



MINISTRY OF EDUCATION

TRANSITIONAL CURRICULUM GUIDE



MATHEMATICS

GRADES 6 & 7

ASSISTANT CHIEF EDUCATION OFFICER
(SECONDARY)

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INTRODUCTION

This Transition Curriculum Guide for Mathematics Grades 6 & 7 has been designed to provide children with learning disability in Mathematics an opportunity to develop with some degree of proficiency the fundamental aspects of the subject in order to allow them to cope with a more rigorous secondary school Mathematics curriculum.

To make the instruction child friendly, a variety of activities are suggested for the students to be engaged in. This approach will allow them to have a conceptual framework on which to build their knowledge and understanding of Mathematics. In addition, it is recommended that extensive practice exercises be given to them so that mastery of the relevant skills is gained. Routine feedback to students is essential to help them through initial difficulties they may experience.

This curriculum guide is accompanied by an Enrichment Activity Booklet which can be used by teachers to reinforce the concepts in a fun way.
Best of luck!

Rajwantie Permual
Head, Learning Resource Development Unit

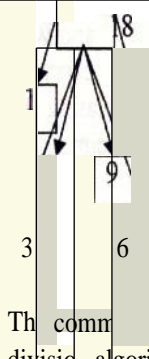
SUGGESTED TEXTS for Mathematics Grades 6 & 7

1. **Let's Do Mathematics** Book 6, Ministry of Education
2. **Mathematics for Secondary Schools in Guyana** Book 1, Ministry of Education
3. **Working with Whole Numbers Books 1, 2, 3**, Ministry of Education
4. **Working with Decimal Numbers Books 1, 2, 3**, Ministry of Education
5. **Working with Fractional Numbers Books 1, 2, 3**, Ministry of Education
6. **Working with Graphs**, Ministry of Education

**MINISTRY OF EDUCATION
TRANSITION CURRICULUM
GRADES 6 - 7
MATHEMATICS
EFFECTIVE 2009**

TOPIC	OBJECTIVE	KNOWLEDGE	ATTITUDE	CONTENT	ACTIVITY	RESOURCE	EVALUATION	AREAS OF INTEGRATION
	SKILL					MATERIAL		
Numbers, Numeration and Operations	1. Read and write two-, three-, four- and five-digit numbers.	Recognise two-, three-, four- and five-digit numbers.	Appreciate the value of numbers in all aspects of social life.	Read and write two, three, four and five digit numbers 37, 158, 2763, 89 705	Creative activities that will involve the use of flash cards, abacuses, place value charts, and base ten blocks.	Suggested Texts- 1, 2, 3 Flash cards, abacuses, place value charts, and base ten blocks.	Oral reading of numbers using flash cards.	Literacy: reading and writing numbers.
	1. Recognize the place value of any digit in a two-, three-, four or five-digit number.	Identify the place value of any digit in a two-, three-, four or five-digit number.	Appreciate the importance of place value.	Place value of 2-, 3-, 4- and 5- digit numbers. Ones, tens, hundreds, thousands, hundredths, thousandths	Use activities that will involve flash cards, abacuses, place value charts, and base ten blocks.	Suggested Texts- 1, 2, 3 Flash cards, abacuses, place value charts, and base ten blocks.	Oral and written assignment	Social Studies: locating places on map using its grid.
	2. Types of numbers – even, odd, prime, composite.	Definition of even, odd, prime and composite numbers.	Appreciate the use of numbers and number patterns.	Types of numbers: Even- 2, 4, 986, 17850, Odd- 1, 3,9,17, 05, 2097, Prime- 2, 5, 7, 19, 331, 509, Composite- 48, 125,	Identify types of numbers from Sieve of Eratosthenes to generate prime and composite numbers.	Suggested Texts- 1, 2, 3 Sieve of Eratosthenes, Number chart	Use number chart or Sieve of Eratosthenes to identify types of numbers.	English: looking for patterns in poetry. Science: looking for patterns in nature

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				784, 1098.				
	3. Rounding numbers – whole numbers and decimals.	Principles in rounding numbers especially the even number principle.	Appreciate the easy use of numbers when rounded	Round to nearest ten, hundred, etc 2 dp , 3 dp If last digit is 5 round up if preceding number is odd, round down if preceding number is even	Use the number line to explore the rounding of number principles. Calculators can also be used.	Suggested Texts- 1, 2, 3, 4, Number lines, calculators	Oral and written work	Science and Social Studies: estimating distances and areas.
	4. Add and subtract whole numbers and decimals up to four digits with and without carrying.	Add and subtract in vertical and horizontal formats whole numbers and decimals up to four digits with and without carrying.	Appreciate the use of the decimal system and relating it to the metric system.	Add and Subtract <ul style="list-style-type: none"> • Whole numbers • Decimals with and without carrying Relating the decimal system to the metric system.	Use of <ol style="list-style-type: none"> 1. Expanded notation 2. Place Value chart 3. Notation cards 3. Abacus 4. Lattice addition to illustrate the principles of computation.	Suggested Texts- 1, 2, 3, 4 Flash cards, abacuses, place value charts, and notation cards	Worksheets and exercises from the basic mathematics textbook.	Consumer Arithmetic: decimalization of money and other currencies.
	5. Multiply whole numbers and decimals with and without	Use the distributive law of multiplication over addition to multiply whole numbers and	Appreciate the value of the decimal point, especially when dealing with	Multiplication of 2 and 3 digit numbers – whole numbers and decimals.	Use any of the following approaches to carry out the computation:	Suggested Texts- 1, 2, 3, 4 Multiplication Chart Expanded notation	Worksheets and exercises from the basic mathematics textbook.	Science: computing results from experiments.

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	carrying, up to three-digit multiplicands and two-digit multipliers.	decimals with and without carrying, up to three-digit multiplicands and two-digit multipliers.	currencies.		Multiplication Chart Expanded notation Lattice multiplication Calculators.			
	6. Divide whole numbers with and without remainders. 7. Divide decimals.	Use the factor method to divide whole numbers without remainders. Use the common division algorithm to divide whole numbers and decimals.	Develop team spirit in solving problems.	Use the factor method to divide whole numbers by composite numbers. Factor tree	Explore the use of the factor method to divide whole numbers by composite numbers. Explain the division algorithm for whole numbers and decimals.	Suggested Texts- 1, 2, 3, 4 Factor Tree	Worksheets and exercises from the basic mathematics textbook. Use the calculator to verify the results obtained from algorithmic calculations.	Science and Technology: use of the calculator and other calculating devices.
								
	8. Find HCF and LCM of two or three whole numbers.	Develop a conceptual understanding of HCF and LCM.	Develop team spirit in seeking out HCF and LCM related problems.	Finding LCM and HCF by the factor method. $15 = 3 \times 5$ $35 = 5 \times 7$ HCF = 5	Using the Factor Tree to find LCM and HCF.	Suggested Texts- 1, 2, 3, 4 Factor Tree	Worksheets and exercises from the basic mathematics textbook.	Literacy: application of HCF and LCM principles in solving consumer related problems.

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	SKILL					MATERIAL		
				LCM = $3 \times 5 \times 7$ =105				
	9. Add and subtract fractions: proper fractions and mixed numbers.	Make equivalent fractions to enable the addition and subtraction of fractions including mixed numbers.	Show willingness to complete a task given for individuals and for groups.	Addition and Subtraction of proper fractions with like and unlike denominators. Like denominators $\begin{array}{r} 7 \\ 15 \\ 21 \end{array} + \begin{array}{r} 11 \\ 15 \\ 17 \end{array}$ $\begin{array}{r} 45 \\ 54 \end{array} - \begin{array}{r} 45 \\ 101 \end{array}$ Unlike denominators $\begin{array}{r} 9 \\ 17 \end{array} + \begin{array}{r} 23 \\ 34 \end{array}$ $\begin{array}{r} 54 \\ 61 \end{array} - \begin{array}{r} 101 \\ 122 \end{array}$	Use any of the following to explain the concepts: Fraction Chart Geoboard Base Ten Blocks Fractions Cut-	Suggested Texts- 1, 2, 5, Fraction Chart Geoboard Base Ten Blocks Fractions Cut-outs.	Worksheets and exercises from the basic mathematics textbook.	Science: use fractional computations in elementary experiments.
				Addition and Subtraction of mixed numbers.				

TOPIC	OBJECTIVE	KNOWLEDGE	ATTITUDE	CONTENT	ACTIVITY	RESOURCE	EVALUATION	AREAS OF INTEGRATION
	SKILL					MATERIAL		
				$5\frac{7}{8} + 3\frac{9}{10}$ $12\frac{5}{6} - 5\frac{7}{8}$				
	10. Multiply and divide fractions using proper and improper fractions and mixed numbers.	Multiply and divide fractions using proper and improper fractions and mixed numbers.	Develop an appreciation of sharing ideas and working as a team member.	Multiplication and division of fractions and mixed numbers using standard algorithms. $\frac{5}{8} \times \frac{16}{25}$ $\frac{18}{19} \div \frac{9}{38}$ $3\frac{5}{8} \times 9\frac{6}{13}$ $2\frac{5}{6} \div 1\frac{8}{9}$	Use cut-outs, number lines, reciprocals, plane shapes, geoboard , repeated addition to facilitate fractional computation.	Suggested Texts- 1, 2, 5, Fraction Chart Geoboard Fractions Cut-outs, number lines	Worksheets and exercises from the basic mathematics textbook.	Science use fractional computations in elementary experiments.
	11. Convert fractions to decimals and vice versa.	Fractions can be expressed as decimal equivalents.	Appreciate equivalences in fractions and decimals.	Convert fractions to decimals and decimal to fractions $\frac{7}{15}, \frac{11}{15}$ $3\frac{5}{8}, 9\frac{6}{13}$	Use standard conversion algorithms supported with the use of calculators and other calculating devices.	Suggested Texts- 1, 2, 5, calculators	Worksheets and exercises from the basic mathematics textbook.	Science: relate fractions and decimals to experiments.

TOPIC	OBJECTIVE SKILL	KNOWLEDGE	ATTITUDE	CONTENT	ACTIVITY	RESOURCE MATERIAL	EVALUATION	AREAS OF INTEGRATION
				23.6, 0.34				
	12. Convert fractions and decimals to percentages and vice versa.	Fractions can be expressed in percentage equivalences.	Willingness to explore concepts.	Convert fractions and decimals to percentages and vice versa	Use of fraction charts, diagrams and calculators to verify the rule for converting fractions to percentages.	Suggested Texts- 1, 2, 3, 4, 5.	Practical work on diagrams	Relate percentages to social arithmetic.
	13. Find the average of a set of numbers.	Average is a central tendency value.	Appreciate the reason for finding an average.	Find average of a set of numbers	Collection of information to form a distribution and use a calculating device to determine an average.	Suggested Texts- 1, 2, 3, 4, 5.	Worksheets and exercises from the basic mathematics textbook.	Social Studies: finding the average of a set of population data or other demographic data.
	14. Number patterns and sequences.	Patterns have underlying rules establishing them.	Develop an obsession to find the rule governing a pattern.	Number patterns and sequences are established by rules and students are encouraged to explore and discover the rules of the patterns and sequences.	Provide and have students provide number patterns and sequences and for them to establish the rules.	Suggested Texts- 1, 2, 3, 4, 5.	Worksheets	

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Geometry	Recognize plane shapes and their properties – triangle, square, rectangle, parallelogram, pentagon and hexagon.	Determine the properties of plane shapes – sides, angles, vertices.	Enjoy constructing shapes and investigate their properties.	Plane shapes are subsets of space. All polygons are examples of plane shapes.	Cut outs of plane shapes , use templates Drawings classification of plane shapes. Use of the geoboard in exploring the properties of plane shapes.	Suggested Texts- 1, 2 Cut outs of plane shapes, geoboard	Written and practical work game Completion of tables on properties of plane shapes	Plane shapes as recognized in the immediate environment.
	Recognize symmetrical shapes and their properties – bilateral symmetry only.	Discover some of the properties of symmetrical shapes through experimentation	Enjoy investigations involving symmetrical shapes.	Properties of symmetrical plane shapes.	Explore in a laboratory setting the properties of plane shapes.	Suggested texts – 1, 2, Cut outs of plane shapes	Worksheets	Science: symmetry in the environment.
	1. Calculate angles at a point, in a triangle and in a quadrilateral.	Discover that the sum of the angles of a given polygon can be determined by measuring each angle and adding them.	Develop critical thinking accepting determined measurements of angles and to arrive at a consensus.	Identify types of angles- acute, obtuse, reflex, straight, right, opposite, complementary, supplementary and calculation of angles at a point, in a triangle and quadrilateral	Use of geometrical instruments to construct or measure angles	Suggested texts – 1, 2, Protractor, set squares, compasses, ruler	Practical and written exercises.	Geometry in the environment.

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	SKILL	KNOWLEDGE	ATTITUDE			MATERIAL		
	Drawing, constructing and measuring angles.	Use the protractor or compasses to draw and construct given angles.	Appreciate the importance of accuracy in drawing and constructing.	Draw, construct- 30° , 45° , 60° , 90° , 120° , etc and measure angles.	Use of geometrical instruments to construct and measure angles.	Suggested texts – 1, 2, Protractor, set squares, compasses, ruler	Practical and Written	Geometry in the environment.
Statistics	1. Interpret data on a pictograph, bar graph and line graph.	Recognise that data can be illustrated in a variety of ways - pictograph, bar graph and line graph.	Develop accuracy in collecting and representing data	Draw and Interpret Graph- Pictograph Bar Pictograph Line Pictograph	Use of checkered paper, Geoboard, Diagrams.	Suggested texts – 1, 2, 6 Graph paper, geoboard	Projects	Graphs in Science and Social Studies.
	2. Construct tally charts, pictographs, bar graphs and line graphs.	Use given data to construct tally charts, pictographs, bar graphs and line graphs.	Appreciate importance in presenting data accurately and neatly	Using graph paper construct Pictograph Bar Graph Line Graph	Use of colours to differentiate data on graphs.	Suggested texts – 1, 2, 6 Graph paper,	Oral and Written assignments.	Graphs in Science and Social Studies.
	3. Calculate the mean, and median of a set of scores. 4. Determine the	Determine the mean, median and mode of a set of scores.	Appreciate the importance of accuracy	Defining the following: Mean Median Mode	Collecting and Sorting data and use the data to determine or find the measure	Suggested texts – 1, 2, 6	Worksheets.	Graphs in Science and Social Studies.

TOPIC	OBJECTIVE	KNOWLEDGE	ATTITUDE	CONTENT	ACT	RESOURCE		AREAS OF INTEGRATION
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	mode of a set of scores.				of central tendency.			
Consumer Arithmetic	I. Calculate simple interest	Recognise the concept of interest.	Appreciate the importance of saving and investing money	Calculation of Simple Interest	Using the algorithm for calculating simple interest. Using tables of values – ready reckoners.	Suggested texts – 1, 2	Worksheets and exercises from the basic mathematics textbook.	Application to the world of business.
	2. Calculating ratios of given quantities.	Recognise that ratio is the comparison of two quantities of the same kind.	Appreciate that alloys are made up of metals in given ratios.	Calculating ratios of various compositions of quantities.	Using the rules for computing ratios and ratio quantities using a calculating device.	Suggested texts – 1, 2	Worksheets and exercises from the basic mathematics textbook.	Science: calculating quantities in alloys and other compounds.
	3. Calculate profit and loss in a business transaction. Find cost price and selling price.	Understand the concepts of profit and loss.	Appreciate the nature of business transactions.	Profit and loss in a business transaction. Finding cost price and selling price in a commercial transaction.	Using a calculating device to determine profit and loss in a business transaction; calculating selling price and cost price of articles.	Suggested texts – 1, 2, advertisement clippings, brochures, ready reckoner	Worksheets and exercises from the basic mathematics textbook.	Application to the world of business.
	4. Calculate percentage increase or decrease of given	Understand that quantities can be compared to a	Recognise the roles of individuals	Percentage increase or decrease of given quantities.	Using advertising business offers	Suggested texts – 1, 2, advertisement clippings,	Worksheets and exercises from the basic mathematics	Application to the world of business.

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	quantities.	given base quantity as a percentage.	working a on a group project based on the topic.		and a calculating device to determine percentage increase or decrease of given quantities.	brochures, ready reckoner	textbook.	
	5. Make a shopping bills and budgets.	Understand the format of making a shopping bill, including VAT. Prepare a budget for any transaction.	Appreciate the reasons for providing shopping bills and budgets.	Making a shopping a bill, and a budget for a transaction activity.	Using a calculating device to construct a shopping bill, and a budget for a small project.	Suggested texts – 1, 2, advertisement clippings, brochures, ready reckoner	Worksheets and exercises from the basic mathematics textbook.	Application to the world of business.
Measurement	1. Calculate duration over a period of time involving minutes, hours, days, months and years.	Recognise that there are various units for measuring time.	Appreciate importance of time	Time periods - minute - hour - day - month - year - decade - century	Calendar, Clock, and other natural phenomena for telling or estimating time.	Suggested texts – 1, 2, clocks, calendar	Worksheets and exercises from the basic mathematics textbook.	Application to the real world.
	2. Estimate and measure distances.	Recognise that there are various units for measuring distances.	Appreciate the importance of accuracy.	Estimate and or measure distances.	Using various measuring instruments to determine	Suggested texts – 1, 2, ruler, tapes	Worksheets and exercises from the basic mathematics textbook.	Application to the real world.

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	SKILL				MATERIAL			
					distances.			
	3. Calculate average speed.	Recognise that there are several units for measuring speed.	Appreciate the importance of accuracy.	Determine average speed by calculation and by using a device for the purpose.	Using a calculating device or an instrument to determine the speed of movements of given objects.	Suggested texts – 1, 2,	Worksheets and exercises from the basic mathematics textbook.	Science: application to simple experiments involving elementary Physics.
	4. Find the perimeter of plane shapes (including the circle) and solve associated problems.	Understand the definition of perimeter and the methods for finding same.	Appreciate the importance of accuracy.	Perimeter of Plane shapes - triangle - rectangle - square - circle	Use the under mentioned to find perimeter: Cut outs and measuring strings Checked paper Rectangular and circular geoboards	Suggested texts – 1, 2	Worksheets and exercises from the basic mathematics textbook.	Agriculture Science: perimeter of a field.
	5. Find the area of plane shapes – the rectangle, square, triangle and circle – and solve associated problems.	Understand the definition of area and formulae for finding areas of some simple plane shapes.	Appreciate the importance of accuracy.	Areas of plane rectilinear shapes and the circle.	Using graph paper and formulae to find the areas of rectilinear figures and the circle.	Suggested texts – 1, 2 Cut-outs of shapes, graph paper	Worksheets and exercises from the basic mathematics textbook.	Agriculture Science: perimeter of a field.

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	6. Find the volume of cuboids and their combinations	Understand the concept of volume.	Recognise the roles of individuals working a on a group project based on the topic.	Calculate the volume of cuboids and their combinations	Using cubes to build models and by counting and calculating, determine the volume of the model constructed.	Suggested texts – 1, 2 Models of solids	Worksheets and exercises from the basic mathematics textbook.	Science: finding volume of quantities in a simple experiment.