1}{3} + 2 \frac{1}{3}$  2.Unlike pairs using fractions strips to add mixed fraction with like denominators. 3.Have children draw diagrams to find the sum.	The Ability to sort and categorize objects into fractional parts. Ability to subtract mixed fractions with like denominators. Ability to describe and explain oral operation. Use of the fraction strips to add mixed fraction.

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UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
$\begin{array}{r} 5/8 = 1 \frac{5}{8} \\ + 1 \frac{1}{2} = 1 \frac{4}{8} \\ \hline 2 \frac{1}{8} \end{array}$ $\begin{array}{r} 2 \frac{1}{8} = 1 \frac{5}{8} \\ 1 \frac{1}{2} = 1 \frac{4}{8} \\ \hline 2 \frac{9}{8} \end{array}$ $\begin{array}{r} 3 \frac{1}{8} = 1 \frac{5}{8} \\ + 1 \frac{1}{2} = 1 \frac{4}{8} \\ \hline 4 \frac{6}{8} = 4 \frac{3}{4} \end{array}$ $\begin{array}{r} 9/8 = 2 + 1 \frac{1}{8} \\ 2 + 1 \frac{1}{8} = 3 \frac{1}{8} \end{array}$	Quick Check: Use shaded shapes $1 \frac{1}{3} + 2 \frac{1}{3}$ 2. Unlike pairs using fraction strip to add mixed fraction with the denominators. 3. Have children draw diagrams to find the sum. 4. Adding mixed numbers: a) $4 \frac{2}{3} + 4 \frac{2}{5}$ b) $1 \frac{3}{8} + 1 \frac{2}{3}$ Develop algebraic thinking : $Y = 1 \frac{7}{12} + 5 \frac{3}{4}$ Solve for Y 5. Worded Problems Miss Clarke walked $9 \frac{2}{3}$ miles in the morning and $8 \frac{1}{7}$ miles in the evening. How far did she walk in all? 6. Have children write about how adding mixed numbers is different from adding fractions. b) Write about how seamstresses, tailors and construction workers use mixed numbers.	Use of the fraction strips to add mixed fraction. Ability to analyze data. Interpret information and make accurate statements to solve problems. Describe and explain how mixed numbers are used in occupations.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Subtracting a mixed number from a whole number. Trade a whole number for a fraction before you can subtract. eg: Subtracting mixed numbers with unlike denominators $5\frac{4}{5} - 3\frac{2}{3}$ 1. Find the least common denominator to rename both fractions. 2. Subtract the fractions then subtract the whole numbers	7. Group Activity Divide class into three groups. Give each group objects to measure, record and add. Motivating Activity 1. Use shaded shapes to rename whole numbers $1 = 7/7$  $3 = 2\frac{2}{2} \quad 000 = 00$ Using shaded shapes to subtract mixed numbers from whole $8 - 6\frac{2}{3} = 7\frac{3}{3} - 6\frac{2}{3} = 1\frac{1}{3}$ Children write story problems relevant to topic. Eg: Abbey is 10 inches long and Toby is 8 inches long. How many inches longer is Abbey than Toby? Quick Check 1. Subtract fractions with like denominators eg: $8\frac{9}{10} - 3\frac{6}{10}$ 2. Discover using shaded shapes to subtract mixed numbers with like denominators. Eg: $6\frac{3}{4} - 6\frac{2}{4}$ 3. Mechanical Problems 1. $135/8 - 123/16$ 2. $711/12 - 41/6$	Ability to work in groups to measure, record and solve problems. Demonstrate the ability to sort and categorize objects into fractional parts. Demonstrate the ability to use everyday situations to make and solve fractional operations in worded problems. Demonstrate the ability to sort and categorize objects into fractional parts. Solve given problems using given format

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Multiply fractions by fractions. To multiply fractions by fractions: 1. Multiply the numerators 2. Multiply the denominators	4. Worded Problems/Critical Thinking Judy began with a wood $7 \frac{1}{2}$ inches long. Her finished car was $1 \frac{3}{8}$ inches shorter than the wood block. How long was Judy's finished car? 5. Think and Discuss 1. Think about $2 \frac{4}{5} - 1 \frac{3}{5}$. Do you need to rename before you subtract? Explain 2. Think about $7 \frac{5}{6} - 4 \frac{5}{12}$. Do you need to rename before you subtract? Explain 6. Use fraction bar to subtract eg: $5 \frac{1}{4} - 3 \frac{5}{6}$ 1. Use folded paper to show multiplication of fractions. Find $\frac{1}{2} \times \frac{1}{3}$ Use activities from Std I I I 2. Fraction strips $\frac{2}{5} \times \frac{1}{3}$ 3. Independent practice $\frac{3}{4} \times \frac{2}{3}$ $\frac{1}{4} \times \frac{5}{9}$ $\frac{3}{5} \times \frac{7}{10}$ Complete multiplication sentences $\frac{3}{7} \times \frac{7}{3} = \frac{9}{21}$ $\frac{1}{2} \times \quad = \frac{\quad}{3}$ $\frac{\quad}{3} = \frac{1}{16}$	Ability to describe and explain information orally and written in solving worded problems. Demonstrate the ability to use shapes to draw conclusions and solve problems. Practice operations and methods in solving problems.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Multiply fractions by whole numbers. Eq: $\frac{2}{5} \times 15$ 1. Write whole numbers as a fraction. 2. Multiply the numerators. 3. Multiply the denominators. 4. Write the answers as a fraction or a mixed number. = 215×15 = $215 \times 1511 = 3015$ or 6	4. Worded Problems Sally knows that $\frac{2}{5}$ of the students in her class are in the school band. $\frac{3}{4}$ own their instruments. What fraction of Sally's class own their own instruments? 5. Recording Have children write a journal entry that describes why models are useful for learning to multiply fractions. Use illustrations to reinforce their arguments. Quick Check 1. Multiply fractions by fractions eg: $\frac{1}{2} \times \frac{1}{3}$. 2. Multiply fractions by whole numbers using shaded shapes. eg: $\frac{1}{4} \times 12$ 88 88 = $\frac{1}{4} \times 12 = 3$ 88 3. Mechanical Problems $\frac{3}{1} \times 28$ $21 \times \frac{2}{3}$ $30 \times \frac{5}{9}$ 4. Worded Problems In Bonnie's Bouquet of 12 roses, $\frac{3}{4}$ of the roses are red. How many red roses are there?	Follow instructions to illustrate and describe use of models to multiply fractions. Demonstrate the ability to use shapes to multiply fractions. Identify the procedures to solve Draw pictures to assist in recognizing and solving problems. Ability to use information to form statements and solve problems.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Multiplying mixed numbers by whole numbers. Eg: $4 \frac{1}{8} \times 6$ 1. Change mixed numbers to improper fractions. 2. Follow steps as in multiplying fraction by whole numbers. Eg: $4 \frac{1}{8} \times 6$ $\frac{33}{8} \times \frac{6}{1}$ $\frac{198}{8}$ $= 24 \frac{6}{8} = 24 \frac{3}{4}$ Multiplying fraction by mixed numbers Eg: $\frac{1}{3} \times 3 \frac{1}{2}$ 1. Change mixed number by improper fraction.	5. Children make stories using fractions of whole numbers. Use activities as in multiplying. Quick Check 1. Using objects/shaded shapes to change mixed numbers to important fractions $3 \frac{1}{2} = \frac{7}{2}$	Demonstrate the ability to create stories using problems given. Demonstrate the ability to follow procedures to solve problems. Ability to use objects and shapes to solve problems. Ability to follow procedures to solve problems.

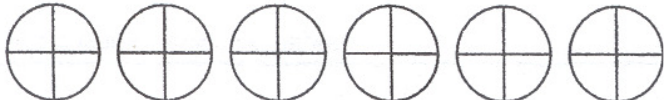
AREA OF STUDY: MATHEMATICS
STANDARD IV
UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
2. Multiplying numerators. 3. Multiply denominators. 4. Write answers as fractions. Eg: $1/3 \times 3 \frac{1}{2}$ $5/6 \times 7/2 = 35/12$ $= 35/12 = 2 \frac{11}{12}$ Multiplying mixed numbers by mixed numbers. Eg: $1 \frac{3}{4} \times 2 \frac{3}{5}$ 1. Change both mixed numbers to improper fractions. 2. Multiply numerators. 3. Multiply denominators. 4. Write answers as fractions eg: $1 \frac{3}{4} \times 2 \frac{3}{5}$ $7/4 \times 13/5 = 91/20$ Answer: $91/20$ or $4 \frac{11}{20}$	2. Use activities as in multiplying fraction by fraction. Quick Check (1) Change mixed numbers to improper fraction and vice versa. (2) $6 \frac{2}{3} / 18/5$ (3) Making equivalent fractions eg: $3/8 = \quad /16$ (4) Multiplying fractions by fraction eg: $2/3 \times 20$ (5) Multiplying mixed numbers by fractions eg: $3 \frac{2}{5} \times 7$	Demonstrate the ability to apply previous knowledge to solve problems in teacher made test. Ability to recognize and follow sequence to solve problems. Ability to solve problems independently.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Divide whole numbers by fractions.	Have children explain method of working $1\frac{3}{4} \times 2\frac{3}{5}$ Use activities as in multiplying fractions by fractions. Finding area of rectangle. $8\frac{2}{3}$ $4\frac{1}{5}$ 9.Colour Fractions:- $6\frac{1}{2}$ $8\frac{2}{3}$ 15 $\frac{4}{5}$ Here's how  $6\frac{1}{2} \times 15 = \frac{13}{2} \times \frac{15}{1} = \frac{195}{2} = 97\frac{1}{2}$  Using fractions circles to find $6 \div \frac{1}{4}$ or the number of quarters in 6 whole. 	Clarity in presentation Teacher made test to assess children's strengths and weakness. Demonstrate the ability to use objects/shapes to divide fractions

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Eg: $7 \div 1/10$ Make whole number 7 a numerator by writing 1 as its denominator e.g. $7 = 7/1$. Change division sign to multiply e.g. $7/1 \div 1/10 = 7/1 \times 1/10$ Invert fraction behind the sign you change e.g. $7/1 \times 10/1$. Multiply numerators – $7/1 \times 10/1$. Multiply denominators – $70/1 = 70$	Trace 6 whole circles on paper. Model $6 \div 1/4$ by tracing $1/4$ circle pieces on the 6 circles. Four quarters equals one whole. How many quarters are in 6 wholes? Answer 24. Think and discuss. Why does $6 \div 1/4 = 24$? There are 24 quarters in 6. <u>Mechanical Problems</u> 1. $2 \div 3/7$ 2. $7 \div 7/16$ 3. $10 \div 5/16$ Recall that dividing a number by 6 gives the same results as multiplying that number by $1/6$ e.g. $12 \div 6 = 2$ $12/1 \times 1/6 = 2$ Have children describe the relationship between multiplication and division for fractions through given examples: $25 \div 5 = 5$ $25 \times 1/5 \div 5$	Ability to explain problems. Ability to solve problems independently.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
	Question children to identify - the pattern - relationship between the dividend in the division and the first factor in the multiplication problem. - Relationship between the quotient and the product. - Relationship between the divisor in the division problems and the second factor in the multiplication problem. <u>Worded Problems</u> A telephone repairman needs $2\frac{1}{3}$ ft. of cord for each phone he installs. If he has 42 ft of cord in his truck, how many telephones can be installed? Divide $42 \div 2\frac{1}{3}$ $42/1 \times 3/7 = 18$ The repairman can install 18 telephones.	Ability to identify patterns and relationships between the parts of the problem. Demonstrate the ability to analyze and solve problems. Demonstrate the ability to apply new concept to solve problems.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Divide fraction by fraction. To divide a fraction by a fraction is the same as multiplying a fraction by its reciprocal of the other fraction. $3/8 \div 3/5 = 3/8 \times 5/3 = 15/24$	Quick Check Dividing fractions by a whole number using mechanical problems. Divide fractions by fractions e.g. $9/16 \div 5/32 = 9/16 \times 32/5$ (32/5 is the reciprocal of 5/32) Have children make up story problems using fractions dividing by a fraction. Mechanical Problems $6/7 \div 5/9$ $8/15 \div 5/16$ Worded Problems John has 7/8 can of paint. It takes 1/16 can to paint one toy truck. How many toy trucks can he paint? Group activity applying all the steps in dividing fractions.	Demonstrate the ability to apply new concept to solve problems. Demonstrate the ability to create their own worded problems.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
A mixed number can be divided by by a fraction e.g. $6 \frac{1}{4} \div \frac{3}{8}$ Change mixed number to improper fraction = $\frac{24 \times 1}{4} = \frac{25}{4}$	Have children work in groups of four. Each group member copies a different one of the following expression on a sheet of paper. Have them complete the acitivity in a round – robin format. Each group member does one step, then passes the paper to the group member to the right. $5/8 \div 5/15$ $5/8 \div 1/4$ $5/6 \div 2/9$ $4/5 \div 2/3$ <u>Steps</u> Find the reciprocal of the divisor. Multiply the reciprocal by the dividend. Simplify the numerators and denominators. Write answers in simpliest form. $2/3$ $6 \frac{1}{2}$ $7/8$ $2 \frac{3}{4}$ Problems involving dividing a fraction by a fraction. $1/8 \div 1/4$ $2/3 \div 1/3$ $3/4 \div 2/3$ Use activities as in dividing fraction by fraction.	Demonstrate the ability to follow steps accurately to solve problems in groups. Demonstrate the ability to apply skills to solve teacher made problems.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Divide mixed numbers by a whole number and whole number by fractions e.g. $8\frac{1}{2} \div 3$ Change mixed numbers to improper fraction. Put whole number over 1 to become a fraction. Write the reciprocal of the divisor. Follow steps as in dividing fraction by fraction e.g. $8\frac{1}{2} \div 3$ $17/2 \div 3/1$ $17/2 \times 1/3$ (1/3 is the reciprocal of 3/1) e.g. $2 \div 4\frac{2}{5}$ $2 \div 22/5$ $2/1 \div 22/5$ $2/1 \div 5/22 = 10/22 = 5/11$	Quick Check Mechanical and worded problems involving division of mixed numbers by fractions e.g. $6\frac{7}{8} \div \frac{1}{2}$ $3\frac{8}{9} \div \frac{3}{4}$ Use activities as in other previous activity involving division of fractions.	Ability to describe/explain operations orally. Ability to solve problems following operation given.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
To divide mixed numbers by mixed numbers. To change mixed numbers to improper fraction. Change division sign to multiplication. Write reciprocal of the divisor. Follow steps as in dividing fraction by fraction. When the dividend or divisor is named by a mixed number, rename each as a fraction, then perform the division e.g. $8\frac{1}{4} \div 3\frac{3}{8}$ $3\frac{3}{4} \times 8\frac{8}{33}$ Multiply the reciprocal of the division. $= \frac{2}{1}$ Multiply $= 2$ Simplify	<u>Quick Check</u> Mechanical and worded problems involving division of mixed numbers by fraction. Mechanical and worded problems involving dividing mixed numbers by mixed numbers $7\frac{1}{3} \div 2\frac{1}{5}$ $22\frac{2}{3} \div 11\frac{1}{5}$ $22\frac{2}{3} \times \frac{5}{11} = \frac{110}{33} = 10\frac{10}{33} = 10\frac{10}{3} = 3\frac{1}{3}$ Answer: $3\frac{1}{3}$ Mechanical and Worded Problems $2\frac{3}{16} \div 1\frac{1}{6}$ $2\frac{1}{10} \div 1\frac{2}{5}$ Solve: Sue lives $7\frac{1}{2}$ miles from school, and her friend Betty lives $1\frac{1}{4}$ miles from school. Sue lives how many times as far from school as Betty? Assessing the Topic: Dividing Fractions Skill Practice. Find the quotient $\frac{5}{6} \div \frac{3}{4}$ $8 \div \frac{2}{3}$ $6\frac{4}{5} \div \frac{6}{7}$ $2\frac{1}{12} \div 1\frac{2}{3}$	Ability to use information to solve problems. Demonstrate the ability to use format to solve problems accurately. The ability to use format effectively to solve problems. Practice skills in solving problems.

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
To cancel a fraction means to reduce to its lowest term e.g. $7\frac{1}{2} \times 2\frac{2}{5}$ write mixed numbers as fractions $15/2 \times 12/5 = 18$ cancel $7\frac{1}{2} \div 1\frac{2}{3}$ write mixed numbers as fractions $15/2 \div 5/3$ Write the reciprocal of the divisor $15/2 \times 3/5$ cancel $= 9/2$ write as a mixed number $= 4\frac{1}{2}$	Rules Have children make, explain and display charts in groups showing rules for - dividing whole number by a fraction - dividing mixed number by fraction - dividing mixed number by a fraction - dividing mixed number by mixed number Activity to reinforce all four operations. Cancellation of fractions is applied in all four operations of fractions $1/6 \div 2/6 = 3/6 = 1/2$ $5/12 - 1/12 = 4/12 = 1/3$ $1/3 \times 3/5 = 3/15 = 1/5$ $1/3 \div 2/3$ $1/3 \times 3/2 = 1/2$	Practice and demonstrate the cancellation of fractions in all four operations

AREA OF STUDY: MATHEMATICS

STANDARD IV

UNIT/THEME: Measure, Quantify and Calculate

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Skills Draw Apply Compare Express Estimate Examine Explain Identify Escribe Solve Practice Take steps Formulate View Discuss Question Display Follow Write Direction Visualize Generalize Record Use Analyze Demonstate Predict Differentiate Attitude Participate Share Interact Cooperate Tolerate Willingness Understand Enjoyment Awareness Interest Independence Value		

AREA OF STUDY: MATHEMATICS**STANDARD IV****UNIT/THEME: Measure, Quantify and Calculate**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
CP1a – Recognize an issue or a problem, CP1b – Examine information related to the problem/issue CP1c – Suggest ways of dealing with the problem/issue SP2a – Take part in group activities SP2b – Express their opinions and feelings in a socially acceptable way SP2e – Lead and follow where appropriate SP2f – Help the group to achieve its goals SP2g – help to create consensus SP2h – Accept major decisions SP3a – Assess their needs/interests EL1k – Interpret and follow instructions/directions EL2d – Follow instructions/directions EL3a – Demonstrate their ability to write grammatically correct sentences EL3d – Produce work that is legible and acceptable EL4a – Express ideas and opinions EL4e – Ask questions and give information SL4b – Ask questions for information and understanding M1f – Understand the concept of other rational numbers, including percent, fractions, ratio and integers. M3e – Add, subtract, multiply and divide fractions to solve fractions M5a – Collect, analyse and present data using charts, graphs, tables and diagrams EA1g – Explore and experiment to create visual images through the use of a variety of concrete materials in the environment WT5a – identify a simple problem/need	Count Me In Grade 7 (Teacher's Resource) Houghton Mifflin Mathematics Teacher's Edition Level 4 Silver Burdett Ginn Mathematics Teacher Guide Grade 4 volume 2 Teacher's Edition Volume Two Middle School 1 Math Advantage Harcourt Brace Teacher's Edition Prentice Hall Middle Grades Math Tools for Success Course 1 Health Mathematics Walter E. Rucker, Clyde A. Dilley David W. Lowry D.C. Health and Company Scott, Foresman Mathematics

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Data Handling

AREA OF STUDY OUTCOMES

Pupils should:

M4A – Make reasonable approximations based on real life experiences.

M4b – Use logical reasoning based on meaningful data to draw conclusions about the likely occurrence of event.

CROSS-CURRICULAR OUTCOMES

Pupils should:

CP1.a – Recognize an issue/problem

CP1.b – Examine information related to the problem/issue

CL1.c – Suggest ways of dealing with the issue/problem.

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Fraction estimation contributes to the development of fraction computation. Changing the structure of the problem to a more manageable form is called transformation and can be used to estimate an e.g. $\frac{3}{4} + \frac{1}{2}$ answer – 3 quarters, 2 quarters, 1 whole + $\frac{3}{4} = 1 \frac{1}{4}$ Rounding of numbers to the nearest place value can be used as means to estimate products.	Estimate relative size of fractions using concrete objects e.g. a plate. Compare set of fractions with the same denominator, numerator and with different denominations and numerations e.g. $\frac{3}{10}$ $\frac{6}{12}$ $\frac{7}{12}$ $\frac{2}{3}$ $\frac{2}{9}$ $\frac{2}{5}$ Model fractions to verify their work. Write a fraction story. Use shopping experiences to create solutions for different computation problems e.g. Round to the nearest tens or hundred to estimate products e.g. $\begin{array}{r} 52 \\ \times 6 \\ \hline \end{array} \rightarrow \begin{array}{r} 50 \\ \times 6 \\ \hline \end{array}$	Knowledge of fractions Compare fractions, identify denominator, numerator, add fractions Model fractions Write a story. Share/participate Multiply and round to the nearest ten and hundred up and down. Add to multiply using the calculator.

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Estimate and Make Predictions

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Sums and differences of decimal numbers can be estimated by using the leading digit or the rounded digit strategy. Volume can be estimated using standard and non-standard units.	Use a calculator Read and write multi-digit decimal numerals. Order and compare decimals Round decimals Identify leading digit e.g. 365.75/number 300 / rounded Round the leading digit e.g. 365.75 = 400 Use real life situations and identify strategy for estimation – leading or rounded. Dramatize life situations. Construct open boxes that are filled with cubes arranged in the following 3x3x3, 4x3x2, 5x5x1 Have students predict which of the boxes will hold the most cubes and then measure in groups. Predict volume of different solids with different dimensions. Record volume and discuss. Calculate the approximate volume of the classroom using length, width and height in metres and yards.	Compare decimals. Round decimals up and down. Be able to use the leading or rounded strategy estimation to deal with real life situations. Role play and creativity. Predict and measure volume. Calculate volume word in graphs. Use litre cups to measure – collect u

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Estimate and Make Predictions

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Probability analyzes the chance of something happening. The probability that a given event will occur is the ratio of the number of favourable or desirable outcome.	Estimate and measure how many times a small container must be filled in order to hold the same amount as a large container. Collect container that measure 1 litre cups and use them to estimate and measure Use experiments to analyze e.g. flip coin and discuss the probability of its landing. Shake a dice and predict the probability of its landing (outcome). Introduce the form. $P = \frac{\text{Number of desired Outcome}}{\text{Number of total Outcome}}$ – Have students create experiments based on the above form. Record and analyze data obtained – Write reports.	Investigate Ask questions Record data Write reports

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Estimate and Make Predictions

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Write Discuss Visualize Analyze Express Solve Question Follow directions <u>Attitude</u> Participate Share Interact Cooperate Tolerate Willingness Value		

AREA OF STUDY: MATHEMATICS**UNIT/THEME: Estimate and Make Predictions**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
EL2d – Follow Instructions/directions WT5a – Identify a simple problem or need EL4e – Ask questions and give information M5a – Collect, analyze and present data using charts, graphs, tables and diagrams	Health Mathematics Walter E. Rucker, Clyde A Dilley, David W. Lowry, D. Health & Company Scott Foresman Mathematics Teacher's Edition Prentice Hall Middle Grade Math Tools for Success Course 1

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Estimate and Make Predictions

AREA OF STUDY OUTCOMES

Pupils should:

M5a – Collect, analyze, present data using charts, tables, graphs, diagrams

CROSS-CURRICULAR OUTCOMES

Pupils should:

CP1.a – Recognize an issue/problem

CP1.b – Examine information related to the problem/issue

CP1.c – Suggest ways of dealing with the issue/problem

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Points are identified by using a coordinate plane. - The coordinate plane is formed by the intersection of two number lines. - The horizontal number line in X – Axis. - The vertical number line is the Y - Axis	Work with a partner and agree on a system for locating points on a geo board. Use the geo board/rubber bands and create shapes without partner seeing the shape(s). Partner ask questions about the shape(s) e.g.: direction, distance, changes in direction. Answer questions using location system. Partner uses answers to guess your shape, make a copy of it.	Ability to work with a partner Ability to: - create shapes - make up a system for locating points - follow instructions to play the game

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Estimate and Make Predictions

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Points can be graphed on a coordinate plane. - Each point has 2 coordinates which form an ordered pair. - The first coordinate tells how far to move along the X-Axis - The second coordinates twlls how far to move along the Y-Axis	Use a grid to graph points with coordinates. Name coordinates of points already graphed. Identify the 4 quardrants. CRAFTS Create a quilt pattern by drawing pattern on a grid and name the coordinates of the points.	Ability to use grid paper to graph points. Name coordinated points already graphed i.e. quadrant. Define the terms coordinate, quadrant. Ability to design a quilt pattern using coordinates of points.
Information can be collected through: - observation - research - conducting - interviews - experiments - ssurvey	Brainstorm in groups or as a whole group how information can be gathered. Present a problem, or isse and brainstorm how the information can be obtained.	Ability to identify ways to obtain information.

AREA OF STUDY: MATHEMATICS

UNIT/THEME: Estimate and Make Predictions

CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
Information collected can be - -organized - interpreted - analyzed charts, tables, diagrams can be used to organize data. Implications/conclusions can be drawn from data. Some information can be used to make predictions.	Collect information. Interpret information from charts, tables, diagrams, bar line and circle graphs. Graph information on bar line and circle graph. Read/discuss information from charts, tables, diagrams, graphs – bar, line, circle. Use information to answer specific questions based on graphs – bar, line, circle. Create problem – solving situations. Perform activities or experiments to solve the problems. Carry out surveys. Analyze the data, make predictions. Compare actual results with predictions. Re-examine predictions for verification. Apply data to problem – solving activities e.g.	Collection of data. Interpretation of data. Creation of graphs/charts Use of information collected to answer questions. Formulation of hypothesis drawing conclusion. Analysis of data. Interpretation of data. Team work/team spirit.

AREA OF STUDY: MATHEMATICS**UNIT/THEME: Estimate and Make Predictions**

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	Two teams work together and one individual from each team keeps the score or track of the results of each withdrawal of popcorn from the bag. Distribute several paper bags, each contain 20 pieces of unpopped popcorn, with a different number of the pieces in each bag spray-painted black. Inform students that each bag contain 20 unpopped popcorn. Pupils must predict the number of pieces in the bag that have been spray painted black. Each team shakes the bag, withdraw one piece, record if it is white or black. Replace the popcorn. The other team does the same procedure. This process is repeated untial a team, upon getting its turn, says it is ready to guess the number of pieces of black-painted popcorn. If a team guessed within one piece, they win a point. If not, the other team gets a point. The game is repeated with other distributions of popcorn.	Follow directions. Work and cooperate in a group. Make inferences from data. Share opinion and ideas. Draw conclusion.

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Pictograph use picture to show data. Block and bar graphs help you organize and compare data. Line graph are used to show continuous data. A circle graph is used to show fractional parts of whole units. Circle graphs provide visual means to transmit information. Circle graphs can be used to help develop analytical skills.	Use tally tables to read and interpret data. Interpret keys e.g. for pictographs, maps. Construct graphs using graph paper. Formulate hypothesis based on findings. Individual/group projects – reading information and or - collecting information - making interpretations - constructing graphs Interpret/record data from circle graphs. Solve problems using circle graphs. Use data from a table to solve problems about circle graph. Use a protractor and demonstrate how to construct a circle graph. Construct circle graph.	Ability to read/interpret information from: - Pictographs, block/bar graphs, line graphs - Ability to construct the graphs (block, abr, line) - Ability to formulate hypothesis - Ability to work on projects involving graphic - Understanding of graphs Ability to interpret and read information from cicrcle graphs. Ability to use a protractor & construct circle graphs. Ability to solve problems involving circle graphs. Understanding of reading material in people who invented graphs.

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	Problem solving-analyzing – involving circle graphs. Read about people who invented graphic e.g. Rene DesCartes. Invite personnel who work with graphs e.g. Weather Personnel; Project Roleplay Personnel who work with graphs.	Ability to role play people who work with graphs.

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CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Skills</u> Draw Compare Estimate Explain Identify Describe Practice Formulate Discuss Display Write Visualize Record Recognize Analyze Predict Differentiate Apply Express Examine Solve Take steps View Question Follow directions Generalize Use Demonstrate		

AREA OF STUDY: MATHEMATICS

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CONTENT ORGANIZED INTO MANAGEABLE SETS	SUGGESTED TEACHING/LEARNING STRATEGIES	SUGGESTED STRATEGIES/ACTIVITIES FOR ASSESSMENT
<u>Attitudes</u> Participate Share Interact Cooperate Tolerate Willingness Understand Enjoyment Awareness Interest Independence Value		

AREA OF STUDY: MATHEMATICS**UNIT/THEME: Estimate and Make Predictions**

LINKAGES/CONNECTIONS	RECOMMENDED RESOURCES: TEACHER/STUDENT
M5a – Collect, analyze and present data using chart. EL4e – Ask questions and give information EL3h – Apply the writing process to their work.	Progress in Mathematics Middle Grae Math Caribbean Primary Math New Common Entrance Math