**PRESIDENT’S OFFICE-**

**REGIONAL ADMINSTRATION AND LOCAL GOVERNMENT**

**SCHEME OF WORK**

SCHOOL’S NAME: ...............................................................

TEACHER’S NAME: ..................................

CLASS: **FORM TWO**

SUBJECT: **BASIC MATHEMATICS**

TERMS**: I AND II**

YEAR: **2025**

| **COMPETENCE** | **OBJECTIVES** | **MONTH** | **WEEK** | **MAIN TOPIC** | **SUB TOPIC** | | | **PERIOD** | **TEACHING ACTIVITIES** | | | | | | **LEARNING ACTIVITIES** | **T/L-MATERIALS** | | **REFERENCE** | **ASSESSMENT** | **REMARKS** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| By the end of Form Two Course the student should have developed competence in finding the relationships among logarithms, exponents and radicals | By the end of Form Two Course the student should be able to derive and apply the laws of exponents and radicals in mathematics manipulations | **JANUARY** | **2** | **EXPONENTS & RADICAL** | **Exponents** | | | **6** | -To guide student to discuss the meaning and the laws of exponents as displayed on the prepared wall chart.  -To guide students to discuss how to derive and use the laws of exponents.  -To lead students in applying the laws of exponents in related computations. | | | | | | -The students to discuss the displayed laws in order to understand them.  -The students to derive and use the laws of exponents.  -The students to apply laws of exponents in computations | -Wall charts  -Mathematical table  -Number chart | | **TIE(2005):Secondary Basic Mathematics, Book Three.Educational Book**  **Publishers LTD,Dar Es Salaam** | student to explain the meaning and the laws of exponents & how to derive and use the laws of exponents. |  | |
| **3**  **&**  **4** | **Radical** | | | **6** | -To lead students to discuss the concept of radicals using exponents.  -To guide the students to find the squire roots and cube roots of numbers by prime factorization method. | | | | | | -The students to participate in the discussion to familiarizes the concepts.  -The Students to find the squire roots and cube roots of numbers by prime factorization method | -Cube root tables  -Squire root tables  -Multiplication table  -Calculators  -mathematical table | | students to explain the concept of radicals using exponents, to find the squire roots and cube roots of numbers by prime factorization method, to add, subtract, multiply, and divide radicals. |  | |
| -To demonstrate how to add, subtract, multiply, and divide radicals. | | | | | | -The students to solve problems related to operations on radicals |
| -To guide the students to rationalize the denominator and use this methods to simplify radicals to simplest. | | | | | | -The students to rationalize the denominator and use this method to simplify radicals to simplest |
| -To lead students to read the square roots of numbers using mathematical tables and calculators. | | | | | | -The students to read the square roots of numbers using mathematical tables and calculators. |
| **FEBRUARY** | **1** | **Transposition of formula** | | | 6 | -To demonstrate on how to rearrange the letter subject of the formula. | | | | | | -The students to rearrange the letter subject of the formula | -Mathematical formula  -text | | students to rearrange the letter subject of the formula |  | |
| To guide students to discuss on transposition of formula with roots and powers. | | | | | | The students to transpose formula with roots and powers |
| By the end of Form Two Course the student should have the ability to Ability to solve algebraic problems | By the end of Form Two Course the student should be able to factorize and solve problems. | **FEBRUARY** | 2 | **2. ALGEBRA** | **Binary operations** | | | 2 | To demonstrate how to perform binary operations | | | | | | The students to perform the binary operations | Text on binary operations | | The students to perform the binary operations  TIE(2005):Secondary Basic Mathematics, Book Three.Educational Book Publishers LTD,Dar Es Salaam  TIE(2005):Secondary Basic Mathematics,  Book Three.Educational Book  Publishers LTD,Dar Es Salaam |  | |
| 2 | **Brackets in Computation** | | | 2 | To lead students to discuss the rules governing basic operations applied to algebra known as “BODMAS” and perform the operations involving brackets. | | | | | | -The students to discuss the rules governing basic operations applied to algebra known as “BODMAS” and perform the operations involving brackets. | Text on brackets | | students to explain the rules governing basic operations applied to algebra known as “BODMAS” and perform the operations involving brackets |  | |
|  |  | 2 | To lead students to simplify the algebraic expressions. | | | | | | -The students to simplify the algebraic expressions. |
|  |  | 3 | **Quadratic expressions** | | | 6 | To lead students to discuss how to multiply two linear factors to form Quadratic expressions | | | | | | -The students to multiply two linear factors to form Quadratic expressions | -Coloured chalks  -Manila papers  -Marker pens | | students to multiply two linear factors to form Quadratic expressions&re-arrange quadratic expressions in the general form |  | |
|  |  | To explain the general form of a quadratic expression  Where a,b,c are real numbers and a#c | | | | | | -The students to re-arrange quadratic expressions in the general form |
|  |  | 4 | **Factoriza-tion** | | | 6 | To guide students on how to factorize linear expressions | | | | | | -The students to factorize linear expressions |  | | students to factorize linear expressions |  | |
|  |  | To guide students on how to factorize the quadratic expressions by inspection, splitting the middle term, difference of two squires, perfect squires. | | | | | | -The students to work in groups on the four techniques of factorization and present in class. |
| By the end of Form Two Course the student should have Ability to solve to solve quadratic equation | - By the end of Form Two Course the student should Students should be able to derive quadratic formula and apply it solve problems. | **MARCH** | **1** | **QUADRATIC EQUATIONS** | **Solving equation** | | | 6 | To lead students to discuss the theorem of the factors of zero | | | | | | The students to discuss the theorem of the factors of zero.  -To find the solution of a quadratic equation using the theorem of the factors of zero. |  | | students to analyse the theorem of the factors of zero&find the solution of a quadratic equation using the theorem of the factors of zero. |  | |
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| **2** |  | **General solution of Quadratic Equation** | |
| By the end of Form Two Course the student should have the ability to find the relationships among logarithms, exponents and radicals | By the end of Form Two Course the student should be able to Derive and apply the laws of logarithms in mathematics manipulations | **MARCH** | 4 | **LOGARITHMS** | **Standard form** | |  | | |
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|  | 3 | **Law of logarithms** | |  | | |
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| **MIDTERM TEST** | | | | | | | | | | | | | | | | | | | | | |
| **MIDTERM BREAK 28TH MARCH – 08TH APRIL 2024** | | | | | | | | | | | | | | | | | | | | | |
| By the end of Form Two Course the student should have the ability to find the relationships among logarithms, exponents and radicals | By the end of Form Two Course the student should have the ability to Derive and apply the laws of logarithms in mathematics manipulations | **APRI**  **L** | 2 | **LOGARITHMS** | **Law of logarithms** | 3 | | |  | | | | | |  | |  |  |  |  | |
| 2 |  | **Tables of logarithm** | 3 | | |  | | | | | |  | |
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| By the end of Form Two Course the student should have the ability to prove apply congruency and similarity of figures. | By the end of Form Two Course the student should be able to prove and apply congruency and similarity of figures. |  | 3 | **CONGRUENCE** | **Congruence of Triangles** | 6 | | |  | | | | | |  | |  |  |  |  | |
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| To identify similar polygons | By the end of the topic students should be able explore the properties of similar figures. |  | 4 | **SIMILARITY** | **Similar figures** | 6 | | |  | | | | | |  | |  |  |  | | |  | | |
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| have to ability to do scale drawing and geometrical transformations | By the end of Form Two Course the student should have the ability to represent reflections, rotations, rotations, translations and enlargement geometrically | MAY | 1 | **GEOMETRICAL TRANSFORMATIONS** | **Reflection** | 6 | | |  | | | | | |  | |  |  |  | | |  | | |
|  | 1  1 | **Rotations** | 6  6 | | | To lead students to investigate the characteristics of a rotated object on a plane. | | | | | | The students to state and write the properties of rotation in a plane. | | Text book  Objects  diagrams |  | The students to state and write the properties of rotation in a plane  students to draw translations points, lines and polygons. |  | | |  | | |
| To guide students to draw rotations of points, line and polygons using mathematical sets. | | | | | | The students to draw rotations of points line and polygons | | Text book  Objects  diagrams |
| **Translation** | To lead to discuss translation by sliding real object, lines and figures on the plan without turning them. | | | | | | -The students to state and write properties of translation | | Text book  Objects  diagrams |
| The teacher to lead students to discuss how to draw projection lines and simple figures to show translation. | | | | | | The students to draw translations points, lines and polygons. | | Text book  Objects  diagrams |  | | |
|  |  |  | 2 |  | **Enlargement** | **3** | | | -The teacher to lead student to discuss the relationship between similarities and hence develop scale of enlargement. | | | | | | -The students to solve problems related to developing scale factor | | -Mathematical set  -Different figures/objects |  | students to solve problems related to developing scale factor, to write the properties of enlargement and construct enlargement figure |  | | |
|  | 2 | **3** | | | To lead student to discuss how to identify enlarge figures. | | | | | | -The students to brainstorm and write the properties of enlargement | |
|  | | | -The teacher to demonstrate to students how to construct enlargement of a given figure | | | | | | The students to construct enlargement figure | |
| By the end of Form Two Course the student should have the ability to verify laws and prove theorems | By the end of Form Two Course the student should be able to apply the proven theorem in computations. | **Llll** | **3** | **PYTHAGORAS THEOREM** | **Proof of Pythagoras theorem** | **3** | | | Leading students to:-Investigate the illustration of Pythagoras theorem ad prove the Pythagoras theorem.  Solve problems related to right angled triangle. | | | | | | The students to prove the Pythagoras theorem | | -Manila paper  -Marker pens  -text | students to prove the Pythagoras theorem |  | | | |  | |
| **3** |  | **Application of Pythagoras theorem** | **3** | | | Leading students in groups to:-  Discuss how to solve real life problems by Pythagoras theorem | | | | | | - The students to guide students to solve problems related to right angled triangle. | | explain how to solve real life problems by Pythagoras theorem |  | | | |
| The students to solve real life problem using Pythagoras theorem | |
| **TERMINAL EXAMINATIONS** | | | | | | | | | | | | | | | | | | | | | | | |
| **TERMINAL LEAVE 31THMAY – 01TH JULY 2024** | | | | | | | | | | | | | | | | | | | | | | | |
| By the end of Form Two Course the student should have the ability to find the relationship between right triangles and trigonometric ratios | By the end of Form Two Course the student should be able to use the relationship of right triangle and trigonometric rations in computations. | **JULY** | 4 | **TRIGONOMETRY** | **Trigonometric ratios** | 6 | | |  | | |
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| **AUGUST** | **1** | **Trigonometric ratios of special angles.** | 6 | | |  | | |
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| **2** | **Trigonometric tables** | 6 | | |  | | |
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| 3 | **Angles of elevation and depression** | 6 | | |  | | |
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| By the end of Form Two Course the student should have the ability to ability set operations in solving problems | By the end of Form Two Course the student should be able to perform operations on sets and apply sets to solve problem. | **AUGUST** | 4 | **SETS** | **Description of a set** | **6** | | |  | | |
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| **MIDTERM TEST** | | | | | | | | | | | | | | | | | | | | | | | |
| **MIDTERM BREAK 30THAUGUST – 16TH SEPTEMBER 2024** | | | | | | | | | | | | | | | | | | | | | | | |
|  |  | **SEPTEMBER** | **4** | **SETS** | **Types of sets** | 3 | | | Leading students in groups of 4 to brainstorm about finite and infinite sets and hence establish their differences. | | | | | | The students to brainstorm about finite and infinite sets and hence establish their differences. | | -Playing cards  -Teams of players  -Real numbers  -Dinner set  -Playing cards  -Teams players  -Real numbers  -Dinner sets |  | The students to brainstorm about finite and infinite sets and hence establish their differences.,  to define universal sets and empty sets and solve problems related to empty set and Universal |  | | | |
| Guiding students to establish the concepts of universal set and empty set. | | | | | | The students to define universal sets and empty sets and solve problems related to empty set and Universal | |
| Guiding students to compare sets in order to determine equivalent of equal sets. | | | | | | The students to compare finite and infinite sets | |
| Guiding students to compare sets in order to determine equivalent of equal sets. | | | | | | The students to compare equivalent and equal sets | |
|  |  |  | 4 |  | **Subsets** | 3 | | | Leading students in groups to define the term subset. | | | | | | The students to give example of subsets in their surrounding | |  | students to give example of subsets in their surrounding, to give example of subsets in their surrounding, to apply the formula to calculate the number of subsets for a set with n elements.  students to apply the formula to solve related problems |  | | | |
| Guiding students to discuss how subsets of a set can be listed. | | | | | | The students to do exercise on listing subsets of given sets. | |
| Guiding students to discuss the meaning of proper and improper subsets using the listed subsets and use of the symbols | | | | | | The students to do exercise of differentiate proper and improper subsets | |
| Guiding students to discuss how to establish the number of a set with members as 2 | | | | | | The students to apply the formula to calculate the number of subsets for a set with n elements. | |
|  |  | **OCTOBER** | 1 | **Operations with sets** | 2 | | | Leading students in groups of 4 to use real life examples to discuss the union of two sets and the use of the symbol  discuss how to find the compliment of a set given a universal set.  To demonstrating how to derive formula n (AUB) =n (A) +n(B)-n(AnB) | | | | | | The students to do exercises involving the union of to set. | |
| -The students to do exercise involving the compliment of sets | |
|  |  | The students to apply the formula to solve related problems | | Written text |
|  |  | 1 | **Venn diagrams** | 2 | | | Leading students in groups of 4 to to emonstrate how to present sets using Venn diagrams | | | | | | -The students to present sets by Venn diagram | | -Venn  diagrams  -Real objects | students to solve problems involving at most two sets using Venn diagrams |  | | | |
| To lead students to show hoe diagrams are used in solving simple problems involving operation with two sets. | | | | | | -The students to solve problems involving at most two sets using Venn diagrams | |  |
|  | | | -The teacher to guide students to solve word problems involving operations on sets, compliment of sets and Venn diagram | | | | | | -The students to solve word problems involving operations on sets compliment of sets and Venn diagrams | |  |
| By the end of Form Two Course students should have developed competence in managing use of knowledge of statistics to interpret and compute statistic data in real life situation | By the end of Form Two Course Students should be able to collect data and interpret them using pictograms, Line Graphs | **OCTOBER** | 1 | **STATISTICS** | **Pictograms** | 2 | | |  | | |
|  | | |  | | |
| 2 |  | **Bar chart** | 2 | | |  | | |
| 2 |  | **Line graphs** | 2 | | |  | | | |  |
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|  |  |  | 2 | **Pie chart** | 2 | | |
|  |  |  | 3 |  |  | 2 | | |
|  |  |  |  | **Frequency Distribution tables** |  | | | |
|  |  | **Frequency polygons** | 2 | | |  | | | |
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| 4 | **Histograms** | 2 | | |  | |  | | |
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| **Cumulative frequency curves** | 2 | | | to demonstrate to students how to construct cumulative f. distribution tables form f. distribution tables | | | | | | -The students to construct cumulative frequency distribution tables | |  |  | students to construct cumulative frequency distribution tables |  |  | | | |
|  |  | **Interpret a cumulative frequency curve** | 2 | | | To lead students to reduce information from cumulative f. curve by using a cumulative f. distribution table and cumulative f. curve | | | | | | -The students to interpret cumulative frequency distribution tables and cumulative frequency curve. | | -Graph paper  -Graphs from papers and Journals | students to interpret cumulative frequency distribution tables and cumulative frequency curve. |  |
| **REVISION AND PREPARATION** | | | | | | | | | | | | | | | | | | | | | | | |
| **FORM TWO NATIONAL ASSESSMENT** | | | | | | | | | | | | | | | | | | | | | | | |
| **ANNUAL HOLIDAYS** | | | | | | | | | | | | | | | | | | | | | | | |

KUPATA FULL SCHEME

TUTAFUTE

GMK ACADEMIC SOLUTION

UTACHANGIA SH. 2000

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