# GRADE 7 NSC MATHEMATICS CURRICULUM

# TERM 1

## Unit 1 Numbers:

Operations on Real Numbers (Real numbers, Indices, Bases)

### Objectives

1. Describe different types of numbers in the real number system (Natural, Whole, Integer, Rational, Irrational)

2. Compare and order a set of numbers.

3. Perform the four basic operations, including multiple operations, on real numbers, mentally, using paper and pencil, and in problem situations.

4. Give reasonable estimates of the results of operations on numbers.

5. By rounding off, approximate a given number to the nearest thousandths, hundredths, tenths, tens, hundreds, thousands, etc.

6. Identify, without calculation, whole numbers divisible by 2, 3, 5, 6 and 9 (Divisibility rules).


## UNIT 2 Measurement:

Measuring concepts (parts of the circle, area and circumference)

### Objectives

1. Measure length, mass, time, temperature, volume, capacity using appropriate instruments.

2. Perform conversions within units and across related units (up to square units).

3. Find the perimeter of plane composite figures.

4. Find the area of plane composite figures.


## UNIT 3 Geometry:

Solids, Transformations

### Objectives

1. Identify and draw nets of solids.

2. Construct solids from nets.

3. State the relationships between an object and its image in a plane when it undergoes a translation in that plane.

4. State the relationships between an object and its image in a plane when it is reflected in a line in that plane.

5. State the relationships between an object and its image in a plane when it is rotated about a point (the centre of rotation), through a given angle, in that plane.

6. Identify and use angle, side and symmetry properties of triangles and quadrilaterals.

7. Construct, using appropriate geometric instruments, a circle of a given radius.

8. Construct, using ruler and compasses only:

  (a) line segments

  (b) perpendicular and parallel lines

  (c) line bisectors.

# TERM 2

## Unit 1 Numbers:

Properties of Arithmetic, Ratio and Proportion

## Objectives

7. Identify and use the following properties of arithmetic:

    a. Commutative

    b. Associative

    c. Distributive

8. Identify and use the following concepts:

    a. Identity

    b. Inverses

13. Write a fraction as a ratio and vice versa.

14. Compare two quantities using ratios.

15. Divide a quantity in a given ratio.

16. Identify quantities in proportion.

### UNIT 4 Algebra:

Making rules, Equations and Inequalities, Simplification

### Objectives

1. Formulate rules from their knowledge of arithmetic properties.

2. Define and identify variables, terms, constant, coefficient, expression, equation and operations.

3. Identify, add and subtract like and unlike terms.

4. Use symbols to represent quantities which vary.4. Use symbols to represent quantities which vary.

5. Write equations to illustrate word problems.

6. Solve simple linear equations using:

       (a) flow diagrams

       (b) the balancing method

7. Simplify algebraic expressions by grouping like terms.


### Unit 5 Statistics and Probability:

Measures of Central Tendency, Measures of Dispersion, Presentation of data

### Objectives

1. Find the mode, median and mean from raw data.

2. Calculate the range of a data set (from raw data or from a frequency table).

3. Construct and interpret simple frequency tables from a set of data.


# TERM 3

### Unit 1 Numbers:

Sets, Consumer Arithmetic

### Objectives

9. Use the language of sets (including disjoint, null, complement and subsets).

10. Identify and give examples of well-defined sets.

11. Illustrate data using Venn diagrams (at most two intersecting sets within the universal set).

12. Obtain and interpret information from Venn Diagrams.

17. Compute the total price given quantity and unit price.

18. Compute unit price given the quantity and total price.

19. Compute quantity given the total price and the unit price.

20. Identify 'best buys' and bargains by comparison of unit costs.

21. Calculate profit and loss in monetary and percentage terms.

22. Convert Jamaican dollars to other currencies and vice versa.


**UNIT 4 Algebra:**

Relations, Functions and Graphs

**Objectives**

8. Write coordinates of points as ordered pairs.

9. Plot ordered pairs of numbers on the Cartesian plane.

10. Read and identify points on the Cartesian plane.

11. Connect points on the Cartesian plane to form patterns.

12. Represent a mapping by:

      (a) a mapping rule,

      (b) a mapping diagram,

      (c) as a set of ordered pairs.

13. Recognize and give examples of each of the following type of mapping:

      a. one-to-one

      b. one-to-many

      c. many-to-one

      d. many-to-many.