**RUTSIRO DISTRICT**

**Academic year:** 2022-2023

**School name:………………….. Teacher’s name: …………………………..**

 **WESTHERN PROVINCE**

 **MATHEMATICS P6 SCHEME OF WORK**

**Number of period per week: 7 FIRST TERM FROM 26/09/2022 TO 23/12/2022**

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| **DATES** | **UNIT TITLE** | **LESSON TITLE** | **LEARNING OBJECTIVES** | **TEACHING METHODS** | **RESOURCES&REFERENCES** | **OBSERVATION** |
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| ***WEEK 1******26-30/09/2022******WEEK 2******03-07/10/ 2022*** | ***Unit 1: Reading, writing and comparing whole numbers beyond 1,000,000*** | **Lesson1**: Reading and writing numbers beyond 1000 000 in words**Lesson 2**: Reading and writing numbers beyond 1000 000 in figures | **Knowledge and understanding**: * Identify the place values of digits beyond 1000 000
* Read and write numbers correctly

Describe steps taken when rounding off numbers**Skills:** - Compare numbers- carry out addition, subtraction, multiplication and division of numbers beyond 1000 000 **Attitudes and values:**Appreciate the importance of accuracy in reading and writing numbers and assessing how big there are***Key unit competence:*** To be able to read, write and compare whole numbers beyond 1000 000. | Group workQuestions and answersDemonstrationGame play | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, KigaliPrimary six Mathematics for Rwanda Schools Learner’s book MASTEP General Suppliers |  |
|  | **Lesson 3**: Place values and comparing numbers **Lesson 4**: Solving problems using calculation strategies**Lesson5**: Rounding to the nearest (tens, hundreds, thousands, etc).***UNIT TEST*** |
| WEEK3 10-14/10/ 2022 | ***Unit2: Multiplication and division of Integers***  | **Lesson** 1: Multiplication of integers**Lesson 2**: Division of integers**Lesson 3**: Solving problems involving multiplication and division of integers***UNIT TEST*** | **Knowledge and understanding:** Describe the steps taken when multiplying and dividing integers.**Skills:** Carry out multiplication and division of integers.**Attitudes and values:** Appreciate the importance of accuracy in multiplication and division of integers.***Key unit competence:*** To be able to multiply and divide integers. | Group workQuestions and answersDemonstrationGame playOral and written evaluation | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, KigaliPrimary six Mathematics for Rwanda Schools Learner’s book MASTEP General Suppliers |  |
| WEEK 4 17-21/10/2022 | ***Unit 3******Powers and Indices, LCM and GCF*** | **Lesson1**: Definition of “base” and “exponent”**Lesson2**: Multiplication and division of indices **Lesson3**: LCM and GCF | **Knowledge and understanding:** * Explain the term “base’ and “exponent”
* State and Explain the laws of indices involving multiplication and division of indices

**Skills:** - Apply the laws of indices in multiplication and division* Apply the LCM and GCF in solving problems.

**Attitudes and values:** Learners should respect each other when they are working in groups.***Key unit competence:*** To be able to use powers and indices, and apply the Lowest Common Multiple (LCM) and Greatest Common Factor (GCF) when solving problems.  |  |  |  |
|  | **Lesson 4**: Solving problems involving LCM and GCF (Application of LCM and GCF***UNIT TEST*** | Group workQuestions and answersDemonstrationGame playOral and written evaluation | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, KigaliPrimary six Mathematics for Rwanda Schools Learner’s book MASTEP General Suppliers |  |
| ***WEEK 5 24-28/10/ 2022*** | ***Unit 4 Operation on fractions*** | **Lesson 1**: Multiplication and Division of fractions**Lesson 2:** Solve problems involving multiplication and division of fractions | **Knowledge and understanding:** Explain how to multiply and divide fractions**Skills:** - Multiply and divide fractions* Calculate word problems involving fractions.

**Attitudes and values**: Appreciate the importance of fraction in daily life situation.***Key unit competence:*** To be able to apply fraction in daily life situation and solve related problems. | Group workQuestions and answersDemonstrationGame playOral and written evaluation | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, KigaliPrimary six Mathematics for Rwanda Schools Learner’s book MASTEP General Suppliers |  |
|  | **Lesson 3:** Application of Fractions***UNIT TEST*** |
| WEEK 6 31/10- 04/11/2022WEEK 7 07-11/11/2022 | ***Unit 5******Rounding and conversion of decimal fractions / numbers*** | **Lesson1**: Conversion of fractions to decimal and vice versa**Lesson 2**: Round off decimal numbers to the nearest (tenths, hundredths, etc.)**Lesson 3**: Solving problems involving rounding and conversion. ***UNIT TEST*** | **Knowledge and understanding**: * Describe various steps taken when rounding off numbers
* Illustrates and explain how to match fractions and decimals

**Skills:** - Apply the knowledge required to match fraction and decimals* Carry out various calculations rounding off numbers

**Attitudes and values:** Confidently and accuracy should be exhibited among learners in groups***Key unit competence:*** To be able to round off decimals, Convert fractions to decimals and vice versa, matching fractions and decimals | Group workQuestions and answersDemonstrationGame playOral and written evaluation | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, KigaliPrimary six Mathematics for Rwanda Schools Learner’s book MASTEP General Suppliers |  |
| ***WEEK 8 14-18/11/ 2022******WEEK 9 21-25/11/2022******WEEK10 28/11-02/12/2022******WEEK11******05-09/12/2022*** | ***Unit 6: Ratios, Proportions, Percentages and Mixtures*** | **Lesson 1**: Percentages* Conversion of fraction to decimals to fractions and vice versa
* Comparing quantities as percentages
* Increase or decrease a given number by a given percentage.
* Find percentage profit and loss

**Lesson 2**: Ratios**Lesson 3:** Proportions | **Knowledge and understanding:*** Explain the meaning and the role of percentages
* Explain the relationship between ratios and proportions
* Describe different ways of working out mixtures

**Skills:** * Apply percentages, ratios, proportions and mixtures in solving mathematical problems
* Convert percentages to decimals and vice versa

**Attitudes and values:**Acknowledge the importance of percentages, ratios, mixtures and proportions in daily life situations***Key unit competence:*** To be able to work out ratios, proportions, percentages and mixtures | Group workQuestions and answersDemonstrationGame playOral and written evaluation | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, KigaliPrimary six Mathematics for Rwanda Schools Learner’s book MASTEP General Suppliers |  |
| ***WEEK12 12-16/12/20 WEEK13 19-23/12/ 2022*** |  ***REVISION***  ***EXAM ANDCORRECTION AND MAKING SCHOOL REPORTS .*** |  |  |  |  |

 **SECOND TERM FROM 09/01/2023 TO 31/03/2023**

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| **DATES** | **UNIT TITLE** | **LESSON TITLE** | **LEARNING OBJECTIVES** | **TEACHING METHODS** | **RESOURCES&REFERENCES** | **OBSERVATION** |
|  | **CORRECTION OF FIRST TERM EXAMINATION** |
|  | ***Unit 6: Ratios, Proportions, Percentages and Mixtures*** | **Lesson 4**: Mixtures* Average price of the mixtures
* The price of one type of the mixtures
* Quantity of one type of the mixtures
* Quantities of both types of mixtures.

**Lesson 5:** Solving of word problems involving ratios, percentages, mixtures and inverse proportions.***UNIT TEST*** | **Knowledge and understanding:*** Explain the meaning and the role of percentages
* Explain the relationship between ratios and proportions
* Describe different ways of working out mixtures

**Skills:** * Apply percentages, ratios, proportions and mixtures in solving mathematical problems
* Convert percentages to decimals and vice versa

**Attitudes and values:**Acknowledge the importance of percentages, ratios, mixtures and proportions in daily life situations***Key unit competence:*** To be able to work out ratios, proportions, percentages and mixtures | Group workQuestions and answersDemonstrationGame playOral and written evaluation | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, KigaliPrimary six Mathematics for Rwanda Schools Learner’s book MASTEP General Suppliers |  |
| Week1 09-13/01/ 2023Week2 16-20/01/ 2023 |
| Week 3 23-27/02/ 2023Week4 30/01-03/02 /2023 | ***Unit 7: Relationship between Volume, Capacity and mass*** | **Lesson 1:** Relationship between volume, capacity and mass**Lesson 2:** Conversion between units of volume, capacity and mass. ***UNIT TEST*** | **Knowledge and understanding:*** State the units of length, capacity and mass in solving problems
* Explain the relationship between volume, capacity and mass in the case of water

**Skills:** * Convert between the units of volume, capacity and mass
* Solve problems involving the relationship between volume, capacity and mass measurements

**Attitudes and values**: * Show respect to one another when working in group
* Show spirit of tolerance when you are with your friend in a group.

**Key unit competence**: To be able to convert between units of volume, capacity and mass. | Group workQuestions and answersDemonstrationGame playOral and written evaluation | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, KigaliPrimary six Mathematics for Rwanda Schools Learner’s book MASTEP General Suppliers |  |
| Week 5 06-10/2/ 2023 | ***Unit 8: Speed, distance and time.*** | **Lesson 1:** Conversion from 12-hr clock to 24-hr clock and vice versa.**Lesson 2:** Mathematical problems that related to different time zones (e.g. Rwanda and America)**Lesson 3:** Speed, distance and time | **Knowledge and understanding**: * Explain relationship between a 12-hour clock and a 24-hour clock
* Define speed, distance and time
* Identify different units of speed, distance and time.
* Explain what determines time zones

**Skills:** | Group workQuestions and answersDemonstrationGame playOral and written evaluation | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, KigaliPrimary six Mathematics for Rwanda Schools Learner’s book MASTEP General Suppliers |  |
| Week6 13-17/02/ 2023 | **Lesson 4:** Conversion of speed from km / hr to m / sec and vice versa.**Lesson 5:** Moving bodies and Problems related to speed, distance and time |
|  |  | ***UNIT TEST*** | * Solve the problems relate to different time zones
* Solve simple problems involving the calculation of speed, distance and time in real life situation

**Attitudes and values:**Appreciate the relationship between speed, distance and time to understand the notion of time management. ***Key unit competence***: To be able to calculate speed, distance and time, Solve problems related to different time zones and convert speed  |  |  |  |
| Week 7 20 -24/02 / 2023Week 8 27/2-03/03/ 2023 | ***Unit 9******Simple interest and problem involving saving.*** | **Lesson 1**: Calculating simple interest, rate, principal and time.**Lesson 2**: Problems involving simple interest, rates, principal and time**Lesson 3:** Saving: Saving money in the bank, or putting it in investments.**Lesson 4**: Problems involving saving and simple interest.***UNIT TEST*** | **Knowledge and understanding**:* Define the different terms such as simple interest, rate, principal and time.
* Explain the importance of saving

**Skills:** * Solve the problems involving saving
* Solve the problems involving calculation of simple interest

**Attitudes and values:**Appreciate the importance of simple interest and saving in daily life situation***Key unit competence***: To be able to work out simple interest and solve problems involving saving. | Group workQuestions and answersDemonstrationGame playOral and written evaluation | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, KigaliPrimary six Mathematics for Rwanda Schools Learner’s book MASTEP General Suppliers |  |
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| *Week9 6/3-10/3 /2023* | ***Unit 10: Equivalent expressions and number sequences*** | **Lesson 1**: Algébrique expressions**Lesson 2**: Equivalent expressionsE.g. 3(n-3) +5 =4n -1**Lesson3**: Examples of linear sequences or number sequences with general terms. e.g. 3, 7, 11, ………, 4n-1**Lesson 4:** Finding the missing numbers or nth term in a linear sequence / numbers **Lesson 5**: Finding the general term / rule of a linear sequence.***UNIT TEST*** | **Knowledge and understanding:** * Give examples of algebraic expressions and equivalent expressions
* Explain how to find the rule for determining the nth term in linear sequence

**Skills:*** Perform operations on algebraic expressions and explain why 2 expressions are equivalent
* Calculate the nth term of linear sequence
* Find the missing numbers in a linear sequence.

**Attitudes and values:**Appreciate the importance of orderliness in finding out different terms of a linear sequence and extent it to real life situation. ***Key unit competence***: To be able to write sequence of whole numbers, fractions and decimals. | Group workQuestions and answersDemonstrationGame playOral and written evaluation | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, KigaliPrimary six Mathematics for Rwanda Schools Learner’s book MASTEP General Suppliers |  |
| Week 10 13/3-17/3/ 2023 | ***Unit 11******Solving simple algebraic equation and inequalities*** | **Lesson 1:** Like and unlike terms of algebraic expressions and substitutions.**Lesson 2**: Simple algebraic equations with one unknown | **Knowledge and understanding**: Describe the process of solving simple algebraic equations or inequalities.**Skills:** * Solve word problems involving simple algebraic equation with one unknown
* Solve simple algebraic inequalities with one unknown.

**Attitudes and values:** Appreciate the importance of algebraic equations and inequalities in solving word problems***Key unit competence***: To be able to form and solve simple algebraic equations and inequalities. | Group workQuestions and answersDemonstrationGame playOral and written evaluation | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, KigaliPrimary six Mathematics for Rwanda Schools Learner’s book MASTEP General Suppliers |  |
|  | **Lesson 3:** Simple algebraic inequalities with one unknown.**Lesson 4**: Problems involving simple algebraic equation or inequalities with one unknown.**UNIT TEST** |
| ***Week11 20-24/03 /2023*** |  **REVISION AND EXAMINATION PREPARATION** |
| ***Week12 27-31/03/ 2023*** |  **EXAMINATION PERIOD , CORRECTION AND MARKING SCHOOL REPORT** |

 **THIRD TERM FROM 17/04/2023 TO 14/07/2023**

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| **DATES & WEEKS** | **UNIT TITLE** | **LESSON TITLES** | **LEARNING OBJECTIVES** | **TEACHING METHODS AND TECHNIQUES** | **RESOURCES AND REFERENCES** | **OBSERVATION** |
| ***Week1 17-21/04/ 2023*** | **CORRECTION OF SECOND TERM EXAMINATION** |
| ***Week 2 24-28/04/ 2023*** | ***Unit 12: Regular polygon and Bearing*** | **Lesson 1**: Definition of polygon**Lesson 2**: Examples of regular polygons (equilateral triangles, square, pentagon, hexagon, etc)**Lesson 3**: Elements of regular polygons * Interior angles and their sum
* Exterior angles and their sum
* Side and apothem
* Perimeter

 -Area**Lesson 4**: Bearing and Compass points**Lesson 5**: Tiling / Construction**UNIT TEST** | * Explain that direction can be specified using compass points and bearing and express the relationship between them
* Understand and use the angle sum of a triangle to determine the angle sum of a polygon

**Skills:** * Derive the interior angle of regular polygon
* Find the sum of interior / exterior angles of regular polygon using the angle sum of a triangle
* Calculate the length of side, apothem, perimeter and area of regular polygons
* Use bearing to define direction

**Attitudes and values:*** Appreciate the importance of regular polygons in every life activities
* Appreciate the relevance of bearing in daily life (e.g. bearings are used by aircraft pilots and tiling patterns in the built environment).

***Key unit competence***: To be able to use bearing and compass | Group workQuestions and answersDemonstrationGame playOral and written evaluation | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, Kigali.Primary six Mathematics for Rwanda Schools Learner’s book MASTEP |  |
| ***Week 3 01-05/05/ 2023*** | ***Unit 13: Construction of polygon and nets for cuboids and prisms*** | **Lesson1** : Construction of polygons using a protractor, a ruler and a pair of compasses  | **Knowledge and understanding:*** Show how to construct polygons with a given properties using a protractor, a ruler and a pair of compasses
* Demonstrate how a 2D shape can be folded to make a 3D and name the 2D shape used.
* Show that the net of a solid is not unique

**Skills**:* Construct polygons using a protractor, a ruler and a pair of compasses
* Design nets to make cuboid and prisms.

**Attitudes and values**:Appreciate that there are likely to be a number of different successful approaches to accurately constructing a polygon or designing a net.***Key unit competence***: To be able to construct polygons using a protractor, a ruler and a pair of compasses. Design nets to make cuboids and prisms. | Group workQuestions and answersDemonstrationGame playOral and written evaluation | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, Kigali.Primary six Mathematics for Rwanda Schools Learner’s book MASTEP |  |
| ***Week4 08-12/05/ 2023******Week5 15-19/05/ 2023*** | **Lesson 2**: Design nets to make cuboids and prisms***UNIT TEST*** |
| ***Week6 22-26/05 /2023******Week 7 29/05-02/06/ 2023******Week8 05-09/06 /023*** | ***Unit 14: Area bounded by a circle, surface area of cuboids and volume of cylinder******Unit 15: Statistics*** | **Lesson 1**: Area bounded by a circle**Lesson 2**: Surface area of cuboid | **Knowledge and understanding:*** State the formula for finding the area bounded by a circle and explain how it can be derived from the circumference of circle
* Explain the surface area of cuboid as area of its nets.
* State the volume of cylinder and explain the meaning of each letter

**Skills**:* Calculate the area bounded by a circle
* Use the nets of cuboid to determine its surface area.
* Calculate the volume of cylinder
* Select the appropriate units when calculating the area and volume.

**Attitudes and values:**Appreciate the difference between area, surface area and volume and the importance of using the correct units.***Key unit competence:*** To be able to calculate the area enclosed by a circle, the surface area of cuboids and the volume of cylinder.**Knowledge and understanding:** * Explain when it is appropriate to use tally and how to obtain frequency from the tally
* Explain how to use pie charts to represent proportions
* Interpret line graph as representation of data.

**Skills:** * Devise a question or hypothesis that require data for its resolution
* Decide what data to collect to answer the question
* Collect data using a table and tally
* Represent data in a bar chart where the total frequency is a factor of 3600
* Interpret the representation of data to draw conclusion.

**Attitudes and values:*** Appreciate the power of data to answer questions and adopt a systematic and organized approach to dealing with data.

***Key unit competence:*** To be able to extend methods for collecting data, representing and interpreting it in order to answer | Group workQuestions and answersDemonstrationGame playOral and written evaluationGroup workQuestions and answersDemonstrationGame playOral and written evaluation | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, Kigali.Primary six Mathematics for Rwanda Schools Learner’s book MASTEPRwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, Kigali.Primary six Mathematics for Rwanda Schools Learner’s book MASTEP |  |
| **Lesson 3**: Volume of a cylinder.**Unit test** |
| **Lesson 1**: Collect data to investigate a question.**Lesson 2**: Explore a hypothesis using a tally to complete a frequency table. |
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| ***Week 9 12-16/06/ 2023******Week 10 19-23/06 /2023*** | ***Unit 15: Statistics*** | **Lesson 3**: Represent data using a bar chart or simple pie chart**Lesson 4**: Interpret bar char and pie chart to draw a conclusion***UNIT TEST*** | **Knowledge and understanding:** * Explain when it is appropriate to use tally and how to obtain frequency from the tally
* Explain how to use pie charts to represent proportions
* Interpret line graph as representation of data.

**Skills:** * Devise a question or hypothesis that require data for its resolution
* Decide what data to collect to answer the question
* Collect data using a table and tally
* Represent data in a bar chart where the total frequency is a factor of 3600
* Interpret the representation of data to draw conclusion.

**Attitudes and values:*** Appreciate the power of data to answer questions and adopt a systematic and organized approach to dealing with data.

***Key unit competence:*** To be able to extend methods for collecting data, representing and interpreting it in order to answer | Group workQuestions and answersDemonstrationGame playOral and written evaluation | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, Kigali.Primary six Mathematics for Rwanda Schools Learner’s book MASTEP |  |
| ***WEEK11 26/6-30/06 /2023*** | ***Unit 16: Probability*** | **Lesson 1**: Vocabulary of chance and associated ordering* Impossible
* Certain
* Equally
* Likely
* Even chance
* Unlikely

**Lesson 2**: Use data to decide how likely something is to happen.***UNIT TEST*** | **Knowledge and understanding**:Explain that random events have different chances to occur and illustrate each terminology related to probability.**Skills:*** Use the language of chance and associate it with events
* Use likelihood to compare and order events

**Attitudes and values:** Appreciate that the random events cannot be predicted***Key unit competence:*** To be able to order events in terms of likelihood (impossible, equally likely, certain) | Group workQuestions and answersDemonstrationGame playOral and written evaluation | Rwanda Education Board (2015). Mathematics Syllabus for Upper Primary P4 – P6: Ministry of Education, Kigali.Primary six Mathematics for Rwanda Schools Learner’s book MASTEP |  |
| ***WEEK12******03-07/7/2023*** | **GENERAL REVIONS** |
|  ***WEEK13 10-14/07/2023*** |  **EXAMS , REPORT AND CLOSING YEAR.** |