ST. MAARTEN ACADEMY

MATHEMATICS DEPARTMENT

FORM 1

SYLLABUS FOR
2023 - 2024

Caring, Learning, Achieving, Excelling

TABLE OF CONTENTS

FORM ONE

GENERAL OBJECTIVES

1. To use set language, notation and Venn diagrams to describe sets and represent relationships between sets.

2. To apply knowledge of sets in number theory and computation.

3. To have a fuller understanding of the decimal numeration system.

4. To use number properties in solving problems.

5. To develop understanding of place value.

6. To become aware of the importance of accuracy in computation.

7. To use the method of estimation and see its importance in everyday life.

8. To improve problem solving skills.

TOPICS: FORM ONE   *TERM ONE*

1.	Ratio and Proportion	2 weeks
2.	Sets	4 weeks
3.	Number Theory	3 weeks
4.	Number bases	2 weeks
5.	Geometry: Lines	1 week

TERM TWO

1.	Geometry : Lines & Angles (continuation from term 1)	2 weeks
2.	Plane Shapes and Solids	4 weeks
3.	Measurement	3 weeks
4.	Perimeter/Area of Polygons	1 week
5.	Algebra (to be continued in term 3)	1 week

TERM THREE

1.	Algebra (continuation from term 2)	2 weeks
2.	Introduction to Statistics	2 weeks
3.	Indices	2 weeks
4.	Revision	

NB: For various reasons, often the last topic (or topics) from term one is/are carried over into term two; the same goes for term two to term three.

WK	TOPIC	OBJECTIVES	ASSESSMENT
1	**RATIO AND PROPORTION** Writing ratios Simplifying ratios Equivalent ratios	• Write a ratio to compare two quantities. • Recognize that a ratio has no units. • Write a ratio in its simplest form (including fractions). • Write equivalent ratio for a given ratio. • Solve problems involving ratios.	Class work Homework Quiz
2	Ratios Direct proportion Inverse proportion	• Solve problems involving ratios. • Recognize that proportion is an extension of ratios. • Solve problems involving ratios, direct proportion and inverse proportion.	Class work Homework Quiz Test
3	**SETS** Examples of sets Describing sets Listing sets Finite sets Infinite sets Empty sets Subsets Universal set	• Define a set and give examples of sets (include different sets of numbers) • Describe a set, list its elements and vice versa. (Use symbols $\notin$ and $\in$) • Identify finite, infinite and empty sets. (Use symbols $\emptyset$ or { }) • Identify equivalent and equal sets. (Use symbols) • Identify subsets of a given set. (Use symbols $\subset$ and $\not\subset$)	Class work Homework Quiz

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WK	TOPIC	OBJECTIVES	ASSESSMENT
4	Union Intersection Venn diagrams	• List the members in the union and intersection of two sets (include disjoint sets). Use the symbols ∩ and ∪ • Construct and use Venn diagrams to show subsets, intersections and union of two sets and read information from Venn diagrams	Class work Homework Quiz Test
5	Complement of a set Cardinal number	~~Introductory work on complement of a set.~~ Example $A^{/}$, $P^{/} \cap Q$, $(A \cup B)^{/}$, etc • Write the cardinal number of a set. Use the notation n(A); extend to n(A∩B), n(B$^{/}$), n(P∪R$^{/}$), etc.	Class work Homework Quiz
6	Number of subsets for a given set	• List the subsets of a given set which has n elements. (n $\leq$ 4) • Derive the formula for the number of subsets in a given set. • Use the formula derived above to state the number of subsets in any given set	Class work Homework Quiz Test
7	**NUMBER THEORY** Define integers Order integers Inequalities	• Define an integer • Differentiate between negative numbers and negative integers. • Order real numbers on a number line. • Compare real numbers using the inequality signs. • Identify and write examples of the use of integers, including temperature figures.	Class work Homework Quiz

WK	TOPIC	OBJECTIVES	ASSESSMENT
8	Commutative law Associative law Distributive law Inverse of a number Identity of a number	• Identify and apply commutative, associative and distributive laws in performing the four basic operations. • Use the above laws in simplifying computational tasks. • Identify the properties of inverse and identity. • Write and solve problems of their own.	Class work Homework Quiz Test
9	Inverse Identity Problem writing	• Identify the properties of inverse and identity. • Write and solve problems of their own.	Class work Homework Quiz Test
10	**NUMBER BASES** Place values Converting numbers	• State the place value of a digit/numeral in a number from base 2 to base 10. • Convert from base ten to another base, and vice versa	Class work Homework Quiz
11	**NUMBER BASES**	• Add, subtract and multiply in different bases .	Class work Homework Quiz
12	**GEOMETRY-LINES** Line Line segment ray Types of straight line Drawing lines	• Define a line, line segment and a ray. • Name the types of straight lines; vertical, oblique (or slanted), horizontal • Name lines using capital letters • Define parallel, perpendicular and intersecting lines. • Draw lines of given lengths.	Class work Homework Quiz Test

WK	TOPIC	OBJECTIVES	ASSESSMENT
1	**GEOMETRY- ANGLES**	• Define an angle. • Name angles using capital letters. • Estimate the size of an angle • Define and identify the following angles:- Acute, right, obtuse, straight, reflex, complete turn. • Measure angles using a protractor. • Draw (construct) angles using a protractor and a ruler.	Class work Homework Quiz
2	**GEOMETRY- LINES GEOMETRY- ANGLES**	. • Define and identify complementary, supplementary and vertically opposite angles. • Calculate the sizes of missing angles in certain angle relationships (using the above knowledge).	Class work Homework Quiz Test
3	**PLANE SHAPES & SOLIDS**	• Recall that a plane shape is a flat surface . • Recognise that circles, triangles, quadrilaterals, pentagon etc, are plane shapes. • Define each of the following triangles:-Right-angled, acute-angled, obtuse-angled, isosceles, equilateral and scalene.	Class work Homework Quiz
4		• Construct triangles using ruler and protractor • Recall the types of quadrilaterals • Recall the names of other polygons	Class work Homework Quiz
5		• Draw plane figures given the number of sides and/or angles. • Recall the names given to special plane figures. • Define a solid. • Identify faces, edges and vertices of a solid. • Draw a 3-dimensional representation of a cylinder, cube, cone, truncated cone, sphere, types of pyramids and types of prisms	Class work Homework Quiz
6		• Draw the net of a solid • Apply the above to problems involving solids.	Class work

			Test
7	**MEASUREMENT-LENGTH**	• Convert units of length within the S. I. (metric) system. • Solve problems involving S. I. Units of lengths. • Use commonly used Imperial Units of length (eg. mile, yard, feet, inch). • Convert some commonly used Imperial Units of length to metric units and vice versa. • Solve simple problems involving metric-imperial equivalents.	Class work Homework Quiz
8	**MEASUREMENT-MASS**	• Convert units of mass within the S. I. (metric) system. • Use commonly used Imperial Units of mass (eg. pounds (lbs) and ounces) • Use some metric-imperial equivalents. (eg. 1 lb = 454 grams)	Class work Homework Quiz Test
9	**MEASUREMENT-TIME**	• Use units of time correctly and convert correctly. • Use the 12-hour and 24-hour clock times. • Solve simple problems involving time.	Class work Homework Quiz
10	**PERIMETER & AREA OF POLYGON**	• Define perimeter and compute the perimeter of composite shapes. • Define area and compute the area of composite shapes. (including rectangles) • Estimate the area of an irregular shape by counting squares.	Class work Homework Quiz
11	**ALGEBRA**	• Recognise the significance of symbols • Explain the meaning of a variable • Define an algebraic expression • Write an algebraic expression from a word statement • Explain the meaning of a term	Class work Homework Quiz

FORM ONE

WK	TOPIC	OBJECTIVES	ASSESSMENT
1	**ALGEBRA**	• Simplify algebraic expressions by simple addition, subtraction, multiplication and division. • Solve simple linear equations (exclude negative solutions).	Class work Homework Quiz
2	**ALGEBRA**	• Differentiate between an algebraic expression and an equation. • Solve word problems using equations • Substitute numbers for variables in simple expressions and evaluate.	Class work Homework Quiz Test
3	**STATISTICS**	• Define the term statistics • Collect data through surveys • Tally a given set of data • Construct a simple frequency table for a given set of data.	Class work Homework Quiz
4	**STATISTICS**	• Represent data on a bar graph. • Read and analyse information depicted on pictographs and bar charts. • Calculate mean, mode and median of a set of data (also from a frequency table)	Class work Homework Quiz Test
5	**INDICES**	• Explain, in their own words, the meaning of "index" and "co-efficient" • Identify the index and coefficient of an algebraic term • Derive the following laws of indices: (a) $a^m \times a^n = a^{m+n}$ (b) $a^m \div a^n = a^{m-n}$ (c) $(a^m)^n = a^{m \times n}$	
6		• Apply the above laws to simplify algebraic and numerical expressions using positive indices.	Class work Homework Test

LIST OF TEXT BOOKS

Mathematics for Caribbean Schools,Third Edition, Bk. 1; A. Foster, T. Tomlinson

Mathematics for Caribbean Schools,Third Edition, Bk. 2; A. Foster, T. Tomlinson

Mathematics for Caribbean Schools,Third Edition, Bk. 3; A. Foster, T. Tomlinson

Mathematics for Caribbean Schools,Third Edition, Bk. 4; A. Foster, T. Tomlinson

Nelson Caribbean Mathematics, Bk. 1 ; M. Folkes, M. Maxwell

Nelson Caribbean Mathematics, Bk. 2 ; M. Folkes, M. Maxwell

Nelson Caribbean Mathematics, Bk. 3 ; M. Folkes, M. Maxwell

Oxford Mathematics for the Caribbean, Fourth Edition; N. Goldberg, C. King, C. Lutchman.

MATHEMATICS , A COMPLETE COURSE, WITH CXC QUESTIONS, Volumes 1 & 2; Raymond Toolsie

CXC Basic Mathematics, A Revision Course, Second Edition; A. Greer, C.E. Layne

CXC Mathematics For Today, Volumes 1&2; G. Buckwell, R. Solomon, T. Chung Harris