# FORMAT OF UNIT PLAN/SCHEME OF WORK

**District:** …………..          **Academic year:** 2021-2022          **Term:** First Term                    **School:**

**Subject:** Mathematics          **Teacher:**                              **Class:** senior **One**                    Nº of
period per week: 6

# FIRST   TERM

| Weeks &Dates | Unit title | Lesson title + Evaluation | Learning objectives + Key unit competence | Teaching methods & techniques + Evaluation procedures | Resources & References | Observations |
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| 1. 11-15/10/2021 | UNIT 1 SETS | **Lesson title 1 :Set concept** : Definition of set, Set notation, -membership of a set, -subset s of a set | **Key unit competence:** Learners should be able to use sets ,venn diagrams and relations to represents situations and solve problems. **Knowledge and understanding:** – Define and give examples of sets. - Show how sets are used in representing given information. - Observe a contextual problem that involves sets, record the solution using set **Skills:** – Use sets to group and | Group discussion, individual work, storytelling. | - Mathematics for Rwanda school, student's book. and teacher's guide -New general mathematics | |
| 2. 18-22/10/2021 | | , Venn diagrams, and complement. (subsets of natural numbers like even numbers, odd | | | | |

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| | | numbers, prime numbers, etc.), cardinal number<br>**Lesson tile 2:** Intersection, union, set difference. | classify according to given conditions.<br>- Use Venn diagrams to represent information.<br> - Use sets and relations tosolve problems.<br>**Attitudes and values:**<br><br>- Appreciate how sets, Venn diagrams, and relations can be used to represent situations mathematically . | | | |
| 3. 25-29/10/2021 | | **Lesson 3**<br>Relations: Mappings, ordered pair, Cartesian product, domain and range, | | | | |
| 4. 01-05/11/2021 | | **Lesson 4**<br>graph of a relation, equivalence relation (reflexive, symmetric, and-transitive), | | | | |
| 5. 08-12/11/2021 | | particular relations(function, mapping, injection/one to one, surjection/onto, | | | | |
| 6. 22-26/11/2021 | | **Lesson 5**<br>Inverse relation, composite relations.<br>*TEST* | **Key unit competence**:<br>To be able to use operations to explore properties of sets | | | |

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| 7. 29/11-03/12/2021 | UNIT 2 **SETS OF NUMBERS** | **lesson 1** - Vocabulary and notations for different sets of numbers | of numbers and their relationships. **Knowledge and understanding:** -identify set of numbers -illustrate the numbers on number line | - In groups:analyse , solve related questions, -presentation | Mathematics for Rwanda school, student's book. and teacher's guide | |
| 8. 06-10/12/2021 | | **Lesson 2** - Set of numbers and its subsets: Natural numbers, integers, rational numbers -,Irrational numbers, and real numbers. - Four operations and properties on sets of numbers. TEST **Lesson 3** - The relationship between sets of numbers. *TEST* | -show that irrational numbers cannot beexpressed exactly as a decimal **Skills.** -Carry out mathematical operations on sets of numbers -convert between decimal and fraction. **Attitude and values** Appreciate that the number line is incomplete without The irrational numbers. | | -New general mathematics Student's book and teacher 's guide | |
| 9. 13-17/12/2021 | | **EXAMS** | | | | |
| 10. 20-24/12/2021 | | **MARKING AND** | | | | |

| | | SCHOOL REPORT | | | | |
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# SECOND  TERM

| 1.10- | UNIT 3: | **Lesson 1:** | **Key unit competency:** | Group | Mathematics | |
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| 14/01/2022 | **Linear function,equat ions and inequalities** | Definition,notation and graph of linear function $F(x)= mx+c$ **Lesson 2:** Solve linear equations with one unknown and represent the solution graphically; TEST | To be able to represent and interpret graphs of linear functions and apply them in real life situations<br><br>**Knowledge and understanding:** – Illustrate that a linear function is written in the form , $y= mx+c$ . | discussion, individual work, storytelling | for Rwanda school, student's book. and teacher's guide -New general mathematics student 's book and teacher's guide. | |
| 2.17-21/01/2022 | | **Lesson 3:** Solve linear inequalities in one unknown and represent the solution on a number line;<br><br>model and solve problems using linear functions, equations, and inequalities. Application of inequalities in life,TEST | – Explain what is meant by the solution of a linear equation and inequality. **Skills** – Plot linear functions on the Cartesian plane. - Use linear functions, equations, and inequalities to model situations and solve problems. **Attitudes and values:** -Represent the function in graph and number line. **Key unit competency:** To beable to solve problems that involves calculating | Group work | | |
| 3.24-28/01/2022 | UNIT 4. **Percentage,Di** | **Lesson 1:** - Percentages. | percentage, discount, profit, loss, and other financial | Group discussion, | | |

| | | | calculations. | individual work, storytelling | | |
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| | scount,Profit and Loss. | - Discount.<br>- Commission.<br>TEST | **Knowledge and Understanding**<br>Explain how to calculate discount, commission, profit and loss, simple interest, tax.<br><br>**Skills**<br>**-** Use percentages to calculate discount, commission, profit, loss, interest, taxes - Solve problems involving: Discount, commission, profit, loss, loans, savings, tax and insurance. | | | |
| 4.31/1-4/2//2022 | | **Lesson 2**<br>:- Profit and loss.<br>- Loans and savings (simple interest only).<br>**Lesson 3:**<br>- Tax (indirect taxes,withholding taxes, VAT) and insurance<br>TEST. | **Attitudes and values**<br>Appreciate the role money plays in our lives. - Be honest in managing and using money. - Appreciate that saving and investing money can increase your wealth. - Appreciate the importance of paying taxes. | | | |
| 5. 7-11/02/2022 | **UNIT 5: Ratio and Proportion** | **Lesson 1**<br>-Express ratios in their simplest form | **Key unit competency**: To be able to solve problems involving ratio and proportion | Group discussion, individual | Mathematics for Rwanda school, | |

| | | | | work, storytelling | student's book. and teacher's guide | |
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| | | -sharing quantities using ratios. | **Knowledge and understanding** - Express ratios in their simplest form. | | | |
| 6.14-18/02/2022 | | **Lesson 2** -Proportion - direct proportion Inverse proportion. TEST. | . - Differentiate direct from indirect proportion. **Skills** - Share quantities in a given proportion or ratio. Interpret ratio and proportions in practical contexts. **Attitudes and values** -Appreciateimportance of multiplication when working with ratio and proportion. | Group work | -New general mathematics Student's book and teacher 's guide | |
| 7.21-25/02/2022 | **UNIT 6: Point , Line and Angles** | **Lisoon 1:** Points ,Line And types of angles **Lisson2:** Angles on the line,angles at a point and on parallel lines | **Key unit competency**: To be able toconstruct mathematical arguments using the angle properties of parallel lines. **Knowledge and understanding** -Recognize that the position of an angle at a point sum to 360o - Distinguish and recognize vertically opposite, corresponding, alternate, and supplementary angles. | Group work | | |

| | | | Skills<br>Use knowledge of angle properties of parallel lines and shapes to construct arguments when finding missing angles in geometric diagrams. - Construct and calculate angles.<br>**Attitudes and values**<br>Appreciate the need togive reasons when developing solutions to missing angle problems. - Value a variety of different approaches to reach the same conclusion. | | | |
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| 8.28/2-4/3/2022 | | **Lisson2**:<br>Angles on the line,angles at a point and on parallel lines<br>Rays and angles<br>Segment and mid point.<br>*TEST* | | Group work | Mathematics for Rwanda school, student's book. and teacher's guide<br>-New general mathematics | |
| 9. 7-11/03/2022 | | **Lisson2**:<br>Angles on the line,angles at a point and on parallel lines<br>Rays and angles | | Group work | Student's book and teacher 's guide | |

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| 10. 14-18/2022 | | Lisson2:<br>Angles on the line,angles at a point and on parallel lines<br>Rays and angles<br>Segment and mid point.<br>TEST | | | Group work | |
| 11.21-25/3/2022 | | EXAMS | | | | |
| 12.28-31/3/2022 | | MARKING AND SCHOOL REPORT | | | | |

## THIRD TERM,2021-2022

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| 1. 18-22/04/2022 | UNIT 7:<br>SOLIDS | lesson 1:<br>-Properties of solids<br>-surface area and volume of solids.<br>- **Lesson2**:<br>Surface area and volume of cuboid<br>**Lesson 3:**<br>Surface area and volume of cube<br>. | **Key unit competency:**<br>To be able to select and use formulae to find the surface area and volume of solids.<br><br>**Knowledge and understanding** | Group discussion, individual work, storytelling | Mathematics for Rwanda school, student's book. and teacher's guide<br>-New general mathematics Student's book and teacher 's guide | |
| 2. 25-29/04/2022 | | **Lesson 5**<br>-Surface area of | –Explain the | Group work | | |

| | | | surface area of a solid as the area of the net. | | | |
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| | | prism ,pyramid<br>-surface and volume of composite solids | | | | |
| 3. 02-06/05/2022 | | **Lesson 6:**<br>Problem solving :areas and volumes<br>*TEST.* | - Illustrate the volume as the space occupied by a solid..<br>**Skills**<br>- Calculate the surface area and volume of common geometrical solids using formulas where necessary.<br>**Attitudes and values**- Recognize solids in the environment. | Group work | | |
| 4. 09-13/05/2022 | **UNIT 8: DESCRIPTIVE STATISTICS** | **Lesson 1**<br>-Introduction to descriptive statistics<br>( ungrouped data)<br>-types of data.<br><br>**Lesson 2:**<br>Frequency distribution.<br>- Measures of central tendency: Mode, mean, median, | Define quantitative data and qualitative data.<br>- Differentiate discrete and continuous data. - Present data on a frequency distribution.<br>- Recognize | Group work | | |

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| | | quartiles (1st, 2nd, 3rd quartiles, inter-quartile range). TEST | formulae used to calculate the mean and median.<br><br>**Skills**<br>-Apply data | | | |
| 5.23-27/05/2022 | | . **Lesson 3:Data display:**<br>**-**Bar chart, histogram, frequency polygon, pie chart, pictogram.<br>- Reading statistical graphs.<br>.TEST | collection to carry out a certain research.<br>- Determine the mode, mean, and median of statistical data. - Interpret correctly graphs involving statistical data. | Group discussion, individual work, storytelling | Mathematics for Rwanda school, student's book. and teacher's guide<br>-New general mathematics Student's book and teacher 's guide | |
| 6.30/5-3/6/2022 | | **Lesson 4:**<br>- Converting statistical graphs into frequency tables<br>-frequency polygon<br>-cumulative frequency diagram /GIVE.<br>TEST. | **Attitudes and values**<br><br>Help in decision making and draw conclusions.<br>- Self-confidence and determination.<br>- Develop competitiveness. - Appreciate the importance of | Group discussion, individual work, | Mathematics for Rwanda school, student's book. and teacher's guide<br><br><br>-New general | |

| | | | order in daily activities. - Develop research and creativity. - Respect each other | storytelling | mathematics Student's book and teacher 's guide - Internet | |
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| 7. 06-10/06/2022 | **UNIT 9: PROBABILITY** | **Lesson 1: Introduction :** -Definition of terms used to describe probability. - type of events **Lesson 2** - Probability of equally likely outcomes through experiments like tossing a coin or dice, etc. TEST | **Key unit competency:** To be able todetermine the probability of an event happening using equally likely events or experiments. **Knowledge and understanding** -Define an event and explain why probabilities canonly be between 0 (impossible) and 1 (certain). | | | |
| 8. 20-24/06/2022 | | **Lesson 3:** -Basic rules in probability -numerical probability. Theoretical probability Theoretical probability | -Demonstrate that the more data collected, , the better the estimate of the probability | | | |

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| 9. 27/06-10/07/2022 | | **REVISION** | | | | |
| 10. 04-08/07/2022 | | EXAMS | . | | | |
| 11. 11-15/07/2022 | | MARKING AND SCHOOL REPORT | | | | |