

**CURRICULUM  
DEVELOPMENT UNIT  
MATHEMATICS**

**ANNUAL TEACHING PLAN  
(GRADE 6)**

**NOVEMBER 2004**

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**TERM1**

Major strands	Topics	Sub Topics	Learning Outcomes	Lessons	Time	
Number Concepts	General	Problem solving	1. Create and solve problems involving number concepts.	6	1wk	
		Strategies for investigating number concepts	2. Use appropriate strategies (mental computation, pencil and paper, or calculators) to investigate number concepts and solve problems. 3. Explain the strategies and procedures they used in carrying out investigations and solving problems involving number concepts.			
	Counting	Use of a variety of counting strategies	4. Count in a variety of ways up to a given number, e.g., counting backward, skip counting, counting on.	2	1.5wk	
		Sequences of numbers	5. Complete sequences of numbers.			
	Whole Number	Place value	6. Identify the place value and total value or the digits in whole numbers with up to seven digits.	10	1.5wk	
		Expanded notation	7. Read the numerals for whole numbers with up to seven digits.			
		Representation of numbers	8. Write numbers with up to seven digits in words and numerals. 9. Write numbers with up to digits in expanded notation.			
		Ordering numbers	10. Arrange a set of whole numbers in order of magnitude.			
		Rounding off numbers	11. Round off whole numbers to the nearest ten, hundred, or thousand.			
		Number-related vocabulary	12. Describe situations (e.g., government projects) that involve the use of very large (e.g., a million) numbers.			
			13. Compare two numbers using verbal number phrases such as: 'more than', 'less than', 'twice', 'thrice', 'twice more than', 'as much as', etc.			
			14. Explain the meaning of verbal number phrases such as 'more than', 'less than', 'twice', 'thrice', 'twice more than', 'as much as', etc. as used in given situations.			
		Types of numbers	15. Classify numbers in a variety of ways, using number concepts such as square, prime, composite, odd, even, factors, multiples, etc.			
			Factors, multiples			16. List the factors of numbers up to 100. 17. Prime-factorise composite numbers up to 100.
	H.C.F. and L.C.M	18. Calculate the highest common factor of two or three numbers. 19. Generate multiples of whole numbers.				
			20. Calculate the lowest common multiple of two or three numbers, using listing of multiples or prime factorisation.			
	Statistics	General	Problem solving	1. Create and solve problems whose solutions require data collection, representation, and interpretation.	5	1wk

		Use of observation, interviews, and questionnaires	2. Describe procedures for collecting data through observation, interview, and the use of questionnaires.		
	Data Collection	Selection of data collection methods	3. Select appropriate means (observation, interview, questionnaire) of collecting data for a particular problem situation and give reasons for their selection.	6	1wk
		Planning for data collection	4. Plan data collection activities. 5. Collect data through observation, interviews, or the use of questionnaires.		
Computation		Computation-related vocabulary	1. Use computation vocabulary (e.g., sum, product, total, etc.) to describe situations that involve addition, subtraction, multiplication, or division.		
		Relationships among the four basic operations	2. Explain the relationships that exist among addition, subtraction, multiplication, or division.		
	General	Checking answers	3. Analyse computation situations to determine if an estimate or exact answer is required. 4. Explain the likely effects of an operation. 5. Estimate the answer to a computation. 6. Determine the reasonableness of an estimated or exact answer to a computation, and justify their conclusion. 7. Explain mental computation strategies that may be used in calculations involving addition, subtraction, multiplication or division.	6	1wk
		Computation strategies	8. Explain pencil and paper computation procedures that may be used in calculations involving addition, subtraction, multiplication or division. 9. Explain how to use the calculator to carry out addition, subtraction, multiplication or division. 10. Select an appropriate computation strategy (mental computation, use of pencil and paper, or use of a calculator) to carry out addition, subtraction, multiplication, or division.		
	Whole Numbers	Problem solving	11. Create and solve problems involving addition, subtraction, multiplication, and/or division of whole numbers.		
		Basic facts	12. Recall the basic facts for addition, subtraction, multiplication, and division of whole numbers.		
		Addition without and with regrouping	13. Add sets of whole numbers, without and with regrouping.	6	1wk
		Subtraction without and with regrouping	14. Carry out subtraction involving whole numbers, without and with regrouping.		
		Multiplication by one- and two-digit numbers	15. Multiply whole numbers by one- and two-digit numbers.		

		Division by one- and two-digit numbers	16. Divide whole numbers by one- and two-digit numbers, without and with remainder			
Measurement	✓ General	Selection of units and instruments	1. Select the most appropriate unit to estimate and measure a length, the mass, or the capacity of a given object and give reasons for their choice of unit.	6	1wk	
			2. Select the most appropriate instrument to measure a length, the mass, or the capacity of a given object and give reasons for their choice of instrument.			
			3. Explain how to use instruments for measuring length, mass, capacity, and temperature.			
			Recording measurements	4. Record estimates and measurements of length, mass, capacity, and temperature using appropriate notation.		
			Converting from one unit to another	5. Use the relationships among the units to carry out simple conversions involving units of measure of the same attribute.		
	✓ Linear Measurement	Problem solving	Use of the kilometre, metre, centimetre as units of measure	6. Create and solve problems involving linear measurement.	6	1wk
				7. Estimate and measure the lengths and heights of objects using the metre, centimetre, and/or millimetre as the units of measure.		
		Scale drawings	Scale drawings	8. Estimate and measure distances using the metre and/or centimetre as the units of measure.		
				9. Estimate and describe distances using the kilometre as the unit of measure.		
	Measurement of Mass	Use of the tonne, kilogram, gram, and milligram as units of measure	Problem solving	10. Use simple scale drawings to determine actual distances.	6	1wk
11. Represent actual distances using scale drawings.						
			12. Create and solve problems involving measurement of mass.			
			13. Estimate and measure the mass of objects using the kilogram, gram, and/or, milligram as the units of measure.			
			14. Use the tonne as a unit of measure to describe the mass of large or very heavy objects.			
Geometry 2		Attributes of three-dimensional shapes	1. Describe three-dimensional shapes in terms of the number and type of faces, and the number of vertices and edges.			
			2. Identify cubes, cuboids, cylinders, cones, and spheres by name.			
			3. Classify three-dimensional shapes in a variety of ways, e.g., according to the shape of their faces, the number of edges, etc.			
			4. Select and use their own criteria to classify three-dimensional shapes.			
			5. Explain the criteria they used to classify three-dimensional shapes.			

Three Dimensional Shapes	Drawing three-dimensional shapes	6. Draw sketches of three-dimensional shapes from different perspectives, e.g., looking down on the shape, looking at it at eye level.	18	3wk
	Drawing and making nets of cubes, cuboids, cylinders, and	7. Draw and make nets of cubes, cuboids, cylinders, and cones. 8. Identify the nets that will form cubes, cuboids, cylinders, and cones.		
	Constructing cubes, cuboids, cylinders, cones, and spheres	9. Construct cubes, cuboids, cylinders, cones, and spheres.		
	Use of three-dimensional shapes in real life	10. Identify three-dimensional shapes that would be appropriate for performing given functions in real life, e.g., storing toys.		

**TERM2**

Major strands	Topics	Sub Topics	Learning Outcomes	Lessons	Time				
Computation	✓ Fractions	Problem solving	17. Create and solve problems involving addition, subtraction, and/or multiplication of fractions.	12	2 wk				
		Addition of proper fractions	18. Add proper fractions with like or unlike but related denominators.						
			19. Add a proper fraction to a whole number.						
		Addition of mixed numbers	20. Add a proper fraction to a mixed number.						
			21. Add two mixed numbers.						
		Subtraction of proper fractions	22. Subtract proper fractions with like or unlike but related denominators.						
			23. Subtract a proper fraction from a mixed number with like or unlike but related denominators, without and with regrouping.						
		Subtraction of mixed numbers	24. Subtract a mixed number from a mixed number with like or unlike but related denominators, without and with regrouping.						
			Multiplication by whole numbers and proper fractions			25. Multiply proper and mixed fractions by whole numbers.			
		26. Multiply proper fractions.							
		27. Multiply a mixed number by a proper fraction.							
		Multiplication of mixed numbers	28. Multiply two mixed numbers.						
			Division by whole numbers			29. Divide a proper fraction by a whole number.			
		30. Divide a mixed number by a whole number.							
		Decimals	/			Problem solving	31. Create and solve problems involving addition, subtraction, and/or multiplication of decimal numbers.	9	1.5 wk
						Addition without and with regrouping	32. Add decimal numbers with up to two decimal places, without and with regrouping.		
Subtraction without and with regrouping	33. Subtract decimal numbers with up to two decimal places, without and with regrouping.								
Multiplication by a one- or two-digit number	34. Multiply a decimal number with up to two decimal places by a one- or two-digit whole number.								

		Profit and loss as a percent	40. Calculate the cost price of an article given the selling price and the profit or loss as an amount of money only. 41. Calculate profit or loss given the cost price and selling price of an article. 42. Express profit, loss, and discounts as a percent of the cost price.		
	Ratio	Sharing in a given ratio	43. Share a quantity in a given ratio.	3	0.5wk
		Problem solving	44. Create and solve problems involving ratio.		
Number Concepts	Percent	The concept of percent	35. Explain the concept of percent.	5	
		Use of percents in real life	36. Explain the meaning of percents, including percents larger than 100%, given a real life situation e.g., profit or increase in bank accounts.		
		Representation of percents as fractions and decimals	37. Represent a percent as a fraction or decimal. 38. Represent simple fractions and decimals as percents.		
	Ratio	Vocabulary related to ratio	39. Use appropriate vocabulary in descriptions of situations involving ratios, e.g., per, for each, for every, etc.	4	2wk
		The concept of ratio	40. Explain the concept of ratio.		
		Representation of ratio	41. Represent a ratio using objects, pictures/diagrams, and numerals.		
		The relationship between ratio and fractions, decimals, and percents	42. Explain the relationship that exists among ratio, percents, fractions, and decimals. 43. Express a ratio as a fraction.		
	Roman Numerals	Use of Roman numerals in real life	44. Identify real life situations that involve the use of Roman numerals (e.g., the numbers on clocks and watches, numbering of chapters in a book, the information at the end of a movie indicating the year in which it was made).	3	
		Representation of Roman numerals	45. Identify and write Roman numerals for numbers from 1 to 20.		
			46. State the Roman numeral corresponding to 1000. 47. Write the current year in Roman numerals.		

**TERM3**

Major strands	Topics	Sub Topics	Learning Outcomes	Lessons	Time	
Measurement	Money	Representation of amounts of money	35. Write and read amounts of money up to the millions.	8	1.5wk	
		Use of money in real life Foreign currency	36. Describe situations that involve large amounts of money.			
			37. Read and interpret the rates of exchange for common foreign currencies (e.g., US dollar, pound sterling, Barbados dollar).			
			38. Convert foreign currencies to Eastern Caribbean currency. 39. Convert Eastern Caribbean currency to foreign currency.			
		Problem solving	40. Create and solve problems involving money, e.g., total cost of items, determining change.			
	Measurement of Angles	Use of protractor	41. Explain how to use a protractor to measure and draw angles.	4	0.5wk	
		Drawing angles	42. Draw angles of a given size.			
Estimating and measuring the size of angles		43. Estimate and measure the size of angles.				
Geometry	Plane Shapes	Points, line segments	20. Represent and label a point.	12	2wk	
		Types of angles	21. Draw and label angles. 22. Identify and label angles. 23. State the number of degrees associated with a right angle. 24. Identify acute angles and obtuse angles.			
			25. Explain the concepts of 'acute angle' and 'obtuse angle'.			
			Simple co-ordinate systems			26. Plot points on a co-ordinate system. 27. Identify points on a co-ordinate system. 28. Identify and describe examples of geometric ideas that are used in everyday life.
		Computation	Percent			Problem solving
Calculations of percents	37. Calculate a given percent of a number. 38. Express one number as a percent of another.					
	39. Calculate the selling price of an article, given the cost price and the profit or loss as an amount of money or as a percent.					



			33. Sketch squares, rectangles, triangles or irregular figures with a given area and/or perimeter.		
		Problem solving	34. Create and solve problems involving perimeter and/or area.		
Statistics					
	Data Representation	Selection of appropriate methods of data representation	6. Select appropriate methods (table, pictograph, bar graph, or line graph) to represent data, and give reasons for their selection.	6	1 wk
		Selection of appropriate scales	7. Select appropriate scales for representing data in pictographs, bar graphs, and line graphs and give reasons for their choice scale.		
		Drawing tables and graphs	8. Represent data using tables, pictographs, bar graphs, or line graphs.		

		18. Describe situations where they may be able to use the relationships between Imperial and metric units of measurement.		
Measurement of Temperature	Use of the Fahrenheit and Celsius scales	19. Read temperatures using the Fahrenheit and Celsius scales.	3	0.5 wk
		20. Compare temperatures using the Celsius and Fahrenheit scales. (E.g., the freezing point of water is 0 degrees Celsius but 32 degrees Fahrenheit.)		
Time	Use of the 12-hour and 24-hour clock	21. Tell time using the 12-hour and 24-hour clock.	6	1 wk
	Time notation	22. Record and read measurements of time using a variety of time notations		
	Problem solving	23. Create and solve problems involving time: e.g., intervals of time, duration of events, starting and finishing times of events.		
	Introduction to average speed	24. Explain the concept of average speed.		
		25. Explain the relationships that exist among distance, average speed, and time, e.g., average speed x travel time = the distance travelled.		
Problem solving	26. Create and solve problems involving distance, speed, and time.			
Perimeter <sup>and</sup> Area	Perimeter of two-dimensional shapes	27. Calculate the perimeter of two-dimensional shapes.	6	1 wk
		28. Calculate the area of squares and rectangles using appropriate formulae.		
	Area of right-angled triangles, squares and rectangles	29. Calculate the area of irregular figures that are comprised of squares, and/or rectangles.		
		30. Calculate the length of a side of a square or rectangle given appropriate information (e.g., the area and/or perimeter, lengths of sides).		
	Area of irregular shapes	31. State the relationship between the area of a rectangle and the area of a triangle.		
		32. Calculate the area of right-angled triangles using the formula, Area = 1/2 base x perpendicular height.		

	Plane Shapes	Classification of two-dimensional shapes	12. Classify two-dimensional shapes in a variety of ways using geometric concepts such as symmetry, congruency, closed figures, perpendicular lines, parallel lines, as well as the number and type of sides and angles.	9	1.5 wk
			13. Select and use their own criteria to classify two-dimensional shapes.		
			14. Explain the criteria that they used to classify two-dimensional shapes.		
		Drawing two-dimensional shapes	15. Draw two-dimensional shapes according to directions that are based on geometric concepts and the properties of the shapes, e.g., symmetry, type of figure (open or closed), the number of sides type of sides (parallel or perpendicular), etc.		
		Attributes of squares, rectangles, triangles, and circles	16. Identify triangles squares, rectangles, and circles. 17. Describe the attributes of the following geometric shapes: triangle, square, rectangle, and circle.		
	Classification of triangles	18. Sort and name triangles according to the length of their sides and the size of their angles (e.g., isosceles, equilateral, and acute angled triangles). 19. Describe the characteristics of each group/type of triangles.			
Measurement	Measurement of Capacity	Use of the litre, centilitre, and millilitre as units of measure	15. Estimate and measure the capacity of containers using the litre, centilitre, and/or millilitre as the units of measure.	6	1 wk
		Problem solving	16. Create and solve problems involving measurement of capacity.		
	Imperial Unit	Relationships between imperial units and metric units	17. State the relationship between metric units of length, mass, and capacity and common units. (E.g., A metre is a little more than a yard. 1 Kg is approximately 2.2lbs., 1 teaspoon is approximately 5 ml.).	2	0.5 wk

		Division by a one- or two-digit number	35. Divide a decimal number with up to two decimal places by a one- or two- digit whole number.		
Number Concepts	✓ Fractions	Representation of fractions	21. Represent fractions using diagrams/pictures and numerals.	6	1 wk
		Equivalent fractions	22. Identify that are equivalent		
			23. Generate fractions that are equivalent to a given fraction.		
			24. Express proper fractions in their lowest terms.		
		Ordering fractions	25. Convert an improper fraction to a mixed number and a mixed number to an improper fraction.		
	26. Arrange a set of fractions with like denominators in order of magnitude.				
	Lowest common denominator	27. Arrange a set of fractions with unlike but related denominates in order of magnitude.	28. Calculate the lowest common denominator of two or three fractions.		
	✓ Decimals	Place value	29. Identify the place value and total value of the digits in decimal numbers with up to two decimal places.	6	1 wk
		Representation of decimal numbers	30. Write and read decimal numbers with up to two decimal places.		
		Rounding off decimal numbers	31. Round off decimal numbers with up to two decimal places to the nearest whole number, tenth, or to 1 decimal place.		
		Equivalent decimals	32. Identify decimals that represent the same quantity, e.g., 1.6 and 1.60.		
		Use of the relationship between fractions and decimals	33. Write a decimal number as a fraction and a fraction as a decimal number.		
	Ordering decimals	34. Arrange a set of decimals in order of magnitude.			
Geometry		Attributes of two-dimensional shapes	11. Describe two-dimensional shapes in terms of the number and type of sides and angles.		

Statistics	Interpretation of Data	Reading data presented in tables and graphs	9. Read and interpret data presented in tables, pictographs, bar graphs, and line graphs.	9	1.5wk
		Calculating the mean/average	10. Explain the concepts of mean and mode.		
			11. Calculate the mean/average of a set of data		
		Identifying the mode	12. Identify the mode of a set of data.		
		Interpreting values of the mean and mode	13. Interpret values of the mean and mode.		
Answering questions based on the presented data	14. Make inferences from the data presented in tables and graphs.				