

SCHEME OF WORK CHECKLIST FROM SEPT 2016 - FORM I: TERM I

TEXT: MATHEMATICS FOR CARIBBEAN SCHOOLS BOOK OR MATHEMATICS A COMPLETE COURSE WITH CXC QUESTIONS VOL. 1 (My listed pages are mainly taken from the **Red Edition of Toolsie**; students are issued with the **Blue Edition** so you will / may need to have both Editions). The library has copies of Mathematics for Caribbean Schools, 1st and 2nd Editions.

1. NUMBER THEORY (I) Toolsie, p11 - 12 & p17 - 37; omit the Addition, Subtraction & Multiplication of Base Numbers

WEEK 1 & 2 1. (a) Distinguish among sets of numbers, for example, (Bk 1, 2nd Edn., p14 – 15)

- (i) Natural _____
- (ii) Whole _____
- (iii) Even _____
- (iv) Odd _____
- (v) Prime _____
- (vi) *Square Numbers* _____

(b) Identify (Bk 1, 2nd Edn, p60 & 66; Bk 2, 2nd Edn., p1)

- (i) Integers, _____
- (ii) Rational _____
- (iii) Irrational Nos. _____

(c) Describe Positive Integers as being Prime OR Composite
(Bk 1, 2nd Edn., p15) _____

(d) *Real Numbers, \mathbf{R} , the union of rational & irrational numbers.* _____

2. Order a set of real numbers, for example, the use of inequality symbols, *listing in ascending order.* _____

3. Identify a given set of numbers as a subset of another set;
recognize the Inclusion Relations among subsets of the Number System;
for example, $N \subset W \subset Z \subset Q \subset R$.
(Bk 2, 2nd Edn., p1 & Toolsie vol. 1, p11) _____

WEEK 3 & 4 4. List the (Bk 1, 2nd Edn., p14 – 23)

set of Factors OR _____
a set of Multiples of a given Positive Integer _____

5. Compute the (Bk 1, 2nd Edn., p14 – 23)

H.C.F _____

OR L.C.M of two or more positive integers _____

6. (i) Number bases & their conversion _____

- (ii) State the value of a digit in a numeral in base n , where $2 \leq n \leq 10$:
Place Value & Face Value of numbers in bases 2 to 10. (Bk 1, 2nd Edn., p1 – 7) _____

2. COMPUTATION (I)

- WEEK 5&6** 1. Perform computation using any of the FOUR basic operations (Addition, Subtraction, Multiplication, Division) with real numbers, namely, (Bk 1, 2nd Edn., p71 - 79 OR Toolsie p39 - 59)

Whole numbers _____

Fractions _____

Decimals _____

2. Convert among (Bk 1, 2nd Edn., p71 - 79 OR Toolsie p79 - 82)

Fractions _____

Percentages _____

Decimals _____

3. Convert from one set of units to another. (Bk 1, 2nd Edn., p24 - 29) _____

- WEEK 7 & 8** 4. Approximate a Value to a given number of Significant Figures (1, 2 or 3) and express any Decimal to a given number of Decimal Places (1, 2 or 3)
 Bk 1, 2nd Edn., p105 - 109 OR Toolsie p59 - 64 _____

5. Calculate any Fraction or Percentage of a given quantity
 (Bk 1, 2nd Edn., p71 - 79 OR Toolsie p79 - 82) _____

6. Express one quantity as a Fraction or Percentage of another
 (Bk 1, 2nd Edn., p71 - 79 OR Toolsie p79 - 82) _____

7. Compare two quantities using Ratios
 (Bk 1, 2nd Edn., p166 - 171 OR Toolsie p71 - 74) _____

8. Divide a quantity in a given Ratio
 (Bk 1, 2nd Edn., p166 - 171 OR Toolsie p71 - 74) _____

- WEEK 9 & 10** 9. Solve problems involving:

(a) Fractions _____

(b) Decimals _____

(c) Percentages _____

(d) Ratio, Rates & Proportions (Bk 1, 1st Edn., p173 - 179, & Toolsie p75 - 78) _____

(e) Arithmetic Mean (or Average) (Toolsie p82) _____

(f) Squares & Square Roots [**No Tables/Calculators**] (Bk 1, 1st Edn., p16 – 17) _____

3. ALGEBRA (I)

WEEK 11 1. Use symbols to represent (Bk 1, 2nd Edn., p41 - 46 OR Toolsie Ch. 6, p214 - 222)

- (i) Numbers _____
- (ii) Operations _____
- (iii) Variables _____
- (iv) Relations _____

2. Translate *between* Algebraic Symbols & *worded expressions*.
(Bk 1, 2nd Edn., p91) _____

WEEK 12 – 14 3. Perform operations involving Directed Numbers (integers) (OR Toolsie p215, but not enough Examples & Problems)

- (a) Addition _____
- (b) Subtraction (Bk 1, 1st Edn., p82 - 90) _____
- (c) Multiplication _____
- (d) Division (Bk 1, 1st Edn., p150 - 154) _____

4. Perform the Four Basic Operations with Algebraic Expressions
(Bk 1, 2nd Edn., p89 - 93) _____

5. Substitute numbers for Algebraic Symbols in Simple Algebraic Expressions
(Bk 1, 2nd Edn., p93 OR Toolsie Ch. 6, p214 - 222) _____

6. Solve Linear Equations in One Unknown
[e.g. Including transposition & collection of numbers & variables;
Fractional Form] (Bk 1, 2nd Edn., p120 - 126 OR Toolsie p238: Ex. 6m,
Q 1 - 63) _____

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4. CONSUMER ARITHMETIC (I) OR Toolsie p170 - 179; p336 - 345; p349, Ex. 8g

WEEK 1 – 3 1. Calculate (Bk 1, 2nd Edn., p178 - 182)

- (i) Discount _____
- (ii) Sales Tax _____
- (iii) Profit or Loss _____

2. Express (Bk 1, 2nd Edn., p178 - 182)

- (i) A Profit _____
- (ii) Loss _____
- (iii) Discount _____
- (iv) Markup _____
- (v) Purchase Tax _____

as a Percentage of some Value

3. Solve problems involving (Bk 1, 2nd Edn., p178 - 182)

- (i) Marked Price (or Selling Price), _____
- (ii) Cost Price _____
- (iii) Percentage Profit _____
- (iv) Percentage Loss or _____
- (v) Discount _____

4. Solve simple problems involving payments by Installments as in the case of (Bk 1, 2nd Edn., p178 - 182)

- (i) Hire Purchase _____
- (ii) Mortgages _____

5. SETS (I) (Bk 1, 2nd Edn., p8 - 13) OR Toolsie p2 - 9

WEEK 4 & 5 1. (i) Describe a Set _____

(ii) Give Examples & Non-examples of Sets _____

(iii) Identify the Empty Set _____

(iv) Identify the Cardinal number (No. of elements) of a Set _____

(v) Distinguish between Finite & Infinite Sets _____

2. (i) list the members of a set from a given description _____

(ii) Use Set Builder Notation to describe a set _____

3. Identify & distinguish between sets which are Equivalent and sets which are Equal, *disjoint sets* _____
4. (i) Identify & Construct Subsets of a given set _____
 (ii) Calculate the number of subsets of a set of n elements _____
5. (i) Determine the Complement of a given set, given the Universal set _____
 (ii) Determine & Count the elements in the Intersection & Union of not more than three sets _____

6. MEASUREMENT (I) OR Toolsie p95 - 120; p150 - 151; p145 - 147

- WEEK 6** 1. Polygons & Circles (Bk 1, 2nd Edn., p95 - 104) _____
- Calculate the Perimeter of (Bk 1, 2nd Edn., p113 - 119)
- (i) A Polygon _____
 - (ii) A Circle & _____
 - (iii) A combination of Polygon & Circle _____

- WEEK 7 & 8** 2. Calculate the area of the region enclosed by (Bk 1, 2nd Edn., p133 - 142 & Bk 1, 1st Edn., p127 - 128)
- (i) a square, _____
 - (ii) a rectangle, _____
 - (iii) a triangle, _____
 - (iv) a parallelogram, _____
 - (v) a trapezium, _____
 - (vi) a rhombus, _____
 - (vii) a circle & _____
 - (viii) any combination of these _____
3. Estimate the area of irregularly-shaped plane figures (Bk 1, 2nd Edn., p133, Q1) _____

- WEEK 9 & 10** 4. Convert units of (Bk 1, 2nd Edn., p204), (Bk 1, 2nd Edn., p24 - 31)
- (i) Length _____
 - (ii) Area _____
 - (iii) Capacity _____
 - (iv) Time (including the 24-hour clock) & _____
 - (v) Speed _____
- within the SI system.
5. Use the appropriate SI unit of measure for (Bk 1, 2nd Edn., p24 - 31)
- (i) Area _____
 - (ii) Mass _____
 - (iii) Temperature (Degrees & Fahrenheit) _____
 - (iv) Other derived quantities _____

6. Solve simple problems involving Time (for example, Timetable Extracts such as Bus & Airline schedules) (Bk 1, 2nd Edn., p24 - 31) _____

WEEK 11 & 12 7. (i) Estimate the margin of error for a given measurement, *sources of error* (Bk 1, 2nd Edn., p105 - 112) _____

(ii) Give to a degree of accuracy (appropriate to the margin of error for a given measurement), the results of calculations involving numbers derived from a set of measurements (Bk 1, 2nd Edn., p105 - 112) _____

8. Solve problems involving Measurements (Bk 1, 2nd Edn., p105 - 112) _____

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7. GEOMETRY (I)

WEEK 1 – 3 1. Explain concepts relating to geometry:

- (i) Point _____
- (ii) Line _____
- (iii) Parallel lines & Perpendicular lines _____
- (iv) Line segment _____
- (v) Ray _____
- (vi) Curve _____
- (vii) Plane angles, *types of* (acute, reflex, right, straight) _____
- (viii) Faces _____
- (ix) Edges _____
- (x) Vertices _____

2. Use Instruments (Ruler & Protractor) to Draw & Measure (Bk 1, 2nd Edn., p81 - 88)

- (i) Angles _____
- (ii) Line segments _____

3. Solve problems using the properties of (Bk 1, 2nd Edn., p95 - 102; p47 - 56)

- (i) Lines (parallel, transversals) _____
- (ii) Angles
Vertically opposite _____
Alternate _____
Adjacent _____
Corresponding _____
Co-interior _____
Angles at a point _____
Complementary _____
Supplementary _____

8. STATISTICS (I)

WEEK 4 & 5 1. Construct a Frequency Table for a given set of Data
(Ungrouped & Grouped) (Bk 1, 2nd Edn., p154 - 161) _____

2. Draw (using compass & protractor as appropriate) & Use [Using Graph Paper]
(Bk 1, 2nd Edn., p154 - 161)

- (i) Line graph _____
- (ii) Pie charts _____
- (iii) Bar charts (Vertical & Horizontal) _____
- (iv) Pictograms _____

3. Interpret data presented in any Tabular, Graphical or Pictorial form _____

WEEK 6 – REVISION EXERCISES, TESTS & PAST PAPERS