**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*** |
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| ***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*** |