NATIONAL EXAMINATIONS COUNCIL (NECO)

BASIC EDUCATION EXAMINATION (BECE)

Mathematics

Syllabus

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The BECE Sylabus Was Sourced From The 3rd Edition Of **BASIC EDUCATION EXAMINATION (BECE)** For JSS1-3 Students

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ABOUT US

Syllabus NG is the premier destination for all educational resources and exam preparation materials in Nigeria and the world. Our mission is simple yet impactful; to empower learners of all ages and backgrounds with the resources they need to succeed academically. It is always better to work smarter than to work harder.

We offer educational consulting, research, and counselling services for individuals, schools, and institutions.

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ABOUT BECE

The Basic Certificate Examination (BECE) syllabus is designed to guide educators on what to teach the students to prepare them for the BECE examination. This syllabus will enhance the effective conduct of the examination for the 9-year Basic Education Curriculum.

This BECE syllabus is the official syllabus designed by the National Examination Council(NECO_, whose headquarter is in Minna, Niger State. This syllabus is the third edition, which is to be used starting in 2021.

It is an improvement of the two previous syllabuses. It covers all the subjects that are to be taken in BECE, stating its themes, topics, objectives, marking guide, and scheme to guide educators and also the students in preparing for BECE.

Eligibility

The following requirements need to be fulfil in order to be qualified to sit for the BECE:

- The student must be a Bona fide student in their final year in Junior Secondary from a Federal /State college or a Private school recognized and approved by the ministries of Education.
- The student must be presented by a Federal/state school or a private college that has been certified to be capable and able to conduct the examination.
- The student must have a complete Continuous Assessment(CA) score that will be submitted to the National Examinations Council(NECO) two weeks before the end of the examination.

BECE Syllabus

The Basic Education Certificate Examination (BECE), Also known as the Junior Secondary Certificate Examination (JSCE) Syllabus explains in detail the expectations required from candidates writing the exam.

This document consists of 18 subject syllabi. Six(6) of the 18 are Nigerian Languages, in which candidates are required to choose only one.

Candidates sitting for BECE are required to choose a minimum of eleven (11) subjects and a maximum of thirteen(13).

We've covered in detail, the BECE syllabus and recommended textbooks for all the 17 Subjects as follows;

1. English Studies
2. Mathematics
3. Nigerian Languages (Edo, Efik, Hausa, Ibibio, Igbo, & Yoruba)
4. Basic Science & Technology (BST)
5. Pre-Vocational Studies (PVS)
6. National Value Education (NVE)
7. Cultural & Creative Arts (CCA)
8. Business Studies
9. French Language
10. Arabic Language
11. Christian Religious Studies (CRS)
12. Islamic Studies
13. History

NB: The BECE exams indicated here are the ones organised by NECO and administered to Federal, State, and Private schools in Nigeria.

BECE Grading Stage

The following are the grades used; A,B, C, P and F and they will be arranged in order of merit below.

- A-Distinction(Highest Pass Grade)
- B-Very Good
- C-Credit
- P-Pass
- F-Fail

SN	SCORE	GRADE
1	70-100	Distinction
2	60-69	Very Good
3	50-59	Credit
4	40-49	Pass
5	0-39	Fail

Registration

After ensuring the student is eligible to sit for the Basic Education Certificate Examination(BECE), they will be expected to pay a non-refundable registration fee which will be specified by the Examination Council. The registration is done by the Head of School on their candidates behalf.

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Chapter One
Aims & Objectives

Introduction

This BECE Mathematics syllabus is designed to make you familiar with the format of the examination. It serves as a guide to both candidates and educators to plan their learning and teaching schedules to make the candidate ace the examination.
The following are the materials needed and will be allowed into the examination hall for this subject: Candidates are expected to bring their calculator (Non-Programmable)into the exam hall as sharing of calculators and other materials is prohibited. Candidates should also ensure they come to the examination hall with their NECO Mathematical/Statistical Table as it will be used during the examination.

Aims & Objectives

This syllabus aims to serve as a guideline to candidates of The Basic Education Certificate Examination. Some of the objectives of The Basic Education Certificate Examination are; To make the candidates recall mathematical formulas and concepts as they will serve as a foundation in their next class, and the candidates are also expected to apply the concepts to real-life situations.

Sections & Marking Guide

The BECE Mathematics exam comprises three compulsory papers: Papers 1, 2, and 3. Below is the breakdown of the papers the number of questions they contain and their marks.

PAPER 1&2

Papers 1 and 2 consist of sixty multiple-choice questions each. The questions from Paper 1 will be Number and Numeration, Basic Operations, and Geometry and Measurement. The questions from Paper 2 will come from Algebraic processes and Everyday Statistics.

PAPER 3

Paper 3 comprises two compulsory questions and it will be set from any of the topics covered in the syllabus.

N.B The total mark for the three papers will cover 70% of the exam score, the remaining 30% will be derived from the candidate's continuous assessment submitted by the school management.

BECE Grading Stage

The grades that were used are A, B, C, P, and F. They will be listed below in order of merit.

- A-Distinction(Highest Pass Grade)
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Chapter Two

Syllabus

BASIC EDUCATION CERTIFICATE EXAMINATION (BECE) MATHEMATICS SYLLABUS			
S/N	**THEMES**	**TOPICS**	**OBJECTIVES**
1	**NUMBER AND NUMERATION**	**I.Whole Numbers**	a. Counting in: i. millions and billions ii. trillions b. Quantitative reasoning. c. Whole numbers in standard form. d. Decimal numbers in standard form. e. Prime factors. f. Prime factorization. g. Squares and square roots. h. Binary number system. i. Using computer to do simple mathematical calculations. j. Translation of word problem into numerical expressions. k. Expressions involving brackets and fractions, Direct and inverse proportion. m. Application of direct and inverse proportions. n. Simple interest o. Compound interest.
		IL Lowest Common Multiple (LCM)	LCM of whole numbers
		III. Highest Common Factor	a. HCF of whole numbers. b. Quantitative reasoning
		IV. Counting in base two	Counting in groups of twos.
		V. Conversion of base 10 numerals to binary numbers	Converting numbers 1-10 to base

		VI. Fractions	a. Identifying Equivalent fractions. b. Quantitative aptitude reasoning. c. Equivalent fractions. d. Ordering of fractions. e. Conversion of fractions to decimals and vice-versa. f. Conversion of fraction to percentage and vice-versa. g. Expressing fractions as ratios, decimals and percentages. h. Quantitative reasoning on fractions, ratios and n es.
		VII. Rational and non rational numbers	Rational and non-rational numbers.
2	**BASIC OPERATION**	**I. Addition and subtraction**	a. Addition and subtraction of numbers and Place values. b. Use of number line. c. Addition and subtraction of positive and negative integers d. Everyday application of positive and negative integers
		Il. Addition and subtraction of fractions	a. Addition and subtraction of fractions. b. Word problems on addition and subtraction of fractions.
		Ill. Multiplication and division of fractions	a. Multiplication of fractions. b. Division of fractions. c. Word problems involving multiplication and division of fractions.

		IV. Estimation	a. Estimation of dimensions and distances. b. Estimation of capacity and mass of objects. c. Estimation of other things, e.g., age, time etc. d. Quantitative reasoning involving estimation.
		V. Approximation	a. Approximating values of addition and subtraction. b. Approximating results of multiplication and division. c. Rounding off numbers to the nearest 10. 100 and 1000. d. Application of approximation in everyday life. e. Approximation of numbers: i. Decimal places ii. Significant figures f. Quantitative reasoning
		VI. Addition of numbers in base 2 numerals	Addition or two or three 3. digit binary numbers
		Vll. Subtraction of numbers in base 2 numerals	Subtraction of two or three 3- digit binary numbers.
		Vlll. Multiplication of numbers in base 2 numerals	Multiplication of two 2-digit binary numbers.
		IX. Transactions in the homes and offices	a. Household arithmetic. b. Commercial arithmetic.

		X. Multiplication and division of directed numbers	a. Square and square root tables. b. Charts, records and schedules. c. Multiplication and Division of directed numbers.
		Xl. Division of numbers in base 2 numerals	Division or two to 3-digit binary numbers
3	**GEOMETRY AND MEASUREMENT**	**I. Plane shapes**	a. Similarities and differences between the following: square, rectangle, triangle, trapezium, parallelogram and circle. b. Perimeter of regular polygon, square, rectangle, triangle, trapezium, parallelogram and circle. c. Area of regular plane shapes such as; squares, rectangles, paralelograms etc.
		II. SIMILAR SHAPES	a. Similar shapes. b. Enlargements and scale factor. c. Lengths, areas and volumes of similar figures. d. Basic properties of cubes and cuboid
		III. Three dimensional figures	a. Basic properties of cubes and cuboids. b. Basic properties of pyramids and cones. c.Basic properties of cylinders and spheres. d. Volume of cubes and cuboids.

		IV. Construction	a. Construction of parallel and perpendicular lines. b. Bisection of a given line segment. c. Construction of angles 90, 60, 45 and 30 degrees. d. Constructing tnangles. e. Bisecting angles. f. Copying given angles. g. Construction of simple plane shape
		V. Angles	a. Measurement of angles. b. Identification and properties of: i. Vertically opposite ii. Adjacent iii. Alternate iv. Corresponding angles c. Identification and properties of angles at a point and angles on a straight line. d. Sum of angles of a polygon. e. Angles of elevation and depression.
		VI. Bearing	Bearing
		VII. Trigonometry	a. The sine, cosine and tangent of an acute angle. b. Application of Trigonometric ratios.
		VIII. Area of plane figures	a. Area of triangles. b. Area of parallelogram. c. Area of trapezium. d. Area of circles. e. Word roblems involving area.

4	**ALGEBRAIC PROCESSES**	**I. Use of Symbols**	a. Open sentences b. Use of letters to represent symbols or shapes in open sentences. c. Solving open sentences with two arithemetic operation. d. Word problem involving use of symbols e. Quantitative aptitude.
		II. Signification of algebraic expressions	a. Like and unlike terms in algebraic expressions b. Identification of coefficient of terms of algebraic expressions c. Basic arithemetic applied to algebraic expressions or similar terms. d. Collection and significations of like and unlike terms in algebraic expressions e. Quantitative reasoning.
		III. Simple equations	a. Translations of word problems into equations and vice versa. b. Solutions of simple equations c. Problems of simple eqautions.

		IV. Algebraic expressions	a. Expanssion of algebraic expressions. b. Factorization of simple algebraic expressions c. Expansion and factorization of quadratic expression d. Quantitative reasoning e. Algebraic expressions of fractions with monomial denominators f. Word problem leading to simple algebraic fractions.
		V. Linear inequalities	a. Linear inequalities in one variable b. Graphical representation of solutions of linear inequalities in one variable c. Word problems.
		VI. Graphs	a. Plotting points on the Cartesian plane b.Graph of linear equation in two variables c. Linear Graphs from real life situations d. Quantitative reasoning
		VII. Factorization	a. Factorization of expression of the form: i. ax+ay ii. 3m+pq+3p+mp iii. a2-b2 iv. a 2-2ab+b2 b. Word problems involving factorization
		VIII. Simple equations involving fractions	a. Simple equations involving fractions b. Word problem leading to simple equation involving fractions.

		IX. Simultanous linear equations	a. Compilation of table of values b. Graphical solution of simultanous linear equations in two variables c. Solution of simultanous linear equration using elimination methods d. Solution of simultanous linear equration using subtitution methods
5	**EVERYDAY STATISTICS**	**I. Need for statistics**	a. Purpose of statistics b. Need for collecting data for planning purpose c. Collectiion of data
		II. Data collection	Collect data in the class a. Median b. Mean c. Mode
		III. Data presentation	a. Ordered presentation of data b. Frequency table c. Pie Chart d. Chart, records and schedule
		IV. Probability	a. Occurance of chance events in everyday life b. Probability of chance events.
		V. Measure of central tendecy	a. Revision of previous work on mean, median and mode. b. Median. c. Mode. d. Mean. e. Application of measures of central tendecy to analyze any given information.

		VI. Measure of dispersion	a. Range.

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Chapter Three
Frequently Asked Questions

What is the source of this Mathematics syllabus?
The BECE Mathematics syllabus is derived from the 9-Year Basic Education Curriculum, developed by the Nigerian Educational Research and Development Council (NERDC) and published in 2012.

What are the expected materials to bring for the examination?
Each candidate is expected to bring a complete set of mathematical instruments and NECO mathematical/statistical table for the papers. Sharing of materials during the exam is strictly prohibited.

What should I do if I fail BECE Mathematics?
You can resit BECE Mathematics if you fail, you will need to pay a nonrefundable fee.

How long does it take to receive the exam results?
The timeframe for the release of BECE results varies, you will be notified once the result is released.

Are there any restrictions on the type of calculator allowed?
Programmable calculators are not allowed, only basic scientific calculators are permitted.

What is the passing grade for the exam?
The grades used are A, B, C, P, and F. The list passing grade is C. Candidates should ensure that they pass and study well to ace their exam.

Are there any recommended textbooks to help prepare for the exam?
NECO will release reviewed recommended textbooks that will be used for study and preparation for the exam. Candidates should ensure they study the list of books recommended.

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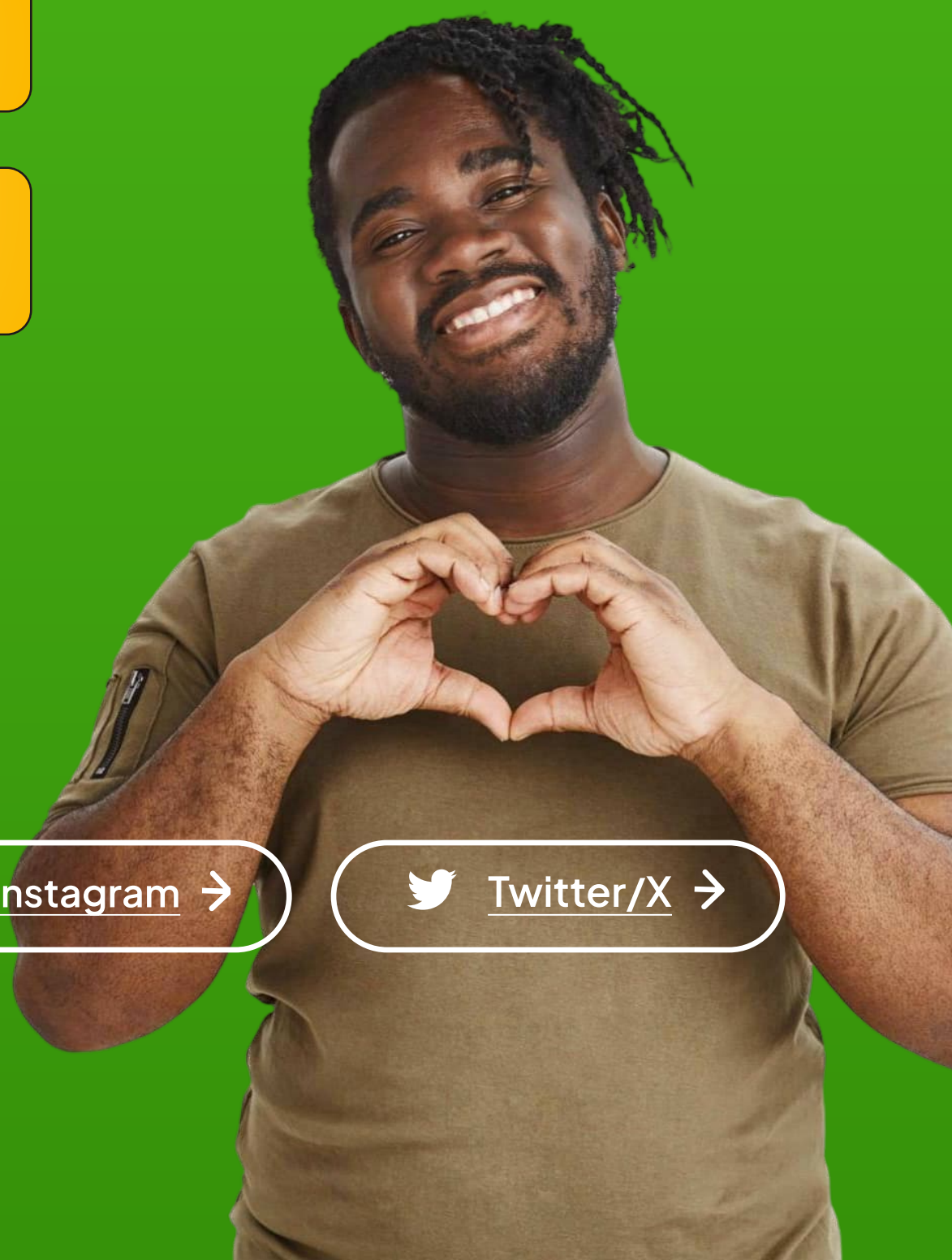

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