**SCHEME OF WORK**

**KIGALI CITY**

**GASABO DISTRICT**

**ACADEMIC YEAR: 2022/2023**

**SUBJECT: MATHEMATICS**

**CLASS: PRIMARY FIVE(P5)**

**TEACHER'S NAME…………………………….**

**NUMBER OF PERIODS PER WEEK: 8 periods**

***FIRST TERM***

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| ***DATES***  ***&***  ***WEEKS*** | ***UNIT TITLE*** | ***LESSON TITLES*** | ***LEARNING OBJECTIVES*** | ***METHODS&TECHNIQUES*** | | ***RESOURCES*** | ***OBSERVATION*** |
|  |  | | | | | |  |
| ***WEEK 1***  ***26-30/09/2022*** | ***Unit 1: Reading, writing, comparing and calculating whole numbers up to 1,000,000*** | **Lesson1**: Reading and writing numbers up to 1,000,000.   * Reading and writing in words * Reading and writing in figures   **Lesson 2**: Place value and comparing numbers   * Place value of numbers up to 7 digits * Comparing numbers | ***Knowledge and understanding***:   * Identify the place values of written numerals * Read and write numbers correctly   **Skills:**  - Compare numbers  - carry out addition, subtraction, multiplication and division of numbers  - Apply the knowledge of addition, subtraction, multiplication and division in solving mathematical problems.  **Attitudes and values:**   * Appreciate the importance of accuracy in reading and writing numbers. * Calculate quick and accurately   ***Key unit competence:*** To be able to read, write, compare and make calculations on whole numbers up to 1 000 000. | * Group work * Question and answer * Game play * Written evaluation | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, Kigali.  Alice. N, et al. (2017). Mathematics for Rwanda Primary Schools Pupil’s book 5: Spotlight publisher, Kigali. | |  |
| ***WEEK 2***  ***03-07/10/2022*** | **Lesson 3**: Operations  **Lesson 4**: Solving mathematical problems involving addition, subtraction, multiplication or division of whole numbers.  ***UNIT TEST*** |  |
| ***WEEK 3***  ***10-14/10/2022***  ***WEEK 4***  ***17-21/10/2022*** | ***Unit2: Addition and subtraction of integers*** | **Lesson** 1: Location of positive and negative numbers on the number line.  **Lesson 2**: Comparison and ordering of integers   * Using number line * Using symbols >, < or =   **Lesson 3**: Addition and subtraction of integers   * Using number line * Without using number line (Calculations)   **Lesson 4**: Additive inverses of numbers  **Lesson 5:** Solve problems involving addition and subtraction of integers  ***UNIT TEST*** | **Knowledge and understanding:**   * Explain that when two numbers have opposite signs, there are located on opposite side of zero on the number line * Describe the concept of addition and subtraction of integers   **Skills:**   * Compare integers physically and mentally using number line * Solve mathematical problems involving addition and subtraction of integers   **Attitudes and values:** Appreciate the relationship between positives and negatives in terms of debits.  ***Key unit competence***: To be able to add and subtract integers. | * Group work * Question and answer   Oral and written evaluation. | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, Kigali.  Alice. N, et al. (2017). Mathematics for Rwanda Primary Schools Pupil’s book 5: Spotlight publisher, Kigali. | |  |
| ***WEEK 5***  **24-28/10/2022**  ***WEEK 6***  ***31/10-04/11/2022*** | ***Unit 3:***  ***Prime factorization and divisibility tests*** | **Lesson 1**: Divisibility tests for 2,3,4,5,6,8,9,10,11 and 12  **Lesson 2**: Prime factorization of numbers and its uniqueness | **Knowledge and understanding:**   * Explain prime numbers * Explain and memorize the rules of divisibility tests * Establish the relationship between LCM and GCF.   **Skills:**   * Factorize numbers using prime factors * Calculate the LCM and GCF of numbers.   **Attitudes and values**: Appreciate the importance of LCM in daily life situations  ***Key unit competence:*** To be able to prime factorize, show the rules of divisibility tests less than 13, find LCM and GCF of whole numbers. | * Group work * Question and answer * Game play   Oral and written evaluation. | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, Kigali.  Alice. N, et al. (2017). Mathematics for Rwanda Primary Schools Pupil’s book 5: Spotlight publisher, Kigali | |  |
| **Lesson 3:** Use indices as shorthand for repeated factors.  **Lesson 4:** Calculation of LCM and GCF.  ***UNIT TEST*** |  |
| ***WEEK 7***  ***07-11/11/2022***  ***WEEK 8***  ***14-18/11/2022*** | ***Unit 4: Equivalent fractions and operations*** | **Lesson 1**: Concepts of equivalent fractions (using models)  **Lesson 2:** Calculation/ determination of equivalent fractions with understanding. | **Knowledge and understanding**:   * Explain the concepts of equivalent fractions * Explain how to add or subtract fractions with different denominators using equivalent   fractions and the LCM  **Skills:**   * Apply the knowledge of equivalent fractions in daily life situation * Describe the method for addition and subtraction of fractions   **Attitudes and values:**   * Appreciate the importance of fraction in daily life situation. * Be confident when finding equivalent fractions   ***Key unit competence***: To be able to add, subtract and find equivalent fractions. | * Group work * Question and answer * Game play   Oral and written evaluation | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, Kigali.  Alice. N, et al. (2017). Mathematics for Rwanda Primary Schools Pupil’s book 5: Spotlight publisher, Kigali | |  |
| **Lesson 3:** Addition and subtraction of fractions with different denominators (Using equivalent fractions and LCM)  ***UNIT TEST*** |  |
| ***WEEK 9***  ***21-25/11/2022***  ***WEEK 10***  ***28/11-02/12/2022*** | ***Unit 5: Multiplication and division of decimals*** | **Lesson 1**: Understanding the concept of decimal fractions through examples  **Lesson 2**: Place value of decimals up to 3 decimal places.    **Lesson 3**: Comparing decimal numbers  **Lesson 4:** Multiplication of decimal fractions.  ***UNIT TEST*** | **Knowledge and understanding**:   * Identify the place values in written numerals * Explain how to multiply decimals numbers   **Skills:**   * Compare two or more decimal numbers * Carry out multiplication of decimal numbers.   **Attitudes and values:**  Develop personal confidence in the use of decimal numbers.  ***Key unit competence***: To be able to multiply, divide and compare decimal numbers up to 3 decimal places | * Group work * Question and answer   Oral and written evaluation. | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, Kigali.  Alice. N, et al. (2017). Mathematics for Rwanda Primary Schools Pupil’s book 5: Spotlight publisher, Kigali | |  |
| ***WEEK 11***  ***05-09/12/2022*** | ***REVISION AND EXAMINATION PREPARATION*** | | | | | | |
| ***WEEK 12***  ***12-16/12/2022*** | ***EXAMINATIONS PERIOD*** | | | | | | |
| ***WEEK 11***  ***19-23/12/2022*** | ***CORRECTION AND MAKING SCHOOL REPORTS*** | | | | | | |

***SECOND TERM***

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| ***DATES***  ***&***  ***WEEKS*** | ***UNIT TITLE*** | ***LESSON TITLES +EVALUATION*** | ***LEARNING OBJECTIVES***  ***+ KEY UNIT COMPETENCE*** | ***TEACHING METHODS&TECHNIQUES***  ***+EVAUATION PROCEDURES*** | ***RESOURCES***  ***AND***  ***REFERENCES*** | ***OBSERVATION*** |
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| ***WEEK 1***  ***09-13/01/2023*** | ***Unit 5: Multiplication and division of decimal numbers*** | **Lesson 5**: Division of decimal fractions  **Lesson 6**: Problems involving multiplication and division of decimals  **Lesson 7:** Converting fraction to decimals and vice versa  **Lesson 8:** Matching fractions to decimals  ***UNIT TEST*** | **Knowledge and understanding**:  Explain how to divide decimal numbers.  **Skills:**   * Carry out division of decimal numbers * Convert fractions to decimal fractions and vice versa   **Attitudes and values**:  Appreciate the importance of decimal fractions in comparing and sharing.  ***Key unit competence***: To be able to multiply, divide and compare decimal numbers up to 3 decimal places | * Group work * Question and answer * Game play   Oral and written evaluation | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, Kigali.  Alice. N, et al. (2017). Mathematics for Rwanda Primary Schools Pupil’s book 5: Spotlight publisher, Kigali. |  |
| ***WEEK 2***  ***16-20/01/2023*** | ***Unit 6: Application of direct proportions*** | **Lesson 1:** concept **of** directproportion  **Lesson 2**:Ratios and direct proportion  **Lesson** 3 :Problems involving direct proportion  ***UNIT TEST*** | **Knowledge and understanding:**   * Explain the concepts of direct proportions * Explain how to work out problems involving direct proportions   **Skills:**  Solve mathematical problems involving direct proportions.  **Attitudes and values:**  Appreciate the importance of direct proportions in daily life situations.  ***Key unit competence***: To be able to apply direct proportions in a practical context. | * Group work * Question and answer   Oral and written evaluation. | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, Kigali.  Alice. N, et al. (2017). Mathematics for Rwanda Primary Schools Pupil’s book 5: Spotlight publisher, Kigali |  |
| ***WEEK 3***  ***23-27/01/2023*** | ***Unit 7: Solving problems involving measurements of lengths, capacity and mass*** | **Lesson 1:** Measurements of length, capacity and mass | **Knowledge and understanding:**   * Explain how to convert measurements of length, capacity and mass. * Distinguish between types of intervals   **Skills:**   * Convert the units of length, capacity and mass. * Solve the problems involving measurements of length, capacity and mass * Calculate the number of intervals   **Attitudes and values:**  Be confident and accurate in performing calculations.  ***Key unit competence:*** To be able to solve problems involving measurements of length, capacity, mass and calculating number of intervals. | * Group work * Question and answer   Oral and written evaluation. | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, Kigali.  Alice. N, et al. (2017). Mathematics for Rwanda Primary Schools Pupil’s book 5: Spotlight publisher, Kigali |  |
| ***WEEK 4***  ***30/01-03/02/2023*** | **Lesson 2:** Number of intervals between objects (on open line or on a closed line)  **Lesson 3:** Problems involving intervals  **Lesson 4:** Select appropriate units when solving problems, interpreting decimal representations up to 3 decimal places intervals.  **UNIT TEST** |  |
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| ***WEEK 5***  ***06-10/02/2023*** | ***Unit 8: Solving problems involving time intervals***  ***Unit 9: Money and its financial applications*** | **Lesson 1**: Real life problems that involve finding time intervals, and converting units of time (converting hours into minutes and seconds and converting hours into days and vice versa).  **Lesson 2:** Adding and subtracting involving units of time.  ***UNIT TEST*** | **Knowledge and understanding:**  Describe how to solve mathematical problems involving time  **Skills:**   * Convert the measurements of time * Add and subtract time   **Attitudes and values:**  Be confident and accurate when working out problems involving time  ***Key unit competence***: To be able to solve real life problems that involve finding time intervals and conversion of units. | * Group work * Question and answer   Oral and written evaluation. | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, Kigali.  Alice. N, et al. (2017). Mathematics for Rwanda Primary Schools Pupil’s book 5: Spotlight publisher, Kigali |  |
| ***WEEK 6***  ***13-17/02/2023*** | **Lesson 1:** Simple budgeting   * Sources of money * Uses of money and roles of money in our daily life * Budgeting what comes in and what goes out and setting priorities | **Knowledge and understanding**:   * State the roles of money in our lives * Identify the sources of money * State the various ways of transferring money * Explain that there are different currencies and give examples   **Skills:**   * Describe the sources of money and state the roles of money * Explain the importance of saving * Convert currencies in practical context   **Attitudes and values:**  Appreciate the importance of money in our daily life  ***Key unit competence:*** To be able to explain money and its financial applications. | * Group work * Question and answer   Oral and written evaluation. | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, Kigali.  Alice. N, et al. (2017). Mathematics for Rwanda Primary Schools Pupil’s book 5: Spotlight publisher, Kigali |  |
| ***WEEK 7***  ***20-24/02/2023*** | **Lesson 2**: Various ways of transferring money: ATM, Cheque, Cash, Money transfer, and using a mobile phone  **Lesson 3**: Saving (protecting) and borrowing money (borrowing is not free) |  |
| ***WEEK 8***  ***27/02-03/03/2023*** | **Lesson 4:** Different currencies and  converting the various ways of money that can be transferred  **UNIT TEST** |  |
| ***WEEK 9***  ***06-10/03/2023*** | ***Unit 10: Sequences that including whole numbers, fractions and decimals*** | **Lesson 1:** Sequences that includes fractions and decimals  **Lesson 2:** Extending number patterns to sequences (e.g. 5,8,11,14,17), sequences with constant ratios (e.g. 1,2,4,8,16,…), sequences with regularly changing differences (e.g.1,3,6,10,15,…) | **Knowledge and understanding:**   * Explain sequences of whole numbers, fractions and decimals * Show the patterns used   **Skills:**   * Find the missing numbers in the sequence * Explain how whole numbers are arranged in different patterns   **Attitudes and values**:  Show respect to one another. | * Group work * Question and answer | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, Kigali.  Alice. N, et al. (2017). |  |
| ***WEEK 10***  ***13-17/03/2023*** | **REVISION AND EXAMINATION PREPARATION** | | | | | |
| ***WEEK 11***  ***20-24/03/2023*** | **EXAMINATIONS PERIOD** | | | | | |
| ***WEEK 12***  ***27-31/03/2023*** | **CORRECTION** | | | | | |

***THIRD TERM***

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| ***DATES***  ***&***  ***WEEKS*** | ***UNIT TITLE*** | ***LESSON TITLES +EVALUATION*** | ***LEARNING OBJECTIVES***  ***+ KEY UNIT COMPETENCE*** | ***TEACHING METHODS&TECHNIQUES***  ***+EVAUATION PROCEDURES*** | ***RESOURCES***  ***AND***  ***REFERENCES*** | ***OBERVATION*** |
|  | ***Correction of examination of the second term*** | | | | |  |
| ***WEEK 1***  ***17-21/04/2023*** | ***Unit 10: Sequences that including whole numbers, fractions and decimals*** | **Lesson 3:** Sequences where each difference is one greater than the one before (e.g.1,3,7,15,31, 63, …)  ***UNIT TEST*** | **Knowledge and understanding:**   * Explain sequences of whole numbers, fractions and decimals   **Skills:**   * Find the missing numbers in the sequence   **Attitudes and values:**  Show respect to one another  ***Key unit competence***: To be able to write sequences of whole numbers, fractions and decimals. | * Group work * Question and answer   Oral and written evaluation | Mathematics for Rwanda Primary Schools Pupil’s book 5: Spotlight publisher, Kigali |  |
| ***WEEK 2***  ***24-28/04/2023*** | ***Unit 11: Drawing and constructing angles*** | **Lesson 1**: Angles properties of parallel and perpendicular lines  **Lesson 2**: Angles formed by intersecting lines  **Lesson 3**: Bisection of angles using fording | **Knowledge and understanding:**   * Explain the concepts of parallel, transversal, intersecting and perpendicular lines * Explain how to solve problems involving angles   **Skills**:   * Measure angles using a protractor * Construct the angles using a ruler and a pair of compasses * Find angle sum of a triangle   **Attitudes and values**:   * Demonstrate confidence and accuracy when drawing   ***Key unit competence:*** To be able to draw and construct angles. | * Group work * Question and answer   Oral and written evaluation. | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, Kigali.  Alice. N, et al. (2017). Mathematics for Rwanda Primary Schools Pupil’s book 5: Spotlight publisher, Kigali |  |
| ***WEEK 3***  ***01-05/05/2023*** | **Lesson 4**: Constructing angles using a pair of compasses and a ruler  **Lesson 5**: Angle sum of a triangle.  ***UNIT TEST*** |  |
| ***WEEK 4***  ***08-12/05/2023*** | ***Unit 12: Interpreting and constructing scale drawing*** | **Lesson 1:** Concepts of scale through examples of actual distances / sizes and the distance / size on the map (e.g. given the real size of a car, or of airplane, we need scale drawings to represent it on a piece of paper, etc)  **Lesson 2:** Calculation, interpretation and construction of scale drawings (actual distance / size of an object, scale of drawings or map  **Lesson 3:** Mathematical problems involving scale drawings.  ***UNIT TEST*** | **Knowledge and understanding**:   * Explain the concepts of scale drawing * Explain how to find the actual distance on the ground * Explain how to find the scale of drawings and maps   **Skills:**   * Calculate the scale of a map * Solve the problems involving scale drawings   **Attitudes and values:**  Be confident and accuracy when calculating scales  ***Key unit competence***: To be able to interpret and construct scale drawings | * Group work * Question and answer   Oral and written evaluation | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, Kigali.  Alice. N, et al. (2017). Mathematics for Rwanda Primary Schools Pupil’s book 5: Spotlight publisher, Kigali |  |
| ***WEEK 5***  ***15-19/05/2023*** | ***Unit 13: Calculating the circumference of a circle and volume of cubes and cuboids .*** | **Lesson 1:** Calculating the circumference of circle.  **Lesson 2**: Cube and cuboids  **Lesson 3:** Properties of cubes and cuboids | **Knowledge and understanding:**   * Describe the process of finding the circumference of circles * Explain how to find the volume of cubes and cuboids   **Skills:**   * Solve mathematical problems related to finding the circumference of circles. * Solve mathematical problems related to finding the volume of cubes and cuboids   **Attitudes and values:**  Appreciate the importance of circumference and volume in daily life  ***Key unit competence:*** To be able to calculate circumference of circle and volume of cuboids and cubes. | * Group work * Question and answer   Oral and written evaluation. | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, Kigali.  Alice. N, et al. (2017). Mathematics for Rwanda Primary Schools Pupil’s book 5: Spotlight publisher, Kigali |  |
| ***WEEK 6***  ***22-26/05/2023*** | **Lesson 3**: Nets of cubes and cuboids  **Lesson 5**: Calculating the volume of cubes and cuboids  ***UNIT TEST*** |  |
| ***WEEK 7***  ***29/05-02/06/2023***    ***WEEK 8***  ***05-09/06/2023*** | ***Unit 14: Statistics*** | **Lesson 1:**  Devise a question or hypothesis that require data for its resolution  **Lesson 2:** Collect quantitative data distinguish whether it is discrete or continuous.  **Lesson 3:** Record data in tables and represent as a bar chart.  **Lesson 4:** Interpret bar chart charts and line graphs to draw a conclusion  ***UNIT TEST*** | **Knowledge and understanding:**   * Distinguish between discrete and continuous data * Explain that line graphs represent data over time.   **Skills:**   * Collect data and record it in a table. * Interpret representations of draw conclusions.   **Attitudes and values:**  Adopt a systematic and organized approach to dealing with data.  ***Key unit competence:*** To be able to collect data, represent and interpret it in order to answer a question or explore a hypothesis. | * Group work * Question and answer   Oral and written evaluation. | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, Kigali.  Alice. N, et al. (2017). Mathematics for Rwanda Primary Schools Pupil’s book 5: Spotlight publisher, Kigali |  |
| ***WEEK9***  ***12-16/06/2023***  ***WEEK 10***  ***19-23/06/2023*** | ***Unit 15: Probability*** | **Lesson 1**: Vocabulary of chance (impossible certain, equally likely, evens chance, unlikely etc.)  **Lesson 2**: Conduct experiments to decide how likely something is to happen  ***UNIT TEST*** | **Knowledge and understanding:**   * Explain that random events have different likelihoods of occurring and recognize associated vocabulary   **Skills:**   * Conduct experiment and record outcomes systematically * Use vocabulary of likelihood to compare events.   **Attitudes and values:**   * Appreciate that the random events cannot be predicted * Take care to record experiments accurately   **Key unit competence**: To be able to conduct experiments to decide how likely something is to happen. | * Group work * Question and answer   Oral and written evaluation. | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, Kigali.  Alice. N, et al. (2017). Mathematics for Rwanda Primary Schools Pupil’s book 5: Spotlight publisher, Kigali |  |
| ***WEEK11***  ***26-30/06/2023*** | ***GENERAL REVISION*** | | | | | |
| ***WEEK 12***  ***03-07/07/2023*** | ***EXAMINATION PERIOD*** | | | | | |
| ***WEEK 13***  ***10-14/07/2023*** | ***MARKING OF EXAMINATION*** | | | | | |
| ***WEEK 14***  ***17-19/07/2023*** | ***PNLE*** | | | | | |