

ICT FOR ASSOCIATE NURSING PROGRAM

TEACHER'S GUIDE SENIOR 5 ASSOCIATE NURSING PROGRAM

First Edition

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FOREWORD

Dear Teacher,

Rwanda Basic Education Board is honoured to present teacher's guide for associate nursing program which assists the teacher as guidance to the competence-based teaching and learning to ensure consistence in the learning of ICT subject.

The Rwandan educational philosophy is to ensure that student-associate nurses achieve full potential at every level of education which will prepare them to be able to respond to the community health needs and exploit employment opportunities.

In line with efforts to improve the quality of education, the government of Rwanda emphasizes the importance of aligning teaching and learning materials with the syllabus to facilitate their learning process. Many factors influence what they learn, how well they learn and the competences they acquire. Those factors include the relevance of the specific content, the quality of teacher's pedagogical approaches, the assessment strategies and the instructional materials available.

We paid special attention to the activities that facilitate the learning process in which student-associate nurse can develop ideas and make new discoveries during concrete activities carried out individually or with peers. With the help of the teacher, student-associate nurse will gain appropriate skills and be able to apply what they have learnt in real life situations.

Hence, they will be able to develop certain values and attitudes allowing them to make a difference not only to their own life but also to the nation. This is in contrast to traditional learning theories which view learning mainly as a process of acquiring knowledge from the more knowledgeable who is mostly the teacher.

In competence-based curriculum, learning is considered as a process of active building and developing of knowledge and understanding, skills and values and attitude by the student-associate nurses where concepts are mainly introduced by an activity, situation or scenario that helps the student-associate nurses to construct knowledge, develop skills and acquire positive attitudes and values.

In addition, such active learning engages student- associate nurses in doing things and thinking about the things they are doing and they are encouraged to bring their own real experiences and knowledge into the learning processes.

In view of this, your role is to:

- Plan your lessons and prepare appropriate teaching and learning materials.
- Organize group discussions for student-associate nurse considering the

importance of social constructivism suggesting that learning occurs more effectively when the student-associate nurses works collaboratively with more knowledgeable and experienced people.

- Engage student-associate nurses through active learning methods such as inquiry methods, group discussions, research, investigative activities, group and individual work activities.
- Provide supervised opportunities for student-associate nurses to develop different competences by giving tasks which enhance critical thinking, problem solving, research, creativity innovation, communication and cooperation.
- Support and facilitate the learning process by valuing student-associate nurses' contributions in the class activities.
- Guide student-associate nurses towards the harmonization of their findings.
- Encourage individual, peer and group evaluation of the work done in the classroom and use appropriate competence-based assessment approaches and methods.

To facilitate you in your teaching activities, the content of this teacher's guide is self-explanatory so that you can easily use it. It is divided in 3 parts:

The part 1: Explains the structure of this teacher's guide and gives you the methodological guidance;

The part 2: Gives the sample lesson plans as reference for your lesson planning process;

The part 3: Provides the teaching guidance for each concept given in the student book.

Even though this teacher's guide contains the Answers to all activities given in the Student book, you are requested to work through each question and activity before judging the student's findings. I wish to sincerely extend my appreciation to the people who contributed towards the development of this Teacher's Guide, the Ministry of Health, Human Resource for Health Secretariat (HRHS), University of Rwanda, School of Nursing and Midwifery, Higher Learning Institutions and Rwanda Basic Education Board.

Special gratitude goes to University faculty, Nurses, Midwives, Teachers, illustrators, designers, HRH Secretariat Staff and REB Staff who diligently worked to successful completion of this book.

Dr. MBARUSHIMANA Nelson

Director General of Rwanda Basic Education Board

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PART I. GENERAL INTRODUCTION

About the teacher's guide

This book is a teacher's guide for ICT subject, for senior Five in Associate Nursing program. It is designed to accompany student book and intends to help teachers in the implementation of competence based curriculum specifically ICT syllabus.

As the name says, it is a guide that teachers can refer to when preparing their lessons. Teachers may prefer to adopt the guidance provided but they are also expected to be more creative and consider their specific classes' contexts and prepare accordingly.

I.0. The structure of the guide

This section presents the overall structure, the unit and sub-heading structure to help teachers to understand the different sections of this guide and what they will find in each section.

Overall structure

The whole guide has three main parts as follows:

◆ Part I: General Introduction.

This part provides general guidance on how to develop the generic competences, how to integrate cross cutting issues, how to cater for students with special educational needs, active methods and techniques of ICT and guidance on assessment.

◆ Part II: Sample lesson plan

This part provides a sample lesson plan, developed and designed to help the teacher develop their own lesson plans.

◆ Part III: Unit development

This is the core part of the guide. Each unit is developed following the structure below. The guide ends with references.

Each unit is made of the following sections:

- **Unit title:** from the syllabus
- **Key unit competence:** from the syllabus
- **Prerequisites (knowledge, skills, attitudes and values)**

This section indicates knowledge, skills and attitudes required for the success of the unit. The competence-based approach calls for connections between units/topics within a subject and interconnections between different subjects. The teacher

will find an indication of those prerequisites and guidance on how to establish connections.

– **Cross-cutting issues to be addressed**

This section suggests cross cutting issues that can be addressed depending on the unit content. It provides guidance on how to come up with the integration of the issue. Note that the issue indicated is a suggestion; teacher are free to take another cross-cutting issue taking into consideration the learning environment.

– **Guidance on the introductory activity**

Each unit starts with an introductory activity in the teacher’s book. This section of the teacher’s guide provides guidance on how to conduct this activity and related answers. Note that students may not be able to find the right solution but they are invited to predict possible solutions or answers. Solutions are provided by students gradually through discovery activities organized at the beginning of lessons or during the lesson.

– **List of lessons/sub-heading**

This section presents in a table suggestion on the list of lessons, lesson objectives copied or adapted from the syllabus and duration for each lesson. Each lesson / subheading is then developed.

– **End of each unit**

At the end of each unit the teacher provides the following sections:

- Summary of the unit which provides the key points of content developed in the teacher’s book.
- Additional information which provides additional content compared to the student book for the teacher to have a deeper understanding of the topic.
- End unit assessment which provides answers to questions of the end unit assessment in the teacher’s book and suggests additional questions and related answers to assess the key unit competence.
- Additional activities :(remedial, consolidation and extended activities). The purpose of these activities is to accommodate each student (slow, average and gifted) based on the end of unit assessment results.

Structure of each sub heading

Each lesson/sub-heading is made of the following sections:

Lesson /Sub heading title 1:

– **Prerequisites/Revision/Introduction:**

This section gives a clear instruction to teacher on how to start the lesson.

– Teaching resources

This section suggests the teaching aids or other resources needed in line with the activities to achieve the learning objectives. Teachers are encouraged to replace the suggested teaching aids by the available ones in their respective schools and based on learning environment.

– Learning activities

This section provides a short description of the methodology and any important aspect to consider. It provides also answers to learning activities with cross reference to student's book.

– Exercises/application activities

This provides questions and answers for exercises/ application activities.

1.1. Methodological guidance

1.1.1. Developing competences

Since 2015 Rwanda shifted from a knowledge based to a competence based curriculum for pre-primary, primary and general secondary education. For TTCs, it is in 2019 that the competence based curriculum was embraced. This called for changing the way of learning by shifting from teacher centered to a learner centered approach. Teachers are not only responsible for knowledge transfer but also for fostering teacher's learning achievement, and creating safe and supportive learning environment. It implies also that a student has to demonstrate what he/she is able to do using the knowledge, skills, values and attitude acquired in a new or different or given situation.

The competence-based curriculum employs an approach of teaching and learning based on discrete skills rather than dwelling on only knowledge or the cognitive domain of learning. It focuses on what learner can do rather than what learners know. Students develop basic competences through specific subject unit competences with specific learning objectives broken down into knowledge, skills and attitudes. These competences are developed through learning activities disseminated in learner-centered rather than the traditional didactic approach. The students are evaluated against set standards to achieve before moving on.

In addition to specific subject competences, students also develop generic competences which are transferable throughout a range of learning areas and situations in life. Below are examples of how generic competences can be developed in Biology:

Generic competence	Examples of activities that develop generic competences
Critical thinking	<ul style="list-style-type: none"> • Describe the relationship and interdependence of sciences • Observe, record, interpret data recorded during experiments • Identify and use the applications of ICT concepts to solve problems of life and society
Research and Problem solving	<ul style="list-style-type: none"> • Research using internet or books from the library • Design a project for making bioplastics • Design a questionnaire for data collection during field visit
Innovation and creativity	<ul style="list-style-type: none"> • Create an experiment procedure to prove a point • Develop a graph to illustrate information • Design a data collection survey/questionnaire • Conduct experiments with objectives, methodology, observations, results, conclusions • Identify local problems and ways to resolve them
Cooperation, Personal and Interpersonal management and life skills	<ul style="list-style-type: none"> • Work in Pairs • Small group work • Large group work
Communication	<ul style="list-style-type: none"> • Organise and present in writing and verbally a complete and clear report of an experiment • Observe, record, interpret the results of a measurement accurately. • Select and use appropriate formats and presentations, such as tables, graphs and diagrams.
Lifelong learning	<ul style="list-style-type: none"> • Exploit all opportunities available to improve on knowledge and skills. Reading scientific journals to keep updated.

I.2.2. Addressing cross cutting issues

Among the changes in the competence based curriculum is the integration of cross cutting issues as an integral part of the teaching learning process-as they relate to and must be considered within all subjects to be appropriately addressed. The eight cross cutting issues identified in the national curriculum framework are: genocide studies, environment and sustainability, gender, Comprehensive Sexuality Education (CSE), Peace and Values Education, Financial Education, standardization Culture and Inclusive Education.

Some cross cutting issues may seem specific to particular learning areas or subjects but the teacher needs to address all of them whenever an opportunity arises. In addition, student should always be given an opportunity during the learning process to address these cross cutting issues both within and out of the classroom so as to progressively develop related attitudes and values.

Below are examples on how crosscutting issues can be addressed in Biology:

Cross-cutting issues	Examples on how to integrate the cross-cutting issues
Inclusive education	Involve all students in all activities without any bias. Eg: Allow a student with physical disability (using wheelchair) to take notes or lead the team during an experiment.
Gender	Involve both girls and boys in all activities: No activity is reserved only to girls or boys. Teacher should ensure equal participation of both girls and boys during experiments as well as during cleaning and tidying up related activities after experiments.
Peace and Values Education	During group activities, debates and presentations, the teacher will encourage students to help each other and to respect opinions of colleagues.

Standardization culture	<ul style="list-style-type: none"> • Some lessons involve carrying out experiments. Instruction should be clear for students to always check if they are not using expired chemicals or defective apparatus. • In addition, when performing experiments students have to record data accurately. • For tasks involving calculations, they have to always present accurate results.
Environment and sustainability	<ul style="list-style-type: none"> • In order to avoid the environment pollution, before, during or after experiments students avoid throwing away chemicals anywhere; special places or appropriate containers should be used. • Students also have to be aware of the impacts of the use of hydrocarbons as fuels, halogenoalkanes, and plastics on the environment.
Financial Education	When performing experiments, students are encouraged to avoid wasting chemicals by using the quantities that are just required. They are required to also avoid spoiling equipments and other materials...

I.2.3. Attention to special educational needs specific to each subject

In the classroom, students learn in different way depending to their learning pace, needs or any other special problem they might have. However, the teacher has the responsibility to know how to adopt his/her methodologies and approaches in order to meet the learning needs of each student in the classroom. Also teacher must understand that students with special needs need to be taught differently or need some accommodations to enhance the learning environment. This will be done depending on the subject and the nature of the lesson.

In order to create a well-rounded learning atmosphere, teacher needs to:

- Remember that students learn in different ways so they have to offer a variety of activities (e.g. role-play, music and singing, word games and quizzes, and outdoor activities).
- Maintain an organized classroom and limits distraction. This will help students with special needs to stay on track during lesson and follow instruction easily.
- Vary the pace of teaching to meet the needs of each student-teacher. Some students process information and learn more slowly than others.

- Break down instructions into smaller, manageable tasks. Students with special needs often have difficulty understanding long-winded or several instructions at once. It is better to use simple, concrete sentences in order to facilitate them understand what you are asking.
- Use clear consistent language to explain the meaning (and demonstrate or show pictures) if you introduce new words or concepts.
- Make full use of facial expressions, gestures and body language.
- Pair a student who has a disability with a friend. Let them do things together and learn from each other. Make sure the friend is not over protective and does not do everything for the student-teacher. Both students will benefit from this strategy
- Use multi-sensory strategies. As all students learn in different ways, it is important to make every lesson as multi-sensory as possible. Students with learning disabilities might have difficulty in one area, while they might excel in another. For example, use both visual and auditory cues.

Below are general strategies related to each main category of disabilities and how to deal with every situation that may arise in the classroom. However, the list is not exhaustive because each student is unique with different needs and that should be handled differently.

Strategy to help students with developmental impairment:

- Use simple words and sentences when giving instructions.
- Use real objects that the student can feel and handle, rather than just working abstractly with pen and paper.
- Break a task down into small steps or learning objectives. The student should start with an activity that s/he can do already before moving on to something that is more difficult.
- Gradually give the student less help.
- Let the student work in the same group with those without disability.

Strategy to help students with visual impairment:

- Help students to use their other senses (hearing, touch, smell and taste) to play and carry out activities that will promote their learning and development.
- Use simple, clear and consistent language.
- Use tactile objects to help explain a concept.
- If the students has some sight, ask them what they can see. Get information from parents/caregivers on how the student manages their remaining sight at home.

- Make sure the student has a group of friends who are helpful and who allow the students to be as independent as possible.
- Plan activities so that students work in pairs or groups whenever possible.

Strategy to help students with hearing impairment:

- Strategies to help students with hearing disabilities or communication difficulties
- Always get the students attention before you begin to speak.
- Encourage the student to look at your face.
- Use gestures, body language and facial expressions.
- Use pictures and objects as much as possible.
- Ask the parents/caregivers to show you the signs they use at home for communication use the same signs yourself and encourage other students to also use them.
- Keep background noise to a minimum.

Strategies to help children with physical disabilities or mobility difficulties:

- Adapt activities so that student who use wheelchairs or other mobility aids, or other students who have difficulty moving, can participate.
- Ask parents/caregivers to assist with adapting furniture e.g. The height of a table may need to be changed to make it easier for a student to reach it or fit their legs or wheelchair under.
- Encourage peer support friends can help friends.
- Get advice from parents or a health professional about assistive devices.

1.2.4. Guidance on assessment

Each unit in the teacher's guide provides additional activities to help students achieve the key unit competence. Results from assessment inform the teacher which student needs remedial, consolidation or extension activities. These activities are designed to cater for the needs of all categories of learners; slow, average and gifted learners respectively.

Assessment is an integral part of teaching and learning process. The main purpose of assessment is for improvement. Assessment for learning/ **Continuous/ formative assessment** intends to improve student-teachers' learning and teacher's teaching whereas assessment of learning/summative assessment intends to improve the entire school's performance and education system in general.

Continuous/ formative assessment

It is an ongoing process that arises out of interaction during teaching and learning process. It includes lesson evaluation and end of sub unit assessment. This formative assessment plays a big role in teaching and learning process. The teacher should encourage individual, peer and group evaluation of the work done in the classroom and uses appropriate competence-based assessment approaches and methods.

In Year two textbook, formative assessment principle is applied through application activities that are planned in each lesson to ensure that lesson objectives are achieved before moving on. At the end of each unit, the end unit assessment is formative when it is done to give information on the progress of students and from there decide what adjustments need to be done. Assessment standards are taken into consideration when setting tasks.

Summative assessment

The assessment done at the end of the term, end of year, is considered as summative. The teacher, school and parents are informed on the achievement of educational objectives and think of improvement strategies. There is also end of level/ cycle assessment in form of national examinations.

1.2.5. Student teachers' learning styles and strategies to conduct teaching and learning process

There are different teaching styles and techniques that should be catered for. The selection of teaching method should be done with the greatest care and some of the factors to be considered are: the uniqueness of subjects, the type of lessons, the particular learning objectives to be achieved, the allocated time to achieve the objective, instructional available materials, the physical/sitting arrangement of the classroom, individual student teachers' needs, abilities and learning styles.

There are mainly four different learning styles as explained below:

a) Active and reflective learners

Active learners tend to retain and understand information best by doing something active with it, discussing or applying it or explaining it to others. Reflective learners prefer to think about it quietly first.

b) Sensing and intuitive learners

Sensing learners tend to like learning facts while intuitive learners often prefer discovering possibilities and relationships. Sensors often like solving problems by well-established methods and dislike complications and surprises; intuitive learners like innovation and dislike repetition.

c) Visual and verbal learners

Visual learners remember best what they see (pictures, diagrams, flow charts, time lines, films, demonstrations, etc.); verbal learners get more out of words (written and spoken explanations).

d) Sequential and global learners

Sequential learners tend to gain understanding in linear steps, with each step following logically from the previous one. Global learners tend to learn in large jumps, absorbing material almost randomly without seeing connections, and then suddenly “getting it.”

I.2.6. Teaching methods and techniques that promote the active learning

The different student learning styles mentioned above can be catered for, if the teacher uses active learning whereby students are really engaged in the learning process.

What is Active learning?

Active learning is a pedagogical approach that engages students in doing things and thinking about the things they are doing. In active learning, learners are encouraged to bring their own experience and knowledge into the learning process.

The role of the teacher in active learning

- The teacher engages students through active learning methods such as inquiry methods, group discussions, research, investigative activities and group and individual work activities.
- He/she encourages individual, peer and group evaluation of the work done in the classroom and uses appropriate competence-based assessment approaches and methods.
- He provides supervised opportunities for students to develop different competences by giving tasks which enhance critical thinking, problem solving, research, creativity and innovation, communication and cooperation.
- Teacher supports and facilitates the learning process by valuing student-teachers’ contributions in the class activities.

The role of learners in active learning

- Learners are key in the active learning process. They are not empty vessels to fill but people with ideas, capacity and skills to build on for effective learning. A learner engaged in active learning:
- Communicates and shares relevant information with other learners through presentations, discussions, group work and other learner-centred activities (role play, case studies, project work, research and investigation)

- Actively participates and takes responsibility for their own learning
- Develops knowledge and skills in active ways
- Carries out research/investigation by consulting print/online documents and resourceful people, and presents their findings
- Ensures the effective contribution of each group member in assigned tasks through clear explanation and arguments, critical thinking, responsibility and confidence in public speaking
- Draws conclusions based on the findings from the learning activities.

Some active techniques that can be used in Biology

The teaching methods strongly emphasised in the competence Based Curriculum (CBC) are active methods. Below are some active techniques that apply in sciences:

A) Practical work/ experiments:

Many of the activities suggested in ICT curriculum as well as in the teacher's book are practical works or experiments.

Practical work is vital in learning Biology; this method gives the student the opportunity to implement a series of activities and leads to the development of both cognitive and hands-on skills. The experiments and questions given should target the development of the following skills in student-teachers: observation, recording and report writing, manipulation, measuring, planning and designing.

A practical lesson/Experiment is done in three main stages:

- **Preparation of experiment:** Checking materials to ensure they are available and at good state; try the experiment before the lesson; think of safety rules and give instructions to lab technician if you have any.
- **Performance of experiment:** Sitting or standing arrangement of student-teachers; introduction of the experiment: aims and objectives; setting up the apparatus; performing the experiment; write and record the data.
- **Discussion:** Observations and interpreting data; make generalisations and assignment: writing out the experiment report and further practice and research.

In some cases, demonstration by the teacher is recommended when for example the experiment requires the use of sophisticated materials or very expensive materials or when safety is a major factor like dangerous experiments and it needs specific skills to be learnt first.

In case your school does not have enough laboratory materials and chemicals, experiments can be done in groups but make sure every student participates. You can also make arrangements with the neighbouring science school and take your students there for a number of experiments.

B) Research work

Each student or group of students is given a research topic. They have to gather information from internet, available books in the library or ask experienced people and then the results are presented in verbal or written form and discussed in class.

C) Project work

ICT teachers are encouraged to sample and prepare project works and engage their students in, as many as possible. Students in groups or individually, are engaged in a self-directed work for an extended period of time to investigate and respond to a complex question, problem, or challenge. The work can be presented to classmates or other people beyond the school. Projects are based on real-world problems that capture learners' interest. This technique develops higher order thinking as the students acquire and apply new knowledge in a problem-solving context.

D) Field trip

One of the main aims of teaching ICT in Rwanda is to apply its knowledge for development. To achieve this aim we need to show to students the relationship between classroom science lessons and applied sciences. This helps them see the link between science principles and technological applications.

To be successful, the field visit should be well prepared and well exploited after the visit:

Before the visit, the teacher and student:

- agree on aims and objectives
- gather relevant information prior to visit
- brainstorm on key questions and share responsibilities
- discuss materials needed and other logistical and administrative issues
- discuss and agree on accepted behaviours during the visit
- Visit the area before the trip if possible to familiarise yourself with the place

After the visit

When students come back from trip, the teacher should plan for follow-up. The follow-up should allow students to share experiences and relate them to the prior science knowledge. This can be done in several ways; either: Students write a report individually or in groups and give to the teacher for marking. The teacher then arranges for discussion to explain possible misconceptions and fill gaps. Or students write reports in groups and display them on the class notice board for everyone to read.

Main steps for a lesson in active learning approach

All the principles and characteristics of the active learning process highlighted above are reflected in steps of a lesson as displayed below. Generally, the lesson is divided into three main parts whereby each one is divided into smaller steps to make sure that students are involved in the learning process. Below are those main parts and their small steps:

1) Introduction

Introduction is a part where the teacher makes connection between the current and previous lesson through appropriate technique. The teacher opens short discussions to encourage students to think about the previous learning experience and connect it with the current instructional objective. The teacher reviews the prior knowledge, skills and attitudes which have a link with the new concepts to create good foundation and logical sequencings.

2) Development of the new lesson

The development of a lesson that introduces a new concept will go through the following small steps: discovery activities, presentation of student-teachers' findings, exploitation, synthesis/summary and exercises/application activities, explained below:

◆ Discovery activity

Step 1

- The teacher discusses convincingly with students to take responsibility of their learning
- He/she distributes the task/activity and gives instructions related to the tasks (working in groups, pairs, or individual to instigate collaborative learning, to discover knowledge to be learned)

Step 2

- The teacher let the students work collaboratively on the task.
- During this period the teacher refrains to intervene directly on the knowledge
- He/she then monitors how the students are progressing towards the knowledge to be learned and boost those who are still behind (but without communicating to them the knowledge).

◆ Presentation of student-teachers' productions

- In this episode, the teacher invites representatives of groups to present the student-teachers' productions/findings.
- After three/four or an acceptable number of presentations, the teacher decides to engage the class into exploitation of the student-teachers' productions.

◆ **Exploitation of student-teachers's productions**

- The teacher asks the students to evaluate the productions: which ones are correct, incomplete or false
- Then the teacher judges the logic of the student-teachers' products, corrects those which are false, completes those which are incomplete, and confirms those which correct.

◆ **Institutionalization (summary/conclusion/ and examples)**

- The teacher summarises the learned knowledge and gives examples which illustrate the learned content.

◆ **Exercises/Application activities**

- Exercises of applying processes and products/objects related to learned unit/ sub-unit
- Exercises in real life contexts
- Teacher guides students to make the connection of what they learnt to real life situations. At this level, the role of teacher is to monitor the fixation of process and product/object being learned.

3) Assessment

In this step the teacher asks some questions to assess achievement of instructional objective. During assessment activity, students work individually on the task/activity. The teacher avoids intervening directly. In fact, results from this assessment inform the teacher on next steps for the whole class and individuals. In some cases, the teacher can end with a homework assignment.

PART II. SAMPLE LESSON PLAN

Lesson Plan

School Name: X

Teacher's name: X

Term	Date	Subject	Class	Unit N°	Lesson N°	Duration	Class size
1	X	ICT	S5	1	1 of 8	80min	45 students
Type of Special Educational Needs to be catered for in this lesson and number of students in each category				Hearing impairment. One student			
Unit title		ADVANCED SPREADSHEET II					
Key Unit Competence:		Use the full potential of the spreadsheet to manipulate data.					
Title of the lesson		Logical functions					
Instructional objectives		After learning the lesson, students will be able to explain the use of logical functions and apply them in doing different calculations					
Plan for this Class (location: in / outside)		This class will be held in the Computer laboratory and Students will be organize in small groups					
Learning Materials (for all learners)	Computers connected to internet, projector, and ICT student text book S5.						
References	ICT student text book S5 and internet website: https://www.Ablebits.com						

Timing for each step	Teacher activities	Learner activities	Competences and cross cutting issues to be addressed + a short explanation
Introduction 10 minutes.	<ul style="list-style-type: none"> • The teacher facilitates students to go in their respective groups. • Teacher asks some questions which helps students to discover the topic of the lesson. 	<ul style="list-style-type: none"> • Students respond appropriately to the questions asked by the teacher in review of the lesson. • Students discuss about different Excel functions 	<ul style="list-style-type: none"> • Communication • Cooperation • Critical thinking. • Gender through mixing boys and girls to do activity
<p>Development of the lesson (Harmonization and summary)</p> <p>30 minutes: Doing activity</p> <p>10 minutes: Presentation</p> <p>15 minutes: Doing application activity</p>	<ul style="list-style-type: none"> • Teacher provides activity questions to discuss in pair using text books and internet. • Teacher guides students to do their activity • The teacher asks students to present their findings and give additional comments to the students 'work. 	<ul style="list-style-type: none"> • In groups, using student text books, and internet. <p>Students discuss on:</p> <ul style="list-style-type: none"> • Answers of a given activity • Excel logical functions • Students ask questions for clarifications while discussing in groups. • Students present their findings. 	<p>Communication through presentations and discussing in groups.</p> <p>Cooperation when working together in groups</p> <p>Cross cutting issues: Gender education:</p> <p>Both boys and girls should participate in doing a research and discuss about Excel functions.</p>

	<ul style="list-style-type: none"> • Teacher provides application Activity to students. • Teacher comments on work of students 	<ul style="list-style-type: none"> • Students takes a summary from comments of a teacher • Students individually do application activity using sheet of papers. 	Inclusive education, by encouraging students to speak loudly so that the one with hearing impairment can hear what have been said
<p>Conclusion (Assessment) 15 minutes</p>	<ul style="list-style-type: none"> • The teacher concludes the lesson by asking questions to the learners, to know the achievement of the objective. • Provides a simple quiz 	<ul style="list-style-type: none"> • Doing a quiz in using their draft books and pens 	Critical thinking and interpersonal cooperation
Teacher self-evaluation	To be completed by the tutor after the lesson		

1.1. Key unit competence:

Use the full potential of the spreadsheet to manipulate data.

1.2. Prerequisite knowledge and skills:

Students should have knowledge and skills related to spreadsheet learnt in senior two in Spreadsheet Basics

1.3. Cross-cutting issues to be addressed

Financial education: While exploring different templates used in Excel, students are made familiar with the loan amortization template and here learn concepts related to loans, interest rates, capital. They evaluate the interest paid for different interest rates.

Standardization culture: while learning excel formula, learners become aware that those are the same as the ones learnt in Mathematics and therefore are aware that mathematics is applicable in life

1.4. Guidance on the introductory activity

- The teacher organizes students into pairs.
- The teacher asks students to do the introductory activity in their respective pairs.
- The teacher moves around to see how students are working and provides guidance where it is needed.
- The teacher invites some pairs to presents their findings to the class
- The teacher asks students to evaluate findings.
- The teacher tells the students that in the coming lessons they will have complete answers.
- If there is a question that cannot be answered, the teacher explains that by the end of the unit they will be able to answer each question

Answer of introductory activity

- a) Sector that has more expectant mothers to receive super nets is cell that has more children under age Two is Ngoma (**Use Max function to get the answer**)

- b) Sector that has more children under age Two is Ngoma **(Use Max function to get the answer)**
- c) The average number of children to receive mosquito nets in Huye District is 12 children. This is got by using the Average ()function
- d) Sector that has less children under age Two is Mbazi **(Use Min function to get the answer)**

1.5. List of lessons

#	Lesson title	Learning objective	Number of periods
1	Logical functions	Explain the use of logical functions and apply them in doing different calculations	2
2	Advanced Math Spreadsheet functions	Recognize the importance of math functions and apply them	1
3	Advanced Statistical spreadsheet functions	Apply statistical functions to carry out different calculations	1
4	Text spreadsheet functions Use text Excel functions to manipulate text and appreciate the importance of these functions in easing the work on text		1
5	Using formula & functions from different sheets	Explain the need to use formula and functions from different sheets and use them	1
6	Protecting worksheet style, contents and elements	Apply spreadsheet security features to protect them against unwanted changes	1
7	Data validation	Protect and secure a spreadsheet or cells within a spreadsheet	1
8	Using other Excel templates	Use various Excel templates to make different excel documents	1

	End unit assessment	Answer the questions of end unit assessment	1
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LESSON 1: Logical functions

a) Learning objective

Explain the use of logical, functions and apply them in doing different calculations

b) Teaching resources:

Students need to use computers in the computer laboratory for practicing, Projector for projecting what they discussed, textbooks and internet connectivity to facilitate research

c) Prerequisites

Students are now familiar with application programs installed in computers. As they learnt in Unit 4: Spreadsheet Basics learnt in senior two, they can therefore apply the same reasoning on Logical functions now to be learned in Year Two.

d) Learning activities: Guidance:

- The lesson starts by analyzing questions in the activity 1.1. If answers can't be found, students are told that by the end of the lesson they will be able to answer them
- By the guidance of the teacher students explain what **logical function** is and brainstorm on it.
- Students give examples of **logical function**
- Individually and under the guidance of the teacher, students discuss the different types of **logical function** use each one of them
- Students do the questions in the activity 1.1 that were not answered at the beginning of the lesson.
- The teacher gives guidance on how to do application activity 1.1

Answers for activity 1.1

Names	Marks in Science	Marks in ICT	Rewarded with a laptop	Rewarded with a dictionary	Not rewarded
Kabera	70	92	Not	Yes	Not
Umutoni	84	88	Yes	Not	Not
Mugabo	60	75	Not	Not	Yes
Isimbi	90	93	Yes	Not	Not

Uwase	55	70	Not	Not	Yes
Uwacu	70	81	Not	Yes	Not
Gihozo	98	95	Yes	Not	Not
Rugwiro	83	78	Not	Yes	Not
Kamikazi	62	68	Not	Not	Yes
Gakuru	80	82	Yes	Not	Not
Total laptops/ dictionaries given					

- a) Excel function to find students who are to be rewarded with a Laptop, dictionary and not rewarded is =IF(C6>80,"Yes","No"). b) 3
c) 4 laptops and 3 dictionaries d) Chemistry
e) Fundamental of Nursing

Application activities 1.1

- 1) Students answer the questions using students' book
- 2) Second

LESSON 2: Advanced Math Spreadsheet functions

a) Learning objective

Recognize the importance of math functions and apply them

b) Teaching resources:

Computers in the Computer Lab with Microsoft Office 2013 and above installed, Projector, Internet, textbooks to facilitate the research

c) Prerequisites

Students are now familiar with Microsoft excel spread sheet. As they learnt in Unit 1: advance spreadsheet in the section on logical function in **year two** then student can therefore apply the same reasoning on Advanced Math Spreadsheet functions.

d) Learning activities: Guidance:

The activity is going to be done individually.

- By the guidance of the teacher, students explain what **Advanced Math Spreadsheet functions** is and brainstorm on its history
- Student gives examples of **Advanced Math Spreadsheet functions**

- In individually and under the guidance of the teacher, students discuss the different types of Advanced Math Spreadsheet functions
- For each mathematical function given, a practical example is demonstrated and the whole class practice using that function
- Students do the questions of activity 1.2 that were not answered at the beginning of the lesson
- The teacher gives guidance on how to do the Application Activity 1.2

Answers for learning activity 1.2

(1& 2 & 3)

Name	ICT/50	English/50	Roman	Average	Root
Munezero	35	28	XXXV	32	5,6124861
Iradukunda	28	29	XXVIII	29	5,3385391
Bagwaneza	40	33	XL	37	6,041523
Bamurange	35	28	XXXV	32	5,6124861
Kwizera	27	33	XXVII	30	5,4772256
Butera	42	29	XLII	36	5,9581876
Uwase	35	15	XXXV	25	5

4) The conversion from roman style to Arabic style number is done by the function ROMAN ()

Answers of application activity 1.2

1. Students answer the questions using student's book

- ARABIC("MCCIII")=1203
- ARABIC("XLIX") =49 c) ARABIC("CMV") = 905
- ARABIC("XXIII") =23

LESSON 3: Advanced Statistical Spreadsheet functions

a) Learning objective

Apply statistical functions to carry out different calculations

b) Teaching resources:

Computers in the computer laboratory and preferably one for each learner, Projector, textbooks and internet connectivity to facilitate research

c) Prerequisites

Students are now familiar with Microsoft excel spread sheet as they learnt in Unit 1:

advance spreadsheet in section logical function in year two. Students can therefore apply the same reasoning on Advanced Statistical Spreadsheet functions.

d) Learning activities: Guidance:

- Students analyze the table in the activity 3 and try to fill it by doing calculations (but not using Excel). The teacher then introduces the lesson by stating that such calculations will be done using Excel
- By the guidance of the teacher, students explain the term **Advanced Statistical Spreadsheet functions** and brainstorm on it.
- Students give examples of Advanced Statistical Spreadsheet functions
- Individually and under the guidance of the teacher; students discuss the different types of **Advanced Statistical Spreadsheet functions** and do practice on them
- Using Excel Students do questions in the activity 1.3
- The teacher gives guidance on how to do the application activity 1.3

Answers for activity 1.3

a) =AVERAGE(B2:D2) this formula must be applied in the first cell then apply it to other cells by scrolling it down.

Name	ICT	Science	Maths	Total Marks	Average
Rutikanga	98	78	95	271	90
Mukagasana	99	86	60	245	82
Murekatete	60	90	92	242	81
Gatete	90	73	50	213	71

b) i) Mukagasana ii) Murekatete iii) Rutikanga

Those with more marks in a subject are got by using the max function and searching for the name having those marks.

Answers of application activity 1.3

Answers to question a, b, c and d are in the table below:

1	Names	ICT/40	ENGLISH/40	MATHS/40	AVERAGE	AVERAGEIF	LARGE	MEDIAN FOR ICT
2	MULISA	34	27	35	32			30
3	MUTONI	25	30	32	29			26
4	KABANDA	39	39	15	31			30.5
5	KABERA	35	25	17	26		35	26
6	KAGIRIMP	37	27	30	31			25.5
7	MUTONI	25	39	38	34	26		25
8	MUTETERI	26	36	36	33			22
9	MUTONI	18	25	39	27			18

LESSON 4: Text spreadsheet functions

a) Learning objective

Use text Excel functions to manipulate text and appreciate the importance of these functions in easing the work on text.

b) Teaching resources:

Computer laboratory which contain a computer for each student teacher, Projector, textbooks and internet to facilitate research.

c) Prerequisites

Students are now familiar with Microsoft excel spread sheet as they learnt in Unit 1: advance spreadsheet in section logical function in **year two**. Students can therefore build on the skills and knowledge acquired in that and understand easily the new lesson.

d) Learning activities

Guidance:

- The teacher presents the scenario in the activity 1.4 to the students and the whole class debate on it by brainstorming on the size of work if the problem is manually solved
- By the guidance of the teacher, students explain what Text spreadsheet functions is and brainstorm on it.
- Students give examples of Text spreadsheet functions they may know
- In pairs and under the guidance of the teacher, Students discuss the different types of Text spreadsheet functions and practice using them following an example given on the black board
- Students do the questions of the activity 1.4. which were not solved at the beginning of the lesson
- The teacher gives guidance on how to do the application activity 1.4.

Answers for activity 1.4

Answer 1: As Mukamana is not familiar with the text manipulation functions she will use copy/ paste function to make Table 1 look like table 2. This will take her a lot of time.

Answer 2: If combining names by copy and paste takes one second and combining phone numbers also takes one second working on one row will take two seconds meaning that the whole document will take 2000 seconds (2*1000) equivalent to 33 minutes

Answer 3: To make Table 1 look like Table 2 first make the Last Name be in capital letter by using the UPPER () function and make the First Name be in small letter with the first letter in capital by using the PROPER () then combine the two rows by using the CONCATENATE () but don't forget to insert in space.

The phone number columns are combined into one column by using the concatenate function but remember also to put in the "or" text

Answer 4: Using the UPPER () function, the PROPER () function and the CONCATENATE () function in order to make Table 1 look like Table 2 can take less than 30 seconds.

Answers of application activity 1.4

Answers:1. d

2. =CONCATENATE (A1&" "&A2&" "&A3)

The & symbol is used to insert in the final results characters that were not in the cells A1, A2 and A3.

LESSON 5: Using formula & functions from different sheets

a) Learning objectives

Explain the need to use formula and functions from different sheets and use them

b) Teaching resources:

Computer Lab., Projector, textbooks to facilitate the research

c) Prerequisites

Students are now familiar with Microsoft excel spread sheet. As they learnt in Unit 1: advance spreadsheet in section logical function in year two therefore they can apply the same reasoning on Using formula & functions from different sheets.

d) Learning activities: Guidance:

- The lesson is started by presenting the scenario in the activity 1.5 or any other scenario made by the teacher to make learners understand that there is always a need to combine data from different sheets
- The teacher gives an exercise that learners do in a short time. Learners who did the exercise properly explain how they did it
- An explanation on how to use formula and functions on data from different sheets is done
- Exercises are given so as to master using those formula and functions
- Teacher ask others students to comments on the results presented.
- Teacher gives instructions on how to do the Application activity 1.5

Answers for activity 1.5

Learners discuss how they can combine data from different sheets. The teacher guides them to make sure the discussion is accurate.

Application activity 1.5

Answers: Students calculate the average by using formula which fetch data from all the three sheets.

LESSON 6: Protecting worksheet style, contents and elements

a) Learning objectives

Apply spreadsheet security features to protect them against unwanted changes

b) Teaching resources

Computer Lab, Projector, textbooks and internet connectivity to facilitate research

c) Prerequisites

Students are now familiar with Microsoft excel spread sheet. As they learnt in Unit 1: advance spreadsheet in section logical function in year two then students can therefore apply the same reasoning on Protecting worksheet style, contents and elements.

d) Learning activity

Guidance:

- The teacher presents a scenario to make learners discover that protection of excel documents and sections is necessary
- Teacher asks students to read the activity 1.6 and give an advice as requested
- The teacher demonstrates how to protect and unprotect a worksheet, how to lock and unlock cells and for each demonstration students are given an

exercise

- Teacher walks among learners to help those having difficulties in doing the exercises given
- Teacher gives instructions to do the Application activity 1.6

Answers for activity 1.6

- a) The Advice to the head teacher is to protect cells of first and second term in worksheet
- b) The only thing to do is to unprotect cells protected

Application activity 1.6

1&2&3) Students answer the questions 1, 2 and three by referring themselves to the steps given in the Student Teacher's book.

LESSON 7: Data validation

a) Learning objectives

Protect and secure a spreadsheet or cells within a spreadsheet

b) Teaching resources:

Computers in the computer lab to make sure every learner has one, Projector, textbooks and internet connectivity to facilitate research

c) Prerequisites

Students are now familiar with Microsoft excel spread sheet. They learnt in Unit 1: advance spreadsheet in section logical function in year two. Learners can therefore apply the same reasoning on Data validation

Guidance:

- Teacher organizes students in pair in order to do activity 1.7 in 10 minutes
- Teacher walks around and sees if students are doing activity in their respective pairs
- In Pairs, Students present their findings on Data validation.
- The teacher demonstrates how to protect data and learners follow suit
- The teacher gives guidance on how to do the application activity1.8

Answers for activity 1.7

- a) a) Learners discuss how to fix the length of the ID so that some users don't enter more than 16 digits

- b) The suggested message to appear in case the entered word is not valid is “The entered number is not in range “

Application activity 1.7

1&2) Learners answer question 1 and 2 by referring themselves to the content in the Student teacher’s book and the teacher makes sure the learners reasoning is correct.

- 1) Learners apply validation on the given table to make sure an input message on Idnumber is created
- 2) Learners create the validation to make the IdNumber be between 1000 and 7777

LESSON 8: Using other Excel templates

a) Learning objectives

Use various Excel templates to make different excel documents

b) Teaching resources:

Computers in the computer laboratory, Projector for displaying examples to learners, textbooks and internet to facilitate the research

c) Prerequisites

Students are now familiar with application programs installed in computers. They learnt in Unit 4: Spreadsheet Basics learnt in senior two. They can therefore apply the same reasoning on using other Excel templates.

d) Learning activity

Guidance

- The teacher presents the scenario to make learners be motivated to know about the different templates which are loan amortization template, calendar, monthly company budget, student schedule, etc
- By the guidance of the teacher; students open excel and cite the different templates
- With learners; the teacher explores the excel templates and demonstrate how to use them
- For each template demonstrated, learners practice using them
- Students choose projects that they will do as homework. Here the teacher makes sure all templates are covered
- The teacher gives guidance on how to do application activity 1.8

Answers for activity 1.8

Answer 1: ICT Club members in order to make a school calendar, they are going to use “**Excel Academic calendar Template**”

Answer 2: a&b)

The answer is summarized in the table below:

LOAN SUMMARY	
Scheduled payment	108,712
Scheduled number of payments	60
Actual number of payments	60
Total interest	1,522,726.92

Application activity 1.8

The questions in this application activity can be answered by referring to the student teacher’s book content

1.6. Summary of the unit

This unit was entitled “Advanced spread sheet functions”. It deals in general with complex functions / advanced excel function like logical functions, statistics function, text function, Microsoft excel validation and Microsoft excel template. The present unit greatly focused on detailing possible results which are got by using functions and formula.

The first section of this unit deals with possible Logical Function as a features in Excel that allows excel users to introduce automated decision-making when executing formulas and functions like “If”, “and”, “or”, “not” etc. The next step is advanced Math Spreadsheet functions that helps to perform operations on a cell content based on special criteria set by the writer or commanding man. Some of the functions discussed were Abs (), Arabic (), Roman (), Base (), Mod () and Sqrt ().

All of these functions are helpful in the elaboration of statistical data needed in the spreadsheet space.

Lastly, the unit assessed the essential of validation and template forms which can be used in Microsoft excel. A validation rule controls any kind of data that can be entered into a certain cell. Microsoft Excel template is a powerful part of Excel experience and a great way to save time. Excel templates help to create consistent

and attractive documents that impress like calendars.

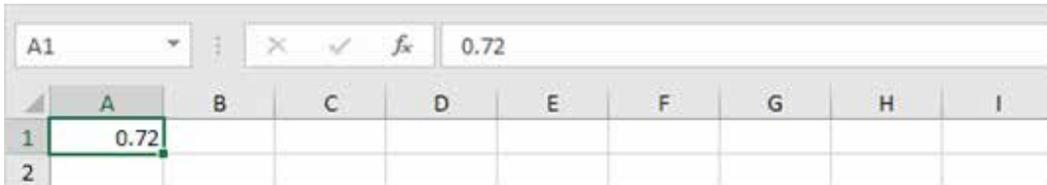
1.7. Additional information

Percentage function

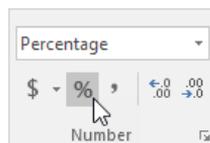
Enter a Percentage

To enter a percentage in Excel, execute the following steps.

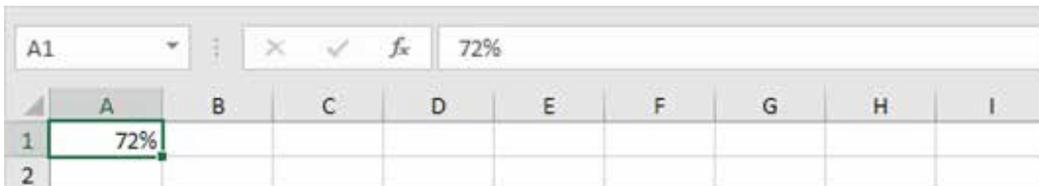
Step 1: First, enter a decimal number.



Step 2: On the Home tab, in the Number group, click the percentage symbol to apply a Percentage format.



Result.

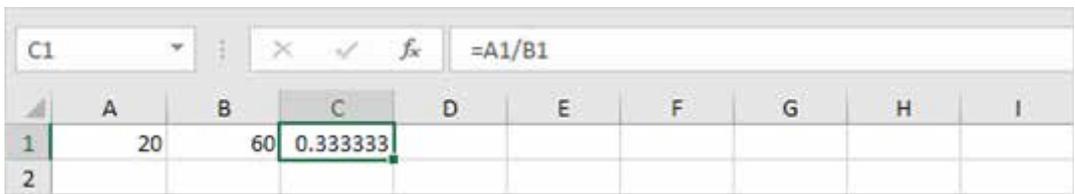


Note: to change the percentage in cell A1, simply select cell A1 and type a new percentage (do not type a decimal number).

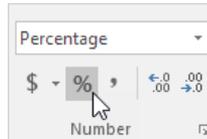
Percentage of Total

To calculate the percentage of a total in Excel, execute the following steps.

Step 1: Enter the formula shown below. This formula divides the value in cell A1 by the value in cell B1. Simply use the forward slash (/) as the division operator. Don't forget, always start a formula with an equal sign (=).

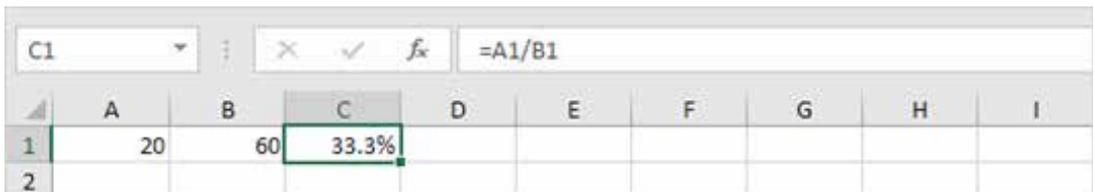


Step 2: On the Home tab, in the Number group, click the percentage symbol to apply a Percentage format.



Result.

Step 3: On the Home tab, in the Number group, click the Increase Decimal button once.



Result.

Note: Excel always uses the underlying precise value in calculations, regardless of how many decimals you choose to display.

1.8. End Unit Assessment Answers

1	Names	Set	Maths	Sqrt /set	Base/Maths
2	Kalisa	12	18	3.46410162	10010
3	KAMANA	18	17	4.24264069	10001
4	MUTONI	16	13	4	1101
5	MURENZI	10	20	3.16227766	10100

Answer 2:

To convert the names use the following formula:

=LOWER(KAMANA)

=LOWER(MUTONI)

=LOWER(MUREZI)

Answer 3:

=CONCATENATE(A2,"",A5)

Answer 4:

To answer question 4 use the content in the student teacher's book.

1.9. Additional Activity**1.9.1. Remedial activity**

The table below contains students' marks.

Name	French	English	Mathematics	Total	Average
Uwera	92	74	93		
Munezero	94	86	65		
Munyana	65	93	92		
Umulisa	94	77	55		

Answer the questions that follow:

- a) Calculate the Total and average marks of every student
- b) Give the name of the one who has more marks in:
 - i) French
 - ii) English
 - iii) Mathematics

1.9.2. Consolidation activities

You are given the following data in Microsoft Excel data sheet.

Name	ICT/50	English/50	Kinyarwanda/50	Roman	Square Root
Rugwiro	35	28	25		
Iradukunda	28	29	32		
Bajeneza	40	33	43		
Bamurange	35	28	37		
Mizero	27	33	45		
Buregeya	42	29	28		
Uwase	35	15	20		

Answer the questions below:

- 1) Convert ICT marks into roman style
- 2) Discuss how to calculate the total and average of students
- 3) Calculate the square root of Kinyarwanda marks?
- 4) Convert Mizero and Iradukunda into capital letter

1.9.3. Extended activities

You are given the following data in Microsoft Excel data sheet.

Name	Age	School	Marks
Kalisa	12	G.S Mushubati	70
Gatete	15	G.s MWENDO	73
Kamana	20	ESC.RUHANGO	70
Tumushime	17	TTC MUHANGA	73

- a) Find the youngest student?
- b) Find the absolute value of Marks?
- c) Find the mode value of age?
- d) Convert TTC MUHANGA and ES.RUHANGO into lowercase?
- e) Find the medium marks value of age

2.1. Key unit competence

Create a power point presentation to address a bigger audience.

2.2. Prerequisite

Students have knowledge and skills related to presentation as they learnt Unit 6 on Presentation in Senior 3. The basic knowledge they got in this unit will enable them to easily learn this new unit

2.3. Cross-cutting issues to be addressed

Peace and value education: Students must be aware that presentations should not be offensive, they should use appropriate language while presenting and should consider that in the audience there are people of different culture who can be offended easily.

Gender education: learners are to be aware that to conduct a good presentation or for a presentation to be good the presenter does not have to be male or female

Standardization culture: While presenting, students must have the culture of not using terms, words, pictures and gestures that are against the Rwandan culture.

2.4. Guidance on the introductory activity

- The teacher organizes learners into pairs and instructs them to answer questions in the introductory activity
- The teacher gives guidance wherever learners want one.
- The teacher invites pair to present their findings by using a projector
- The teacher asks students to evaluate findings and decide whether PowerPoint presentation program is necessary or can be replaced by other programs.

Answers to the introductory Activity

Answer 1: The application program that is opened in the projection is “Ms Office Power Point “

Answer 2: Ms Office PowerPoint is the application program used in presentation document.

Answer 3: Learners connect a projector to a desktop computer or to a laptop computer.

2.5. List of lessons

#	Lesson title	Learning objective	Number of periods
1	Creating, copying and inserting slides	Creating presentations and insert in new slides Manipulate the created presentation by using different options like copy, hide...	1
2	Managing slides	Managing slides by using the different options so as to make the presentation more professional	1
3	Apply design themes and format background	Create a presentation and apply themes to slides and format background	2
4	Adding notes and comments, inserting header and footer	Insert meaningful header & footer and comments to a PowerPoint Presentation	2
5	Add sound and animation to slides	Add sound and animation into slides and appreciate its importance in a presentation	1
6	Add audio and video content	Create a presentation and insert audio and video to make it more entertaining	2
7	Slide transition	Apply different transitions to slides into created presentation	1
8	Presenting using power point	Conduct an effective presentation using PowerPoint and a projector	2
9	End unit assessment		1

LESSON 1: Creating, copying and inserting slides

a) Learning objectives

- Creating presentations and insert in new slides
- Manipulate the created presentation by using different options like copy, hide...

b) Teaching resources:

Computer laboratory containing at least one computer for each learner, Projector, internet, textbooks and internet connectivity to facilitate the research

c) Prerequisites

Students are now familiar with programs installed in computers as they learnt Unit 6 in senior 3 on presentation; they can therefore apply the same reasoning in using PowerPoint.

d) Learning activities: Guidance:

- Under the guidance of the teacher, learners open PowerPoint
- The teacher demonstrate how to create slides, inserting slides, copying slides
- The teacher instructs learners to create a PowerPoint presentation on Good Money Habit as instructed in the activity 2.1
- The teacher moves to help learners in their writing of the presentation
- Learners present some of their presentations
- Teacher gives guidance on how to do application activity 2.1

Answers for activity 2.1

Answer 1: learners give answer to the question but the following elements should be in the answer:

Content of the presentation:

- Design the PowerPoint correctly by not making longer paragraphs and making text have appropriate size (preferably not below 28)
- If possible provide notes and comments in the provided area that will help you while presenting.

Presenting:

- Master the content to present, present with poise and use appropriate language
- Know that what you are presenting is not only on the screen so have broader knowledge of your presentation so as to provide additional explanations which are not necessarily in the presentation
- Involve the audience for better understanding of your presentation

Answer 2: Steps to do this Answer 2 are available in the Students book.

Application activity 2.1

(1&2) Students choose a topic in Fundamental of nursing and create a presentation on it. They also present their topics to their colleagues using a projector

3) Presenting using paper notes without computers and projectors is less attention captivating to the audience and will require distributing printouts which is time consuming and more expensive

LESSON 2: Managing slides

a) Learning objectives

Managing slides by using the different options so as to make the presentation more professional

b) Teaching resources:

For this lesson to be properly conducted every learner should have a computer for practice. There is also a need for a projector to be used by the teacher for demonstration, textbooks and internet connectivity for research.

c) Prerequisites

Students are now familiar with Microsoft Office programs installed in computers. As they learnt Unit 6 in senior 3 on presentation. They can apply knowledge acquired to this lesson to be learnt.

d) Learning activities: Guidance:

- Under the guidance of the teacher, students in pairs create a
- PowerPoint presentation on the importance of ICT
- After observing the demonstration of the teacher; students practice hiding, moving, rearranging, deleting and dividing slides into sections using the presentations they created
- Teacher walks around and sees if learners are practicing as per the example given and provide support to the needy learners
- A few pair of students show the presentation to the rest of class
- Teacher shows students how they arrange the slides in the presentation
- Teacher gives instructions on how to do the Application activity 2.2

Answers for activity 2.2

Students create a PowerPoint presentation having 10 slides and hide the last two slides

Application activity 2.2

Steps to Create distinctive sections in the presentation are available in students' books. Therefore; they create a presentation "The importance of ICT in Health sector" and create in that presentation 3 sections namely a section on "Benefits of ICT in Health sector" ; another on "Importance of using technology into Hospital management " and the last section on "Role of ICT in bringing about changes in Health care"

LESSON 3: Apply design themes and format back ground

a) Learning objectives

Create a presentation, apply themes to slides and format background

b) Teaching resources:

For this lesson, every student will have a computer for practice Computer Lab, Projector, internet, textbooks to facilitate the research

c) Prerequisites

Students are now familiar with Microsoft Office programs installed in computers. They learnt Unit 6 in senior 3 on presentation; they can therefore apply the acquired knowledge in learning this lesson

d) Learning activities

Guidance:

- The teacher shows to learners a PowerPoint presentation having all the features to learn
- Methodically and step by step learners under the guidance of the teacher discover how to insert the features like the ones in the teacher's presentation.
- Teacher moves among students to help those having difficulties an practicing the creation of the shown features
- A few pairs of students show the presentation to the rest of the class
- Teacher give instructions to do the Application activity 2.3

Answers for activity 2.3

Tips used to make effective and more attractive PowerPoint presentations are shown in the student book in the section "Apply Design themes and format background"

Answers of application activity 2.3

Students create presentation “Understanding Gender Equality”. All steps to apply themes, change background and adding a section to the existing presentation are available in the students’ book.

LESSON 4: Adding notes and comments, inserting header and footer

a) Learning objectives

Insert meaningful header & footer and comments to a PowerPoint Presentation

b) Teaching resources:

For this lesson the teacher and students will need computers for each learners, Computer lab, Projector, internet, textbooks to facilitate the research

c) Prerequisites

Students are now familiar with programs installed in computers. As they learnt Unit 6 in senior 3 on presentation; they can therefore apply the same reasoning in inserting header and footer.

d) Learning activities

Guidance:

- Teacher shows to the learners a PowerPoint presentation in which notes, comments, header and footer have been inserted
- Learners discover the name of what they see (notes, comments, header and footers)in the shown presentation
- Under the guidance of the teacher and after the teacher’s demonstration, learners practice inserting notes, comments, header and footer in a PowerPoint presentation document.
- The teacher moves among the learners to help those that may be facing
- difficulties
- The teacher instructs learners to do a PowerPoint presentation on “Inborn reflexes” containing at least 15 slides as it is asked in the activity 2.4
- Teacher gives instructions to do the Application activity 2.4

Answers for activity 2.4

Students create a presentation with 15 slides “**on Inborn Reflexes**”, they add notes, comments and a header on slide of the presentation. All steps to do this activity are available in the student teacher’s book.

Answers of application activity 2.4

(1&2) learners differentiate header and footers and discuss the importance of notes and comments by referring themselves to the Students' book in the section on "Adding notes and comments, inserting header and footer"

3) Learners create a presentation on "Quality and Accessibility of Education in health services". They get the content to use from the internet or any related book

LESSON 5: Add sound and animation to slides

a) Learning objectives

Add sound and animation into slides and appreciate its importance in a presentation

b) Teaching resources:

For this lesson, every learner will need a computer. There will also be a need of a projector to facilitate demonstration by the teacher and books & internet connectivity to facilitate research.

c) Prerequisites

Students are now familiar with PowerPoint, how to apply themes and change background formats. As they learnt importance of theme and fonts in slides in previous lessons. They can therefore apply the acquired knowledge in this lesson.

d) Learning activities: Guidance:

- The teacher shows a PowerPoint presentation containing sounds and animations
- The teacher asks questions related to the observed slides. They identify that the observed slides have sounds inserted and slides are animated
- The teacher demonstrates how to insert a picture in slides, instructs learners to do the same and moves to help those having difficulties
- As on inserting pictures, the teacher shows how to animate text or a picture, how to set an animation delay and how to customize animation effects. For each item, the teacher does a demonstration, instructs learners to apply the shown steps to do the same and helps those that may be having difficulties.
- Under the guidance of the teacher, students do the activity 2.5.
- Some students show the presentation to the rest of class
- The teacher gives guidance on how to do application activity 2.5

Answers for activity 2.5

Answer 1: Benefits of using multimedia in presentation are: providing more details or explanation to the content, helping the audience to understand more about the presentation, giving good appearance and more attraction to the presentation

Answer 2: Students improve the presentation on “**Quality and Accessibility of Health services in Rwanda**“ by adding in images that are related to the context.

Answers of application activity 2.5

Students create a PowerPoint presentation on “**Nursing principles**” and insert pictures animate the presentation as instructed in the question by using the steps shown in the Student teacher’s book.

LESSON 6: Add audio and video content to slides

a) Learning objectives

Create a presentation and insert audio and video to make it more entertaining

b) Teaching resources:

For this lesson to be conducted there will be a need for a computer for each learner, a projector to facilitate demonstration, textbooks and internet connectivity for research.

c) Prerequisites

Learners are familiar with PowerPoint presentation learnt in Senior 3 and have learned some lessons in this unit which can serve as prerequisites to the new lesson.

d) Learning activities: Guidance:

- The teacher starts the lesson by asking students the role of video and audio in a presentation.
- Students give their views on the role of video and audio in a presentation.
- Under the guidance of the teacher and after the teacher’s demonstration, students practice inserting audio or video, inserting a recording and inserting a screen capture
- The teacher moves among learners to help those having difficulties
- Under the guidance of the teacher, students do the activity 2.6.
- Teacher walks around and sees if students are doing activities individually
- Some students show the presentation to the rest of class
- The teacher gives guidance on how to do application activity 2.6

Answers for activity 2.6

All the steps to insert a video into a slide are in the students' book. Students can refer to those steps to do the activity.

Answers of application activity 2.6

Students create the requested PowerPoint presentation by using the steps shown in the student teacher's book.

LESSON 7: Slide transitions

a) Learning objectives

Apply different transitions to slides into created presentation

b) Teaching resources:

For this lesson there will be a need for computers (a computer for each learner), a projector to facilitate demonstrations by the teacher, textbooks and internet connectivity to facilitate research

c) Prerequisites

Students are now familiar with PowerPoint as they learnt it in Ordinary level and in some lessons learnt in this unit. This knowledge can serve as a prerequisite.

d) Learning activities

Guidance:

- Teacher plays a slideshow of a presentation having slides transitions
- Students discuss what they saw in the presentation and the importance those new features may have in improving the qualities of a presentation
- The teacher shows the different slide transitions and how to use them
- Students practice using the different slide transitions and make a presentation on "Saving culture" as asked in activity 2.7
- Teacher walks around and sees if learners are doing the exercises properly and provides help where needed
- Some students show the presentation to the rest of class
- Teacher give instructions to do the Application activity 2.7

Answers for activity 2.7

Learners do the activity by referring themselves to the Students' book in which are all the steps on how to apply slide transition.

Answers of application activity 2.7

Students create a PowerPoint presentation on “Education for all”. They use the steps shown in the Students’ book or do their own discoveries in order to change the font, change the animation, ...

LESSON 8: Presenting using power point

a) Learning objectives

Conduct an effective presentation using PowerPoint and a projector

b) Teaching resources:

For this lesson every learners will need a computer for creating PowerPoint presentations, a projector to conduct presentations, a printer to print handouts.

c) Prerequisites

Students are now familiar with power point; they know each necessary point to make a good presentation and to make it more attractive. They can now use all learnt in previous lessons to make a good presentation to the big audience.

d) Learning activities

Guidance:

- Teacher organizes students in groups of 5 to do the activity 2.8 which can take up to 10 minutes
- The teacher demonstrates how to connect and use a projector
- Students are aware that handouts are necessary in a presentation and discuss their role in making a good presentation
- Students discuss the points that have to be met to make a good presentation
- Groups are given time to improve the presentation they made at the beginning of the lesson and print handouts to use
- Sample groups present in front of the whole class and other students ask questions
- At the end of each presentation, a criticism on each is done to evaluate the effectiveness of the presentation
- Teacher give instructions to do the Application activity 2.8

Answers for activity 2.8

Answer 1:

Students answer this question by showing that for a presentation to be effective, it must be thoroughly prepared by making sure that the presenter master what to

present and that all tools are in place and properly working

Know also that feedback is necessary and have a good attitude even toward negative feedback

Answer 2: Doing presentation using papers is very problematic because audience will lose focus easily. Reaching the effectiveness will be hard.

Answers of application activity 2.8

Answer 1:

Qualities a presentation should have:

- Short and concise sentences which are bulleted
- Highlight important points by using animations and transitions
- For long slides provide short partial synthesis to make the audience keep track of what is so far presented
- Rehearse the presentation and use scripts and notes to help you not forget the important points to mention
- Be polite and use appropriate language.

Answer 2: Options to use when a projector is connected to a computer are:

- Disconnect projector
- Duplicate
- Extend
- Projector only

To reach these options hit the windows key in combination with the the letter “P” key

2.6. Summary of the unit

PowerPoint is a complete presentation Graphics package. It gives everything that we need to produce a professional-looking presentation to big audience.

Using Projector, big screen or a wall, PowerPoint is the best way to present to the big audience.

PowerPoint offers word processing software, outlining, drawing, graphing, and presentation management tools- all designed to be easy to use and learn.

To give more appearance and more attractiveness to the presentation, PowerPoint offers different options to apply to slides created in the presentation. It gives different ways to animate the slides and contents, and also gives the ways to use sounds and video in presentation.

In PowerPoint, there is a last option to print out the handouts; either they can be given to the audience or they can be kept as hardcopies of the presentation.

2.7. Additional information

Shapes

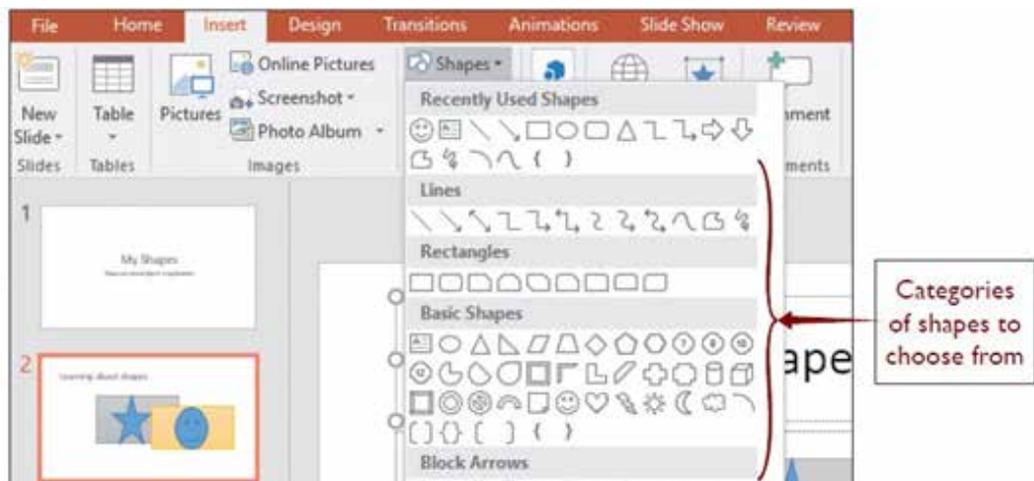
A shape is an outline form of an object. In office applications such as Microsoft PowerPoint, you can add shapes such as boxes, circles and arrows to your slide show presentation.

Insert a shape

Use the steps given below and insert any type of shape you want. Open Nature-protect file or create a new presentation. In the open file create a new slide for your shape(s) as slide 10.

Step 1: Click on Insert tab.

Step 2: Click Shapes from the Illustrations group.



Step 3: Select a shape such as a rectangle and then click and drag to draw the shape in the desired place.

After drawing a shape, you can add text, bullets and numbering to them. You can also change their fill, outline and other effects on the Format tab.

Answers of End unit assessment

Students create a presentation of 12 slides on the topic “Nature-Protect” by using the knowledge acquired throughout the lessons of Unit 2.

2.8. Additional activities

2.8.1. Remedial activities

1) Define a presentation

A presentation is an organized report or message prepared as a talk before an audience, with the help of a computer program.

2) Differentiate a page to a slide

A slide refers to a single page of presentation while a page is one or both sides of a sheet of paper in a book or in word document

3) Create a presentation with 3 slides, and apply the following activities:

- Write Hello world in first slide
- In second slide, introduce your self
- Copy the third slide and make a presentation of 4slides.

4) Save your presentation as My presentation

2.8.2. Consolidation activities

1.Create a presentation on early marriage in Rwanda society. Your presentation must have 5 slides with animation in the last slide.

2.8.3. Extended activities

Create a presentation on early pregnancy in Rwandan young girls

- 1) On slide 2, select the text box that contains presentation title, and add a Pulse animation from the Emphasis group.
- 2) In the same text box, add a Wipe animation from Entrance group.
- 3) Change the Effect Options so it wipes From Left.
- 4) Add note and comments to help the presenter
- 5) Change the Start options for the Pulse animation so it starts After Previous.
- 6) Add sound and video to make audience more attentive
- 7) Add date on slides as footer
- 8) Save the presentation.

With the guidance from the teacher, connect the computer to the projector and present to the rest of the class.

3.1. Key unit competence:

To be able to request for online services and access social media

3.2. Prerequisite knowledge and skills:

Students should have knowledge and skills related to online services and access social media learnt in **Senior two** on Network Components and Social Media Applications.

3.3. Cross-cutting issues to be addressed:

Peace and values Education: student must be aware of crimes that are committed using online services and social media while using them in the different activities, and student will be aware of friendship developed through social media.

Gender education: student should be informed that online services and social media are all used by male and female.

Standardization culture: While presenting their works, students must be aware that pictures may have copyright issues attached to them and therefore should not be used in social media posts. They have also to be aware that posting nude pictures is against Rwandan culture. Pictures that make people feel concerned, worried, grieved should be avoided.

3.4. Guidance on the introductory activity

- The teacher organizes students into groups of 4 students.
- The teacher asks students to do the introductory activity in their respective groups.
- The teacher moves around to see how students are working and provides guidance to needy groups
- The teacher invites representatives of groups to presents their findings
- At the end of each presentation, students give inputs and the teacher help them by making sure that the overall help comes at the end of all the presentations
- The teacher tells the students that in the coming lessons they will have complete answers.

Answer Introductory Activity

Answer a: The ways the manager can use to communicate with the supplier to obtain the price of the goods are:

- He can send an email directly to the suppliers
- He can text the supplier through WhatsApp messaging or through any other social media

Answer b: There are various businesses that can be conducted on the Internet which all can be summarized under the name of online shopping, e-banking, e-payment and e-commerce

Answer c: Social media platforms that are used for daily communication are Facebook, Instagram, Twitter, WhatsApp and many others

Answer d: The way can be used for payment are bank cheque, wiring transfer, Used of credit card, mobile money

3.5. List of lessons

#	Lesson title	Learning objective	Number of periods
1	E-Commerce & E commerce models	Understand ecommerce and apply E commerce principles to purchase goods and services online	2
2	Online Payment methods	Understand the payment methods used in online shopping	1
3	Facebook	Use facebook to inform and be informed	1
4	Twitter	Understand the importance, usage of Twitter in our daily life Use Twitter to be inform and be informed	1
5	Instagram	Understand the importance of Instagram and use it in every day's life	1
6	WhatsApp	Understand the importance and usage of WhatsApp in daily life and use it	1

7	E Banking and e payment	Understand e banking and e payment and their roles in requesting and providing online services	1
8	Irembo local online services	Request for online services using Irembo	1
	End Unit Assessment		1

LESSON 1: E commerce

a) Learning objectives

Understand e commerce and apply E commerce principles to purchase goods and services online

b) Teaching resources:

Students and the teacher need to use computers in the computer laboratory for practicing, projector for displaying the content of the lesson, Internet and textbooks to facilitate the research

c) Prerequisites

Students are now familiar with browsing the Internet as they learnt the unit 5 on searching the internet in TTC Year One and unit 4 on online services and access social media learnt in Senior two. The skills acquired in this unit will enable them to properly learn this new lesson.

d) Learning activities: Guidance:

- The lesson is started by reading the scenario in the activity 4.1.
- The teacher asks the students to answer the questions in activity 4.1 individually and independently for 10 minutes
- Teacher walks around and sees if students are doing activity individually
- Few students present their findings to the rest of the class
- Teacher ask others students to comments on the results presented.
- Under the guidance of the teacher; students explore the Amazon and Kikuu shopping platforms
- Teacher gives instructions to do the Application activity 4.1

Answers for activity 3.1

Answer 1:

Answer a: Kamikazi must have an account on the online shopping platform that sells the book then will have to place an order of the Psychology book and thereafter pays the book using one of the paying method available on the platform. The company selling the book on the website will deliver the book at Kamikazi's address.

Answer b:

- Local online platform are vubavuba ,Kikuu shopping
- Global online platform are Amazon, Alibaba
- And many others. (Students explore as many online platforms as they can)

Answer 2: The consumer provides goods or services to the company.

Answers of application activity 3.1

All answers for the application activity 3.1 are available in student teacher's book.

LESSON 2: Online Payment methods

a) Learning objective

Understand the payment methods used in online shopping

b) Teaching resources:

For this lesson students and the teacher will need to have a projector, a mobile telephone to exercise themselves on mobile money, any debit or credit card, computers with internet connectivity and textbooks for more research.

c) Prerequisites

Students are familiar with local online payment methods like MTN Mobile Money, Tigo cash and AirTel Money as they learnt this in Senior Two Unit 2: ICT in financial transactions. They also learnt the first lesson in this unit which cleared their minds on the concept of online payment methods

d) Learning activities

Guidance:

- The teacher shows to students an image in the activity 4.2 showing the different payment methods
- Students analyze the image and identify the different payment methods shown on the image

- Students differentiate cash payment and online payment
- Under the guidance of the teacher; students identify the different parts of a debit/credit card
- If means allow it, students practice paying using a debit/credit card and phone based money under the guidance of the teacher.
- Teacher gives instructions to do the Application activity 3.2

Answers for activity 3.2

Answer 1: Payment method used in Rwanda are: MTN Mobile money, Airtel money, Visa card and Master card.

Answer 2: answers for this question are available in student teacher's book.

Answers of application activity 3.2

- 1) All answers for question 1 available in the students' book
- 2) Students discuss the payment methods used at their schools which vary depending on the school
- 3) Mobile Money has the following advantages:
 - Money can be transferred almost anywhere, even when there are no banks nearby.
 - It enables cashless payments which reduces dependency on cash
 - Customers need not require middlemen for money transfers
 - It avoids long travel to send/receive money or to pay bills by standing in long queues.
 - It allows purchasing of online goods and services
 - It allows providing services to the people who are geographically inaccessible

LESSON 3: Facebook

a) Learning objective

Use facebook to inform and be informed

b) Teaching resources:

Students need to have computers with internet connectivity so that they can have access to facebook and do additional researches. There will also be a need of projector to display and do demonstrations to students.

c) Prerequisites

Students are now familiar with social media as they learnt Unit 8: Network components and social media applications in Senior Two. The knowledge acquired in this unit can be applied in learning this lesson

d) Learning activities: Guidance:

- The teacher opens facebook and asks questions on the opened window. The questions aim at discovering the role of facebook and how to access its full functionalities.
- Under the guidance of the teacher, students create facebook accounts. The teacher moves in the class to help those facing difficulties.
- After creating accounts the teacher demonstrates how to edit the profile and students follow suit
- The teacher demonstrates how to get friends and students do the same by befriending their classmates
- Under the guidance of the teacher; students create posts
- Teacher give instructions to do the Application activity 4.3

Answers for activity 3.3

Answer 1: The figure in the activity is part of the facebook homepage

Answer 2: Social media are interactive computer-mediated technologies that facilitate the creation and sharing of information, ideas, career interests and other forms of expression via virtual communities and networks

Answer 3: Positive Effects of Social Media

- Social networking sites allow people to communicate and remain in contact with friends as well as meet new people.
- The use of social networking helps improve technological skills of students, and exposes them to many diverse views about things.

Answers of application activity 3.3

All answers for the application activity 3.3 are in the content of the students' book.

LESSON 4: Twitter

a) Learning objectives

Understand the importance, usage of Twitter in our daily life

- Use Twitter to be informed and be informed

b) Teaching resources

Students need to use computers in the computer laboratory or mobile telephones to have access to Twitter, a projector is needed for doing demonstrations by the teacher, textbooks for additional reading and internet connectivity for having access to twitter by using a computer or a mobile telephone.

c) Prerequisites

Students are now familiar with social media as they have already learnt how to use facebook. They also learnt Twitter in **Unit 8: Network components and social media applications** in Senior Two. The knowledge acquired in the previous lesson and the unit in Senior Two can be applied in learning this lesson.

d) Learning activities: Guidance

- Teacher asks students to read the activity 3.4 and answer related questions
- Under the guidance and demonstration of the teacher, students create Twitter accounts
- Teacher walks around and sees if students are not facing difficulties in creating accounts
- Students edit their twitter account profiles and post their tweets. Thereafter students follow each other on twitter
- The teacher walks among students to make sure everyone has created a twitter account and has posted a tweet
- Students identify the different icons found in Twitter and how to use them
- Teacher gives instructions to do the Application activity 3.4

Answers for activity 3.4

Answer a: The figure in the activity is logo of Twitter

Answer b: Twitter is used as a social media through which users write tweets in the form of text, images or videos that will be viewed by an account follower or whoever search for it on twitter

Answers of application activity 3.4

All questions in the application activity 3.4 can be answered by reading the content of the students' book, in the section on Twitter.

LESSON 5: Instagram

a) Learning objective

Understand the importance of Instagram and use it in every day's life

b) Teaching resources:

For reaching this lesson the teacher will need to have a computer with internet connectivity or a mobile phone with Instagram installed, he/she will also need a projector for projecting in front of the class. Students will need computers connected to the internet and textbooks for additional reading.

c) Prerequisites

Students are now familiar with social media as they learnt different social media in the previous lessons of this unit and learnt the unit 9: Computer Network and Data Communication in Senior three (S3).

d) Learning activities:

Guidance:

- The teacher shows an image in which are icons of different social media and students identify which one is for Instagram.
- Students describe the Instagram icon and guess that Instagram is used more for images basing on the fact that its icon looks like a camera
- After the teacher's demonstration, students open their Instagram accounts.
- The teacher moves among students to help those that may be facing difficulties
- Under the guidance of the teacher, students identify the different
- Instagram icons and practice using them
- Students follow each other on Instagram and create posts
- Teacher give instructions on how to do the Application activity 3.5

Answers for activity 3.5

Answer a: Instagram is a free, online photo-sharing application and social network platform that was acquired by Facebook in 2012. Instagram allows users to edit and upload photos and short videos through a mobile app.

Answer b: basing on what they have already learnt and by doing additional researches on the internet students differentiate Instagram, Twitter, WhatsApp and facebook.

Answer c: The Instagram icon is a camera. This symbolizes the fact that it focuses on posting images and videos online which are then commented by viewers.

Answers of application activity 3.5

All answers for the application activity 3.5 are available in student teacher book.

LESSON 6: WhatsApp

a) Learning objectives

Understand the importance and usage of WhatsApp in daily life and use it

b) Teaching resources:

For this lesson there will be a need of smart phones on which to install WhatsApp with internet connectivity. Where those telephones cannot be got they will use an Android simulator which, once installed on a computer (laptop) will allow the installation of Android applications (like WhatsApp) on that computer.

This lesson will also need to have a projector and textbooks for additional reading.

c) Prerequisites

Students are now familiar with social media, they know how to send and receive a message and write posts. This necessary prerequisite was got not only in Senior Two but also in the previous lessons of this unit.

d) Learning activities

Guidance

- The teacher shows an image of a smart phone screenshot like the one in the activity 3.6 and ask them to show the one for WhatsApp
- Under the guidance of the teacher; students brainstorm the use of WhatsApp
- The teacher demonstrates how to download applications from Play Store including the WhatsApp application. He/she explains what Play Store is.
- The teacher demonstrates and explains the steps to install WhatsApp
- Students create their WhatsApp accounts using their computers (on which Nox player was installed to allows WhatsApp installation), change their profiles and send each other WhatsApp messages
- Sample students have their computers connected to the projector to see if their WhatsApp accounts were created
- Teacher gives instructions to do the Application activity 4.6

Answers for activity 3.6

Answer 1: Umurerwa should use WhatsApp which is the second from the left.

Answer 2: One like Umurerwa can choose to use WhatsApp because it allows real time chat, send and receiving images, video and other files and allow video calls

Answers of application activity 3.6

Answer 1: Students discuss the improvements that WhatsApp has brought about in the communication field in Rwanda

Answer 2: Difference between WhatsApp and Instagram are:

a) Whatsapp:

- it is a free messages services with free VoIP calling and video calling
- no profile
- No Sign Up & Sign In.

b) Instagram

- It is a photo and video sharing
- It is a sells advertising
- You need account for signing in or signing out

LESSON 7: E Banking and e payment

a) Learning objectives

Understand e banking and e payment and their roles in requesting and providing online services

b) Teaching resources:

Students need to use Computer Lab for doing the practice and receiving message using online service, Projector for projecting what they discuss or what they are taught, internet for creating account, sending and receiving a message, and textbooks to facilitate research.

c) Prerequisites

Students are familiar different payment methods seen in the previous lesson on Online Payment methods. The knowledge acquired in this lesson will enable them understand the new one

d) Learning activity

Guidance:

- The teacher makes one learner read the scenario in the activity 3.7 and the whole class debate on it by answering its questions
- The teacher writes a question on the black board that the whole class is going to discuss in groups. The question is: "Discuss in details the terms e banking and e payment by showing its advantages and possible disadvantages". To do this questions students have to be provided with internet for research.

- Groups present their findings in front of the whole class and other students provide inputs.
- A summary basing on what has been presented is realized
- Teacher give instructions to do the Application activity 3.7

Answers for activity 3.7

Answer 1: Using the school's telephone Kamana will call his parents and inform them of the school fees issue and Kamana's parents will inform the school bursar that they are going to solve the problem using **Funds transfer** to the school account or **MTN Mobile Money**.

Answer 2: Services that can be paid electronically in Rwanda are Electricity, water and many others

Answers of application activity 3.7

Answer 1: Mobile money generally refers to payment services operated under financial regulation and performed via a mobile device while credit card is where the cards pull the money from your bank account.

Answer 2: For this question, students do a research by reading books or using the internet and present the findings to the class so as to draw a common conclusion

LESSON 8: Irembo local online services

a) Learning objectives

Request for online services using Irembo online platform

b) Teaching resources:

Students need to use computers with internet connectivity for doing practice and sending a request using Irembo, projector for projecting what they learn and textbooks for additional reading.

c) Prerequisites

Students are now familiar with online services as they saw them in lesson one of this unit on **E Commerce**. They browsed online shopping platforms like **Amazon** and **Kikuu**. They are also familiar with the payment methods which are also used to pay for services requested on irembo

d) Learning activities

Guidance

- The teacher asks students to brainstorm the steps to go through in order to get registered to sit for a provisional driving license test. In the answer the Irembo platform must be mentioned

- Under the guidance of the teacher, students discuss in groups the problems that Irembo came to solve. Sample groups present their findings and receive feedbacks from other groups
- Under the guidance of the teacher, students explore different services available on Irembo
- Students create Irembo accounts after the teacher’s demonstration. They must be aware that once an id number is entered in the platform it is not possible to create another account. For this reason they must remember their credentials
- The teacher demonstrates how to request a service. It is better to request for a service which is really needed in order to avoid tampering with the Irembo system.
- Teacher give instructions to do the Application activity 4.8

Answers for activity 3.8

Answer: Here are different categories of services available at Irembo: Immigration and emigration, Land, Local government, National ID, Notarization and Gazette services, Police, Rwandans living abroad, Media, Education and many others. They all respond to local citizens’ need.

Answers of application activity 3.8

All answers for the application activity 3.8 are available in student teacher’s book.

3.6. Summary of unity

This unit entitled “e commerce, social media and online service” is very useful and interesting in nowadays technology. Business contributes to the human living condition by ameliorating the future capability in problem solving and self-management.

Normally E-Commerce or Electronic Commerce known also as “eBusiness”, is the buying and selling process via internet. Historically it started very soon in the 21st century. E commerce goes hand in hand with payment method such as debit/ credit card, mobile phone based money and so many others.

The unit goes hand in hand with social media usage. Social media are online communication means or channels that are spread in the community to enable users to create or share valuable contents together with participating in business and leisure attachments. Examples of social media highlighted in this book are Facebook, twitter, WhatsApp, Instagram, etc.

Undoubtedly e-commerce and social media are inseparable with online service. One is an agent of another in the achievement of any task. Therefore online services are information and services provided over the Internet. It is not only communication but also giving a clear unlimited access to information and online services.

3.7. Additional Information

How to connect with users on social media

Social media marketing, like all marketing, centers on getting the attention of your target audience and forging a connection. While social media can be used to directly promote products and deals, it is not an effective means to connect with new users on networks such as Facebook and Twitter. Social media is a place to genuinely interact with users and tell them what makes your business unique

Instead, success on social media is built on the creation and sharing of relevant, interesting content. This can range from something as simple as posting a photo on Facebook to creating and tweeting a link to your latest blog post.

Grabbing a user's attention on social media begins with something they're interested in, not something you want them to do. By demonstrating your topical expertise and introducing people to the voice of your brand, interested users then have a reason to visit your website and see what you have to offer.

Content and social sharing

In addition to driving traffic to your site directly, the communal nature of social networks provides an extra benefit: organic customer acquisition. If you provide content that users find relevant to their interests, they will share it with their friends and contacts. Essentially, your potential customers will actually be marketing for you. Even better, since the content is being referred from a friend or family member rather than directly from a business it is seen less like an advertisement and more as trusted information from a verified source. Many customers become acquainted with a brand via informational content, then come to find out about their products or services.

Decide which social media platform is best for your business

Facebook: The world's largest social network, Facebook's massive audience is highly coveted by online businesses. A regular presence of informational content, industry news, and product promotions can generate brand loyalty and increased sales.

Instagram: Ecommerce performance is highly impacted by product images highly impacted by product image, making this visually-dominated social platform a key driver of brand awareness for online businesses. Regularly sharing product images

and lifestyle posts relevant to a brand can go a long way to expanding your audience.

Twitter: Popularity and engagement on Twitter can be just as effective as Facebook, when done properly. Staying active and engaging with other users combined with content marketing strategies employed on Facebook can reinforce your presence on other social media platforms and generate awareness among new prospects.

LinkedIn: The most-used professional networking platform enables companies and individuals with similar interests to connect. LinkedIn is best suited for thought leadership content, particularly for high-end and high-AOV brands. Many executives and CEOs share business wisdom and culture pieces to indirectly promote their company.

3.8. End Unit Assessment Answers

All the questions in the end unit assessment can be answered by referring to the content related to this unit available in the student teacher's book.

3.9. Additional Activity

3.9.1. Remedial activity

1. Buying and selling the products over the Internet is called a) Electronic Commerce
b) EDI
c) Electronic Market d) E-Shopping
e) None of the above
2. E-Commerce means _____
a) Education Version of Commerce
b) Buying and selling product and service over the internet c) Account
d) D.All above
e) None of these
3. Disadvantage of E- Commerce is a) Distribution delivery
b) Problem of controlling privacy and security c) New technology
d) High price
4. What is the difference between e-commerce and traditional commerce?

5. What are the different e-commerce business models?

3.9.2. Consolidation activities

1. E-Commerce Provide customer service
 - a) Worse
 - b) Better
 - c) Same
 - d) All of above
2. In E-commerce, customer is
 - a) Purchaser
 - b) Cyber surfer
 - c) Seller
 - d) Player
 - e) None
3. Currency can be replaced with transaction for payment
 - a) Credit Card
 - b) Password
 - c) Login User
 - d) Barcode system
 - e) None

in E-commerce

4. Give characteristics of a strong password for your social media login?
5. Explain the advantages to society because of e-commerce?

3.9.3. Extended activities

1. Internet can be used for parts of trade cycle
 - a) Search
 - b) Order
 - c) Invoice
 - d) None
 - e) All
2. Internet commerce support

- a) Paypal
 - b) Online Payment c) Cash Payment
 - d) Net Banking Payment e) Cheque Payment
3.is used to identify of each person in an electronic transaction
- a) Digital transaction
 - b) Digital Certificate
 - c) License
 - d) Password
4. Disadvantage of E- Market a) Reduce search cost
- b) Market is available round the clock
 - c) Dialogue between seller and customer are not possible d) Customer are not aware of new technology
 - e) None
5. Discuss the best time to discuss your vacation and post pictures on social media?

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