MATHEMATICS SYLLABUS FOR

LOWER PRIMARY (P1-P3)

Third Edition

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FOREWORD

Rwanda Basic Education Board (REB) is honored to present the syllabus for Lower Primary Mathematics (P1–P3). This syllabus serves as both an official guideline and a foundation for competence-based teaching and learning Mathematics.

As Rwanda progresses toward building a knowledge-based economy, education plays a pivotal role. The well-designed syllabus is central to this transformation, with content that encourages learners to connect classroom knowledge with real-life experiences. By doing so, it fosters individual growth and contributes to national development. Additionally, this syllabus ensures consistency and coherence in delivering quality education at the Lower primary level of general education in Rwandan schools.

The Rwandan education philosophy aims to ensure that young people at every level achieve their full potential by acquiring relevant knowledge, foundational skills, and appropriate attitudes. Through this, children begin to see the relevance of Mathematics, building a mindset that values lifelong learning and contribution to society.

To enhance education quality, the Government of Rwanda prioritizes aligning the syllabus, teaching methods, and assessments to foster capable and creative learners who can meet national and global demands. The shift to a Competence-Based Curriculum (CBC) reflects Rwanda's vision for a knowledge-based society and prepares students for a competitive job market. Teachers are key to implementing this syllabus effectively, ensuring learners acquire practical skills for real-world applications that benefit both their personal growth and Rwanda's development.

I sincerely appreciate all those who contributed to developing this document, particularly the REB staff who coordinated the process from inception. Special gratitude also goes to the development partners for their unwavering support throughout this initiative.

I warmly welcome feedback and contributions for further improvement of this syllabus.

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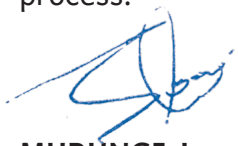
ACKNOWLEDGEMENT

I would like to extend my sincere appreciation to everyone who contributed to the refinement of the Mathematics syllabus for Lower Primary (P1-P3). This achievement would not have been possible without the active involvement of various stakeholders.

Special thanks go to the Rwanda Basic Education Board (REB) staff, subject experts, university lecturers, and teachers for their valuable work in the adaptation of this syllabus.

I am also grateful to all our education development partners whose support was instrumental throughout the process.



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1. INTRODUCTION

1.1 Background to curriculum review

The rationale behind the Lower Primary Mathematics syllabus review process was to ensure that the syllabus is responsive to the needs of the learner and to shift from objective and knowledge-based learning to competency-based learning. Emphasis in the review has been on building skills and competencies, as well as streamlining the coherence of the existing content by benchmarking against a number of best practice syllabi.

The new Lower Primary Mathematics syllabus guides the interaction between the teacher and the learner through the learning processes and highlights the essential practical skills and competencies a learner should acquire during and at the end of each unit of learning.

1.2 Rationale of teaching and learning Mathematics

1.2.1 Mathematics and society

The Lower Primary Mathematics syllabus has put emphasis on integrated production skills and on an integrated approach in all disciplines. Mathematics is an excellent vehicle for the development and improvement of a person's intellectual competence in logical reasoning, spatial visualisation, analysis, and abstract thought. Learning mathematics develops numeracy, logical reasoning skills, critical thinking skills, and problem-solving skills. This will result in the use of Mathematics in many activities of daily life thereby serving as an important tool to the society.

Therefore, Mathematics plays an important role in society through counting, calculation, measurement, systematic study of shapes and motion. It is also used in natural sciences, engineering, medicine, finance and social sciences. Applied Mathematics such as statistics and probability play an important role in game of chance, in the national

census process, in scientific research, etc. In addition, some cross-cutting issues, such as financial awareness, are incorporated into some of the Mathematics units to improve the social and economic welfare of Rwandan society.

1.2.2 Mathematics and learners

Learners need enough basic Mathematical competencies to be effective members of Rwandan society, including the ability to count, estimate, measure, calculate, handle and manage money, interpret statistics, assess probabilities, and read commonly used mathematical representations and graphs. Reading or listening to the news requires many of these competencies and citizenship requires being able to interpret critically the information one receives. For example, understanding an age-length or age-weight graph helps parents and health practitioners monitor the health of a child.

Mathematics also equips learners with knowledge, skills, and attitudes necessary to enable them to succeed in an era of rapid technological growth and socio-economic development. Mastery of basic mathematical ideas and operations should make learners confident in problem-solving in life situations. A high-quality mathematics education, therefore, provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

In this syllabus, the teacher has the task of trying to make mathematics a reality in life. Methods and approaches to learning experiences should be mostly practical and based on the experience of the learners. Hence, teaching methods to be emphasized are those that allow learners to explore, try different procedures, and solve problems practically. Learning mathematics needs to include practical problem-solving activities with opportunities for learners to plan their investigations and develop their mathematical competency and confidence. New technologies have had a dramatic impact on all aspects of life. For this reason, wherever possible in mathematics, learners should gain experience with a range of ICT applications.

1.2.3. Competences

Competence is defined as the ability to perform a particular task successfully, resulting from having gained an appropriate combination of knowledge, skills, and attitudes.

The Mathematics syllabus provides the opportunity for learners to develop different competences, including basic and generic competences.

Basic competences are addressed in the stated broad subject competences and in objectives highlighted on year basis and in each of the units of learning. Generic competences (also known as core competences or transferable skills) refer to a set of fundamental skills, abilities, and attributes that are applicable across a wide range of contexts, professions, and life situations. The generic competences that must be emphasised and reflected in the learning process are briefly described below and teachers will ensure that learners are exposed to tasks that help learners acquire the skills.

Generic competencies and values

Critical and problem-solving skills: Learners use different techniques to solve mathematical problems related to real life situations. They are engaged in mathematical thinking, they construct, symbolise, apply and generalise ideas.

The acquisition of such skills will help learners to think imaginatively and broadly to evaluate and find solutions to problems encountered in all situations.

Creativity and innovation: The acquisition of such skills will help learners to take initiatives and use imagination beyond the knowledge provided to generate new ideas and construct new concepts. Learners will improve these skills through mathematics contests, and mathematics competitions, etc.

Research: This will help learners find answers to questions based on existing information and concepts as well as explain phenomena based on findings from information gathered.

Communication in official languages: Learners communicate effectively their findings through explanations, construction of arguments and drawing relevant conclusions.

Mathematics teachers, irrespective of not being teachers of language, will ensure the proper use of the language of instruction by learners. This will help learners communicate clearly and confidently and convey ideas effectively through speaking and writing and use the correct language structure and relevant vocabulary.

Cooperation, inter personal management and life skills: Learners are engaged in cooperative learning groups to promote higher achievement rather than competitive and individual work.

This will help learners to co-operate with others as a team in whatever task are assigned and to practice positive ethical moral values and respect for the rights, feelings and views of others. Leaners will perform practical activities related to environmental conservation and protection. They will also advocate for personal, family and community health, hygiene and nutrition and respond creatively to the variety of challenges encountered in life.

Lifelong learning: The acquisition of such skills will help learners update their knowledge and skills with minimum external support and to cope with the evolution of advances in knowledge for personal fulfillment in areas that need improvement and development.

Broad mathematical competences

During and at the end of the learning process, the learner can:

- Encourage problem-solving in real-world scenarios, and promote personal skills along with interest in self-efficacy.
- Develop their aesthetic and linguistic experiences to use their digital literacy skills to learn and have joy.
- Promote scientific, technical, cultural, moral, religious values, and social skills to promote development and wealth in society.
- Use verbal and non-verbal cues acquired in mathematics knowledge and skills in future training and convey information in varied contexts
- Work in a systematic way to develop clear, logical, coherent, and creative reasoning for environmental conservation and sustainability
- Develop creativity, initiative, and mental adaptability to a variety of cultural traditions for peaceful existence.
- Describe, clarify, analyse, and evaluate information to show that they understand a number of concepts and can use them to solve problems in day-to-day life.
- Use acquired knowledge and skills to succeed in an era of rapid technological growth and socio-economic development;
- As a local and global citizen of a democratic society in an interdependent world, use ICT tools to solve mathematical problems and make well-informed decisions.

Mathematics and developing competences

The national policy documents based on national aspirations identify some 'Basic Competencies' alongside the 'Generic Competencies'' that will develop higher order thinking skills and help learners learn subject content and promote the application of acquired knowledge and skills.

Through observations, constructions, hands-on manipulations, generalisations, and presentations of information during the learning process, the learner will not only develop deductive and inductive skills but also acquire co-operation, communication, critical thinking and problem solving skills. This will be realised when learners make presentations leading to inferences and conclusions at the end of the learning unit. This will be achieved through group work activities and cooperative learning which in turn will promote interpersonal relations and teamwork.

The acquired knowledge in learning mathematics should develop a responsible citizen who adapts to scientific reasoning, attitudes and develops confidence in reasoning independently.

1.2.4 Values (Suggested definition)

Values are enduring beliefs, principles, and dispositions that influence how individuals think, feel, make decisions, interact with others, and apply knowledge, skills, and attitudes in different situations. Within the Competence-Based Curriculum, values provide the ethical, social, and cultural foundation for learning and responsible citizenship. The Rwanda Curriculum Framework recognizes two complementary categories of values: Curriculum Values, which guide the philosophy, design, and implementation of education, and Basic Values, which represent the moral, civic, and character attributes that learners are expected to internalize and demonstrate in their daily lives. Together, these values shape the development of competent, responsible, self-reliant, and socially engaged citizens.

1.2.4.1 Curriculum Values

Excellence: Striving for the highest standards in learning, behaviour, and performance by consistently producing quality work, using feedback for improvement, and taking pride in achievement. It is reflected in accuracy, continuous growth, and encouraging excellence in others.

Aspiration and Optimism: Believing in one's potential and pursuing ambitious goals with confidence, perseverance, and a positive outlook. It involves viewing challenges as opportunities for growth and inspiring hope in oneself and others.

Equity and Inclusiveness: Valuing the dignity and worth of every individual by promoting fairness, equal participation, and opportunities for all. It is demonstrated through respect for diversity, support for others, and opposition to discrimination and exclusion.

Openness and Transparency: Acting honestly, ethically, and accountably while fostering trust and participation. It is reflected in clear communication, responsible decision-making, openness to feedback, and fairness in interactions with others.

Importance of Family, Rwandan culture and heritage: Recognizing the role of family, culture, and heritage in shaping identity, values, learning, and social development. It is demonstrated through respect for family relationships, participation in community life, and appreciation of cultural traditions and responsibilities.

Learner-centredness: Placing learners at the heart of education by recognizing their needs, interests, abilities, and experiences while promoting active engagement and ownership of learning. It is reflected in inclusive, supportive learning environments where learners participate, explore, collaborate, reflect, and take responsibility for their learning.

1.2.4.2 Basic Values

Dignity and Integrity: Upholding self-worth and acting consistently according to moral and ethical principles. It is demonstrated through honesty, responsibility, respect for self and others, and doing what is right even when unsupervised.

Self-Reliance: Taking responsibility for one's learning, decisions, and wellbeing through initiative, confidence, and independent action. It involves solving problems, managing resources effectively, and making informed choices.

National and Cultural Identity: Appreciating and promoting Rwanda's heritage, values, language, traditions, and national aspirations. It is reflected in national pride, respect for cultural heritage and institutions, and commitment to unity and social cohesion.

Peace and Tolerance: Living harmoniously with others by respecting differences and resolving conflicts constructively. It is demonstrated through empathy, respectful dialogue, reconciliation, and support for peaceful coexistence.

Justice: Promoting fairness, equity, and respect for rules, rights, and responsibilities. It is reflected in impartial decision-making, ethical judgement, consistent application of rules, and opposition to unfair treatment.

Respect for Others and Human Rights: Recognizing and upholding the dignity, rights, and freedoms of every person. It is demonstrated through courtesy, active listening, inclusion, respect for diversity, and protection of the rights of others.

Solidarity and Democracy: Working collaboratively for the common good while respecting participation, shared responsibility, and collective decision-making. It is reflected in teamwork, community service, social responsibility, and respect for diverse views.

Patriotism: Demonstrating love, loyalty, and commitment to the wellbeing and development of Rwanda. It is expressed through civic responsibility, community participation, promotion of national unity, and positive representation of the country.

Hard Work: Applying consistent effort, diligence, and responsibility in pursuing goals and fulfilling duties. It is demonstrated through persistence, productive use of time, initiative, and commitment to quality outcomes.

Commitment and Resilience: Remaining dedicated to goals and continuing to make progress despite difficulties and setbacks. It is reflected in perseverance, adaptability, learning from mistakes, emotional self-control, and determination to succeed.

2. PEDAGOGICAL APPROACH

The change to a competence-based curriculum is about transforming learning to ensure that learning is deep, enjoyable and habit-forming.

IT in general and particularly ICT should be used as a pedagogical tool to facilitate teaching and learning of mathematics. Various teaching strategies and approaches such as direct instruction, discovery learning, investigation, guided discovery, or other methods must be incorporated. Among the approaches that can be given consideration include the following:

- Learner-centred learning;
- Different learning abilities and styles of learners (individualisation);
- Use of relevant, suitable, and effective teaching materials;
- Formative evaluation to determine the effectiveness of teaching and learning processes.

The choice of a suitable approach will stimulate the teaching and learning environment inside or outside the classroom.

Suitable approaches include the following:

- Co-operative learning;
- Contextual learning;
- Mastery learning;
- Constructivism.

2.1 The role of the learner

In the competence-based curriculum, the learner is the principal actor of his/her education. He/she is not an empty bottle to fill. Taking into account the initial capacities and abilities of the learner, the activities of the learner are indicated against each learning unit and reflect appropriate engagement of the learner in the learning process. The teaching-learning process will be tailored towards creating a learner friendly environment based on capabilities, needs, experience and interests.

Therefore, the following are some of the roles or expectations from learners:

- Learners construct the knowledge either individually or in groups in an active way. From the learning theory, learners move in their understanding from concrete through pictorial to abstract. Therefore, the opportunities should be given to learners to manipulate concrete objects and to use models.
- Learners will be encouraged to do research and present their findings through group work activities.
- A learner is co-operative: learners work in heterogeneous groups to increase tolerance and understanding.
- Learners are responsible for their own participation and for making sure others participate.
- Help is sought from within the group and the teacher is asked for help only when the whole group agrees to ask a question.
- Consensus on the answer is required from the whole group.
- The group evaluates its own strategies and ideas rather than relying on the teacher for this evaluation.
- The learners who learn at a faster pace do not do the task alone and then the others merely sign off on it.
- Participants ensure the effective contribution of each member, through clear explanation and articulation of constructive arguments, to improve their English literacy, develop a sense of responsibility and to increase their selfconfidence, and public speaking ability, etc.

2.2 The role of the teacher

Some of the specific duties of the teacher when implementing competence-based activities are as follows:

- He/she is a facilitator: his/her role is to provide opportunities for learners to meet problems that create interest and challenge them and that, with appropriate effort, they can solve.
- He/she is an organiser: his/her role is to organise the learners, in the classroom or outside, and engage them through participatory and interactive methods through the learning processes as individuals, in pairs or in groups. To ensure that the learning is personalised, active and participative, the teacher must identify the needs of the learners, the nature of the learning to be done, and the means to shape learning experiences accordingly.
- He/she is an advisor: he/she provides counseling and guidance for learners in need. He/she comforts and encourages learners by valuing their contributions in the class activities.
- He/she is a conflict-solver: when members of a group have problems such as the attribution of tasks he/she should provide useful and constructive ideas. The teacher should settle disputes among the group.
- He/she is ethical: he/she teaches by example, by being impartial, by being a role-model, and by caring for individual needs, especially for slow learners and learners with Special Educational Needs.

2.3 Special Needs Education and inclusive approach

All Rwandans have the right to access education regardless of their different needs. The underpinnings of this provision would naturally hold that all citizens benefit from the same menu of educational programs. The possibility of this assumption is the focus of special needs education. The critical issue is that we have learners who are totally different in their ways of living and learning as opposed to the majority. The difference can be emotional, physical, sensory, or related to intellectual learning challenges, traditionally known as mental retardation

These learners equally have the right to benefit from the free and compulsory basic education in nearby ordinary/ mainstream schools. Therefore, the schools' role is to enroll them and also set strategies to provide relevant education for them. The teacher therefore is requested to consider each learner's needs during the teaching and learning process. Assessment strategies and conditions should also be standardised to the needs of these learners. Detailed guidance for each category of learners with special education needs is provided for in the guidance for teachers.

3. ASSESSMENT APPROACH

Assessment evaluates the teaching and learning process through collecting and interpreting evidence of an individual learner's learning progress and makes a judgment about the learner's achievements measured against defined standards. Assessment is an integral part of the teaching and learning process. In the new competence-based curriculum, assessment must also be competence-based, whereby a learner is given a complex situation related to his/her everyday life and asked to try to overcome the situation by applying what he/she has learned.

Assessment will be organised at the following levels: School-based assessment, District examinations, National assessment (Learning Achievement in Rwandan Schools (LARS)), and National examinations.

3.1 Types of assessments

3.1.1. Formative assessment:

Formative assessment helps to check the efficiency of the process of learning. It is done within the teaching/ learning process. Continuous assessment involves formal and informal methods used by schools to check whether learning is taking place. When a teacher is planning his/her lesson, he/she should establish the criteria for performance and behavioral changes at the beginning of a unit. Then, at the end of every unit, the teacher should ensure that all the learners have mastered the stated key unit competencies based on the criteria stated, before

going to the next unit. The teacher will assess how well each learner masters both the subject and the generic competencies described in the syllabus, and from this, the teacher will gain a picture of the all-round progress of the learner. The teacher will use one or a combination of the following: (a) observation, (b) pen and paper, (c) oral questioning.

3.1.2. Summative assessments:

When assessment is used to record a judgment of the competence or the performance of the learner, it serves a summative purpose. Summative assessment gives a picture of a learner's competence or progress at any specific moment. The main purpose of summative assessment is to evaluate whether learning objectives have been achieved. The results of summative assessment are also used to rank or grade learners, for deciding on progression, for selection into the next level of education, and for certification. This assessment should have an integrative aspect whereby a learner must be able to show mastery of all competencies.

Summative assessment can be an internal school-based assessment or an external assessment in the form of national examinations. School-based summative assessment should take place once at the end of each term and once at the end of the year. School summative assessment average scores for each subject will be weighted and included in the final national examination grade. School-based assessment average grades will contribute a certain percentage as teachers gain more experience and confidence in assessment techniques. Districts will be supported to continue their initiatives to organise a common test per class for all the schools to evaluate the performance and the achievement level of learners in each individual school. Summative assessment will be done at the end of the term in form of comprehensive assessment and marks will be uploaded in Comprehensive Assessment Management Information System (CAMIS) for stakeholders.

3.2 Record keeping

This is gathering facts and evidence from assessment instruments and using them to judge the learners' performance by assigning an indicator against the set criteria or standard. Assessment procedures generate data in the form of scores which will be carefully be recorded and stored in a portfolio. These scores will contribute to remedial actions and alternative instructional strategies. They will also be used to provide feedback to the learner and their parents to check learning progress and to provide advice, as well as be used in the final assessment of the learners.

This portfolio is a folder (or binder or even a digital collection) containing the learners' work as well as the learners' evaluation of the strengths and weaknesses of their work. Portfolios reflect not only the work produced (such as papers and assignments), but also provide a record of the activities undertaken over time as part of learners' learning.

Additionally, it will serve as a verification tool for each learner to confirm that he/she has completed the entire learning process before undergoing the summative assessment for the subject

3.3 Item writing in summative assessment

When developing a question paper, a plan or specification of what is to be tested or examined, the assessment task must show the units or topics to be tested, the number of questions in each level of Bloom's taxonomy, and the mark allocation for each question. In a competency-based curriculum, questions from higher levels of Bloom's taxonomy should be given more weight than those from the knowledge and comprehension level.

Before developing a question paper, the item writer must ensure that the test or examination questions are tailored towards competency-based assessment by doing the following:

- Identify topic areas to be tested on from the subject syllabus.

- Outline the subject-matter content to be considered as the basis for the test.
- Identify learning outcomes to be measured by the test.
- Prepare a table of specifications.
- Ensure that the verbs used in the formulation of questions do not require memorisation or recall answers only, but test for broad competencies as stated in the syllabus.

Structure and format of the examination

At the end of this level, the paper for the exam will be comprised of two sections. The first section will be composed of short-answer items or items with short calculations, which include questions testing for knowledge and understanding, investigation of simple patterns, quick calculations, and applications of mathematics in real life through simple word problems. The second section will be composed of long answer items or answers with constructions, simple demonstrations, investigation of simple patterns and generalisation, interpretation, and explanations. The items for the second section will emphasise the mastery of mathematical facts, the understanding of mathematical concepts, and their application in real-life situations. In this section, the assessment will find out not only what skills and facts have been mastered, but also how well learners understand the process of solving a mathematical problem and whether they can link the application of what they have learned to the context or to real life.

The following topic areas must be assessed: Numbers and operations, algebra, measurements and money; two-dimensional (2D) shapes, geometry, and pictographs as an introduction to data handling. Topic areas with more weight will have more emphasis in the second section, where learners should have the right to choose to answer a given number of questions.

3.4 Reporting to parents

The wider range of learning in the new curriculum means that it is necessary to think again about how to share a learner's progress with their parents. A single mark is not sufficient to convey the different expectations of learning that are outlined in the learning objectives. The most helpful reporting is to share with parents what learners are doing well and where they need to improve.

4. RESOURCES

4.1 Materials needed for implementation

The use of teaching resources and teaching materials is crucial in guiding learners to develop mathematical ideas.

Teachers should use real or concrete materials to help learners gain experience, construct abstract ideas, make inventions, build self-confidence, encourage independence, and inculcate the spirit of cooperation. Some resources that can be used are:

- Reference books
- Manila cards
- Geometrical instruments like rulers, a pair of compasses, rubbers, pencils, dividers, sharpeners, etc
- Computers
- Projectors
- Graph paper
- Abacus

- Calculator
- Counters, etc.

4.2 Human resources

The effective implementation of this curriculum requires a collaboration of educators at all levels. Given the material requirements, teachers are expected to accomplish their noble role as stated above. School head teachers and directors of studies are required to follow up and assess the teaching and learning of Mathematics. These combined efforts will ensure bright future careers and lives for learners as well as the contemporary development of the country.

Specifically, a teacher of Mathematics at in lower primary level should have a firm understanding of mathematical concepts at the level he/she teaches. He/she should be qualified in mathematics and have firm ethical conduct. The teacher should possess the qualities of a good facilitator, organiser, problem solver, listener, and adviser. He/she is required to have basic skills and competence in guidance and counseling because learners may come to him/her for advice.

Skills required for the Teacher of Mathematics

The teacher of mathematics should have the following skills, values, and qualities:

- Engage learners in a variety of learning activities.
- Use multiple teaching and assessment methods.
- Adjust instruction to the level of the learners.
- Use creativity and innovation in the teaching and learning process.
- Be a good communicator and organiser.

- Be a guide/facilitator and a counselor.
- Manifest passion and impartial love for children in the teaching and learning process.
- Link the use of mathematics with other subjects and real-life situations.
- Have good mastery of mathematics content.
- Have good classroom management skills

4.3 Use of AI in Mathematics teaching and learning

AI became a powerful tool in mathematics education when used thoughtfully. The key is viewing AI as a tool in our educational toolkit, not as a threat to genuine mathematical understanding.

Here is how teachers and students can ask a question to AI at different stages of the learning process.

(1) Ways in which Mathematics teachers can use AI

a) Lesson planning and content creation

- Generate practice activities: "Create 10 problems on quadratic equations with varying difficulty levels".
- Develop worksheets: "Make a worksheet on Pythagorean theorem with real-world applications".
- Create alternative explanations: "Explain complex numbers in 3 different ways for visual, auditory, and kinesthetic students".
- Generate assessment items: "Create a quiz on derivatives with answer key and scoring rubric".

b) Differentiation and individualization

- Adapt problems: "Modify this calculus problem for a student who's struggling with algebraic manipulation".

- Create assignments: “Provide this geometry proof at basic, proficient, and advanced levels”.
- Generate enrichment: “Create challenging problems about geometric sequences for advanced students”.

c) Assessment and feedback

- Analyze common errors: “Identify common misconceptions in solving linear equations and suggest addressing strategies”.
- Generate rubrics: “Create a grading rubric for the activities on quantifiers and their negation”.
- Provide feedback templates: “Suggest specific, constructive feedback for a student who made a sign error in solving inequalities”.

D) Professional development

- Stay current: “What are recent research-based strategies for teaching fractions?”
- Plan interventions: “Suggest interventions for students struggling with word problems”.
- Designing projects to be assigned to students: “Help me design a project-based learning unit on exponential growth”.

(2) Ways in which Mathematics students can use AI

a) Personalized tutoring and explanation

- Get multiple explanations: “Explain the chain rule in calculus using simple expressions to be understood by a S4 student”.
- Clarify concepts: “Why do we ‘invert and multiply’ when dividing fractions? Explain visually”.
- Step-by-step guidance: “Walk me through solving this simultaneous equations step by step using matrices, but don’t give me the answer”.

b) Practice and problem-solving

- Generate similar problems: "Give me more problems like this one about probability".
- Check understanding: "Create a self-check quiz on trigonometric identities".
- Explore variations: "What if this geometry problem had different given information?"

c) Conceptual deepening

- Make connections: "How is the concept of slope related to real-world applications?"
- Explore why: "Why does the quadratic formula work? Derive it for me".
- Historical context: "What's the history behind the development of calculus?"

(3) Best Practices and guidelines

For Teachers, use AI as a Co-planner, not replacement. Verify and edit AI-generated content for accuracy. Teach students HOW to use AI responsibly. Create AI-use policies for your classroom so that they focus on process over answers.

For Students, use AI as a tutor, not an answer key. Show your work and ask for feedback on process. Ask "why" and "how" not just "what's the answer". Do not copy AI solutions directly but use AI to understand methods. Do not depend solely on AI but use AI to supplement learning. Do not trust AI blindly but verify answers and methods.

In conclusion, the most effective mathematics classrooms will be those where teachers use AI to enhance their expertise and reach more students. Students use AI to get immediate, personalized support. Human connection between teachers and students remains central for motivation and deep understanding. This means that AI won't replace mathematics teachers, but teachers who use AI effectively will replace those who don't.

5. SYLLABUS UNITS

5.1 Presentation of the structure of the syllabus units

Mathematics is taught and learned as a core subject in lower primary education, specifically in P1, P2, and P3. In each grade, the syllabus is structured into Topic Areas and Sub-Topic Areas, where applicable, and is further divided into Units. This breakdown promotes uniformity, effectiveness, and efficiency in the teaching and learning of Mathematics. The Units contain the following elements:

1. Each unit is aligned with the number of periods
2. Each unit has a key competence whose achievement is pursued by all teaching and learning activities undertaken by both the teacher and the learners.
3. Each key unit competence is broken into three types of Learning Objectives as follows:
    a. *Type I:* Learning Objectives relating to Knowledge and Understanding. *Type I* Learning Objectives are also known as Lower Order Thinking Skills or LOTS.
    b. *Type II a*nd *Type III:* These Learning Objectives relate to the acquisition of skills, Attitudes, and Values. *Type II* and *Type III* Learning Objectives are also known as Higher Order Thinking Skills or HOTS. These Learning Objectives are considered to be the ones targeted by the present reviewed curriculum.
4. Each Unit has content that indicates the scope of coverage of what is to be taught and learnt in line with the stated Learning Objectives.
5. Each Unit suggests a non-exhaustive list of learning activities that are expected to engage learners in an interactive learning process as much as possible (learner-centred and participatory approach).

6. Finally, each Unit is linked to other subjects, the assessment criteria, and the materials (or resources) that are expected to be used in the teaching and learning process. The Mathematics syllabus for the lower primary level consists of 38 units with 11 units in P1, 13 units in P2, and 14 units in P3.

5.2 Mathematics Syllabus for Primary One (P1)

5.2.1 Key competences at the end of P1

1. Counting, reading, writing, ordering, and comparing whole numbers from 0 up to 100, decomposing numbers, and using effectively and rapidly the rules of counting (+,-,×,÷) in numbers with 2 digits.
2. Measuring and comparing the length of various real objects with length less than or equal to 10m and working out exercises and word problems involving addition and subtraction in meters.
3. Differentiating coins of Rwandan currency from 1Frw up to 100 Frw, exchanging money, and solving word problems involving addition and subtraction.
4. Grouping real objects and describing the values of working together with others.
5. Identifying a square and a rectangle from other geometric shapes and giving examples of different tools having similar shapes as a square or a rectangle.
6. Directions, location of objects, and lines.

5.2.2 Mathematics units for Primary One

<table>
<tr><td colspan="2">TOPIC AREA: NUMBERS AND OPERATIONS</td><td colspan="3">SUB-TOPIC AREA: WHOLE NUMBERS FROM 0 TO 100</td></tr>
<tr><td colspan="2">P1 MATHEMATICS</td><td colspan="2">Unit 1: Numbers from 1 to 5</td><td>Number of Periods: 25</td></tr>
<tr><td colspan="5">Key Unit Competence: Pupils will be able to count, read, write, order, compare, add and subtract whole numbers from 1 to 5.</td></tr>
<tr><td colspan="3">Learning Objectives</td><td rowspan="2">Content</td><td rowspan="2">Learning Activities</td></tr>
<tr><td>Knowledge and Understanding</td><td>Skills</td><td>Attitudes and Values</td></tr>
<tr><td>– Understand the concept of a number from 1 to 5.
– Clearly understand the use of addition, subtraction, and equal signs: +, and =
– Mentally add numbers whose sum does not exceed 5</td><td>– Count, read, write, and order numbers from 1 to 5.
– Group various objects / draw groups of various objects where the number does not exceed 5</td><td>– Show orderliness in daily life
– Appreciate the importance of learning counting, reading, and writing numbers in daily life.</td><td>- Counting objects in groups from 1 to 5.
- Pronunciation, reading, and appropriate writing of numbers from 1 to 5.</td><td>– Through the use of rhymes, songs, number lines, counting and quick-ordering games, and groupings of different items, pupils will reply to the questions based on their observations.
Example: Which number did you find? What is the number you can add or subtract to get a given sum or difference, determine that number, ...?</td></tr>
</table>

– Mentally subtract numbers whose first term does not exceed 5.	– Compare groups of objects whose number does not exceed 5. - Add and subtract numbers by counting and writing (the sum should not exceed 5) - Read whole numbers from 1 to 5 wherever they are written. - Differentiate and compare the number of objects that do not exceed 5. - Order whole numbers that do not exceed 5 using symbols of comparison.	– Develop the a culture of working together with others harmoniously.	- Comparing the number of objects not exceeding 5 using comparison symbols (<,>, or =) - Ordering of numbers 1 to 5 in ascending and descending order - Addition and subtraction of numbers with the sum not exceeding 5.	– Each learner reads the number shown on a number card and shows it using counters. – Each learner uses a finger to write the number in various locations: In the air, on the desk… starting from the learnt lines. - Each learner compares groups of various objects showing fewer or more. - In groups, learners show the sum of different numbers either by writing or using counters. **Example:** 5=4+1; 5=3+2; 5=2+1+2, … - In pairs, learners answer the questions about addition and subtraction by counting, writing, using various counters, sum of drawings, games for mental arithmetic. (**Example:** add one, subtract one, add two, subtract two….)

			- Word problems on addition and subtraction of whole numbers (the sum and the first term should not exceed 5)	- In groups, learners solve simple word problems related to their daily lives. - In groups, learners discuss the schedule of their daily activities and the importance of counting, reading, and writing, comparing, ordering, adding, and subtracting numbers in daily life.
Links to other subjects: *English (reading and using words containing numbers),* ***Music*** *(songs used in counting),* ***Physical Sports*** *(games about counting in groups),* ***Elementary Science and Technology*** *(attributing the numbers to groups of objects and counting of various objects),...*				
Generic skills to be developed: Critical thinking, Research and problem solving, Communication, and lifelong learning.				
Values to be developed: Equity and Inclusiveness, Learner-Centeredness, Peace and Tolerance, Hard Work (Commitment & Resilience), Self-Reliance.				
Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Gender, Environment and Sustainability, and financial education.				
Assessment criteria: *Learners can read and write numbers from 1 to 5, order and compare numbers from the greatest to the lowest or vice versa, count groups of various objects, select /pick all numbers less than or equal to 5 from other numbers, and add and subtract whole numbers less than or equal to 5.*				
Teaching/ learning aids: *Various counters (bottles, stones, sticks,...), number cards, from number one to five.*				

TOPIC AREA: NUMBERS AND OPERATIONS	SUB-TOPIC AREA: WHOLE NUMBERS FROM 0 TO 100	
P1 MATHEMATICS	**Unit 2:** Numbers from 1 to 9.	**Number of Periods:25**

Key Unit Competence: Pupils will be able to count, read, write, order, compare, add, and subtract whole numbers from 1 to 9.

Learning objectives			Content	Learning activities
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– Understand and discover the concept of a number from 1 to 9. – Clearly understand the comparison symbols: <, >, and =, as well as mental arithmetic for comparing numbers from 1 to 9."	– Count, read, write and order numbers from 1 to 9. – Group objects/ drawing props of various objects whose number does not exceed 9 – Compare groups of objects whose number does not exceed 9	– Show orderliness in their daily life. – Appreciate the importance of learning counting, reading and writing numbers in their daily life.	– Counting objects in groups from 1 to 9. – Pronunciation, reading and appropriate writing of numbers from 1 to 9. – Comparing the number of objects not exceeding 9	– Using songs, rhymes, number line, games in counting and quick ordering numbers and groups of various objects, learners answer the questions related to the lesson learnt. **Example:** Which number did you find? What is the number you can add or subtract to get a given sum or difference, determine that number, ...? – Each learner reads the number shown on a number card and shows it using counters.

– Mentally add numbers whose sum does not exceed 9. – Mentally subtract numbers whose first term does not exceed 9. – Mentally recognize and ordering the number patterns – Clearly understand the appropriate operation to solve the problem	– Add and subtract numbers by counting and writing (the sum should not exceed 9) – Read numbers from 1 to 9 wherever they are written. – Differentiate and compare the number of objects less than or equal to 9. – Order his/her daily activities (five activities per day) starting from morning.	– Develop the culture of working together with others in harmony.	– Ordering of numbers 1-9 in ascending and descending order – Addition and subtraction of numbers whose sum does not exceed 9. – Comparison of numbers from 1 to 9 using comparison symbols (<,>, or =) – Word problems involving addition and subtraction numbers less than or equal to 9 (the sum and the first term should not exceed 9)	– Each learner uses a finger to write the numbers in various locations: In the air, on the desk ..., starting from the learnt lines. - Each learner compares groups of various objects showing fewer or more objects. – In groups, learners show the sum of different numbers either by writing or using counters **Example**: 9= 4+5; 9=3+9; 9=3+4+2, ... – In pairs, learners answer the questions involving addition and subtraction of numbers from 1 to 9 by counting, writing, using various counters, drawings, and games for mental arithmetic . **Example:** Add one, subtract one, add two, subtract two.... - In groups, learners solve simple word problems related to their daily l**ives**.

	– Compare numbers less than or equal to 9 using comparison symbols (<,>, or =)			- In groups, learners discuss the schedule of their daily activities and the importance of counting, reading, and writing, comparing, ordering, adding, and subtracting numbers in daily life. - **Number Tracing and Writing**: Provide opportunities for children to trace and write numbers 0-9. This helps with number formation and recognition. Use different mediums like sand, paint, or playdough for a multi-sensory experience.
Links to other subjects: English *(reading and using words containing numbers),* ***Music*** *(songs about counting),* ***Physical Sports*** *(games about counting in groups),* ***Elementary Science and Technology*** *(attributing to groups of objects and counting of various objects),...*				
Generic skills to be developed: Critical thinking, Research and problem solving, Effective Communication.				
Values to be developed: Equity and inclusiveness, Peace and Tolerance, excellence in all learning activities, Solidarity and Democracy				

Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Gender, Environment and Sustainability , and Financial education
Assessment criteria: *Learners can write and read numbers from 1 to 9, order and compare numbers from the greatest to the lowest or vice versa, count groups of various objects, select /pick all numbers less than or equal to 9 from other number, add and subtract numbers from 1 to 9.*
Teaching/ learning aids: *Various counter (bottles, stones,stick, abacus……), number cards, from number 1 to 9.*

TOPIC AREA: NUMBERS AND OPERATIONS	SUB-TOPIC AREA: WHOLE NUMBERS FROM 0 TO 100	
P1 Mathematics	**Unit 3:** Numbers from 0 up to 10	**Number of Periods: 5**

Key Unit Competence: Pupils will be able to count, read, write, order, compare, add, and subtract whole numbers from 0 to 10.

Learning objectives			**Content**	**Learning activities**
Knowledge and understanding	**Skills**	Attitudes and Values		
– Discover and understand the concept of numbers 0 and 10 – Mentally add and subtract numbers less than or equal to 10.	– Count, read, write, order numbers from 0 up to 10. – Group various objects less than or equal to 10 using counters/ drawings. – Count and list scholastic and household materials whose number does not exceed 10.	Show order in various activities of daily life Appreciate the importance of learning counting, reading and writing numbers in daily life.	– The concept of zero – Counting objects in various groups from 0 up to 10. – Reading and writing numbers from 0 to 10. – Comparing two numbers less than or equal to 10 using comparison symbols (<,> or =). – Arranging numbers up to 10	– In groups, learners show the concept of zero using subtraction of counters until they are left with nothing **Example**: **Everyday Counting**: If you have 3 apples and eat all of them, you have **0 apples left**. Using songs, rhymes, number line, games in counting and quick ordering of numbers and groups of various objects, learners answer the questions related to the lesson learnt.

– Clearly understand the—symbols of comparison: <, > or = and mental arithmetic on comparison of numbers from 0 to 10. – Mentally add numbers whose sum does not exceed 10. – Mentally subtract numbers whose first term does not exceed 10. – Mentally ordering and recognizing number patterns	– Compare groups of objects having elements or members less than or equal to 10. – Compare two numbers less than or equal to 10 using comparison symbols (<,> or =) – Addition and subtraction of numbers (the sum and the terms used should not exceed 10)	Develop the culture of working together with others in harmony.	– Addition and subtraction of two numbers whose sum is less than or equal to 10	**Example:** Which number did you find? What is the number you can add or subtract to get a given sum or difference, determine that number, ...? – Each learner will decompose the number 10, showing that it is formed by two digits (1 and 0) – Individually, each learner reads the number shown on a number card and matches it with counters. – Each learner uses a finger to write the numbers in various location: In air, on the desk, ... starting from the learnt lines.

				– Each learner compares the groups of various objects showing less or more objects. – In groups, learners show the sum of different numbers either by writing or using counters. **Example:** 10=4+6; 10=3+7; 10=3+2+5.... – In pairs, learners answer the questions involving addition and subtraction of numbers from 0 up to 10 by counting, writing, using various counters, drawings and games for mental arithmetic: **Example:** Add one, subtract one, add two, subtract two.... – In groups, learners solve simple word problems related to their daily life.

				– In groups, learners discuss the schedule of their daily activities and the importance of counting, reading and writing, comparing, ordering, adding and subtracting numbers in their daily life.

Links to other subjects: English (*reading and telling words containing numbers*), ***Music*** (*songs about counting*), ***Physical Sports*** (*games about counting in groups), **Elementary Science and Technology*** (*attributing the numbers to the groups of objects and counting of various objects*),...

Generic skills to be developed: Critical thinking, Research and problem solving, Effective Communication and lifelong learning.

Values to be developed: Equity and inclusiveness, openness and transparency, and, Self-Reliance, Learner-centredness, and hardwork.

Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Gender, Environment and Sustainability.

Assessment criteria: *Learners can write and read numbers from 0 to 10, order and compare numbers from the greatest to the lowest or vice versa, count groups of various objects, select/pick all numbers less than or equal to 10 from other number, add and subtract numbers from 0 up to 10.*

Teaching/ learning aids**:** *Various counters (bottles, stones,.....), an abacus, and number cards having numbers from 0 up to 10.*

TOPIC AREA: NUMBERS AND OPERATIONS	**SUB-TOPIC AREA: WHOLE NUMBERS FROM 0 TO 100**	
P1 Mathematics	**Unit 4:** Numbers from 0 up to 20	**Number of Periods:15**

Key Unit Competence: Pupils will be able to count, read, write, order, compare, add, and subtract whole numbers from 0 up to 20.

Learning objectives			**Content**	**Learning activities**
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– Discover and understand the concept of numbers from 0 up to 20 – Understand the place value of the digits in numbers not exceeding 20. – Mentally add and subtract numbers less than or equal to 20.	– Group various objects whose number does not exceed 20 – Count, read, write, and order numbers less than or equal to 20. – Count and list scholastic and household materials whose number does not exceed 20. – Read sign posts showing numbers less than or equal to 20.	– Show orderliness in daily activities. – Appreciate the importance of addition and subtraction in daily life. – Develop the culture of working togethe in harmony. – Develop critical thinking and problem-solving	– Counting various objects in groups from 0 up to 20. – Counting, Reading and writing numbers from 0 up to 20. – Decomposing the place values such as tens and ones less than or equal to 20	– Individually, grouping various objects and counting them. (The sum of each type of objects must be less than or equal to 20) – In small groups, exercises on reading and writing numbers from 0 up to 20 using number cards

– Understanding how numbers relate to each other in addition problems less than or equal to 20.	**Example:** Number of the house, number of the road, ... – Compare the quantity of various objects showing less and more quantity and order numbers less than or equal to 20 from the smallest to the greatest. – Decompose numbers less than or equal to 20 into ones and tens. – Add and subtract numbers (the sum and the terms used should not exceed 20).		– Ordering numbers from 0 up to 20 and comparing numbers using the symbols of comparison (<, >, or =) – Addition and subtraction of numbers whose sum does not exceed 20. – Word problems involving addition and subtraction (the sum and the first term should not exceed 20).	– In small groups, mental arithmetics involving addition and subtraction of numbers (the sum and the first term should not exceed 20) using games, counters and number cards. – In pairs, learners use a number line to count in descending order then arrange numbers following a given interval. – Each learner compares groups of various objects showing which is more or less or equal quantity using comparison symbols (<, > or =) – In groups, learners decompose numbers into ones and tens using abacus or numeration table.

				– In groups, learners find the sum of different numbers less than or equal to 20 either by writing or using counters. **Example: 20**=14+6; 20 = 13 + 2 +5… – In groups, learners solve word problems involving addition and subtraction of numbers (the sum and the first term should not exceed 20). – In groups, learners discuss the importance of addition and subtraction in daily life.
Links to other subjects: **English** (*reading and determining the words containing numbers*), ***Music*** (*songs about counting*), ***Physical Sports*** (*games about counting in groups), **Elementary Science and Technology** (attributing numbers to groups of objects and counting of various objects*). ***Social Studies**: discussing simple population numbers for their class (e.g., «There are 8 pupils in our class, and 20 children in the whole school») can introduce simple numbers in a social context.*				

Generic skills to be developed: Critical thinking, Research and problem solving, Effective Communication and lifelong learning.
Values to be developed: Dignity and Integrity, Patriotism, Excellence, Equity and Inclusiveness, Respect for Others and Human Rights.
Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Gender, Environment and Sustainability, and financial education.
Assessment criteria: *Learners can write and read numbers from 0 to 20, order and compare numbers from the greatest to the lowest or vice versa, count groups of various objects, select/pick all numbers less than or equal to 20 from other numbers, add and subtract numbers from 0 up to 20.*
Teaching/ learning aids**:** *Various counters (bottles, stones,.....), number cards having numbers from 0 up to20.*

TOPIC AREA: NUMBERS AND OPERATIONS		SUB-TOPIC AREA: NUMBERS FROM 0 TO 100		
P1 Mathematics		**Unit 5:** Numbers from 0 to 50.		**Number of Periods: 20**
Key unit competence: Pupils will be able to count, read, write, order, compare, add, and subtract whole numbers from 0 to 50.				
Learning objectives			**Content**	**Learning activities**
Knowledge and Understanding	**Skills**	**Attitudes and Values**		
– Discover and understand the concept of numbers from 0 to 50. – Understand the place values of the digits in numbers not exceeding 50. – Add and subtract numbers not exceeding 50.	– Group various objects whose number does not exceed 50 – Count, read, write, order, numbers less than or equal to 50. – Compare the quantity of various objects showing less and more quantity	– Shows orderliness in daily activities – Appreciate the importance of addition and subtraction in daily life. – Instills a strong value for accuracy and attention	– Counting objects in groups from 1 up to 50. – Reading and writing numbers from 0 up to 50. – Decomposition of numbers into ones and tens in a 2-digit number from 0 up to 50. – Ordering, matching and comparing numbers up to 50 using the symbols of comparison (<, >, and =). – Addition and subtraction of numbers whose sum does not exceed 50.	– In pairs, make groups of various objects from 1 up to 50 and count them. – Individually, read and write numbers from 1 up to 50. – In groups, use games, counters and number cards to add and subtract the numbers whose sum or difference does not exceed 50.

– Clearly understand the symbols of comparison: <, > or = and mental arthimetic on comparison of numbers from 0 to 50. – Understand the arrangement of numbers and interpret the word problems less than or equal to 50.	– Order numbers less than or equal to 50 from the smallest to the greatest. – Decompose numbers less than or equal to 50 into ones and tens. – Add and subtract numbers (the sum and the terms used should not exceed 50).		– Word problems involving addition and subtraction of numbers less than or equal to 50.	– In groups, use a number line to count in descending order following a given interval – Arrange numbers either in ascending or descending order following a given interval or using a number line – Each learner compares groups of various objects showing less and more using the symbols of comparison (<, > or =) – In groups, they decompose numbers into ones and tens using abacus or numeration table in groups, learners do exercises on addition of numbers (the sum less or equal to 50)

				Example: 50= 40+10; 50=30+15+5....) – In groups, learners solve word problems involving addition and subtraction of numbers less than or equal to 50 and discuss the importance of addition and subtraction in daily life.
Links to other subjects: **English** (*reading and using words containing numbers*), ***Music*** (*songs about counting*), ***Physical Sports*** (*games about counting in groups), **Elementary Science And Technology** (attributing numbers to groups objects and cpounting of various objects*), ***Social studies*** *«How Many People in a Family?»: Discuss different family structures and count the number of members in various families, fostering an understanding of diversity.*				
Generic skills to be developed: critical thinking and problem-solving, effective communication, cooperation, lifelong learning.				
Values to be developed: Equity and Inclusiveness, Hard Work, Peace and Tolerance, and Solidarity and Democracy.				
Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Gender, Environment and Sustainability, and financial education.				

Assessment criteria: *Learners can write and read numbers from 0 up to 50, order and compare numbers from the greatest to the lowest or vice versa, count groups of various objects, select/pick all numbers less than or equal to 50 from other numbers, add and subtract numbers from 0 to 50.*
Teaching/ learning aids**:** *Various counters (bottles, stones,....), abacus, number cards having numbers from 0 to 50.*

TOPIC AREA: NUMBERS AND OPERATIONS	SUB-TOPIC AREA: WHOLE NUMBERS FROM 0 TO 100	
P1 Mathematics	**Unit 6: Numbers from 0 to 100.**	**Number of Periods:20**

Key Unit Competence: Pupils will be able to count, read, write, order, compare, add and subtract whole numbers from 0 to 99.

Learning objectives			Content	Learning activities
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– Discover and understand the concept of numbers from 0 to 99. – Understand the place value of the digits in numbers not exceeding 99. – Add and subtract numbers not exceeding 99	– Group various objects whose numbers does not exceed 99. – Count, read, write, order, numbers not exceeding 99. – Count various scholastic and household items.	– Show orderliness in daily activities. – Appreciate the importance of addition and subtraction in daily life – Encourages self-correction and immediate feedback	– Counting objects in groups from 1 to 100. – Reading and writing numbers from 0 to 100. – Decomposing numbers less than or equal to 99 into ones and tens	In small groups or individually do the following: – Make groups of various objects from 1 to 100 using counters or drawings – Read and write numbers from 1 to 99. – Do mental arthimetic involving addition and subtraction from 1 up to 99. **Example:** Add 10, subtract 10, what is the missing number, ...

– Interpret the word problems in an addition context with numbers less than or equal to 99. – Understand the arrangement of the numbers less than or equal to 99.	– Compare numbers showing less than and more than, and order numbers 0-99 from the smallest to the greatest. – Decompose numbers less than or equal to 99 into ones and tens. – Add and subtract numbers whose the sum and the first term do not exceed 99.		– Ordering and comparing numbers from 1 to 99 using comparison symbols (<, >, or =) – Addition and subtraction of numbers whose sum does not exceed 99. – Word problems involving addition and subtraction of numbers less than or equal to 99.	– Use descending the number lines to count in order – Use the number lines to arrange numbers in the given order – Use groups of various objects to compare different quantities by showing which is more or less using signs <, >, or = – Decompose numbers from 1 to 99 into ones and tens using an abacus or the table of place values. – Do exercises on the addition of numbers that do not exceed 99. **Example:** 80= 50+ 30, ... – Solve word problems involving addition and subtraction of numbers less than or equal to 100.

				– Discuss the importance of addition and subtraction in daily life.

Links to other subjects: English (*reading and using words containing numbers*), ***Music*** (*songs about counting*), ***Physical Sports*** (games *about counting in groups), **Elementary Science and Technology*** (*attributing numbers to groups of objects and coounting of various objects*), ***Social Studies**, counting School Days: mentioning, counting the days of school is a direct link to time and routine.*

Generic skills to be developed: critical thinking and problem-solving, effective communication, cooperation, lifelong learning.

Values to be developed: Equity and Inclusiveness, Excellence, Solidarity and Democracy, Peace and Tolerance.

Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Gender, Environment and Sustainability, and financial education.

Assessment criteria: *Learners can read and write the numbers from 1 to 99, order and compare numbers from the greatest to the smallest or vice versa, count groups of various objects, select /pick all numbers less than or equal to 99 from other numbers , add and subtract numbers from 1 to 99.*

***Teaching/ learning aids*:** *Various counters (bottles, stones, ……),abacus, number cards having number from 1 to 99.*

TOPIC AREA: ALGEBRA	SUB-TOPIC AREA: NUMBER PATTERN	
P1 Mathematics	**Unit 7:** Number patterns	**Number of Periods:** 10

Key Unit Competence: Finding the missing number in a number pattern and how to find it in numbers composed of 1 and 2 digits.

Learning Objectives			Content	Learning activities
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– Order numbers following the given instructions – Discover the missing numbers in the number patterns using addition or subtraction. – Find the common difference in the number patterns.	– Make number patterns with a constant ratio/ interval. – Identify and extend simple repeating number patterns within the range of 0 to 99.	– Develop the capacity for critical thinking – Show orderliness in daily life. – Promotes logical reasoning and pattern recognition – Appreciate number patterns by creating and extending patterns during play activities	– Write ordinal numbers – Using addition or subtraction to introduce the concept of number patterns. – Finding the common difference/ ratio used in a number pattern	– In small groups or individually: – Make groups of various counters and arrange them to form a pattern by respecting equal intervals or a constant ratio/interval. – Arrange various objects following their size, color, and shape. – Find the difference between two successive groups.

– Discover the ratio/interval used between two consecutive numbers in the number patterns – -Ability to create a pattern by ordering numbers			– Number patterns involving addition and subtraction.	– Use drawings in arranging counters in groups. – Use addition and subtraction to demonstrate the number pattern with a constant interval, common difference /ratio. – Analyse the number pattern, hence determine the rule used to find the terms of a number sequence. – Do exercises on addition and subtraction. – Use various games to find missing numbers in a given number pattern with addition or subtraction

				Example: Skip Counting: A foundational number pattern activity, skip counting involves counting by a specific number (e.g., 2s, 5s, 10s). This can be taught using visual aids like base ten blocks or 120 charts, helping learners visualize the patterns and develop a deeper understanding of place value
Links to other subjects: Physical Education *(Jump rope counting: learners count jumps aloud, by ones, twos, fives, or tens).* ***Elementary Science and Technology*** *(students can record daily temperatures, rainfall, or cloud types over a period. They can then look for numerical patterns in these recordings, such as a consistent increase or decrease in temperature, or a repeating sequence of sunny and cloudy days. This helps them understand how scientists use information to predict the weather.*				
Generic skills to be developed: Critical Thinking & Problem Solving, Cooperation & Interpersonal Skills, Communication,Creativity and innovation .				
Values to be developed: Hard Work, Self-Reliance, Learner-Centredness, Aspiration and Optimism, Dignity and Integrity, Solidarity and Democracy				

Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Gender, Environment and Sustainability, and financial education.
Assessment criteria: *Learners can find the missing number in a number pattern and the rule used to find it in numbers composed of 1 and 2 digits.*
Teaching/ learning aids: *Various counters, number cards, cards of various drawings*

TOPIC AREA: MEASUREMENT	SUB-TOPIC AREA: LENGTH MEASUREMENTS	
P1 Mathematics	**Unit 8:** Measuring the length less than or equal to 10 m.	**Number of Periods:**15

Key Unit Competence: Pupil should be able to measure and compare the length of various objects having the length not exceeding 10 m, add and subtract length measurements less than or equal to 10m.

Learning Objectives			Content	Learning activities
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– Learn about length and how we measure it with meters. – Add and subtract length measurements of various objects having a length not exceeding 10 m – Understand putting standard units in order and comparison	– Compare the lengths of various objects with equal length or different lengths, but their length should be less than or equal to 10 m	– Understand the reason why length measurements are used for measuring length. – Develop an appreciation for accuracy and precision in their measurements. – Develops patience and determination in their practical work	– Concept of lengths and the standard unit of length measurements metre. – Tools used for measuring the length in metres (tape measure, folding metre, metre ruler) – Measuring the length of 10 m using a metre. – Reading and writing length measurements in metres.	In small groups or individually: – Ordering and comparing objects of various lengths by determining the longest and the shortest. – Use span of hand, ropes, steps of legs, feet, and sticks to measure various objects having a length not exceeding 1m

– Solve simple problems about lengths that are 10 meters or shorter.	– Measure various objects using the span of the hand, ropes, steps of the legs, feet, sticks, and metre ruler, but their length should be less than or equal to 10 m – Classify objects according to their length. – Read and write length measurements of various objects in figures.		– Comparing lengths less than 10 m using <,>, or = – Addition and subtraction of length measurements less than or equal to 10 m. – Word problems involving length measurements.	– Use a ruler of 1m length to compare the length in metres. – Measure the distance between 1m and 10 m and compare them. – Read and write measured length. – Do exercises and word problems involving comparison, addition, and subtraction of length measurements less than or equal to 10 m. – Discuss the use of length measurements in daily life.

				– Visit a nearby tailoring house, a building company, and a carpentry workshop where length measurements are used, to observe the importance of length measurement tools.
Links to other subjects: English *in reading: activities like jump rope, spelling using the word "Walls" for key vocabulary,* ***Physical Education, and Art*** *(running can incorporate counting in length covered, and learners can use basic mathematics skills to compute length in games)*				
Generic skills to be developed: Critical Thinking & Problem Solving, Cooperation & Interpersonal Skills, Communication, Creativity & Innovation, Lifelong Learning & Practical Application				
Values to be developed: Hard Work, Learner-Centredness, Aspiration and Optimism, Dignity and Integrity, Solidarity and Democracy.				
Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Gender, Environment and Sustainability, and financial education.				
Assessment criteria: *Learners can measure, compare, read, write, add, and subtract length measurements of various objects having the length not exceeding 10 m.*				
Teaching/ learning aids*: A ruler measuring 1 m in length, rope, sticks, a tape measure, a folding metre ...*				

TOPIC AREA: MEASUREMENT	SUB-TOPIC: RWANDAN CURRENCY	
P1 Mathematics	**Unit 9:** Rwandan currency from 1Frw to 100 Frw	**Number of Periods: 10**

Key Unit Competence: Pupils will be able to differentiate Rwandan currency from 1Frw to 100Frw and solve various problems involving the use of Rwandan currency from 1Frw to 100Frw.

Learning objectives			Content	Learning activities
Knowledge and Understanding	**Skills**	**Attitudes and Values**		
– Identify Rwandan currency from 1Frw to 100 Frw – Understand the value of Rwandan currency from 1Frw up to 100 Frw. – Interpret the word problems of the Rwandan currency – Understand the features of each coin from 1Frw to 100Frw.	– Appropriately use Rwandan currency from 1 Frw and 100Frw when buying goods. – Show the value and the usage of Rwandan currency from 1Frw to 100Frw.	– Develop a culture of honesty when using money. – Appreciate the importance of the economy and use money effectively. – Promotes collaboration and communication among the learners.	– Characteristics of Rwandan currency from 1Frw to 100Frw – Rwandan Coins and their features. – -Exchanging, adding and subtracting Rwandan currency from 1Frw to 100Frw.	In small groups or individually: – Observe Rwandan coins and differentiate them according to their characteristics. (Size, drawings, colors, and values from 1Frw to 100 Frw). – Use drawings and pictures to show the characteristics of Rwandan coins from 1 Frw to 100Frw.

– Mentally understand that two 5 Frw coins are equivalent to one 10 Frw coin	– Give examples of how money can be used in buying needed goods. – Determine items that can be purchased with a given amount of money		– Value and the importance of money in buying and selling different goods. – Word problems involving addition and subtraction of Rwandan currency from 1Frw to 100Frw.	– Use a pencil and pieces of paper to draw Rwandan coins. – Use games when adding and subtracting Rwandan coins during mental arithmetic. – Work out word problems involving exchanging, adding, and subtracting Rwandan coins from 1Frw to 100 Frw. – Give ideas about spending money. **Example:** If you have 100Frw, what can you buy?
Links to other subjects: English *in reading and vocabulary (Coins are available in denominations of 1, 5, 10, 20, 50, and 100 francs).* ***Social studies****, (visiting natural physical features like Lake Kivu and agricultural products like coffee beans, to pay banknotes to allow people to see/visit them).*				
Generic skills to be developed: critical thinking and problem-solving, effective communication, cooperation, interpersonal management and life skills, as well as creativity and innovation.				

Values to be developed: Hard Work, Self-Reliance, Aspiration and Optimism, Dignity and Integrity, Excellence, Solidarity and Democracy.
Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Gender, Environment and Sustainability, and financial education
Assessment criteria: *Learners can differentiate* coins of *Rwandan currency from 1Frw to 100Frw and demonstrate how they are used in daily life.*
Teaching/ learning aids*: Coins of the Rwandan currency from 1Frw to 100Frw and an abacus.*

TOPIC AREA: GEOMETRY		SUB-TOPIC AREA: DIRECTIONS AND LINES		
P1 Mathematics		**Unit 10:** Location of objects and lines		**Number of Periods: 5**
Key Unit Competence: Pupils will be able to locate objects on or out of the line and define types of lines.				
Learning objectives			**Content**	**Learning activities**
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– Know location of objects – Identify and draw different types of lines. – Understanding how to draw and differentiate types of lines	– Locate objects – Identify different types of lines and observe them in the school environment, both inside and outside the classroom. – Draw straight lines and closed lines. – Put dots on a closed line.	– Be attentive and develop the culture of performing assigned activities perfectly. – Promotes proper handling and maintenance of tools used	– Locating objects. (Under, over, right, left, down, up, aside.) – Types of lines (Horizontal straight lines, vertical straight lines, oblique straight lines, closed lines, open lines, curved lines, and zigzag/ broken lines) – Dots outside, inside, and on a closed line.	In small groups or individually: – Show the location of tools in the classroom. – Identify the types of lines using objects in the classroom. – Use games to show different types of lines. – In groups, discuss the importance of lines in daily life.

Links to other subjects: English *in reading and vocabulary.* ***Physical Sports*** *in different games and art in drawing.*
Generic skills to be developed: critical thinking and problem-solving, effective communication, cooperation, interpersonal management.
Values to be developed: Equity and inclusiveness, Hard working, openness and transparency, Self-Reliance and Dignity and Integrity
Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Gender, and Environment and Sustainability
Assessment criteria: *Learners can locate different objects and draw different types of lines.*
Teaching/ learning aids: Different tools (tables, chairs, bottles, ...), a metre ruler.

TOPIC AREA: GEOMETRY		SUB-TOPIC AREA: ANGLES AND SHAPES		
P1 Mathematics		**Unit 11:** Right angle, Square, and Rectangle		**Number of Periods:15**
Key Unit Competence: Pupils will be able to identify the right angle, square, and rectangle from other shapes and accurately draw them.				
Learning Objectives			**Content**	**Learning activities**
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– Identify the characteristics of a right angle – Identify the characteristics of a square. – Identify the characteristics of a rectangle – Understanding to draw a square for their classroom and a smaller rectangle for their desk within it.	– Show angles on different scholastic materials. – Draw a right angle – Identify a square and a rectangle from other shapes. – Show a rectangular objects or square objects found in the school environment.	– Develop the culture of observation and critical thinking before making a decision. – Promotes responsibility and care for tools	Right angle: – Properties of a right angle. – Drawing a right angle square and Rectangle: – Properties of a square and a rectangle – Drawing a square and a rectangle – Identifying square and rectangle from other shapes and describing them.	In groups, identify and draw a right angle **Example:** Showing a right angle using edge… In groups, discuss where right angles are used in daily life. **Example:** Building a house, table, … – In groups, discuss the concept of a square and a rectangle using different shapes and different objects.

	– Draw a square and a rectangle			– Individually, identify a square and a rectangle from other shapes – Individually, draw a square and a rectangle in their notebooks' grid by joining the given dots. – In pairs, play different games about square and rectangle's properties. **Example:** I'm a shape of 4 equal sides and 4 equal right angles. Who am I? In groups, outline tools and materials that have square shape or rectangle shape.
***Links to other subjects**: **English** in reading and spelling words, **Elementary Science and Technology**, art in drawing and making simple crafts.*				
Generic skills to be developed: critical thinking and problem-solving, effective communication, cooperation, interpersonal management and life skills, as well as creativity and innovation				

Values to be developed: Openness and Transparency, Hard work, Excellence, and Self-reliance.
Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Gender, and Environment and Sustainability.
Assessment criteria: *Learners can identify right angles, square and rectangle from other shapes, draw them and show where they are used in daily life.*
Teaching/ learning aids: *Edges, meter ruler, a grid drawn on a manila paper and flash cards*

5.3 Mathematics Syllabus for Primary (P2)

5.3.1 Key competences at the end of P2

1. Count, read, write, order, and compare whole numbers from 0 to 1000. Decompose numbers and effectively use the rules of counting (+, -, ×, ÷) with three-digit numbers.
2. Measuring and comparing the length of various objects in m, dm, cm, and mm, converting measurements of length from m to cm, and working out exercises involving addition and subtraction.
3. Differentiating notes and coins of Rwandan currency from 1Frw to 1000Frw, exchanging money, and solving word problems involving addition and subtraction.
4. Describing, explaining information represented by a pictograph, and showing the quantity of things on a pictograph.
5. Identifying a square and a rectangle from other geometric shapes and giving examples of different objects having a similar shape to a square or rectangle.
6. Finding the missing numbers in number patterns and explaining how to find the missing number in a number sentence with 3-digit numbers.
7. Reading, writing, drawing, shading and comparing $\frac{1}{2}, \frac{1}{4} \text{ and } \frac{1}{8}$ of a whole, and working out exercises and related word problems from daily life.
8. Weighing and comparing the weights of various objects whose mass is less than or equal to 10 kg and explaining where kg is used in daily life.

9. Measuring and comparing the capacity of different liquid containers in liters and working out exercises and word problems involving addition and subtraction of the standard unit of capacity measurements.
10. Ordering the days of the week and months of the year, reading and telling the time shown by the clock face or digital watch.
11. Drawing different types of lines, showing different types of lines on given shapes, drawing different angles, and identifying where those angles are found in daily life.
12. Drawing and giving the features of a rectangle, a square, and a triangle, and calculating their perimeter.

5.3.2 Mathematics Units for Primary Two

TOPIC AREA: NUMBERS AND OPERATIONS	**SUB-TOPIC AREA: WHOLE NUMBERS**	
P2 Mathematics	**Unit 1:** Numbers from 0 to 200.	**Number of Periods: 25**

Key Unit Competence: Pupils will be able to count, read, write, arrange, compare, add and subtract, multiply and divide whole numbers from 0 up to 200

Learning objectives			**Content**	**Learning activities**
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– Show and explain the place value of each digit in numbers composed of 3 digits. – Compare and ordering numbers from 0 to 200.	– Count without mistakes, read and write numbers from 1 to 200.	– Show the culture of orderliness in daily life – Develops persistence and flexibility through commitment and hard work – Appreciate the importance of addition, subtraction, multiplication, and division in daily life.	– Counting groups of objects from 1 to 200 – Decomposition of numbers into ones, tens, and hundreds. – Counting, reading, and writing numbers from 0 to 200: – Comparing numbers up to 200 using "is greater than" or "is less than" or "is equal to" or <,> or =	In small groups or individually: – Start from a group of 100 counters, then keep adding other counters, one by one, until you get 110. – Counting in tens up to 200 – Using song when counting in tens and ordering numbers up to 200.

– Add and subtract numbers from 0 to 200. – Multiply numbers from 0 to 10 by 2 and 3 – Divide numbers less than or equal to 30 by 2 and 3. (Division without remainder) – Interpret the word problems with numbers from 0 to 200.	– Accurately read numbers from 1 to 200. **Example**: Number of houses, roads, signposts, ... – Decompose numbers from 1 to 200 into ones, tens, and hundreds – Use comparison symbols (<,> and =) to Compare numbers from 0 to 200		– Arranging numbers in increasing order (from smallest to the biggest) – Addition and subtraction of numbers from 0 to 200 with out carrying and borrowing: – Addition of numbers whose sum does not exceed 200 with carrying – Subtraction of numbers whose first term does not exceed 200 with borrowing. – Word problems involving addition and subtraction of numbers less than or equal to 200.	– Using number lines to train learners how to count in descending order. – Read the number shown on a number card and use the abacus to show it. – Ordering numbers using the number line. – Writing and decomposing numbers up to 200 using abacus or the table of place values. – Using number cards and games make various numbers then read, write and order them

– Read and write numbers to the extend up to 200 in numerals and words	– Arrange numbers from 1 to 200 in ascending and descending order – Add and subtract- numbers whose sum and first term does not exceed 200. – Multiply numbers with 2-digit numbers by 2 and 3. (The product should not exceed 200).		Multiplication and division of numbers less than or equal to 200: – Multiplication table of 2. (The product should not exceed 20) – Multiplication of 2-digit numbers by 2 and 3 without carrying (The product should not exceed 200) – Multiplication table of 3. (The product should not exceed 30) – Division by 2 and 3 without a remainder. (The dividend should not exceed 200).	– Use abacus to compare the given numbers – Giving ideas or stories about numbers less than or equal to 200. – Mental arthemetics on addion and subtraction of numbers. **Example:** Add 10, subtract 10, ... – Word problems involving addition and subtraction of numbers less than or equal to 200. – Using repetitive addition to identify the multiples of 2 and 3 and working out exercises involving multiplication by 2 and 3.

	– Divide numbers less than or equal to 30 by 2 and 3. (Division without remainder)		– Word problems involving multiplication and division of numbers less than or equal to 200.	– In groups, learners use counters and multiples of 2 and 3 to work out exercises involving division by 2 or 3. – Discussing the importance of multiplication and division in daily life. – Solving word problems related to daily life involving multiplication and division by 2 or 3 with 2-digit numbers.
Links to other subjects*:English:** *Reading and using words containing numbers*, ***Music*:** *Songs about counting*, ***Physical Sports: Games *about counting in groups,* ***Elementary Science and Technology*:** *Attributing numbers to groups of objects and counting of various objects,...*				
Generic skills to be developed: Critical Thinking and Problem Solving, Effective Communication, Creativity & Innovation.				
Values to be developed: Excellence, Learner-Centredness, Equity and Inclusiveness, Hard Work, Respect for Others and Human Rights:				

Crosscutting issues to be addressed: Envoronmrnt and Sustainability, Inclusive education, Peace and value Education, Gender, Financial Education, StandardizationCulture.
Assessment criteria: *Learners can write, read, orde, add, subtract, multiply, and divide numbers correctly from 1 to 200.*
Teaching/ learning aids**:** *Various counters (bottles, stones, ...), number cards, from 1 to 200.*

TOPIC AREA: NUMBERS AND OPERATIONS		SUB-TOPIC AREA: WHOLE NUMBERS		
P2 Mathematics		**Unit 2:** Numbers from 0 to 500		**Number of Periods: 25**
Key unit competence: Pupils will be able to count, read, write, arrange, compare, add and subtract, multiply and divide whole numbers from 0 to 500.				
Learning objectives			**Content**	**Learning activities**
Knowledge and Understanding	**Skills**	**Attitudes and Values**		
– Identify and explain the place value of each digit in numbers composed of three digits. – Compare and order numbers less than or equal to 500. – Add and subtract numbers whose sum and first term does not exceed 500.	– Count without mistakes, read and write correctly numbers from 1 to 500. – Read/ write accurately numbers from 1 to 500 in words and figures – Decompose numbers from 1 to 500 into ones, tens and hundreds.	– Show the culture of orderliness in daily life. – Instill a strong value for accuracy and attention. – Appreciate the importance of addition, subtraction, multiplication and division in daily life.	**Counting, reading, and writing numbers from 1 up to 500** – Counting of groups of objects from 1 to 500 – Reading and writing numbers from 0 to 500. – Decomposing numbers less than or equal to 500 into ones, tens, and hundreds and expanding numbers up to 500	In small groups or individually: – Using groups of counters, count in hundreds to 500. – Use songs, count in tens, and order numbers from 1 to 500 – Use number lines to train learners how to count in descending order.

– Multiply numbers from 0 to 10 by 4 and 5. – Divide numbers less than or equal to 50 by 4 and 5. – Interpret the word problems with numbers from 0 to 500. – Read and write numbers to the extent up to 500 in numerals and words	– Use comparison symbols (<,> or =) to compare numbers from 0 to 500. – Arrange numbers from 1 to 500 in ascending and descending order. – Add numbers from 0 to 500 without and with carrying (The sum should not exceed 500). – Subtract numbers whose first term does not exceed 500 without and with borrowing. – Multiply a two-digit number by 2 and 3 (The product should not exceed 500.		– Using comparison symbols (<, > or =) to compare the numbers less than or equal to 500. – Arrange numbers within 500 in increasing or decreasing order, less than or equal to 500. **Adding and subtracting numbers from 0 up to 500:** – Addition without carrying – Addition with carrying – Subtraction without borrowing	– Read the number shown on a number card and use the abacus to show it. – Ordering numbers using the number line. – Using an abacus or the table of place values to write and decompose the numbers less than or equal to 500. – Using number cards and games to make various numbers, then read them, write them, and order them. – Using an abacus to compare numbers less than or equal to 500. – Using stories to compare the numbers not exceeding 500.

	– Divide numbers less than or equal to 50 by 4 and 5. (The division without remainder).		– Subtraction with borrowing – Word problems involving addition and subtraction of numbers less than or equal to 500. **Multiplication and division** – Multiplication table of 4 (The product should not exceed 40 without carrying) – Multiplication table of 5 (The product should not exceed 50 without carrying) – Multiplying 2 digit numbers by 4 and 5 without carrying. – Dividing numbers less than or equal to 500 by 4 and 5 without the remainder	– Using games and the table of place values, keep adding 10 and subtracting 10 to numbers less than 500. – Solving word problems involving addition and subtraction of numbers less than or equal to 500 related to daily life. – Using repetitive addition to identify the multiples of 4 and 5, and working out exercises involving multiplication of a number by 4 and 5. – In groups, learners use counters or multiples of 4 and 5 to work out the exercises of division by 4 or 5.

			– Word problems involving multiplication and division of numbers less than or equal to 500 by 4 and 5..	– Show the importance of multiplication and division in daily life. – Basing on word problems related to daily life, learners work out the exercises involving multiplication and division without a remainder of 2 digit numbers by 4 or 5. – Repeated subtraction where one repeatedly subtracts the divisor from the dividend until zero is reached, and the number of subtractions is the quotient.
Links to other subjects: **English:** *Reading and using words containing numbers*, ***Music*****:** *songs about counting*, ***Physical Sports:*** games *about counting in groups,* ***Elementary Science and Technology*****:** *attributing numbers to groups of objects and counting of various objects,...*				
Generic skills to be developed: Critical thinking, Communication, problem solving.				
Values to be developed: Self-Reliance, Solidarity and Democracy, Respect for Others and Human Rights, Excellence, Aspiration and Optimism.				

Crosscutting issues to be addressed: Envoronmrnt and Sustainability, Inclusive education, Peace and value Education, Gender, Financial Education, StandardizationCulture..
***Assessment criteria**: Learners can write, read, order, add, subtract, multiply, and divide numbers correctly from 1 to 500.*
***Teaching/ learning aids*: *Various* types of *counters (bottles, stones, ……), number cards, numbers from 1 to 500.*

TOPIC AREA: NUMBERS AND OPERATIONS			SUB-TOPIC AREA: WHOLE NUMBERS	
P2 Mathematics		**Unit 3:** Numbers from 0 to 1000		**Number of Periods: 25**
Key Unit competence: Pupils will be able to count, read, write, arrange, compare, add and subtract, multiply and divide whole numbers from 0 to 1000.				
Learning objectives			**Content**	**Learning activities**
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– Identify and explain the place value of each digit in numbers composed of three digits. – Compare and order numbers from 0 to 1000 – Add and subtract numbers whose sum and first term do not exceed 1000.	– Count, read, and write numbers correctly from 0 to 1000. – Accurately read numbers from 0 to 1000. Example: Number of houses, roads, signposts, ... – Arrange numbers from 0 to 1000 in ascending and descending order.	– Develop the culture of orderliness in daily life. – Appreciate the importance of addition, subtraction, multiplication, and division in daily life – Develops persistence and flexibility through commitment and hard work	**Count, read, and write numbers from 1 to 1000:** – Counting groups of objects less than or equal to 1000. – Read and write numbers from 0 to 1000. **Decomposing, expanding, ordering, and comparing numbers from 1 to 1000:**	In small groups or individually: – Using groups of counters to count in hundreds up to 1000. – Using songs when counting in tens and ordering numbers up to 1000. – Use number lines to train learners how to count in descending order. – Read numbers shown on a number card and use the abacus to show them.

– Multiplying numbers from 0 to 10 by 6. – Divide numbers less than or equal to 60 by 6. – Multiply numbers from 0 to 100 by 10. (Product should not exceed 990) – Multiply numbers from 0 to 10 by 100. (The product should not exceed 1000). – Interpret the word problems with numbers from 0 up to 1000	– Decompose numbers from 1 to 1000 into ones, tens, and hundreds, – Compare numbers from 0 to 1000. – Add and subtract numbers whose sum and first term do not exceed 1000. – Multiply 2-digit numbers by 6. (Product should not exceed 100) – -Divide numbers less than or equal to 60 by 6.		– Decomposing numbers into ones, tens, and hundreds up to 1000. – Expanding numbers up to 1000 – Comparing numbers within 1000 – Ordering and comparing numbers from 1 to 1000 using comparison symbols of (<, >, or =) **Adding and subtracting numbers from 1 up to 999:** – Addition without carrying	– Ordering numbers using number lines. – Using an abacus or the table of place values to read, write, and decomposing numbers from 1 up to 999. – Using number cards or games to make various numbers, then read them, write them, and order them. – Using an abacus to compare numbers – Using stories to compare numbers not exceeding 1000. – Solving word problems involving addition and subtraction of numbers less than or equal to 1000 related to daily life.

– Read and write numbers to the extent of 1000 in numerals and words			– Addition with carrying – Subtraction without borrowing – Subtraction with borrowing – Word problems involving addition and subtraction. **Multiplication and division:** – Multiplication table of 6 (The product should not exceed 60). – Multiplying a 2 digit numbers by 6 (The Product should not exceed 1000).	– Using repetitive addition, to show multiples of 6. – Working out an exercise involving multiplication by 6.

			– Multiplication by 10 and 100 with the product which does not exceed 1000. – Dividing numbers less than or equal to 1000 by 6. (The Dividend should not exceed 1000). – Word problems involving multiplication and division of numbers less than or equal to 1000.	– In groups, learners use counters or multiples of 6 to work out the exercises of division by 6. – Showing the importance of multiplication and division in daily life.
Links to other subjects: **English:** *Reading and using words containing numbers*, ***Music*****:** *songs about counting*, ***Physical Sports:*** *games about counting in groups,* ***Elementary Science and Technology*****:** *attributing numbers to groups of objects and counting of various objects,...*				
Generic skills to be developed: Critical thinking, Communication, problrm solving, Lifelong learning, Creativity and innovation.				

Values to be developed: Dignity and Integrity, Self-Reliance, Hard work, Commitment and Resilience, Solidarity and Democracy, Respect for Others and Human Rights
Crosscutting issues to be addressed: Envoronmrnt and Sustainability, Inclusive education, Peace and value Education, Gender, Financial Education, StandardizationCulture.
***Assessment criteria**: Learners can write, read, decompose, compare order, add, subtract, multiply, and divide numbers from 1 to 1000.*
Teaching/ learning aids*: *Various types of counters (bottles, stones ...), number cards from number up to 1000.

TOPIC AREA: NUMBERS AND OPERATIONS	SUB-TOPIC AREA: FRACTIONS	
P2 Mathematics	**Unit 4: Fractions $\frac{1}{2}, \frac{1}{4}$ and $\frac{1}{8}$.**	**Number of Periods: 10**

Key Unit Competence: Pupils will be able to read, write, draw, compare, and shade $\frac{1}{2}, \frac{1}{4}$ and $\frac{1}{8}$.

Learning Objectives			Content	Learning activities
Knowledge and understanding	**Skills**	**Values and attitudes**		
– Show $\frac{1}{2}, \frac{1}{4}$ and $\frac{1}{8}$ of a real object. – Use drawings to show $\frac{1}{2}, \frac{1}{4}$ and $\frac{1}{8}$ – Identify parts of a fraction (Shaded and unshaded)	– Divide a real object into 2 equal parts, 4 equal parts, and 8 equal parts; – Read and write $\frac{1}{2}, \frac{1}{4}$ and $\frac{1}{8}$;	– Develop the spirit of sharing and working harmoniously with others. – Instills a strong importance for accuracy and attention.	– Reading and $\frac{1}{2}, \frac{1}{4}$ and $\frac{1}{8}$ – Drawing and shading fractions: $\frac{1}{2}, \frac{1}{4}$ and $\frac{1}{8}$ – Comparing fractions: $\frac{1}{2}, \frac{1}{4}$ and $\frac{1}{8}$	In mall groups or individually: – Using a sheet of paper as a whole (or another teaching aid): – Fold a paper into 2 equal parts, 4 equal parts, 8 equal parts.

– Write the fractions in words and figures – Understand the comparison of fractions using <, > or =	– Compare $\frac{1}{2}, \frac{1}{4}$ *and* $\frac{1}{8}$ using comparison symbols **(<, > or =)** – Apply fractions in day-to-day activities by identifying and naming unit fractions.		– Making a whole using drawings of fractions or equal parts of real objects.	– Show $\frac{1}{2}, \frac{1}{4}$ *and* $\frac{1}{8}$ of that paper by cutting or painting/shading 1 part out of 2 parts, parts 4 and parts 8. – Showing and writing $\frac{1}{2}, \frac{1}{4}$ *and* $\frac{1}{8}$ on a chart. – Showing the parts of a fraction: the numerator, the denominator, and the fraction bar. – Using teaching/ learning aids to read, write, and compare $\frac{1}{2}, \frac{1}{4}$ *and* $\frac{1}{8}$. – Using teaching and learning aids to make a whole by combining fractions.

				– In groups, learners discuss the importance of fractions in daily life. – Learners draw rectangles/ squares, dividing some into equal parts (fractions) and others into unequal parts.

***Links to other subjects**: **Languages:** reading and vocabulary, (Teachers can use a play game to create and cut circles into equal parts, emphasizing that fractions represent equal divisions of a whole).*

Generic skills to be developed: Critical thinking, Communication, problrm solving, Lifelong learning, Creativity and innovation.

Values to be developed: Dignity and Integrity, Learner-centredness, Respect for Others and Human Rights, Equity and Inclusiveness

Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Gender, Financial Education, Standardization Culture.

***Assessment criteria**: Learners can read, write, draw, and compare* $\frac{1}{2}, \frac{1}{4}$ *and* $\frac{1}{8}$ *using real objects /materials.*

***Teaching/ learning aids:** A paper, oranges, pawpaw, and sugar cane...*

TOPIC AREA: MEASUREMENT	SUB-TOPIC AREA: LENGTH MEASUREMENTS	
P2 Mathematics	**Unit 5:** Length measurements: m, dm, and cm.	**Number of Periods:15**

Key Unit Competence: Pupils will be able to measure, convert, compare, add, and subtract length measurements, multiply and divide length measurements by a whole number.

Learning Objectives			Content	Learning activities
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– Distinguish between the concept of length and the concept of m – Add and subtract length measurements not exceeding 10 m – Identify the length of m, dm, and cm. – Understand the order of length measurements and identify the relationship between them.	– Measure the distance or objects in m and cm. – Identify where m and cm are used in daily life. – Convert length measurements (m, dm, and cm) from the greatest to the lowest. – Compare the length in m, dm, and cm using comparison symbols **(<, >,** or **=)**	– Develop the culture of using appropriate instrument of measuring the length and do it accurately. – Appreciate the importance of using length measurements in daily life. - Develop the culture of honesty in measuring the length of various objects.	**Length measurements m, dm and cm:** – Measuring length for objects by the use of a metre ruler and relationship among length measurements. – Converting units of measurement from the greatest to the lowest.	In small groups or individually: – Measuring 1m to the chalkboard or on a manilla paper. – Dividing 1m into 10 equal parts and demonstrating that each part equals to 1 dm. – Dividing 1dm into 10 equal parts and demonstrating that each part equals 1cm.

– Understand the conversion of length measurement	– Add and subtract length measurements. – Multiply length measurements by a whole number. (Product should not exceed 60m). – Divide length measurements by 2,3,4,5 and 6. – Estimating the length of objects and distances in centimetres and metres.	– Promotes proper handling and maintenance of tools	– Compairing length measuments using comparison symbols (<, > or =) and arranging length measurements. – Word problems involving conversion of length measurements m, dm, and cm. – Addition and subtraction of length measurements m, dm, and cm – Word problems involving addition and subtraction of length measurements m, dm, and cm.	– Using a stick of 1m divided into 10 dm and 1dm divided into 10 cm to demonstrate that length measurements are 10 times greater than or 10 times less than. – Using a conversion table of length measurements to convert measures from m to cm. – Measuring the length of 10m in groups. – Solving word problems involving addition and subtraction of length measurements.

			– Multiplication and division of length measurements m, dm, and cm by a whole number less than or equal to 6. – Word problems involving multiplication and division of length measurements m, dm, and cm by a whole number less than or equl to 6.	– Multiplying and dividing length measurements by a whole number less than or equal to 6. – Discuss the importance of metres and centimetres, and identify where they are used in daily life.
***Links to other subjects**: **English:** Listening, reading, and writing words unit measurement. **Physical sports**: measuring the length by* athletics *such as road races is measured in kilometres.*				
Generic skills to be developed: Critical thinking, Communication, problrm solving, Lifelong learning, Creativity and innovation.				

Values to be developed: Dignity and Integrity, Respect for Others and Human Rights, Hard Work, Excellence,and Learner-Centredness.
Crosscutting issues to be addressed: Gender Balance, Inclusive education, Envornmrnt and sustainability, Peace and value Education.
***Assessment criteria**: Learners can measure a distance or the length of various objects in m and cm, show the relationship among m, dm and cm using a conversion table, and solve word problems involving addition, subtraction, multiplication and division of length measurements with a whole number.*
***Teaching/ learning aids**: A metre ruler of 1 m length, rope, sticks, conversion table of length measurements.*

TOPIC AREA: MEASUREMENT	SUB-TOPIC AREA: CAPACITY MEASUREMENTS	
P2 Mathematics	**Unit 6:** Standard unit of capacity measurements "litre".	**Number of Periods:10**

Key Unit Competence: Pupils will be able to measure, compare, add, and subtract capacity measurements, multiply and divide capacity measurements in litres (l) by a whole number.

Learning Objectives			Content	Learning activities
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– Understand the concept of litre (l) – Compare the capacity of various containers of liquids. – Add and subtract capacity measurements of liquids – Ability to interpret the word problems	– Measure the capacity of various containers using a one-liter bottle of one liter. – Measure up to 10 litres and compare the capacity of various containers in litres (l).	– Develop carefulness and accuracy when measuring. – Promote responsibility and care for tools – Appreciate the importance of the litre as a standard unit in measuring the capacity of various containers in daily life.	– Standard unit of capacity measurements litre (l) – Measuring liquids using a bottle litre by measuring 1l, 2l, up to 10 l of water. – Comparing the capacity of containers in litres (l)	In small groups or individually: – Using water for measuring the capacity of various containers in litres (l). – Comparing various containers in liters (l) (which one carries more liters, ...) – Solving word problems related to real life involving addition, subtraction, multiplication, and division of capacity measurements in liters (l).

	– Read and write the amount of space a liquid occupies within a container. – Solving word problems involving addition, subtraction, multiplication, and division of standard units (l) of capacity measurements by whole numbers.		– Using comparison symbols <,>, or = to compare various quantities in litres (l). – Addition and subtraction of capacity measurements of liquids – Word problems involving addition and subtraction of various quantities of liquids in liters (l). – Multiplication of capacity measurements by a whole number	– Providing mathematical stories related to comparison, addition, subtraction, multiplication and division of capacity measurements in litres (l). – In groups, talk about the importance of using litres (l) in measuring the capacity of liquids and identify where it is used in real life. **Example:** Buying and selling milk, cooking oil, fuel, etc. – Providing measuring cups (a half litre cup) allows learners to compare capacities directly by pouring from one vessel to another to observe relationships, such as how many cups fill a jar

			– Word problems involving multiplication and division of various quantities of liquids in litres (l).	
***Links to other subjects**: **English:** Reading, writing, and speaking capacity measurement. **Physical sports**: Measuring liquids in groups. **Elementary Science and Technology:** Learners engage in open-ended experiments with various containers and pouring/ mixing substances.*				
Generic skills to be developed: Critical thinking, Communication, problrm solving, Lifelong learning, Creativity and innovation, and Co-operation, interpersonal relations aand life skills.				
Values to be developed: Dignity and Integrity, Hard Work, Learner-Centredness, Equity and Inclusiveness.				
Crosscutting issues to be addressed: Envoronmrnt and Sustainability, Inclusive education, Peace and value Education, Gender, Financial Education, StandardizationCulture.				
***Assessment criteria**: Learners can measure the capacity of various containers in litres (l) and compare them, solve word problems involving addition, subtraction, multiplication, and division of capacity measurements in litres.*				
***Teaching/ learning aids:** Various containers (a bottle of 1l, small jerrycans of 1l, 2l, 3l, 5l, and 10l, buckets, cups…)*				

TOPIC AREA: MEASUREMENTS		SUB-TOPIC AREA: MASS MEASUREMENTS	
P2 Mathematics		**Unit 7: Mass measurements "Kg".**	**Periods: 5**
Key Unit Competence: Pupils will be able to weigh, compare, add, and subtract weights of various objects to 10kg			
Learning Objectives			**Content** / **Learning activities**
Knowledge and understanding	**Skills**	**Attitudes and Values**	
– Understand the concept of weight of a kilogram (kg) – Read and write kg as a unit of weight. – Differentiate various objects according to their weight.	– Measure the mass of objects using appropriate tools, balance scales, and digital scales up to 10 kg. – Compare the weight of various objects – Read and write the weight of weighed objects in kg.	– Appreciate the importance of using kg in weighing and develop the spirit of honesty when weighing. – Promotes flexibility and patience in weighing items	**Content:** – The Kilogram as a standard unit of mass: Weighing up to 10 kg – Types of balances / weighing machines – Weighing 1kg, 2kg, 3kg, ... – Reading and writing 1kg, 2kg,3kg, ... **Learning activities:** In small groups or individually: – Weighing sugar, salt to understand the concept of a kilogram (kg). – In groups, compare the weight of various objects by lifting them and using weighing machines/balances. – Weighing various objects up to 10kg and recording the weight.

– Understand how to add, subtract, multiply, and divide the mass measurements in kg.	– Ability to estimate the mass of objects – Solve word problems involving addition, subtraction, multiplication, and division of mass measurements in kg.		– Comparing the weight of various objects up to 10kg: • Comparing by lifting, • Comparing by weighing, – Comparing mass measurements using symbols of comparison (<,>, or =) – Ordering mass measurement – Addition, subtraction, multiplication, and division of mass measurements	– Discussing the importance of using the weight in kg and identifying where it is used in daily life. – Providing mathematical stories about mass measurements in "kg" – Discuss the addition and subtraction of mass measurements in kilograms (kg) in daily life. – Solving word problems related to daily life involving addition, subtraction, multiplication, and division of mass measurements in kg.

			– Word problems involving addition, subtraction, multiplication, and division of weight/ mass measurements in kg.	– Provide a set of three or more objects and ask children to arrange them from lightest to heaviest or vice versa using their hands or a balance scale. This activity develops sequencing skills related to mass
Links to other subjects: English *in reading, writing, and speaking, mass measurement.* ***Elementary Science and Technology****. Holding and Lifting activity by providing pairs of objects of varying masses and asking children to hold one in each hand to determine which is heavier or lighter.*				
Generic skills to be developed: Critical thinking, Communication, problrm solving, Lifelong learning, Creativity and innovation.				
Values to be developed: Self-Reliance, Respect for Others and Human Rights, Equity and Inclusiveness, Excellence, and Learner-Centredness.				
Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Gender, Financial Education.				
Assessment criteria*: Learners can weigh, compare, add, subtract, multiply, and divide mass measurements up to 10 kg.*				
Teaching/ learning aids: *Various weighing machines/balances, stone weights, sacs, and various objects for weighing.*				

TOPIC AREA: MEASUREMENT		SUB-TOPIC AREA: CURRENCY		
P2 Mathematics		**Unit 8:** Rwandan currency from 1Frw to 1000 Frw.		**Number of Periods:15**
Key Unit Competence: Counting and exchanging Rwandan currency to 1000Frw.				
Learning objectives			**Content**	**Learning activities**
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– Identify and list the value Rwandan currency from 1Frw to 1000Frw. – Distinguish the value of Rwandan currency from 1Frw to 1000Frw. – Understand comparison of Rwandan currency using <, >, or =	– Count Rwandan currency from 1Frw to 1000Frw correctly – Use Rwandan currency appropriately, from 1 FRW to 1000 FRW, in buying and selling goods as well as in exchanges. – Plan how to use money less than or equal to 1000Frw and show what he/she can do to save money.	– Develop the culture of spending money wisely according to everyone's income. – Develop the culture of honesty in using money. – Develop the culture of saving and open a small business that generates income.	– Characteristics of Rwandan currency from 1Frw to 1000Frw. – Use of money and how to spend it. – Exchange of Rwandan currency from 1 Frw to 1000 Frw – Comparing the amount of money to 1000 Frw	In small groups or individually: – Observe different types of Rwandan currency and differentiate them according to their characteristics (Sizes, designs, colors, and values). – Comparing Rwandan currency by the value of goods or services you can get from it.

– Understand addition, subtraction, multiplication, and division of Rwandan currency	– Identify and recognize different denominations of Rwandan currency (notes and coins)	– Promote teamwork and effective communication among learners	– Ordering Rwandan currency and comparing Rwandan currency using symbols of comparison (<,> or =) – Addition, subtraction, multiplication and division of Rwandan currency – Word problems involving addition and subtraction of Rwandan currency from 1Frw to 1000Frw. – Word problems involving multiplication and division of Rwandan currency from 1Frw to 1000Frw.	**Example:** If you had 100Frw, what would you buy? – In groups, learners use drawings and pictures to describe Rwandan currency from 1 Frw to 1000Frw – Learners list down goods (From the most important to the least important) they can buy using less than or equal to 1000Frw. – Role-play the use of money in buying and selling activities. – Discussing about small businesses that generate income (the teacher uses question-and-answer).

			– Make a list of items and prices before buying them, and simple problems involving buying and selling goods. – Preparing small income-generating projects	– learners consider what they can buy with specific amounts of money, such as 100 Frw, 500 Frw, or 1000 Frw, and whether large purchases like a house/car/ aeroplane are possible with these amounts. – learners are encouraged to think about ways to earn money by identifying activities that can generate income.
***Links to other subjects**: **English** in reading, writing, speaking, different types of currencies, and vocabulary. **Social Studies**: learners discuss and reflect on how people use money, why they do so, and methods for keeping money safely, and this introduces concepts of financial responsibility and security.*				
Generic skills to be developed: Critical thinking, Communication, problrm solving, Lifelong learning, Creativity and innovation.				

Values to be developed: Patriotism, Solidarity and Democracy, Respect for Others and Human Rights, Excellence, Learner-Centredness.
Crosscutting issues to be addressed: Envoronmrnt and Sustainability, Inclusive education, Peace and value Education, Gender, Financial Education, StandardizationCulture.
Assessment criteria*: Learners can count, compare, exchange, add, subtract, multiply, and divide Rwandan currency from 1Frw to 1000Frw.*
Teaching/ learning aids: Rwandan currency from 1Frw to 1000Frw, Drawings *and pictures of Rwandan currency.*

TOPIC AREA: MEASUREMENT		SUB-TOPIC AREA: TIME MEASUREMENTS		
P2 Mathematics		**Unit 9: Hours, Months of the Year, and Days in Each Month.**		**Number of Periods:10**
Key Unit Competence: Pupils will be able to read, write, and draw the time shown by clock faces or watches showing hour o'clock and half past an hour, use a calendar to identify months of the year and days of each month.				
Learning objectives			**Content**	**Learning activities**
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– Order hours of the day – Identify and use days of the week, days of each month, and names of each month of the year. – Telling time of exact time, quarter past and half past	– Read and use the time shown by a clockface with long and short needles. – Differentiate months of the year according to the number of days of each month. – Read and use a calendar. – Plan and order daily and weekly activities starting from the most important.	– Value time and manage it effectively – Develop orderliness in daily life and respect for time. – Develop an appreciation for accuracy in relation to time	Reading, telling, and writing time shown by a clock face using o'clock and half past. – Clock face with long and short needles (hands); – Clockface with numbers. – Hours of the day, weeks of the month, and the year;	In small groups or individually: – Observing a clockface and showing the needle of hours (short and big), the needle of minutes (long), and the needle of seconds (very long and small). – Practicing reading and writing the time shown with clock faces showing o'clock and half past.

– Understand how to plan daily and weekly activities as well as time management		– Instill a sense of responsibility and self-reliance.	– Months of the year; – Days of each month; – Days of the year. – Planning daily and weekly activities, time management, and matching the school activities with the days of the week	– Using a clockface of numbers only to read and write the time showing o'clock and half past. – Drawing clock faces according to the time given or matching drawings with the given time. – In groups, identify all activities carried out at school during the given time. – Using a calendar, read the dates and show the weeks of the month, months of the year, and days of each month. – Planning daily and weekly activities, ordering them from the most important, and discussing the importance of

				respecting time. (The teacher guides the discussion using questions related to the topic.) – Singing songs about the months of the year is a highly effective and engaging method – Ask questions like "Which month of the year comes first? and "Which month of the year comes last?" to reinforce the sequence.
Links to other subjects: English *in reading, writing, and speaking, time vocabulary, as well as the number of days the learner attends classes.* ***Social studies****: learners can color in a graph to represent the day's weather, leading to discussions about most, least, more than, and less than.*				
Generic skills to be developed: Critical thinking, Communication, problrm solving, Lifelong learning, Creativity and innovation.				
Values to be developed: Dignity and Integrity, Commitment and Resilience, Respect for Others and Human Rights, Excellence, and Learner-Centredness.				

Crosscutting issues to be addressed: Envoronmrnt and Sustainability, Inclusive education, Peace and value Education, Gender, Financial Education, StandardizationCulture.
Assessment criteria: *Learners can read, write, and draw clock faces using o'clock and half past, and use a calendar to identify months of the year and days of each month.*
Teaching/ learning aids: *Clock faces with needles, clock faces with numbers, drawings of clock faces showing o'clock or half past, graphs, and calendars.*

TOPIC AREA: GEOMETRY	SUB-TOPIC AREA: DIRECTIONS AND SHAPES	
P2 Mathematics	**Unit 10:** Types of lines and angles.	**Number of Periods: 5**

Key Unit Competence: Pupils will be able to identify and draw different types of lines, acute and obtuse angles.

Learning Objectives			Content	Learning activities
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– Differentiate and draw straight lines, closed lines, open lines, curved lines, and zigzag/ broken lines. – Name and identify the characteristics/ properties of acute and obtuse angles using the right angle. – Differentiate right, acute, and obtuse angles according to their size. – Comparing the angles using <,> or =	– Show straight lines, closed lines, open lines, curved lines, and zigzag/broken lines that form various objects/ materials located in and outside the classroom. – Draw straight lines, closed lines, open lines, curved lines, and zigzag/ broken lines	– Develop a culture of observation in whatever you are doing. – Show the capability of working toward the objective. – Develop a spirit of using appropriate tools to minimize errors.	**Types of lines:** – Straight lines: – Horizontal lines – Vertical lines – Oblique lines, – Closed lines, – Open lines, – Curved lines – Zigzag/ broken lines – Characteristics of each type of angle.	In small groups or individually: – Discovering the types of lines using objects/ materials found in the classroom and outside the classroom. – Using a ruler to draw straight lines in their notebooks. – Showing different types of lines and then naming them using a game called "**Which line**",

	– Identify a right angle, an acute angle, and an obtuse angle that form various objects/ materials located in and outside the classroom. – Draw right angle, acute angle, and obtuse angle.		– Drawing different types of lines **Types of angles:** – Right angle – Acute angle – Obtuse angles – Characteristics of each type of angle – Drawing right, acute, and obtuse angles using a ruler and a grid. – Comparing right, acute, and obtuse angles.	– Discuss the importance of lines in daily life and where they are used. (The teacher guides discussion using questions related to the topic.) – Identifying right, acute, and obtuse angles from different types of angles or objects/ materials located in and outside the classroom or drawings of various objects/materials such as a chair, a table, a car, a house, a door, etc. – Using a grid, learners join dots with a ruler to draw the types of angles.

***Links to other subjects**: **English:** Use words to describe shapes and movements in stories and pictures, helping us tell better stories. **Art and physical sports**: artists use different lines to show feelings in their pictures, while athletes use lines and angles to help them move better and play games.*
Generic skills to be developed: Critical thinking, Communication, problrm solving, Lifelong learning, Creativity and innovation.
Values to be developed: Self-Reliance, Solidarity and Democracy, Excellence, Learner-Centredness, Aspiration.
Crosscutting issues to be addressed: Envoronmrnt and Sustainability, Inclusive education, Peace and value Education, Gender.
***Assessment criteria:** Learners can name and draw different types of lines and angles, give examples of objects/ materials formed by different types of lines or right, acute, and obtuse angles.*
***Teaching/ learning aids**: Edges, metre ruler, protractor, grids.*

TOPIC AREA: GEOMETRY	SUB-TOPIC AREA: SHAPES	
P2 Mathematics	**Unit 11:** Square, rectangle, and triangle.	**Periods:10**

Key Unit Competence: Pupils will be able to identify a square, a rectangle, and a triangle from other geometrical shapes and calculate their perimeter.

Learning Objectives			Content	Learning activities
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– List the characteristics/ properties of a square, a rectangle and a triangle. – Identify the permitre of each shape. – Understand drawing the shapes using a ruler.	– Distinguish a square, a rectangle and a triangle from other geometrical shapes. – Give examples of materials/ objects that have a similar shape to a square, rectangle, and triangle in and outside the classroom.	– Develop the spirit of carefulness and matching similar objects/ materials in daily life. – Develop a spirit of living harmoniously with others – Respect each other at all times.	– Characteristics/ properties of a square, a rectangle and a triangle. – Drawing a square, a rectangle and a triangle. – Measuring and calculating the perimeter of a square, a rectangle, and a triangle.	In small groups or individually: – Discuss the geometrical shapes presented. – Using drawings of various geometrical shapes, learners use the properties and characteristics of a square, rectangle, and triangle to identify them among other geometrical shapes. – Using a ruler and grid to draw a square, a rectangle, and a triangle.

	– Draw a square, rectangle, and triangle – Measure and calculate the perimeter of a square, a rectangle, and a triangle.	– Develop critical thinking about the scale of an object		– Playing various games related to each studied geometrical shape. **Example:** hot square ... – In groups, discuss the objects or materials that have a similar shape to that of a square, a rectangle, and a triangle. – Showing the perimeter of a square, a rectangle, and a triangle, and finding it using word problems of daily life. – Provide large sheets of paper, guide learners to identify key features in the classroom (e.g., their desk, the teacher's desk, the reading corner, the door). Discuss which shape best represents each feature. For instance,

				their desk might be a rectangle, the teacher's desk a larger rectangle, and a carpet in the reading corner a square.
***Links to other subjects**: Art and physical sports: Learners can use their bodies or work with partners to form different geometric shapes (squares, rectangles, triangles) on the floor. **Social Studies**: Learners can use graph paper to draw "**people**» and their areas of work.*				
Generic skills to be developed: Critical thinking, Communication, problrm solving, Lifelong learning, Creativity and innovation.				
Values to be developed: Commitment and Resilience, Respect for Others, Excellence, Learner-Centredness, Peace and Value Education.				
Crosscutting issues to be addressed: Envoronmrnt and Sustainability, Inclusive education, Peace and value Education, Gender.				
***Assessment criteria:** Learners can draw, give characteristics/properties of a square, a rectangle and a triangle and identify them rom other geometrical shapes,measure and calculate the perimeter of a square, a rectangle, and a triangle using words problems of daily life.*				
***Teaching/ learning aids**: Various shapes, materials in shapes of square, rectangle, triangle, ruler, grid.*				

TOPIC AREA: ALGEBRA	SUB-TOPIC AREA: EQUATIONS	
P2 Mathematics	**Unit 12:** Missing numbers in addition, subtraction, multiplication, and division.	**Number of Periods: 5**

Key Unit Competence: Pupils will be able to find the missing number in addition, subtraction, multiplication, and division. of numbers.

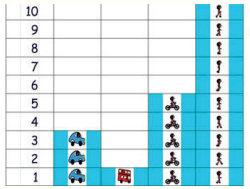
Learning Objectives			Content	Learning activities
Knowledge and understanding	**Skills**	**Attitudes Values and**		
– Understand the concept of an equation. – Understand the rule used when finding the missing numbers in addition, subtraction, multiplication, and division. – Understand the inverse relationship between addition and subtraction as well as multiplication and division.	– Calculate and find the missing number in addition, subtraction, multiplication, and division of numbers	– Reason quickly and effectively. – Develop the culture of orderliness. – Promote logical reasoning and pattern recognition	Finding the missing number – The idea of equality and the equal sign (=) – Rules of finding the missing number in arithmetic operations of numbers in relation to the 4 fundamental operations (+, -, X, ÷)	In small groups or individually: – Making groups of counters and finding out the number of missing counters to match a given number – Using different games to practise the rules of counting when finding the missing number in arithmetic operations.

	– Use the inverse operation of subtraction to solve for a missing number in an addition statement and vice versa		– Activities for finding the missing number in addition, subtraction, multiplication, and division of numbers. – Finding a missing number in number pattern.	– Using drawings for finding the missing number in arthimetic operation of addition, subtraction, multiplication or division. – Finding the missing numbers in arithmetic operations of numbers through mental arithmetic, exercises of simple numbers, and by writing the numbers that require deeper thinking. (**Example: 5• + 36 = 89**). – Discuss the rule used when finding the missing numbers in arithmetic operations of numbers.

				– Learners can place 5 counters and then add more until they reach 8, counting the added counters to find the missing number. **Example:** Find the missing number 5+__ =8 – Learners can start with 7 counters and remove them until 3 remain, counting the removed counters. **Example: 7−_=3** – Learners can distribute 10 counters into groups of 2 and count how many groups they form, or distribute 10 counters into a given number of groups and count how many counters are in each group. For example, in division: 10 ÷ ____ = 2.

***Links to the Subjects**: **ICT**: Working out numbers with a computer, **Elementary science and technology**: Learners can measure the growth of a plant over several weeks (plant biology, measurement). If a plant was 5 cm tall initially and is now 12 cm tall, they can determine the growth by using 5+x=12* *5+[...]=12*
Generic skills to be developed: Critical thinking, Communication, problrm solving, Creativity and innovation.
Values to be developed: Commitment and Resilience (Hard Work), Dignity and Integrity, Respect for Others, Learner-Centredness.
Crosscutting issues to be addressed: Envoronmrnt and Sustainability, Inclusive education, Peace and value Education, Gender.
***Assessment criteria:** Learners can find the missing number in addition, subtraction, multiplication and division.*
***Teaching/ learning aids**: Various counters, manila papers or various number cards showing various examples of exercises.*

TOPIC AREA: STATISTICS		SUB-TOPIC AREA: READING A PICTOGRAPH		
P2 Mathematics		**Unit 13:** Pictographs / Simple graphs		**Number of Periods: 5**
Key Unit Competence: Pupils will be able to describe and explain the information provided by a given pictograph / simple graphs.				
Learning Objectives			**Content**	**Learning activities**
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– Understand how to make a pictograph used in mathematics when showing the size of objects. – Understand to observe, interpret, and describe pictographs / Simple graphs	– Find the number of objects represented on the given pictograph. – Describe and explain all information provided by a pictograph. – Read and interpret information presented in a simple bar graph	– Develop quick critical thinking. – Develop the capacity of describing and interpreting a pictograph by finding the number of different objects shown on it. – Promotes a habit of self-assessment and review. – Developing the spirit of accurate measurements often requires patience.	Pictograph illustrating the number of objects/Systems: – Making groups of objects/items and showing them on a pictograph. – Observing, interpreting, and describing various pictographs showing the number of objects less than or equal to **10 per one column**.	In small groups or individually: – Using real materials or drawings to describe and interpret a given pictograph. – After observing a pictograph, learners describe and interpret all information provided by a pictograph.

				 **Example:** Draw a pictograph having 4 small cars, 1 big car, 5 bicycles and 10 people. – Learners can draw a pictograph related to daily life, similar to the example shown above. **Example:** Making different groups of 3, 5, or 10 books, then learners can show it using a pictograph in different ways.

	– Compare and contrast information presented in the graph, such as identifying the group with the most or least items.		– Comparing the number of objects for different types of a pictograph. – Drawing a pictograph similar to the given information.	– Learners sort the objects into categories and then count how many are in each category. – Learners raise their hands for their choice, and then practice tallying the responses on a chalkboard/ whiteboard or large paper. **Example**: «How many students like apples?»
Links to other subjects**:* **Art:** *Drawing and making different materials,* ***Statistics: *Learners raise their hands for their choice, and then practice tallying the responses on a blackboard or large paper. This reinforces counting and prepares them for data organization. For example, «How many students like apples?»*				
Generic skills to be developed: Critical thinking, Communication, problrm solving, Lifelong learning, Creativity and innovation.				
Values to be developed: Dignity and Integrity, Commitment and Resilience, Self-Reliance, Hard work.				

Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Financial Education.
Assessment criteria: *Learners can describe, interprete, explain, draw, and represent different information on a pictograph.*
Teaching/ learning aids: *Various materials such as books, notebooks, various drawings…*

5.4. Mathematics Syllabus for P3

5.4.1 Key competences

1. Counting, reading, writing, ordering, and comparing whole numbers from 0 to 10000, and using effectively and rapidly the rules of counting (+, -, x, ÷) in numbers with 4 digits.
2. Differentiating Rwandan Francs from 1Frw to 5000 Frw, exchanging money, and solving word problems involving addition and subtraction.
3. Finding the missing number in arithmetic operations (addition, subtraction) and explaining how to find those numbers in case of numbers with 4 digits.
4. Using the calendar correctly and reading the time shown by a watch.
5. Reading, writing, and drawing correctly fractions not exceeding a whole of wherever the denominator is less than or equal to 10, working out exercises and word problems related to their daily life.
6. Measuring and comparing length using metres, showing the relationship, converting measurements of length, and working out exercises and word problems involving length measurements.
7. Weighing and comparing the weight of various things in Kg, working out exercises and word problems involving mass measurements.
8. Measuring and comparing the quantity of various liquids in l, dl, and ml, writing and reading capacity measurements (l, dl, and cl), and identifying where they are used in daily life.
9. Differentiating types of angles and lines on drawings and giving examples of where they are used in daily life.
10. Drawing and giving the properties of a rectangle, a square, a triangle, a circle, and differentiating the types of triangles.
11. Drawing a pictograph and types of lines.

5.4.2 Mathematics Units for Primary Three

TOPIC AREA: NUMBERS AND OPERATIONS	**SUB-TOPIC AREA: WHOLE NUMBERS FROM 0 TO 10000**	
P3 Mathematics	**UNIT 1: Numbers from 0 to 2000**	**Number of Periods: 25**

Key unit Competence: Pupils will be able to count, read, write, order, compare, add, subtract, multiply, and divide numbers from 0 to 2000.

Learning objectives			**Contents**	**Learning activities**
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– Understand and identify the place value of numbers composed of four digits – Compare numbers less than or equal to 2000 using <,>, or = • Understand addition of numbers with or without carrying, whose sum does not exceed 2000.	– Count, read, and write numbers less than or equal to 2000. – Decompose numbers less than or equal to 2000 into ones, tens, hundreds, and thousands.	– Develop the spirit of orderliness in daily activities. – Promote self-confidence and hard work. – Develop critical thinking.	– Reading and writing numbers less than or equal to 2000 (in words and figures) – Writing numbers less than or equal to 2000 in expanded form. – Decomposing numbers into ones, tens, hundreds, and thousands, and expanded form	In small groups or individually: – Using number cards with the numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9, work in groups to make different four-digit numbers. Share all the possible numbers you can create that are less than 2000.

• Understand subtraction with or without borrowing, whose first term does not exceed 2000. – Multiply numbers from 0 to 10 by 7, 8, and 9- – Understand the multiplication numbers composed of three digits by another number composed of two digits. Their product should not exceed 2000 – Understand the division of a number composed of four digits by a number less than or equal to 9. The dividend should not exceed 2000.	– Order numbers in ascending and descending order. – Add numbers with and without carrying, whose sum does not exceed 2000. – Subtract numbers with and without borrowing. The first term should not exceed 2000.		– Arranging numbers less than or equal to 2000 in ascending or descending order. – Comparing numbers less than or equal to 2000 using comparison symbols (<,>, and =). • Addition of numbers whose sum does not exceed 2000 and subtraction of numbers less than or equal to 2000. – Addition without carrying – Addition with carrying – Subtraction without borrowing – Subtraction with borrowing	– Using the number line in counting and ordering numbers up to 2000 – Practice exercises on identifying numbers from 0 to 2000 into ones, tens, hundreds, and thousands by using counters and counting tables – Add without carrying or with carrying vertically by using counters and counting tables – Subtraction without borrowing or with borrowing of a number with four digits vertically by using a counting table or counters – Assist learners to counters rapidly and mentally by adding, subtracting, multiplying, and dividing

	– Multiply numbers composed of 3 digits by a number composed of 2 digits. Their product should not exceed 2000. – Divide a 4-digit number by less than or equal to 9. The dividend should not exceed 2000.		– Word problems related to real life involving addition and subtraction – Multiplication of numbers whose product does not exceed 2000 and division of numbers less than or equal to 2000. – Multiples of 7 up to 70 – Multiples of 8 up to 80 – Multiples of 9 up to 90 – Multiplication of a number by a single-digit number (7, 8 or 9). The product should not exceed 2000.	– Practice and interpret word problems of addition, subtraction, multiplication and division of real life – Example: add 1000, subtract 1000, multiply by 10, 100; divide by 2... – Sharing ideas on the story of numbers related to addition, subtraction, multiplication, and division – Using synthetic division of numbers with four digits by a number with one digit – Add, subtract, multiply and divide by using counting exercises and finding the missing number in order to get the given answer (example: 155 + 12 = 167...)

			– Multiply numbers by 100 and 1000 where the product does not exceed 2000 – Multiplication of a 3-digit number by a 2-digit number where the product does not exceed 2 000 – Division of a number composed by four digits by a number less than or equal to 9, the dividend should not exceed 2000. – Word problems involving multiplication and division of numbers less than or equal to 2000.	– Practice and interpret word problems of addition, subtraction, multiplication and division of real life – Sharing ideas in groups on the use of addition, subtraction, multiplication and division in real life. – Learners will be provided lists of 3- and 4-digit numbers for students to order from least to greatest or greatest to least. – Jump along the number line to practice addition and subtraction. When you jump, call out the number you land on. For example, if you start at 3 and jump forward 2, say '3, 4, 5' as you land on each number. If you jump backward, say the numbers as you go down.

Links to other subjects: English: *reading, speaking, and writing; counting different objects and general knowledge on countable objects.* ***Art and Physical Education****: Learners physically jump along the number line to perform addition or subtraction.*
Generic skills to be developed: Critical thinking, Communication, problrm solving, Lifelong learning, Creativity and innovation.
Values to be developed: Dignity and Integrity, Commitment and Resilience, Hard work.
Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Gender.
Assessment criteria: *Learners should be able to count, read, write, expand, decompose, order, compare, add, subtract, multiply, and divide whole numbers less than or equal to 2000.*
Teaching/lerning aids: *Different counters, number card, counters and figures of counters.*

TOPIC AREA: NUMBERS AND OPERATIONS		SUB-TOPIC AREA: WHOLE NUMBERS FROM 0 TO 10000		
P3 Mathematics		**Unit 2:** Numbers from 0 to 5000		**Number of Periods: 25**
Key Unit Competence: Pupils will be able to count, read, write, expand, decompose, order, compare, add, subtract, multiply, and divide whole numbers less than or equal to 5000.				
Learning Objectives			**Contents**	**Learning activities**
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– Use the table of place values to determine the place value of numbers composed of four digits. – Compare numbers less than or equal to 5000 using <,>, or = – Understand addition of numbers with or without carrying, whose sum does not exceed 5000	– Count, read, and write numbers less than or equal to 5000 – Decompose numbers less than or equal to 5000 into ones, tens, hundreds, and thousands	– Develop the spirit of orderliness in daily activities. – Develop the capacity for critical thinking – Demonstrate self-confidence and hard work.	– Reading and writing numbers less than or equal to 5000(in words and figures). – Decomposing numbers less than or equal to 5000 into ones, tens, hundreds, and thousands – Writing numbers less than or equal to 5000 in expanded form	In small groups or individually: – Using a number line when ordering and counting numbers less than or equal to 5000. Start from 1000, then focus on numbers ending in two zeros (1000, 1500...).

– Understanding subtraction with or without borrowing, whose first term does not exceed 5000. – Understand the multiplication of numbers composed of three digits by another number composed by two digits. Their product should not exceed 5000	– Order numbers less than or equal to 5000 from the lowest to the greatest and vice versa. – Add numbers with and without carrying, and the sum does not exceed 5000. – Subtract numbers less than or equal to 5000 with and without borrowing. The first term should not exceed 5000.		– Ordering numbers from 2000 up to 5000 from the greatest to the lowest and vice versa – Using the symbols of comparison (<,>, or =) to compare 2 numbers less than or equal to 5000. – Addition of numbers less than or equal to 5000 (*Addition with carrying and without carrying*) – Subtraction within 5000 (*without borrowing and with borrowing*) – Word problems involving addition and subtraction	– Using number cards showing the following numbers: 1,2,3,4,5,6,7,8,9, and 0. Group learners into four groups, instruct them to form numbers made up of four digits using the given numbers, and let them present their findings. Each digit should be used once.

– Understand the division of a number composed of four digits by a number less than or equal to 9. The dividend should not exceed 5000. – Ability to interpret the word problems of addition, subtraction, multiplication, and division	– Multiply 3-digit numbers with a 2-digits number. Their product should not exceed 5000. – Divide 4-digits numbers by a number less than or equal to 9. The dividend should not exceed 5000.		– Multiplication and division of numbers less than or equal to 5000: – Multiplication of a number composed of three digits by a number composed of two digits. The product should not exceed 5000. – Multiply numbers by 100 and 1000 where the product does not exceed 5000 – Division without a remainder of a 4-digit number less than 5000 by a one-digit number. – Word problems involving multiplication and division of numbers less than or equal to 5000.	– Using abacus counters or the table of place values, decompose a number less than or equal to 5000 into ones, tens, hundreds, and thousandths – Addition with or without carrying in the vertical position using the table of place values and abacus counters. – Subtraction with or without borrowing a number with four digits in a vertical way using the multiplication table or counter

			– Word problems relating to daily life involving multiplication and division	– Using add 1000, subtract 2000, multiply by 10or 100, divide by 2...) to help the learners to be familiar with mental arithmetics or quick calculation in addition, subtraction, multiplication, and division – Using mathematical stories in relation to addition subtraction, multiplication, and division – Using multiplication tables to workout exercises involving addition, subtraction, and multiplication by finding the missing number when answered.

				Example: 21.5 + 13. = 2167... – Workout problems related to daily life involving addition, multiplication, and division – In groups, discuss the importance of studying addition, subtraction, multiplication, and division in daily life. – Practice counting by 100s, both forwards and backwards, starting from various numbers (e.g., 100, 200, ... 2000 or 50, 150, 250, ...).

				– Learners find and identify each number, stating its value place and perhaps its value components.
***Links to other subjects: English**: reading, speaking, and writing, counting different objects, and general knowledge on countable objects.*				
Generic skills to be developed: Critical thinking, Communication, problrm solving, Creativity and innovation.				
Values to be developed: Dignity and Integrity, Commitment and Resilience, Hard work.				
Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Gender.				
***Assessment criteria**: learners can count, read, write, expand, decompose, order, compare, add, subtract, multiply, and divide whole numbers less than or equal to 5000.*				
***Teaching/learning aids**:Different counters, number cards, table of place values, abacus counters,...*				

TOPIC AREA:NUMBERS AND OPERATIONS	SUB-TOPIC AREA: WHOLE NUMBERS FROM 0 TO 10000	
P3 Mathematics	**UNIT 3:** Numbers from 0 to 10000	**Number of Periods: 25**

Key unit Competence: Pupils will be able to count, read, write, order, decompose, expand, compare, add, substract, and divide whole numbers to 10000.

Learning objectives			Contents	Learning activities
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– Understand well the place value of each digit in a four digit numbers – Compare numbers less than or equal to 10,000	– Count, read, and write correctly the numbers less than or equal to 10000. – Decompose a 4-digit number into ones, tens, hundreds and thousands. – Order the numbers less than or equal to 10000 from the lowest to the greatest and vice versa.	– Develop the spirit of orderliness in daily activities. – Develop the capacity of critical thinking – Developing a sense of accuracy and attention	– Counting, reading and writing numbers from 0 up to 10000 (in words and figures) – Write a 4-digit number into ones, tens, hundreds and thousands. – Expanded form of a number less than or equal to 10000.	In small groups or individually: – Using a number line to count and order numbers from 5000 up to 10000 focusing on numbers ended by two zeros (5000, 5500....) – Using number cards showing the following numbers: 1,2,3,4,5,6,7,8,9 and 0. Group learners in four groups, instruct them to form numbers made by four digits from 5000 up to 10000 using the given numbers and let them present their findings. Each digit should be used once.

– Understand addition with or without carrying. of numbers whose sum does not exceed 10,000. – Understand substract with or without borrowing numbers whose first term does not exceed 10,000. – Understanding multiplication of a 3-digit number by a 2-digit number. The product should not exceed 10,000	– Add with or without carrying the numbers whose sum is less than or equal to 10000. – Subtract with or without borrowing the numbers less than or equal to 10000. The first term should not exceed 10000. – Multiply a 3-digit number with a 2-digit number. Their product should not exceed 10000.		– Arrange numbers between 2000 and 10 000 in ascending or descending order. – Comparing two numbers less than or equal to 10 000 using comparison symbols (<,> or =). – Addition (addition with carrying and without carrying) less than or equal to 10000: – Subtraction (with borrowing and without borrowing) of numbers less than or equal to 10000:	– Using counters or the table of place values work out exercises involving decomposition of numbers from 0 up to 9999 into ones, tens, hundreds and thousands. – Add with or without carrying in the vertical position using the table of place values and counters. – Subtract with or without borrowing number in the vertical position using the table of place values and counters. – Using add 1000 substract 2000, multiply with 10, 100 or 1000, divide by 2...) to help the learners to be familiar with mental arithmetics or quick calculation in addition, subtraction, multiplication, and division

– Understand dividision of a 4-digit number by a number less than or equal to 9. The dividend should not exceed 10,000	– Dividing a 4-digit number with a number less than or equal to 9. The dividend should not exceed 10000		– Word problems related to real life involving addition and subtraction where the sum/ difference does not exceed 10000. • Multiply numbers by 100 and 1000 where the product does not exceed 10000.	– Using mathematical stories in relation to addition subtraction, multiplication, and division – Using multiplication tables to workout exercises involving addition, subtraction, and multiplication by finding the missing number when answered. **Example:** 415+313 =728; 415+3,143=3,558 • Workout problem involving addition, subtraction, multiplication, and division related to daily life. • Discuss the importance of studying addition, subtraction, multiplication, and division in daily life.

				• Presentation and interpretation of word problems that involve addition, subtraction, and multiplication within the 0-9999 range, using "real-life" scenarios, and develop their knowledge of place value.
***Links to other subjects: English**: reading, speaking, and writing, counting different objects, and general knowledge on countable objects. **Music**: Utilize number-related songs and rhymes to make learning sequences and number recognition memorable and enjoyable.*				
Generic skills to be developed: Critical thinking, Communication, problrm solving, Lifelong learning, Creativity and innovation.				
Values to be developed: Dignity and Integrity, Patriotism, Commitment and Resilience, Justice, Self-Reliance, Hard work.				
Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Gender.				
***Assessment criteria**: Learners can count, read, write, decompose, expand, order, compare, subtract, add, multiply, and divide correctly the whole numbers less than or equal to 10000.*				
***Teaching/learning aids**: Different counters, number cards, table of place values, abacus counters,...*				

TOPIC AREA: NUMBERS AND OPERATIONS	SUB-TOPIC AREA: FRACTIONS	
P3 Mathematics	**Unit 4:** Fractions having a numerator less than or equal to 10.	**Number of Periods:10**

Key Unit Competence: Pupils will be able to read, write, draw, add, and subtract fractions with the same denominator less than or equal to 10 and multiplying fractions with a whole number.

Learning Objectives			Contents	Learning activities
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– Understand how two or more fractions can give a whole number. – Use drawings or real objects to compare fractions with the same denominator, less than or equal to 10, using <, >, or = – Understand how to find a fraction of a whole number.	– Divide a whole object into equal parts. – Show the parts of a fraction. – Read and write fractions not exceeding a whole. The denominators should not exceed 10	– Develop a spirit of sharing equitably – Develop the culture of sharing with others – Promote a culture of collaboration and teamwork – Appreciate the importance of fractions in real life.	– Reading and writing fractions not exceeding a whole number (words and figures). The denominators should not exceed 10. $\frac{1}{2};\frac{1}{3};\frac{1}{4};\frac{1}{5};\frac{1}{6};\frac{1}{7};\frac{1}{8};\frac{1}{9};\frac{1}{10}$ – Drawing and shading /coloring various fractions not exceeding a whole.	In small groups or individually: – Using drawings or any other objects divisible equally into 10 pieces to show different fractions – Using drawings to show, read, and write different fractions, basing selected parts of a whole or colored parts – Using teaching/learning aids to read and write different fractions based on selected equal parts of a whole.

– Understand how to identify and name the unit fractions in words and figures – Understanding that the denominator indicates the number of equal parts a whole is divided into, and the numerator indicates how many of those parts are being considered	– Compare, add, and subtract of fractions with the same denominators. The sum should not exceed a whole and the denominators should not exceed 10. – Work out mathematical problems involving fractions of a whole number.		• $\frac{1}{3}, \frac{2}{3}, \frac{1}{4}, \frac{3}{4}, \frac{1}{5}, \frac{2}{5}, \frac{1}{6}, \frac{1}{7}, \frac{1}{8}, \frac{1}{9}, \frac{1}{10}, \ldots$ Ordering like fractions • Comparing fractions having the denominator not exceeding a whole, and the denominators should not exceed 10. – $\frac{1}{3}, \frac{2}{3}$ – $\frac{1}{4}, \frac{2}{4}, \frac{3}{4}$ $\frac{1}{5}, \frac{2}{5}, \frac{3}{5}, \frac{4}{5}$ • Finding the complement of a fraction to form a unit fraction	– Using drawings to find the complement of a unit fraction. – Work out word problems related to daily life involving addition, subtraction of fractions not exceeding a whole. The denominators should not exceed 10. – Work out word problems related to daily life involving the calculation of a fraction of a whole number by multiplying it by the numerator and dividing by the denominator. – The discussion focuses on the significance of sharing in daily life, using fractions to illustrate equal and unequal division of shares.

			• Addition and subtraction of fractions not exceeding a whole, and the denominators should not exceed 10. • Fraction for a number of real objects and word problems involving fractions with the same denominator not exceeding 10	– Learners will draw and shade various models to represent fractions, such as circles, rectangles, or number lines divided into equal parts.
Links to other subjects: English: *Reading, speaking, and vocabulary.* ***Music****: Primary three pupils, music can be effectively integrated into number learning through activities that focus on rhythm, patterns, fractions, and basic operations.*				
Generic skills to be developed: Critical thinking, Communication, problrm solving, Lifelong learning, Creativity and innovation.				
Values to be developed: Dignity and Integrity, Patriotism, Commitment and Resilience, Self-Reliance, Hard work.				

Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Gender, Financial Education.
Assessment criteria: *learners work out exercises in relation with reading, writing and drawing fraction not exceeding a whole and denominators do not exceed 10, Solve word problems involving addition and subtraction of fractions not exceeding a whole and denominators do not exceed 10 and multiply fractions by a whole number / Fraction of a whole number.*
Teaching/learning aids*: different objects about division into fractions (papers, cards,….)and a scisors.*

SUB-TOPIC AREA: LENGTH MEASUREMENTS				
P3 Mathematics	**UNIT 5:** Relationship between length measurements.			**Number of Periods: 10**
Key Unit Competence: Measure and show the relationship between length measurements, compare, add, subtract length measurements, and multiply/ divide length measurements by a whole number.				
Learning objectives			**Content**	**Learning activities**
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– Understand and identify the standard units of measurement for length (km, hm, dam, m, dm, cm, and mm) – Understand the comparison and relationship among length measurements from km to mm.	– Use a meter or a decameter to measure and determine the distance between different places in m and km. – Read, write, compare, order, add, subtract, multiply, and divide length measurements basing to in real-life situations.	• Measure quickly and accurately. • Appreciate the importance of length measurements in real life. – Develop the culture of patience by measuring the length of different objects.	– Length measurements: km, hm, dam, m, dm, cm, and mm – Relationship between length measurements and their conversion. – Comparing length measurements from km to mm and arranging objects according to their lengths – Measuring the length of objects	In small groups or individually: – Observing and measuring the length of different objects/ places, then comparing their length. – In groups, use the conversion table of length measurements to convert length measures from km to mm

– Understanding the conversion of units from small to big and vice versa	– Select the appropriate standard unit (cm, m, km) for measuring lengths, with larger units for longer distances and smaller units for shorter ones.	– Promote collaboration and teamwork when measuring long distances – Identify where to use length measurements in real life.	– Ordering length measurements – Comparing length measurements using comparison symbols: (<,> or =). – Addition and subtraction of length measurements – Multiplication and division of length measurements by a whole number. – Word problems involving addition and subtraction, multiplication and division of length measurement related to daily life involving addition and subtraction.	– Word problems related to daily life involving addition and subtraction of length measurement – Multiply and divide length measurements by a whole number – In groups, discuss the importance of the most used length measurement (km, m, cm, and mm) based on where they are used in real life.

				– Visit tailors' workshop, construction/ building places, or any other places that use length measurement materials to know their uses. – Learners will "Jump Distances," where learners jump and then measure the distance with a tape measure or ruler. – Encourage learners to estimate lengths before measuring, then compare their estimates to the actual measurements.

Links to other subjects: English: *reading and speaking, arts, ICT,* ***Elementary Sciences and Technology*** *learners maintain a «Temperature Diary» or a plant growth chart, recording the plant's height at regular intervals (e.g., daily or weekly), and this helps them observe growth over time and understand that measurement is active.*
Generic skills to be developed: Critical thinking, Communication, problrm solving, Lifelong learning, Creativity and innovation.
Values to be developed: Dignity and Integrity, Patriotism, Commitment and Resilience, Justice, Self-Reliance, Hard work.
Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Gender, Financial Education.
Assessment criteria*: learners measure the distance or length of different objects using m/dam and solve word problems involving conversion, comparison, addition, subtraction of length measurements, and multiply/ divide length measurements by a whole number.*
Teaching/learning aids*: metre ruler, string of metre, decameter, and small rulers, rope, sticks, tape measure, folding metre,....*

TOPIC AREA: MEASUREMENT	SUB-TOPIC AREA: MASS MEASUREMENTS	
P3 Mathematics	**Unit 6:** Mass measurements from kilogram (Kg) to gram (g).	**Number of Periods: 10**

Key Unit Competence: Pupils will be able to measure, arrange, and compare the weight of different objects not exceeding 10 kg, and perform addition, subtraction, multiplication, and division of mass measurements between kilograms (kg) and grams (g).

Learning objectives			Contents	Learning activities
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– Understand the relationship between mass measurements: kilogram (kg), hectogram (hg), decagram (dag), and gram (g) – Identify the greatest and the lowest unit of mass measurements from kg up to g.	– Measure the weight of different objects having a weight less than or equal to 10 kg without error and using balances – Convert mass measurements from kg to g using a conversion table	– Develop a culture of patience and trust in weighing different objects – Promotes collaboration and respect through groupwork activities	• Mass measurements from kg up to g: – Relationship between mass measurements and their conversion: kg, hg, dag, and g. – Comparing mass measurements: by weighing and using symbols of comparison <,>, or =, and arranging them	In small groups or individually: – Measuring the weight of different objects using different types of balances. – Comparing the weight of different objects by lifting or weighing them – Ordering the weight of different objects – Reading and writing the weight of weighed objects.

– Understand how to estimate an object's mass in kilograms	– Differentiate and compare the weight of different objects. – Using mass measurements from kg to g in daily life – Read the measurements displayed on measuring instruments and ensure proper adjustment or zeroing before use	– Promotes exactness and accuracy in the measurement of items – Appreciate the importance of mass measurement in daily life	– Arranging objects according to their mass – Converting mass measurements from greatest to smallest and vice versa. – Multiplication and division of mass measurements by a number. – Problems related to daily life involving addition, subtraction, multiplication, and division.	– Converting mass measurements using the conversion table of mass measurements – Solving word problems related to our daily life involving addition, subtraction, multiplication, and division, mass measurements. – In groups, learners create/ formulate their own word problems related to their daily life involving addition, subtraction, multiplication, and division, mass measurements, and provide their answers/ solutions. – Visiting nearby shops, supermarkets, markets, or any other places that have objects to be weighed and balances for use.

				– In groups, discussing the importance of using mass measurements and identifying where they are used in daily life. – Learners hold different objects and estimate which is heavier or lighter before using a weighing scale to verify their guesses – Ask learners to arrange objects from lightest to heaviest (or vice versa) based on estimation, then use a scale to check and refine their order. – Learners can practice placing objects on the weighing scale and read the mass in grams or kilograms.
Links to other subjects: English: *Speaking, reading, and writing.* ***ICT:*** *Knowledge and technology in measuring mass, using an electronic weighing scale, and reading the mass in grams or kilograms*				
Generic skills to be developed: Critical thinking, Communication, problrm solving, Lifelong learning, Creativity and innovation.				
Values to be developed: Dignity and Integrity, Patriotism, Commitment and Resilience, Aspiration and Optimism, Hard work.				

Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Gender, Financial Education.
Assessment criteria: *Learners measure the weight of different objects using a balance and work out word problems involving converting, comparing, adding, subtracting, multiplying, and dividing mass measurements*
Teaching/learning aids*: Different types of balances, weighing stones, conversion table of mass measurements, different objects for weighing,….*

TOPIC AREA: MEASUREMENTS	SUB-TOPIC AREA: CAPACITY MEASUREMENTS	
P3 Mathematics	**Unit 7:** Capacity Measurements.	**Number of Periods: 5**

Key Unit Competence: Measure and compare the capacity of different objects in litres. Addition, subtraction, multiplication and division of capacity measurements from liter (l) to milliliter (ml).

Learning objectives			Content	Learning activities
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– Understand the relationship between capacity measurements from liter (l) to milliliter (ml) – Use the conversion table of capacity measurements from liter (l) to milliliter (ml) to compare and order capacity measurements from liter (l) to milliliter (ml)	– Write capacity of measured containers in liter (l), centiliter (cl) and milliliter (ml) – Measure and compare the capacity of liquid containers in liters (l)	– Develop the culture of patience when measuring capacity measurements from liter (l) to milliliter (ml) – Promotes trustworthiness in measuring liquids – Demonstrate self-confidence and hard work	– Capacity measurements from liter (l) to milliliter (ml): – Relationship of capacity measurements from litre (ℓ) to millilitre (mℓ) and their conversion: l, dl, cl, and ml. – Comparing capacity measurements from liter (l) to milliliter (ml) by lifting and using comparison symbols: >, < or =	In small groups or individually: – Compare and order liquid container materials according to their capacity/volume. – Use a one liter container to measure different liquid containers and write down the capacity of each liquid container measured. – Use a song to order capacity measurements from liter (l) to milliliter (ml).

– Understand to estimate the amount of liquid a container can hold in litres.	– Convert capacity measurements from liters (l) to milliliters (ml) using a conversion table. – Read, write, order, compare, add, subtract, multiply, and divide the capacity measurements from liter (l) to milliliter (ml) using real-life situations. – Estimating which container holds more, less, or the same amount of liquid	– Develop a spirit of living harmoniously with others	– Ordering capacity measurements from litre (ℓ) to millilitre (mℓ) in ascending and descending. – Converting capacity measurements from liter (l) to milliliter (ml) – Addition, subtraction, multiplication, and division of capacity measurements – Word problems related to daily life involving addition, subtraction, multiplication, and division of capacity measurements from liter (l) to milliliter (ml)	– Discuss the use of liter (l), centiliter (cl), and milliliter (ml) in real life – Use the conversion table of capacity measurements to convert units of capacity from liter (l) to milliliter (ml) – Solving word problems related to real life involving addition, subtraction, multiplication, and division of capacity measurements from liter (l) to milliliter (ml) – In groups, learners create/ formulate their own word problems related to their daily life involving addition, subtraction, multiplication, and division capacity measurements from liter (l) to milliliter (ml) using real-life situations and provide their answers/ solutions.

				– In groups, discuss different liquids that can be measured in liters (l), centiliters (cl), and milliliters (ml), and the importance of using capacity measurements and identifying where they are used in real life. – Ask learners to estimate which containers hold more or less, and verify their predictions by pouring liquids from a container to another.
Links to other subjects: English: *Speaking, reading, and writing.* ***Sciences and Technology*** *in measuring liquids.*				
Generic skills to be developed: Critical thinking, Communication, problrm solving, Lifelong learning, Creativity and innovation.				
Values to be developed: Dignity and Integrity, Patriotism, Commitment and Resilience, Aspiration and Optimism ,Hard work.				
Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Gender, Financial Education.				

***Assessment criteria**: Learners should be able to accurately measure the capacity of different liquid containers in liter (l) using other liquid containers and solve word problems involving conversion, comparaison, addition and subtraction of capacity measurements from liter (l) to milliliter (ml), multiply and divide capacity measurements from liter (l) to milliliter by a whole number.*
***Teaching/learning aids**: Different liquid containers, bottles of one liter (l), spoons of 5 ml and 10 ml, medical bottles of 100 ml,...*

TOPIC AREA: MEASUREMENT		SUB-TOPIC AREA: RWANDAN CURRENCY		
P3 Mathematics		**UNIT 8:** Rwandan money from 1Frw to 5000 Frw.		**Number of Periods:10**
Key Unit Competence: Pupils will be able to use up to 5000 Frw appropriately for buying and selling.				
Learning objectives			**Content**	**Learning activities**
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– Recognize and identify Rwandan currency denominations (both notes and coins). – Differentiate and identify the use of Rwandan money from 1 Frw up to 5000 Frw. – Understand the value of Rwandan money from 1 Frw up to 5000 Frw.	– Count Rwandan money less than or equal to 5000 Frw – Use Rwandan money from 1 Frw up to 5000 Frw in buying, selling, and exchanging activities.	– Develop a culture of trustworthy in using Rwandan money. – Develop the culture of making priorities of needs in using the available money.	– Characteristics and Values of Rwandan money from 1Frw up to 5000 Frw. – Importance of money and the sources of money. – Changing Rwandan francs from 1 Frw up to 5000 Frw	In small groups or individually: – Observe and describe Rwandan money from 1 Frw up to 5000 Frw. – Compare Rwandan money from 1 Frw to 5000 Frw, starting from buying affordable items/objects/ materials and use of available money to buy a ticket (what can you buy if you have 1000 Frw? ...) – Make a list of priority objects/materials or any other things you can buy using 1000Frw.

– Represent the same amount of money in different denominations.	– Make a list of what you can do using Rwandan money less than or equal to 5000 Frw and show how you can do a savings activity. – Identify the source of money and the proper use of money – Convert money into different denominations	– Instills the culture of saving money for future goals in real-life situations – Develop problem-solving and decision-making skills related to financial scenarios in real-life situations	– Word problems involving addition and subtraction, multiplication and division from 1 Frw up to 5000 Frw – Buying and selling from 1 Frw up to 5000 Frw. – Importance of money, saving, and small income-generating projects.	– Use games to carry out buying and selling activities (In buying and selling: a buyer and a seller, in a bank: a depositor and a withdrawer, in a job: employer and employee....) – Discuss the source of money, proper use of money, the culture of saving, and the importance of small businesses that generate money (The teacher uses different questions when guiding the discussion). – Learners match a coin or banknote to its numerical value to enhance value of money recognition.
Links to other subjects: *Reading and vocabulary in English, being a trustworthy person in social studies.*				
Generic skills to be developed: Critical thinking, Communication, problrm solving, Lifelong learning, Creativity and innovation.				
Values to be developed: Dignity and Integrity, Patriotism, Commitment and Resilience, Aspiration and Optimism, Self-Reliance, Hard work.				

Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Gender, Financial Education.
***Assessment criteria**: Learners are able to differentiate Rwandan money less than or equal to 5000 Frw, work out the exchange of Rwandan money less than or equal to 5000 Frw, and solve word problems involving addition, subtraction, multiplication, and division of Rwandan money less than or equal to 5000 Frw.*
***Teaching/learning aids**: Rwandan money from 1 Frw up to 5000 Frw, drawings/pictures of coins and notes of Rwandan money, manila papers…*

TOPIC AREA: MEASUREMENTS	SUB-TOPIC AREA: TIME MEASUREMENTS	
P3 Mathematics	**Unit 9:** Time measurement.	**Number of Periods: 15**

Key Unit Competence: Pupils will be able to read and write the time shown on clock faces or digital watches, use a calendar to show months of the year, days of each month, and make a list of daily, weekly, and monthly activities.

Learning objectives			Content	Learning activities
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– Order hours of the day. – Understand the time shown by a clockface or a digital watch – Name and identify the months of the year and the days of each month	– Read and tell the time shown by both clockface and digital watch – Read the date on the calendar. – Convert months into days	– Develop a spirit of time management – Appreciate the value of time in daily situations – Develop the spirit of orderliness and respect for time.	Read, write, and tell time shown by clockface or a digital watch using the following expressions of time: – O'clock (exact time) – Half past (30 minutes past...) – Quarter past (15minutes past ...)	In small groups or individually: – Use digital watches and clock faces to differentiate the indicators of hours, minutes, and seconds. – Using expressions of time (o'clock, half past, quarter past, and quarter to) to carry out activities about telling time

– Understand how to interpret and solve basic word problems involving buying and selling	– Convert years into months – Convert days to hours – Convert years into days – Estimate time in hours	– Instills the culture of completing tasks on time with positive outcomes	– Quarter to (15minutes to ...) Using a calendar to determine: – Months of the year (Twelve months of the year) – Days of each month – Days of the year – Hours of the day – Converting (days into hours), (weeks into days), (years into months), and (Ordinary year and leap year) – Making a list of weekly, monthly, and yearly activities.	– Draw a digital watch or clock face showing the time given and vice versa. – Discuss your daily activities and make a plan showing the time to carry them out. – Use a calendar to identify the months of the year and the days of each month. – Use a calendar to carry out activities of reading different dates – Discuss the use of time and the importance of respecting time in daily life activities.

				– Learners create their paper clocks with movable hands to help them to understand how the hour and minute hands relate to each other
Links to other subjects: *Reading and vocabulary in English.* ***Social Studies****: Learners would learn about the importance of money in daily life, its role in transactions, and how it facilitates trade within their community.*				
Generic skills to be developed: Critical thinking, Communication, problrm solving, Lifelong learning, Creativity and innovation.				
Values to be developed: Dignity and Integrity, Patriotism, Commitment and Resilience, Self-Reliance, Excellence, Hard work.				
Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Gender, Financial Education.				
Assessment criteria: *Learners are able to read and write the time shown by clock faces or digital watches, use a calendar to show months of the year, days of each month, and make a list of their weekly and monthly activities.*				
Teaching/learning aids*: Digital watches and clock faces, calendars, manila papers,…*				

TOPIC AREA: GEOMETRY			SUB-TOPIC AREA: TYPES OF LINES AND ANGLES	
P3 Mathematics			Unit 10: Types of lines and angles.	Number of Periods: 5
Key Unit Competence: Pupils will be able to identify and draw parallel, perpendicular, and intersecting lines, as well as draw and compare right, acute, and obtuse angles.				
Learning objectives			**Content**	**Learning activities**
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– Differentiate straight parallel lines, straight perpendicular lines, and straight intersecting lines. – Identify and describe the characteristics/ properties of right, acute, and obtuse angles	– Show straight parallel lines, straight perpendicular lines, and straight intersecting lines on different materials located in and outside the classroom.	– Develop the spirit of observation – Enhances problem-solving skills – Encourages collaboration and communication when discussing different types of lines	**Types of lines:** – Straight lines – Parallel lines – Perpendicular lines – Intersecting lines **Angles: Name and draw** – A right angle – An obtuse angle – An acute angle	In small groups or individually: – Use objects/materials located in or out of the classroom to identify the types of lines. – -Use a ruler and square ruler to draw straight lines, straight parallel lines, straight perpendicular lines, and straight intersecting lines

– Differentiate right, acute, and obtuse angles – Compare the angles using <, > , or =	– Draw straight parallel lines, straight perpendicular lines, and straight intersecting lines – Draw right, acute, and obtuse angles – Show right, acute, and obtuse angles on different objects/ materials located in and outside of the classroom.		**Use of *a* protractor to measure angles.** **Compare the named and drawn angles using comparison symbols: >, <, or =** – A right angle – An acute angle – An obtuse angle	– In groups, discuss the use of different types of lines and where they are used in real life. – Use objects/ materials or different measurements to identify and compare right, acute, and obtuse angles. • Use a ruler and a square ruler to draw and measure right, acute, and obtuse angles • In groups, discuss the use of angles and where they are used in real life. • Learners draw pictures using only specific types of lines and angles.

				– Learners utilise rulers to identify and trace various types of lines and angles found in everyday objects such as desks, doors, windows, and books.
Links to other subjects: English, *reading, writing, and speaking.* ***Art and physical education****: drawing*				
Generic skills to be developed: Critical thinking, Communication, problrm solving, Lifelong learning, Creativity and innovation.				
Values to be developed: Dignity and Integrity, Patriotism, Commitment and Resilience, Justice, Self-Reliance, Hard work, Excellence.				
Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Gender, Financial Education.				
Assessment criteria: *Learners should be able to draw and discover parallel, perpendicular and intersecting, or cutting lines. Draw, measure, and compare right, acute, and obtuse angles*				
Teaching/learning aids: *edges, meter ruler, protractor, manila papers,pencils,…*				

TOPIC AREA: GEOMETRY	SUB-TOPIC AREA: GEOMETRICAL FIGURES AND A CIRCLE	
P3 Mathematics	**Unit 11**: Square, rectangle, triangle, and circle.	**Number of Periods:10**

Key unit Competence: Pupils will be able to draw and describe a square, rectangle, triangle, and circle, and find the perimeter of a square, rectangle, and triangle.

Learning objectives			Contents	Learners activities
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– Identify the properties of a square, rectangle, triangle, and a circle – Explain how to find the perimeter of a square, rectangle, and triangle. – -Understanding to differentiate the types of triangles Recognise and identify the properties of a circle	– Draw a square, a rectangle, a triangle, and a circle. – Draw the diagonals and median of a square and a rectangle. – Differentiate square, rectangle, triangle, and circle from other geometrical figures	– Develop the culture of observation. – Be a goal-oriented person and live well with others – Instills the culture of planning and organization	**Characteristics of:** – Square – Rectangle – Triangle **Define and find the perimeter of:** – Square **Rectangle** – Triangle	In small groups or individually: – Find out a square, a rectangle, a triangle, and a circle from other figures – Describe a square, a rectangle, a triangle, and a circle – Draw a square, a rectangle, a triangle, and a circle

	– Give examples of objects having the same shape as a square, rectangle, triangle, and circle – Differentiate the types of triangles – Draw a circle and identify its center, radius, and diameter		**Types of triangles and their properties:** – Equilateral triangle – Isosceles triangle – Right-angled or right triangle – Scalene triangle **Draw a circle and its properties:** – Centre – Radius – Diameter	– Find the perimeter of a square, a rectangle, and a triangle using the sum of all sides. – Fold a paper into two eqaul parts, then show the medians of a square and a rectangle. – Use a ruler to draw and determine the diagonals of a square and a rectangle. – Draw a circle using a rope and ruler and a pair of compasses to find out the properties of a cicle: center, radius, and diameter – Use different games to differentiate the studied geometrical figures.

				– Discuss the objects/ materials that have similar shape to a square, rectangle, triangle, and circle. – Discuss the importance of studying a square, rectangle, triangle, and circle.
Links to other subjects: *Drawing and physical education*				
Generic skills to be developed: Critical thinking, Communication, problrm solving, Lifelong learning, Creativity and innovation.				
Values to be developed: Dignity and Integrity, Patriotism, Commitment and Resilience, Justice, Self-Reliance, Hard work.				
Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Gender, Financial Education.				
Assessment criteria: *Learners can draw and describe a square, rectangle, triangle, and circle, and find the perimeter of a square, a rectangle, and a triangle.*				
Teaching/learning aids: *Geometric figures, meters, angles, rules, and compass.*				

TOPIC AREA: GEOMETRY			SUB-TOPIC AREA: DIRECTIONS	
P3 Mathematics			**Unit 12:** Grid.	**Number of Periods:5**
Key Unit Competence: Pupils will be able to draw grids, plot points or geometric figures on the grid according to its posts and crossing bars.				
Learning objectives			**Content**	**Learning activities**
Knowledge	**Skills**	**Attitudes and Values**		
– Orient a point on the grid. – Show a geometric figure located on the grid based on posts and crossing bars.	– Draw a grid and orient a point or a geometric figure located on the grid. – Put a point on the grid based on a given post and a crossing bar. – Draw a geometric figure on a grid using its coordinates.	– Develop the culture of observation. – Develop the spirit of orderliness and accuracy.	**Characteristics of a grid:** – Draw a grid • Posts and crossing bars. • Locating a point on a grid • Position of a point on a grid. • Plotting and joining points to form shapes in a grid	In small groups or individually: – In groups of two, learners can draw a grid using 10 straight vertical and 10 straight horizontal lines: 10 posts and 10 crossing bars. 1. **Number the Posts and Crossing Bars**: Assign a number to each post and each crossing bar. **Example:** (1, 2, 3, 4, 5, 6, 7, 8, 9, 10) for the posts represented by straight horizontal lines, and (1, 2, 3, 4, 5, 6, 7, 8, 9, 10) for the crossing bars represented by straight vertical lines.

			– Drawing a square, a rectangle, and a triangle on a grid.	2. **Place Points on the Grid**: Mark points A, B, and C on the grid according to the numbered posts and crossing bars. 3. **Locate the Points**: Identify the positions of the points on the grid by counting the number of posts and crossing bars. **Example:** Point A is located at the second post and fourth crossing bar: A (2, 4). 4. **Draw a Geometric Figure**: Place a geometric figure on the grid and clearly show its edges. 5. Discuss a grid and identify where the grid can be used in daily life activities.

***Links to other Subject: Arts and Social Studies**: Learners create a grid map of their local community, identifying key places like schools, parks, and fire stations.*
Generic skills to be developed: Critical thinking, Communication, problrm solving, Lifelong learning, Creativity and innovation.
Values to be developed: Dignity and Integrity, Patriotism, Commitment and Resilience, Justice, Self-Reliance, Hard work, Importance of Family, Rwandan culture and heritage.
Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Gender, Financial Education.
***Assessment criteria**: Learners should be able to draw a grid, orient and put points or geometric figures on a grid according to its posts and crossing bars (coordinates).*
***Teaching/learning aids:** Edges, ruler, meter, and manila papers.*

TOPIC AREA: ALGEBRA	SUB-TOPIC AREA: EQUATION	
P3 Mathematics	**Unit 13:** Missing numbers in addition, subtraction, multiplication, and division.	**Number of Periods: 5**

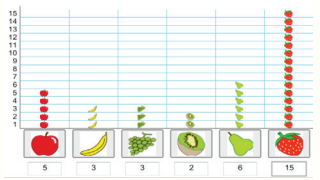
Key Unit Competence: Pupils will be able to find the missing number using the rules of counting.

Learning objectives			Contents	Learning activities
Knowledge and understanding	**Skills**	**Attitudes and Values**		
– Understand the concept of an equation. – Understand the rule used to find the missing number in addition, subtraction, multiplication, and division of numbers.	– Determine the rule used when finding the missing number. – Find the missing numbers in different exercises involving addition, subtraction, multiplication, and division.	– Develop critical thinking and orderliness. – Instills a spirit of self-confidence to solve problems independently – Developing an appreciation for the value of the missing number pattern.	– Finding the missing number in addition, subtraction, multiplication, or division expressions – The concept of equality.	– Form groups of counters and find the missing counters to match the given number. – Use number cards to work out different exercises and find the missing number in addition, subtraction, multiplication or division. – In groups, discuss about the rule of finding the missing number in different exercises of addition, subtraction, multiplication or division. **Examples**: (_ + 36 = 896)

– Ability to recognize and identify the unknown number and choose the appropriate operation.	– Mentally estimate the missing number to check the reasonableness of the answer.		– Finding the common difference in number patterns is a rule applied when finding the missing number. – Finding the missing numbers in a number pattern/ sequence.	– Learners will count forward and backward, skip counting, and basic addition/ subtraction. **Example**: if the pattern is counting by 5s, students might encounter: 5, 10, _, 20, 25. The missing number is 15 – Learners can place 5 counters in one part and then add counters to the other part until they reach 8 in total, discovering that 3 is the missing number. 5+_=8 – Create simple story problems that involve missing addends. **Example**: If you had 6 apples and your friend gave you some more, you now have a total of 10 apples. How many apples did your friend give you?

Links to other subjects: General science, science and technology*: Learners involve understanding that quantities remain constant or change in predictable ways. If a total amount is known, and a part is removed, finding the remaining part is a missing number problem. For example, if a certain amount of water evaporates, how much is «missing» from the original volume?*
Generic skills to be developed: Critical thinking, Communication, problrm solving, Lifelong learning, Creativity and innovation.
Values to be developed: Dignity and Integrity, Patriotism, Commitment and Resilience, Justice, Self-Reliance, Hard work, Respect for Others and Human Rights.
Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Gender, Financial Education.
Assessment criteria*: Learners should be able to find the missing numbers in a number sequence and determine the rule to be applied.*
Teaching/learning aids: *Different counters, manila papers showing various examples.*

TOPIC AREA: STATISTICS	**SUB-TOPIC AREA:** DRAWINGS AND GEOMETRICAL FIGURES	
P3 Mathematics	**Unit 14:** Pictograph used in counting.	**Number of Periods: 5**
Unit Key Competence: Pupils will be able to describe the information on a pictograph.		

Learning objectives			**Content**	**Learning activities**
Knowledge and understanding	**Skills**	**Values and attitudes**		
– Understand how to make a pictograph used in counting based on the quantity of objects represented on it – Describe and explain the information on a pictograph	– Demonstrate the number of objects and any other information represented on a pictograph. – Analyse the number of objects represented on a pictograph – Identify the number represented by each group or find the group with the highest or lowest value	– **Curiosity and Engagement:** Encouraging pupils to ask questions and explore data visually can foster a sense of curiosity about numbers and how they represent real-world information.	– A pictograph used in mathematics to demonstrate the number of objects represented. – Finding and representing the number of objects on a pictograph. – Description of various pictographs and determination of the number of objects represented on them.	– Use real materials or drawings to show, describe, and analyse the information provided by the following pictograph. **Example:** 3 bananas, ... 

– Identify the frequency of items in a category and determine which category has the most or fewest items. – Recognise and involve drawing the appropriate number of pictures or symbols for each category based on the provided information and the chosen scale			– Developing a pictograph based on the given information or objects.	– Learners can make a pictograph based on the given information or objects. – Learners can use flashcards named A, B, C... to represent the number of books read by different children, with each flashcard representing a set number of books.
***Links to other subject: Statistics, general knowledge**: Teaching pictographs contributes to general knowledge by demonstrating the practical application of mathematics in everyday life. Learners see how information is used to understand their environment, from classroom surveys to simple charts in newspapers or on television.*				
Generic skills to be developed: Critical thinking, Communication, problrm solving, Lifelong learning, Creativity and innovation.				
Values to be developed: Dignity and Integrity, Openness and Transparency, Respect for Others and Human Rights, Commitment and Resilience, Self-Reliance, Hard work.				

Crosscutting issues to be addressed: Inclusive education, Peace and value Education, Gender, Financial Education.
***Assessment criteria**: Learners can analyse, describe the information given by a pictograph. and represent any given information on a pictograph.*
***Teaching/ learning aids**: Various materials, drawings of a pictograph on Manila papers,...*

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SUBJECTS AND WEEKLY TIME ALLOCATION FOR DOUBLE SHIFT IN LOWER PRIMARY (P1-P3)

	Subjects to be taught in P1-P3	Number of periods (Period=40 minutes)		
		P1	P2	P3
1	Kinyarwanda	5	5	5
2	English	5	5	5
3	Mathematics	5	5	5
4	Social and Religious Studies	2	2	2
5	Science and Elementary Technology (SET)	2	2	2
6	French	2	2	2
7	Creative Arts (Fine Arts and Music)	2	2	2
8	Physical Education and Sports	1	1	1
9	Co-Curricular activities	1	1	1

	Total number of contact *periods* per week	25	25	25
	Total number of contact *hours*/ Week	16.6	16.6	16.6
	Total number of contact *hours* per year (39 weeks)	647.4	647.4	647.4