

MANAGEMENT ACCOUNTING

ACCOUNTING PROFESSION OPTION

For Rwandan Schools

Senior

5

Teacher's Guide

EXPERIMENTAL VERSION



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FOREWORD

Dear Teachers,

Rwanda Basic Education Board is honoured to present the teacher's guide for Management accounting in the Accounting Profession Option. This book serves as a guide to competence-based teaching and learning to ensure consistency and coherence in the learning of the Management accounting Subject. The Rwandan educational philosophy is to ensure that students achieve full potential at every level of education which will prepare them to be well integrated in society and exploit employment opportunities.

Specifically, the curriculum for Accounting Profession Option was reviewed to train quality Accountant Technicians who are qualified, confident and efficient for job opportunities and further studies in Higher Education in different programs under accounting career advancement.

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 students learn, how well they learn and the competences they acquire. Those factors include the relevance of the specific content, the quality of teachers' pedagogical approaches, the assessment strategies and the instructional materials.

High Quality Technician Accounting program is an important component of Finance and Economic development of the Rwanda Vision 2050, "The Rwanda We Want" that aims at transforming the country's socioeconomic status. The qualified Technicians accountant will significantly play a major role in the mentioned socioeconomic transformation journey. Management accounting textbooks and teacher's guide were elaborated to provide the accounting operations and equations that are necessary to train a Technician Accountant capable of successfully perform his/her duties.

The ambition to develop a knowledge-based society and the growth of regional and global competition in the jobs market has necessitated the shift to a competence-based curriculum.

The Management accounting teacher's guide provides active teaching and learning techniques that engage students to develop competences. In view of this, your role as a Management accounting teacher is to:

- Plan your lessons and prepare appropriate teaching materials.
- Organize group discussions for students considering the importance of social constructivism suggesting that learning occurs more effectively

when the students works collaboratively with more knowledgeable and experienced people.

- Engage students through active learning methods such as inquiry methods, group discussions, research, investigative activities and group or individual work activities.
- Provide supervised opportunities for students to develop different competences by giving tasks which enhance critical thinking, problem solving, research, creativity and innovation, communication and cooperation.
- Support and facilitate the learning process by valuing students' contributions in the class activities.
- Guide students towards the harmonization of their findings.
- Encourage individual, pair 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 book is self-explanatory so that you can easily use it. It is divided in 3 parts:

The part I explains the structure of this book and gives you the methodological guidance;

The part II gives a sample lesson plan;

The part III details the teaching guidance for each concept given in the student book.

Even though this Teacher's guide contains the guidance on solutions for all activities given in the student's book, you are requested to work through each question before judging student's findings.

I wish to sincerely express my appreciation to the people who contributed towards the development of this book, particularly, REB staff, UR Lecturers, Teachers from TTC and General Education and experts from different Education partners for their technical support. A word of gratitude goes also to the administration of Universities, Head Teachers and TTCs principals who availed their staff for various activities.

Dr. MBARUSHIMANA Nelson

Director General, REB.

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I wish to extend my sincere gratitude to lecturers and teachers whose efforts during writing exercise of this teacher`s guide was very much valuable.

Finally, my word of gratitude goes to the Rwanda Basic Education Board staffs who were involved in the whole process of in-house textbook writing.

Joan MURUNGI

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ACCRONYMS AND ABBREVIATION

FRW: Francs Rwandais

Ltd: Limited

Co. Company

BEP: Break-Even Point

P/V: Profit- Volume Ratio

CM: Contribution margin ratio

TV: Television

CVP: Cost-Volume-Profit

ABC: Activity Based Costing

PLC: Public Listed Company

b/d: Brought down

b/f: Brought forward

EFTPOS: Electronic Funds Transfer at Point of Sale

CIMA: Chartered Institute of Management Accountants

LIFO: Last In, First Out

FIFO: First In, First Out

GNP: Gross National Product

CEO: Chief Executive Officer

OLS: Ordinary Least Square

ZZB: Zero-Based Budgeting

ABB: Activity Based Budgeting

SIB: Self-Imposed Budgeting

MCV: Material Cost Variance

MPV: Material Price variance

MUV or MQV: Material usage (or Quantity) Variance

MYV: Material Yield (or Sub-usage) Variance

LCV: Labor cost variance

LRV: Labor Rate Variance

LEV: Labor Efficiency (time) Variance

LMV: Labor Mix Variance

LYV: Labor Yield Variance

FOV: Fixed Overhead Variance

EV: Expenditure Variance

W.I.P: Work-In-Progress

GDPR: General Data Protection Regulation legislation

VAT: Value Added Tax

TABLE OF CONTENT

FOREWORD	iii
ACKNOWLEDGEMENT	v
ACCRONYMS AND ABBREVIATION	vi
PART I. GENERAL INTRODUCTION	1
1.1. The structure of the guide.....	1
1.2. Methodological guidance.....	1
PART II: SAMPLE LESSON	15
PART III: UNIT DEVELOPMENT	25
Unit 1: THE STRUCTURE OF COSTING SYSTEM WITHIN AN ORGANIZATION	26
1.1. Key unit competence	26
1.2. Prerequisites (knowledge, skills, attitudes, and values).....	26
1.3. Cross-cutting issues to be addressed:.....	26
1.4. Guidance on the introductory activity	27
1.5. List of lessons and lesson development.....	28
Lesson 1: Introduction to costing system	29
Lesson 2: Information required in costing.....	32
Lesson 3: Types of costing system	34
1.6. Summary of the unit	36
1.7. Additional Information for Teachers.....	37
1.8. End unit assessment	38
1.9. Additional activities	40
Unit 2: INTRODUCTION TO COST BEHAVIOR	44
2.1. Key unit competence	44
2.2. Prerequisites (knowledge, skills, attitudes, and values).....	44
2.3. Cross-cutting issues to be addressed:.....	44
2.4. Guidance on the introductory activity	44
2.5. List of lessons and lesson development.....	46

Lesson 1: Introduction to cost behavior	47
Lesson 2: Cost Volume Profit.....	50
2.6. Summary of the unit	53
2.7. Additional Information for Teachers	53
2.7 End unit assessment	55
2.8. Additional activities	57
Unit 3: THE COSTING METHOD AND DECISION MAKING.....	63
3.1. Key unit competence	63
3.2. Prerequisites (knowledge, skills, attitudes, and values).....	63
3.3. Cross-cutting issues to be addressed:	63
3.4. Guidance on the introductory activity.....	63
3.5. List of lessons and lesson development	64
Lesson 1: Costing methods.....	65
Lesson 2: Decision making	68
3.6. Sum/mary of the unit.....	70
3.7. Additional Information for Teachers	70
3.8 End unit assessment	72
3.9. Additional activities	73
Unit 4: CASH MANAGEMENT PROCEDURES IN ORGANIZATION.....	80
4.1. Key Unit competence.....	80
4.2. Prerequisite (knowledge, skills, attitudes and values).....	80
4.3. Cross-cutting issues to be addressed	80
4.4. Guidance on introductory activity	81
4.5. List of lessons and lesson development	82
Lesson 1: Introduction to cash management	83
Lesson 2: Cash flow statement	86
Lesson 3: Use of financial and non financial performance measures....	89
4.6. Summary of the unit	92
4.7. Additional information for teachers	92

4.8. End unit assessment.....	94
4.9. Additional activities.....	96
Unit 5: CASH BALANCES MANAGEMENT	100
5.1. Key Unit competence.....	100
5.2. Prerequisite (knowledge, skills, attitudes and values).....	100
5.3. Cross-cutting issues to be addressed	100
5.4. Guidance on introductory activity.....	100
5.5. List of lessons and lesson development.....	102
Lesson 1: Liquidity and cash balance management tools.....	103
Lesson 2: Explain and apply cash management measures.....	105
5.6. Summary of the unit	107
5.7. Additional information for teachers	107
5.8. End unit assessment.....	108
5.9. Additional activities.....	109
Unit 6: IDENTIFICATION OF COST ACCOUNT	112
6.1. Key Unit competence.....	112
6.2. Prerequisite (knowledge, skills, attitudes and values).....	112
6.3. Cross-cutting issues to be addressed	112
6.4. Guidance on introductory activity.....	113
6.5. List of lessons/sub-heading	114
Lesson 1: Introduction to cost accounts.....	115
Lesson 2: Recording and analysis of information relating to cost accounts	116
6.6. Summary of the unit	119
6.7. Additional information	119
6.8. Guidance to the teacher.....	120
6.8. End unit assessment	121
6.9. Additional activities.....	122
BIBLIOGRAPHY	128

PART I. GENERAL INTRODUCTION

1.1. The structure of the guide

The teacher's guide of Management accounting is composed of three parts:

Part I concerns general introduction that discusses methodological guidance on how best to teach and learn Management accounting, developing competences in teaching and learning, addressing cross-cutting issues in teaching and learning and guidance on assessment.

Part II presents a sample lesson plan. This lesson plan serves to guide the teacher on how to prepare a lesson in Management accounting.

Part III is about the structure of a unit and the structure of a lesson. This includes information related to the different components of the unit which components are the same for all units. This part provides information and guidelines on how to facilitate students while working on learning activities, in addition, all application activities from the textbook have answers in this part.

1.2. Methodological guidance

1.2.1. Developing competences

Since 2015 Rwanda shifted from a knowledge based to a competence-based curriculum for pre-primary, primary, secondary education and recently the curriculum for profession options such as TTC, Associate Nurse and Accounting programs. This called for changing the way of learning by shifting from teacher centred to a learner centred approach. Teachers are not only responsible for knowledge transfer but also for fostering students' learning achievement and creating safe and supportive learning environment. It implies also that students have to demonstrate what they are able to transfer the acquired knowledge, skills, values and attitude to new situations.

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 learner knows. Students develop competences through subject unit with specific learning objectives broken down into knowledge, skills and attitudes/values through learning activities.

In addition to the competences related to Management accounting, students also develop generic competences which should promote the development of the higher order thinking skills and professional skills in Management accounting teaching.

Generic competences are developed throughout all units of Management accounting as follows:

Generic competences	Ways of developing generic competences
Critical thinking	All activities that require students to calculate, convert, interpret, analyse, compare and contrast, etc. have a common factor of developing critical thinking into students
Creativity and innovation	All activities that require students to plot a graph of a given algebraic data, to organize and interpret statistical data collected and to apply skills in solving problems of production/ finance/ economic have a common character of developing creativity into students
Research and problem solving	All activities that require students to make a research and apply their knowledge to solve problems from the real-life situation have a character of developing research and problem solving into students.
Communication	During Mathematics class, all activities that require students to discuss either in groups or in the whole class, present findings, debate ...have a common character of developing communication skills into students.
Co-operation, interpersonal relations and life skills	All activities that require students to work in pairs or in groups have a character of developing cooperation and life skills among students.
Lifelong learning	All activities that are connected with research have a common character of developing into students a curiosity of applying the knowledge learnt in a range of situations. The purpose of such kind of activities is for enabling students to become life-long students who can adapt to the fast-changing world and the uncertain future by taking initiative to update knowledge and skills with minimum external support.

Professional skills	Specific instructional activities and procedures that a teacher may use in the class room to facilitate, directly or indirectly, students to be engaged in learning activities. These include a range of teaching skills: the skills of questioning, reinforcement, probing, explaining, stimulus variation, introducing a lesson; illustrating with examples, using blackboard, silence and non-verbal cues, using audio – visual aids, recognizing attending behaviour and the skill of achieving closure.
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The generic competences help students expand their understanding of Management accounting and apply their knowledge in a range of situations. As students develop generic competences they also acquire the set of skills that employers look for in their employees, and so the generic competences prepare students for the world of work.

1.2.2. Addressing cross cutting issues

Among the changes brought by 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: *Comprehensive Sexuality Education, Environment and Sustainability, Financial Education, Genocide studies, Gender, Inclusive Education, Peace and Values Education*; and *Standardization Culture*.

Some cross-cutting issues may seem specific to particular learning areas/ subjects but the teacher need to address all of them whenever an opportunity arises. In addition, students should always be given an opportunity during the learning process to address these cross-cutting issues both within and out of the classroom.

Below are examples of how crosscutting issues can be addressed:

Cross-Cutting Issue	Ways of addressing cross-cutting issues
<p>Comprehensive Sexuality Education: The primary goal of introducing Comprehensive Sexuality Education program in schools is to equip children, adolescents, and young people with knowledge, skills and values in an age appropriate and culturally gender sensitive manner so as to enable them to make responsible choices about their sexual and social relationships, explain and clarify feelings, values and attitudes, and promote and sustain risk reducing behaviour.</p>	<p>Using different charts and their interpretation, Management accounting teacher should lead students to discuss the following situations: “Alcohol abuse and unwanted pregnancies” and advise students on how they can fight against them.</p> <p>Some examples can be given when learning, recruitment process and the related graphical interpretation.</p>
<p>Environment and Sustainability: Integration of Environment, Climate Change and Sustainability in the curriculum focuses on and advocates for the need to balance economic growth, society well-being and ecological systems. Students need basic knowledge from the natural sciences, social sciences, and humanities to understand and interpret principles of sustainability.</p>	<p>Using Real life models or students’ experience, Management accounting Teachers should lead students to illustrate the situation of “population growth” and discuss its effects on the environment and sustainability.</p>
<p>Financial Education:</p> <p>The integration of Financial Education into the curriculum is aimed at a comprehensive Financial Education program as a precondition for achieving financial inclusion targets and improving the financial capability of Rwandans so that they can make appropriate financial decisions that best fit the circumstances of one’s life.</p>	<p>Through different examples and calculations on labour payment (wages and salaries), cost sheet problems, and total cost, Management accounting teacher can lead students to discuss how to make appropriate financial decisions.</p>

<p>Gender: At school, gender will be understood as family complementarities, gender roles and responsibilities, the need for gender equality and equity, gender stereotypes, gender sensitivity, etc.</p>	<p>Management accounting Teachers should address gender as cross-cutting issue through assigning leading roles in the management of groups to both girls and boys and providing equal opportunity in the lesson participation and avoid any gender stereotype in the whole teaching and learning process.</p>
<p>Inclusive Education: Inclusion is based on the right of all students to a qualitative and equitable education that meets their basic learning needs and understands the diversity of backgrounds and abilities as a learning opportunity.</p>	<p>Firstly, Management accounting Teachers need to identify/recognize students with special needs. Then by using adapted teaching and learning resources while conducting a lesson and setting appropriate tasks to the level of students, they can cater for students with special education needs. They must create opportunity where students can discuss how to cater for students with special educational needs.</p>
<p>Peace and Values Education: Peace and Values Education (PVE) is defined as education that promotes social cohesion, positive values, including pluralism and personal responsibility, empathy, critical thinking and action in order to build a more peaceful society.</p>	<p>Through a given lesson, a teacher should:</p> <ul style="list-style-type: none"> • Set a learning objective which is addressing positive attitudes and values, • Encourage students to develop the culture of tolerance during discussion and to be able to instil it in colleagues and cohabitants; • Encourage students to respect ideas from others.

Standardization Culture: Standardization Culture in Rwanda will be promoted through formal education and plays a vital role in terms of health improvement, economic growth, industrialization, trade and general welfare of the people through the effective implementation of Standardization, Quality Assurance, Metrology and Testing.

With different word problems related to the effective implementation of Standardization, Quality Assurance, Metrology and Testing, students can be motivated to be aware of health improvement, economic growth, industrialization, trade and general welfare of the people.

1.2.3. Guidance on how to help students with special education needs in the classroom

In the classroom, students learn in different ways depending on 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 methodology and approaches in order to meet the learning need of each student in the classroom. Also teachers need to understand that student 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, teachers need 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. 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 and 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 that the friend is not over protective and does not do everything for the one with disability. 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.

Strategies to help students with developmental impairment:

- Use simple words and sentences when giving instructions;
- Use real objects that students 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 she/he can already **do** before moving on to something that is more difficult;
- Gradually give the student less help;
- Let the student with disability work in the same group with those without disability.

Strategies to help students with visual impairment:

- Help students to use their other senses (hearing, touch, smell and taste) 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 student has some sight, ask him/her what he/she can see;
- Make sure the student has a group of friends who are helpful and who allow him/her to be as independent as possible;
- Plan activities so that students work in pairs or groups whenever possible;

Strategies to help students with hearing disabilities or communication difficulties

- Always get the student's 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.
- Keep background noise to a minimum.

Strategies to help students with physical disabilities or mobility difficulties:

- Adapt activities so that students, who use wheelchairs or other mobility aids, 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 when needed;
- Get advice from parents or a health professional about assistive devices if the student has one.

Adaptation of assessment strategies:

At the end of each unit, the teacher is advised to provide additional activities to help students achieve the key unit competence. These assessment activities are for remedial, consolidation and extension designed to cater for the needs of all categories of students; slow, average and gifted students respectively. Therefore, the teacher is expected to do assessment that fits individual students.

Remedial activities	After evaluation, slow students are provided with lower order thinking activities related to the concepts learnt to facilitate them in their learning. These activities can also be given to assist deepening knowledge acquired through the learning activities for slow students.
Consolidated activities	After introduction of any concept, a range number of activities can be provided to all students to enhance/ reinforce learning.
Extended activities	After evaluation, gifted and talented students can be provided with high order thinking activities related to the concepts learnt to make them think deeply and critically. These activities can be assigned to gifted and talented students to keep them working while other students are getting up to required level of knowledge through the learning activity.

1.2.4. Guidance on assessment

Assessment is an integral part of teaching and learning process. The main purpose of assessment is for improvement of learning outcomes. Assessment for learning/ Continuous/ formative assessment intend to improve students' 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 on-going process that arises during the teaching and learning process. It includes lesson evaluation and end of sub unit assessment. This formative assessment should play a big role in teaching and learning process. The teacher should encourage individual, pair and group evaluation of the work done in the classroom and uses appropriate competence-based assessment approaches and methods.

Formative assessment is used to:

- Determine the extent to which learning objectives are being achieved and competences are being acquired and to identify which students need remedial interventions, reinforcement as well as extended activities. The application activities are developed in the student book and they are designed to be given as remedial, reinforcement, end lesson assessment, homework or assignment
- Motivate students to learn and succeed by encouraging **them** to read, or learn more, revise, etc.
- Check effectiveness of teaching methods in terms of variety, appropriateness, relevance, or need for new approaches and strategies. Mathematics teachers need for example to consider various aspects of the instructional process including appropriate language levels, meaningful examples, suitable methods and teaching aids/ materials, etc.
- Help students to take control of their own learning.
- In teaching Management accounting, formative or continuous assessment should compare performance against instructional objectives. Formative assessment should measure the student's ability with respect to a criterion or standard. For this reason, it is used to determine what students can do, rather than how much they know.

Summative assessment

The assessment can serve as summative and informative depending **on** its purpose. The end unit assessment will be considered summative when it is done at end of unit and want to start a new one.

It will be formative assessment, when it is done in order to give information on the progress of students and from there decide what adjustments need to be done.

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

When carrying out assessment?

Assessment should be clearly visible in lesson, unit, term and yearly plans.

- Before learning (diagnostic): At the beginning of a new unit or a section of work; assessment can be organized to find out what students already know / can do, and to check whether the students are at the same level.
- During learning (formative/continuous): When students appear to be having difficulty with some of the work, by using on-going assessment (continuous). The assessment aims at giving students support and feedback.
- After learning (summative): At the end of a section of work or a learning unit, the Management accounting Teacher has to assess after the learning. This is also known as Assessment of Learning to establish and record overall progress of students towards full achievement. Summative assessment in Rwandan schools mainly takes the form of written tests at the end of a learning unit or end of the month, and examinations at the end of a term, school year or cycle.

Instruments used in assessment.

- **Observation:** This is where the Mathematics teacher gathers information by watching students interacting, conversing, working, playing, etc. A teacher can use observations to collect data on behaviours that are difficult to assess by other methods such as attitudes, values, and generic competences and intellectual skills. It is very important because it is used before the lesson begins and throughout the lesson since the teacher has to continue observing each and every activity.
- Questioning
 - a) Oral questioning: a process which requires a student to respond verbally to questions
 - b) Class activities/ exercise: tasks that are given during the learning/ teaching process

- c) Short and informal questions usually asked during a lesson
- d) Homework and assignments: tasks assigned to students by their teachers to be completed outside of class.

Homework assignments, portfolio, project work, interview, debate, science fair are the different forms/instruments of assessment.

1.2.5. Teaching methods and techniques that promote active learning

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

The main teaching methods used in Management accounting are the following:

- **Dogmatic method** (the teacher tells the students what to do, What to observe, How to attempt, How to conclude)
- **Inductive-deductive method:** Inductive method is to move from specific examples to generalization and deductive method is to move from generalization to specific examples.
- **Analytic-synthetic method:** Analytic method proceeds from unknown to known, 'Analysis' means 'breaking up' of the problem in hand so that it ultimately gets connected with something obvious or already known. Synthetic method is the opposite of the analytic method. Here one proceeds from known to unknown.
- **Skills lab method:** Skills lab method is based on the maxim "learning by doing." It is a procedure for stimulating the activities of the students and to encourage them to make discoveries through practical activities.
- **Problem solving method, Project method and Seminar Method.**

The following are some active techniques to be used in Management accounting:

- Group work
- Research
- Probing questions
- Practical activities (drawing, plotting, interpreting graphs)
- Modelling
- Brainstorming
- Quiz Technique
- Discussion Technique
- Scenario building Technique

What is Active learning?

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

The role of the teacher in active learning	The role of students in active learning
<ul style="list-style-type: none"> – The teacher engages students through active learning methods such as inquiry methods, group discussions, research, investigative activities, 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 students' contributions in the class activities. 	<ul style="list-style-type: none"> – A learner engaged in active learning: – Communicates and shares relevant information with fellow students 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 his/her 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.

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 part 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 students' findings, exploitation, synthesis/summary and exercises/application activities.

- **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 prompt /instigate collaborative learning, to discover knowledge to be learned)

Step 2:

- The teacher let 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 boosts those who are still behind (but without communicating to them the knowledge).

- **Presentation of students' findings/productions**
 - In this part, the teacher invites representatives of groups to present their productions/findings.
 - After three/four or an acceptable number of presentations, the teacher decides to engage the class into exploitation of students' productions.
- **Exploitation of students' findings/ productions**
 - The teacher asks students to evaluate the productions: which ones are correct, incomplete or false
 - Then the teacher judges the logic of the students' products, corrects those which are false, completes those which are incomplete, and confirms those which are correct.
- **Institutionalization or harmonization (summary/conclusion/ and examples)**
 - The teacher summarizes the learned knowledge and gives examples which illustrate the learned content.
- **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. Doing this will allow students to relay their understanding on the concepts covered that day. Teacher leads them not to wait until the last minute for doing the homework as this often results in an incomplete homework set and/or an incomplete understanding of the concept.

1.2.6. Skills Lab

- i) Skills lab is a method of teaching where students are required to complete learning activities working in manageable groups.

PART II: SAMPLE LESSON

School Name: X Teacher's name: Y

Term	Date	Subject	Class	Unit N°	Lesson N°	Duration	Class size
1	dd/ Month/ 2023	Management Accounting	Year 5	2	7 of 7	1 2 0 Min	35
Type of Special Educational Needs to be catered for in this lesson and number of learners in each category				Two students with visual impairment			
Unit title		Cost behavior analysis					
Key Unit Competence:		Analyze Cost behavior for decision making.					
Title of the lesson		High and low points or Range method					
Instructional Objective		Given a written question of businesses costs, student will be able to Compute the different types of costs using different methods. The teacher will read for the students with visual impairment and allow them to answer verbally or use Braille documents.					
Plan for this Class (location: in / outside)		Inside the classroom in a U shape arrangement or outside the classroom					
Learning Materials (for all learners)		The learning material will depend on what is available (, students' books, internet, flip charts, markers, case studies, chalkboard, Computers (desktops & laptops), projectors)					
References		Management accounting S4, Unit Cost classification and computation					

Timing for each step	Description of teaching and learning activity		Generic competences and cross cutting issues to be addressed + a short explanation
	Think-pair-share; small group discussion on methods of cost estimation especially on high and low Method, gallery, walk, and content harmonization from different group presentations		
	Teacher activities	Learner activities	
1 Introduction 15minutes	<p>Revision on the previous lesson on the Least squares method</p> <p>Handle any homework or assignments,</p> <p>Ensure a conducive learning environment.</p> <p>Show learners the relationship between the previous lesson and new lesson.</p> <p>Guide students to discover the lesson of the day.</p>	<p>Answer the questions on the meaning of Least squares method.</p> <p>Correct homework with the teacher</p> <p>Discover the title of today's lesson:</p> <p>High and low Point method</p>	<p>Communication: Through answering questions and peer discussion.</p>
2. Development of the lesson:80min			

<p>a) Discovery activity</p> <p>25 Minutes</p>	<p>Share the objectives of the lesson with the learners.</p> <p>Ask students to show the link between learning objective and Key unit competence.</p> <p>Ask students to play Watermelon Game: Put students into groups & have them sit together.</p> <p>Ask students to look in student book year 4 Management accounting, Unit7. classification and computation of cost.</p>	<p>Listen carefully to instructions.</p> <p>Forming groups:</p> <ul style="list-style-type: none"> - Students arrange themselves in teams and sit together. - Work individually or in pairs to Explain. Cost estimation method: high and low point method. - In their groups, they share and agree on Cost estimation method, using high and low point method to find fixed cost and variable cost from semi variable cost 	<p>Cooperation, interpersonal management, and life</p> <p>Skills: Students share ideas in pairs and in groups.</p> <p>Critical thinking:</p> <ul style="list-style-type: none"> - Students analyze situation of business in their community and come up with various costs incurred by businesses. And should be able to calculate fixed and variable cost from semi variable by using high and low point methods
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	<p>Tell students that this activity will be done in 25 minutes and the presentation will be done using gallery work.</p> <p>This activity will be done first individually, shared in pairs then in a big group according to students sitting arrangement.</p> <p>Teacher moves around in groups to guide them as they attempt to answer the questions.</p> <p>The teacher pays a special attention to students with disabilities.</p>		<p>Communication:</p> <ul style="list-style-type: none"> – Students discuss in groups and answer questions. <p>Research and problem solving:</p> <p>Through discussions and research, students compute the fixed cost and variable cost from semi variable cost:</p> <p>Trough games and group discussions, students socialize and develop some values like sharing, honesty, cooperation, respect, teamwork, etc.</p>
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<p>b) Presentation and exploitation of learners' productions</p> <p>40 Minutes</p>	<ul style="list-style-type: none"> - Invite the students to hang their work on the Present Boards. - Allow students to do gallery work - To ask other groups if they agree on what other groups have presented and comment on each presentation. - Invite the representative of each group to come, show Steps followed to compute fixed and variable cost by using high and low method 	<p>Groups present about the steps followed to compute fixed and variable cost by using high and low method.</p> <ul style="list-style-type: none"> - Each team hangs its answers on Present Board. - Each team moves around to read presentations of other teams while taking notes and asking for clarification where they do not understand. <p>Harmonize their findings and come up with Steps followed to compute fixed and variable cost by using high and low method.</p>	<p>Inclusive Education:</p> <p>Taking into account students with visual impairment during gallery walk and also read for them.</p> <p>Communication:</p> <ul style="list-style-type: none"> - Students discuss and communicates verbally while presenting their work and commenting on other groups work. <p>Critical thinking:</p> <ul style="list-style-type: none"> - Learners use critical thinking in answering questions.
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<p>c) Summary/ conclusion</p> <p>15 Minutes</p>	<ul style="list-style-type: none"> - Help the students to come up with a summary on Steps followed to compute fixed and variable cost by using high and low method - Read the summary loudly for the students with visual impairment to allow them to take notes. 	<p>Compute fixed and variable cost by using high and low point method.</p> <p>1. Cost estimation methods: high and low method cost estimation is based on the relationship between past cost and past level of activity. Variable cost is based on the relationship between costs at the highest level of activity and the lowest level of activity. The difference in cost between high and low activity level is taken to be the total variable cost from which the unit variable cost can be computed by dividing it by the change in output level.</p> <p>2. The goal of the high-low method is to describe this line mathematically in the form of an equation stated as</p> <p>$f(x) = a + bX$, which requires calculating both the total fixed costs amount (a) and per unit variable cost amount (b). Four steps are required to achieve this using the high-low method:</p> <p>3. steps followed in computation fixed and variable cost by using High and Low point method</p>	<p>Inclusive Education:</p> <p>Taking into account of students with visual impairment by reading for them note written onboard and giving more time to take notes.</p>
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Step 1. Identify the high and low activity levels from the data set.

Step 2. Calculate the variable cost per unit (b).

Step 3. Calculate the total fixed cost (a) or Y

Step 4. State the results in equation form $f(x) = Y = a + bX$.

Re- porting Period (Month)	Total Pro- duction Costs(- FRW)	Units Pro- duced
July	230,000	3,500
August	250,000	3,750
Septem- ber	260,000	3,800
October	220,000	3,400
Novem- ber	340,000	5,800
Decem- ber	330,000	5,500
<i>January</i>	<i>200,000</i>	<i>2,900</i>
February	210,000	3,300
March	240,000	3,600
<i>April</i>	<i>380,000</i>	<i>5,900</i>
May	350,000	5,600
June	290,000	5,000

Step 1. Identify the high and low activity levels from the data set.

The highest level of activity (level of production) occurred in the month of April (5,900 units; FRW 380,000 production costs), and the lowest level of activity occurred in the month of January (2,900 units; FRW 200,000 production costs).

Step 2. Calculate the variable cost per unit (b).

$$\begin{aligned} & \text{Unit variable cost (b):} \\ & = \frac{\text{Cost at Highest Level} - \text{Cost at Lowest Level}}{\text{Highest Activity Level} - \text{Lowest Activity Level}} \\ & = \frac{\text{FRW } 380,000 - \text{FRW } 200,000}{5,900 \text{ units} - 2,900 \text{ Units}} \\ & = \frac{\text{FRW } 180,000}{3000 \text{ units}} \\ & = \text{FRW } 60 \text{ per unit} \end{aligned}$$

Step 3. Calculate the total fixed cost (fx) or Y

After completing step 2, the equation to describe the line is partially complete and stated as $Y = a + \text{FRW } 60X$. The goal of step 3 is to calculate a value for total fixed cost $f(a)/Y$.

Simply select either the high or low activity level, and fill in the data to solve for f (total fixed costs), as shown. Using the low activity level of 2,900 units and FRW 200,000,

$$Y = a + bX$$

$$200,000 = a + (60 \times 2,900 \text{ units})$$

$$a = 200,000 - (60 \times 2,900 \text{ units})$$

$$a = 200,000 - 174,000$$

$$a = \text{FRW } 26,000$$

Thus total fixed costs total FRW 26,000. (Try this using the high activity level of 5,900 units and FRW 380,000. You will get the same result as long as the per unit variable cost is not rounded.)

iv) State the results in equation form $f(x) = Y = a + bX$.

We know from step 2 that the variable cost per unit is FRW 60, and from step 3 that total fixed cost is FRW 26,000. Thus we can state the equation used to estimate total costs as

$$f(x) \text{ or } Y = \text{FRW } 26,000 + \text{FRW } 60X$$

3
Assessment
25 Minutes

1. What is the difference between fixed and variable cost
2. Define semi variable cost
3. List three cost estimation method that you can use to segregate fixed cost and variable cost from semi variable cost
4. The following information is extracted from the books of Urugwiro Ltd for the year ended 30th September 2010.

month	Q	Mixed cost(-FRW)
March	200	2000
April	150	1750
May	250	2250
June	300	2500
July	400	3000
sept	500	3500
	1800	15000

Expected Answers:

1. Variable Costs are costs that increase or decrease proportionately with the level of activity while Fixed cost is the cost which does not vary with the change in the volume of activity in the short run. These costs are not affected by temporary fluctuation in activity of an enterprise.

2. Semi-variable costs Are costs with both a fixed and variable cost component. The fixed component is that portion which is constant irrespective of the level of activity.

- 3.a. comparison methods
- b. Least square method.
- c. High and Low Method

4. b) High and Low /Range Methods

Variable cost per unit

$$b = \frac{3500 - 1750}{500 - 150} = FRW5$$

Critical thinking:

Students develop critical thinking and reasoning skills while answering questions from other groups.

Research and problem solving

Imagination and application of this lesson to real business world.

Month	Q	Mixed (FRW)	TVC (FRW)	Fc (a)
March	200	2,000	1,000	1,000
April	150	1,750	750	1,000
May	250	2,250	1,250	1,000
June	300	2,500	1,500	1,000
July	400	3,000	2,000	1,000
sept	500	3,500	2,500	1,000
Total	1800	15,000	9,000	6,000

Variable cost = $b \times \text{quantity}$

Fixed cost = mixed cost - variable cost

Example,

March

$$VC = 5 \times 200 = 1000$$

$$FC = 2000 - 1000 = 1000 \text{ FRW}$$

Teacher self-evaluation

For example:

3 students need remedial activities (they are given)

PART III: UNIT DEVELOPMENT

Unit

1

THE STRUCTURE OF COSTING SYSTEM WITHIN AN ORGANIZATION

1.1. Key unit competence

Explain the structure of costing system within an organization

1.2. Prerequisites (knowledge, skills, attitudes, and values)

The students have already acquired the basic knowledge and skills related to cost classification, cost computation and cost control in S4 especially in Unit 3, Component of cost in organization and S4, Unit 7 Cost Classification and computation in Management accounting, This prior knowledge, skills acquired should help students to Calculate the cost of a product and evaluate cost incurred by organization.

1.3. Cross-cutting issues to be addressed:

- **Inclusive education:** Encourage the participation of all students during the teaching and learning process.
- **Peace and value education:** During group activities, the teacher encourages students to respect their peers' opinions.
- **Gender education:** From the beginning to the end of class, provide all students with equal opportunities for girls and boys to participate actively in class.
- **Environmental sustainability:** While teaching, both teacher and students should keep in mind that protecting the environment is everyone's responsibility. They should work in good environment which help the students to get well the lesson
- **Financial education:** Remind students to be financially competent so they can understand and use effectively various financial skills including personal financial management, budgeting, and costing, know how to manage your money and save responsibly.

1.4. Guidance on the introductory activity

- Lead small groups of students to work on introductory activity.
- During the class discussion, the students think about different possible solutions for elements of cost, cost computation, costing system and justify their phases in front of the whole class.
- The teacher should visit all groups and offer assistance as needed.
- After a set amount of time, ask the students to present and harmonize their findings.
- Explain to students that based on the sentences they are looking at; they may get different responses for the given task.
- Supplement students' presentations and link students' answers on the new lesson

Possible answer to introductory activity

1. This scenario is about organisation of wedding ceremony and costing the products
2. **The main activities that require cost are: decoration, meal provision, providing soft drinks, transport facilities, the coordination of ceremony and to entertaining guests.**
3. **Costing:** costing' refers to the techniques and processes of determining costs of a product manufactured or services rendered.
4. **Soft drink and meal provision: Job Costing:** This method of costing is used in business where the production is as per the requirements of the customer. In Job Order industries, the production is not on continuous basis, and **decoration, Coordination of event and transport services: Services Costing** or operating costing is a costing method used in service organizations to determine all the costs associated with providing their services.

1.5. List of lessons and lesson development

Lesson title	Sub-heading	Learning objectives (from the syllabus or set according to the lesson title)	Number of periods
1.1 Introduction to costing system	1.1.1. Definition of key terms	Explain costing system, its characteristics, conditions, advantages and its challenges.	2P
	1.1.2. Characteristics of costing system		
	1.1.3. Effective conditions for good costing system		1P
	1.1.4. Advantages of costing system		2P
	1.1.5. Challenges in installing costing system		2P
	1.1.6. Overcoming challenges to costing system		2P
	1.1.7. Steps for installation a good costing system		2P
	1.1.8. Factor to consider for installing a good costing system		1P
1.2 Information required in costing system	1.2.1. Identify information required in costing system.	Identify and explain the necessary condition for costing system	1P
	1.2.2. Explain information required in costing system		4P
1.3. Types of costing system	1.3.1. Job costing	Explain the types of costing system	4P
	1.3.2. Batch costing		3P
	1.3.3. Service costing		2P
	1.3.4. Contract costing		3P
1.4 End unit assessment			3P

Lesson 1: Introduction to costing system

a. Learning objective

Explain costing system, its characteristics, conditions, advantages and its challenges and the ways to overcome them.

b. Teaching resources

Basic materials for a class/ lesson to be conducted: Desks, students' books, internet, flip charts, markers, case studies, chalkboard, Computers (desktops & laptops), projectors, and any other trustworthy and reliable resources to enhance learning.

c. Prerequisites/Revision/Introduction

The students have already acquired the basic knowledge and skills related to cost classification, cost computation and cost control in S4 in Unit 3, Component of cost in organization and unit 7, Cost Classification and computation in Management accounting. This prior knowledge, skills acquired should help students to Calculate the cost of a product and explain the process of setting the cost of a product

d. Learning activity

Learning activities 1.1

- Invite students to sit in small groups;
- Invite students to work in groups and do activity from in their student book;
- Move around the class to facilitate students as well as necessary.
- Identify groups with different work steps.
- Invite each group with different activities to present their answers in a class discussion;
- Harmonize the learnings from the students' presentation and ask them to provide
- Supplement students' presentations and link students' answers on the new lesson

Possible Answers for Learning activity 1.1

Answer

1. a) **Costing system** is that system in which we calculate different costs with different methods and also monitor cost for reducing wastage and misuse of resources.
2. a) Identify the lessons you learn from this case study

Lesson

- a) Before a business sells the product on the market, it must determine the cost of product appropriately by considering all cost of resources used from the production process up to the delivery of product to the customer.
- b) In case the business manager is not able to calculate the cost of a product, he /she may hire an accountant to determine the cost of a product instead of estimating the cost based on his/ skills or records.
- c) Serving more customers does not mean that you will get a profit, it depends on difference between cost of production per unit and selling price.

Q3.

Advantages for installing a good costing system

- a) **Identification of Unprofitable Activities:** Just because a firm is making overall profits, it does not mean all activities are profitable. Cost accounting system will help us identify the profitable and unprofitable activities of the firm.
- b) **Fixing the price:** Costing system makes the distinction between fixed and variable cost, which allows the firm to fix prices in different economic scenario. Prices that we fix without the help of costing system can be too high or Low and both cause losses to the business.
- c) **Evaluating the Reasons for Losses:** Every firm has to deal with periods of profits and losses. But now they must always evaluate or investigate the reasons for the losses suffered. This will help to tackle the problem or overcome the cause by some other means necessary. So if you cannot eliminate the reason you can at least minimize the losses.

e. Application activity

- Help students to form small groups as possible.
- Distribute the questions printed from students' book
- Guide students while they are discussing on the questions
- Distribute the flip charts, markers and pens into formed groups.
- Ask the group representatives to present their observations
- Give the constructive feedback

Possible Answers for the application activity 1.1.

Answers

1. The following are the characteristics of a good costing system
 - suit its nature and size of business and its information needs
 - The Costing System must be economical to the organization
 - The system should be more flexible enough to take care of changing business situations
 - The system should be simple to understand and easy to operate.
 - The Costing System should ensure proper accounting for materials, labour and overheads
2. Costing refers to the techniques and processes of _____
A. Ascertainment of costs.
3. Cost of sales plus profit is _____.
A. Selling price.

Lesson 2: Information required in costing

a. Learning objectives

- Identify the necessary conditions for costing system
- Explain the necessary condition for costing system

a. Teaching resources

Basic materials for a class/ lesson to be conducted: Desks, students' books, internet, flip charts, markers, case studies, chalkboard, Computers (desktops & laptops), projectors, and any other trustworthy and reliable resources to enhance learning.

b. Prerequisites/Revision/Introduction

Students have the basic knowledge on cost classification and cost computation obtained in S4 Management Accounting. They also have knowledge on preparation of cost statement; this will help them to collect all required information in installation of a good costing system.

c. Learning activities 1.2

- Invite students to form the small groups;
- Invite students to work in formed groups
- Move around the class to facilitate when needed and bring more
- Identify groups with different work steps.
- Invite each group with different activities to present
- Harmonize the learning from the students' presentation and ask them to provide other real-life examples of problems involving the use of company profits
- Guide them to explore examples from the student book
- Supplement students' presentations and link students' answers on the new lesson

Possible Answers for Activity 1.2

1. Accountant needs the following information to determine the cost of soap : the cost of material used, cost on number of employees used, number of hours available per day, overhead absorption cost, wasted materials during the production process , water and electricity cost, pay rate per day, packaging cost and Overhead cost ,the quantities of soap produced and needed (demand).

d. Application activities 1.2

- Invite students to read, discuss in pairs the application activities in student books;
- Have some pairs to present their findings.
- Ask other pairs to supplement.
- Give constructive feedback.

Possible Answers for the application activity 1.2

1. Qualitative and quantitative information.

Quantitative information: volume, material quantities, expected output or yield, scrap factor, standard time, business capacity, labor hours available, material cost, labor cost and overhead etc

Qualitative information: Quality of product, motivation factor, management decisions, business plans,

2.

SERVICE		COST UNIT
Hotels/Guest house		Passenger-kilometre, tonne-kilomet
Education		Patient -Day
Hospital		Meal Served
Catering organisation		full-time students
Road, rail and air transport services		Occupied bed -night

Lesson 3: Types of costing system

a. Learning objective

Explain the types of costing system

b. Teaching resources

Basic materials for a class/ lesson to be conducted: Desks, students' books, internet, flip charts, markers, case studies, chalkboard, Computers (desktops & laptops), projectors, and any other trustworthy and reliable resources to enhance learning.

c. Prerequisites/revision/introduction

The purpose of management accounting is to set effective costing system and take appropriate management decision regarding the production process. To do this, a cost system must be designed. Students have the basic knowledge on cost classification and cost computation obtained in S4 Management Accounting. They also have knowledge on preparation of cost statement; this will help them to develop appropriate costing system in organization.

d. Learning activities

- Organize students into small groups;
- Invite students to work on the questions for learning activity 1.3 in small groups.
- Walk around to help and guide students who are having difficulty with their assignment.
- Invite each group to share their answers with another group, and encourage each other when they have greater difficulty completing this activity 1.3
- During a class discussion, ask the group leader to present their findings to the whole class.
- As a teacher, harmonize the students' different responses to activity 1.3
- Have students review application activity 1.3 and assess whether the objectives of the lesson have been met.

Possible Answers for Activity 1.3

1. **Costing method** is the technique used to ascertain the cost of product or services. For example- job costing, process costing, contract costing, etc
2. a) **Purchase order one. Purchase plastic bucket.**

Job Costing: This method of costing is used in Job Order Industries or business where the production is as per the requirements of the customer. Job costing method, here the cost per unit will be calculated based on quantity of plastic bucket ordered. And there is no continuous process in this order

Purchase order two : purchase motor vehicle

Batch Costing: batch costing is used where units of a product are manufactured in batches and used in the assembly of the final product. The motor vehicle materials will be produced in different batches and assembly will be made after physical testing.

Tender 1. its bidding documents to construct a mega Building in Kigali City

Contract Costing: In fact Contract Costing can be termed as an extension of Job Costing as each contract is nothing but a job completed . in this contract what is important is the completion of job

b) **Tender 2. Road maintenance**

Operating costing 'that form of operating costing which applies where standardized services are provided either by an undertaking or by a service cost center within an undertaking'. Operating costing is to compute the cost of the services offered by the organization. For doing this, it is necessary to decide the unit of cost in such cases.

e. Application activities 1.3

- Invite students to read, discuss in pairs the application activities in student books;
- Have some pairs to present their findings.
- Ask other pairs to supplement.
- Give constructive feedback.

Possible Answers for the application activity 1.3

1. costing methods and costing techniques

Costing methods are used to ascertain the cost of product or services. For example- job costing, process costing, contract costing etc. While costing techniques are used to control and minimize the cost. Examples of costing techniques are -Activity Based Costing (ABC), Marginal Costing etc

2. The best alternative is

- A. Answer D
- B. Answer D
- C. Answer B

1.6. Summary of the unit

Today different business and industry needs different costing systems to meet their individual requirements. It is not possible to devise a single costing system to fulfill everybody's needs. The choice of a particular method of costing depends on the nature of business of the concern. There are five basic methods of costing such as unit costing method, job costing method, batch costing methods, services costing methods and contract costing methods.

This unit explains the meaning of costing system and describes its characteristics, factors, advantages, challenges and steps followed in installation of a good costing system in organization.

In modern economy where there is a stiff competition on the market, the companies are required to fix a good costing system which can help them to set affordable price which can help the company to compete on the market and determine profitable product. A good costing system evaluates the causes of the business loss.

There are five costing methods, and these costing methods are designed to suit the way goods are processed or manufactured or the way services are provided. Each organization's costing method will therefore have unique features but costing methods of firms in the same line of business will be more than likely have common aspects. As conclusion the business cannot set a good price without installing a good cost system.

1.7. Additional Information for Teachers

The content provided in the student's textbook has holistically covered the information that a student needs in this unit. However, the teacher should look for more application activities to supplement the ones presented in the main content. This will help students to get the required skills to compute the cost of a product and evaluate the costing method used to compute the cost of a product.

SKILLS LAB 1

- **Guidance to the lab:**

Throughout the club the students are required to discuss about the business of bakery but none among the club members has information on what it requires to produce bread (ingredients, equipments, required skills etc). The concerned would research on ingredients, Equipments and Skills required in producing bread.

- **Build**

- Form mixed manageable groups from class
- Given the skills lab from the students' book by sharing them the printed guidance.
- Let each team have the secretary or representative (note taker, time keeper, and presenter)
- Ensure they have papers where to write the necessary notes from the findings.

- **Practice**

- Give them clear instruction on what they have to do, by when and how.
- Ensure that the structure, data given are clear and understandable to everyone.
- Move around the groups as you provide necessary clarifications and guidance.

- **Present**

- Randomly, choose any one team' representative to present their findings.
- Allow students remaining to ask questions for more clarification and understanding

- **Conclusion**

- Teacher emphasizes on the objective on the skills lab reminding students that they have to use knowledge and skills acquired in correction if errors.

- Give necessary constructive feedback as you conclude the lesson. Including a list of all bread ingredients to produce a bread are: flour, livener, salt, sugar, dairy, fats, spices, water, eggs and list of all bakery equipment required to produce a bread: ovens, rangers, proof boxes, commercial bread mixer, grills, microwaves, freezers and refrigerators, safety equipment, sinks. etc

1.8. End unit assessment

- Distribute assessment sheets to the students.
- Give clear and concise instructions.
- Invigilate the assessment.
- Collect the assessment sheet.
- Give clear and concise constructive feedback.

Possible Answers to end unit assessment activities

Difference between costing and costing system

Question 1

Costing: costing refers to the methods and processes of determining costs of a product manufactured or services rendered. Or costing is the technique and process of ascertaining cost. While **Costing system** is that system in which we calculate different costs with different methods and also monitor cost for reducing wastage and misuse of resources. The system is comprised of a set of forms, processes, controls, and reports that are designed to aggregate and report to the management about revenue, costs, and profitability.

Question 2

2. A. Answer D.
2. B. Answer B
2. C. Answer D

3. A. Challenges in installing costing system:

1. Lack of Support from Top Management: Cost Accounting System is to provide necessary information to the internal management for the purpose of problem solving, decision making and control. Without necessary support and recognition from the top management, the very purpose of Cost System is vitiated.

2. **Resistance from Existing Accounting Staff:** The existing accounting staff may resist the introduction of Cost Accounting System in the organization due to fear of losing job recognition and importance after the implementation of the system.
3. **Lack of Cooperation from other Departments:** The employees of other departments may not cooperate for the installation of Cost Accounting System due to fear of increase in work load, bring-out inefficiency etc.
4. **Resistance from Operating Level Workers:** The foremen, supervisors, workers and other operating level staff may resent the introduction of cost system on the ground that it will increase their job responsibilities and paper work and may fear that it may cause change in wage structure.
5. **Shortage of Trained Staff:** The installation and implementation of cost system requires trained, qualified and experienced staff which may be shortage.

3.B. Overcoming challenges to costing system

1. The management should be convinced of the benefits which can derive by installation and operation of a Cost System.
2. Non-cooperation and resistance can be overcome by explaining the simplicity and use of the system and should be ensured that the system will benefit the organization and increase its profitability. They should be given assurance that the system will not reduce the importance of existing staff.
3. To overcome resistance, the existing staff should be properly trained to take up the responsibilities of the Costing System
4. All levels of staff and managers in the organization should be properly trained and made familiar with the Costing Procedures. The system should be simple to understand and easy to operate
5. The benefits derived from Cost System should be more than the costs incurred on its installation and operation.

Question 4

Answer

The reception of the purchase order for 1,000 jeans for men and 1,000 jeans for women from Terimbere customer and each Jeans should be delivered at FRW 15,000. For Jeans, will be used *on job costing*. The job is specific and the method of payment is clear.

The reception a purchase order of 1,200 units of televisions from AGAHOZO TV shop and each batch of television unit should be delivered at FRW 1,200,000 and the payment will be done based on batch delivered. Thus, *batch costing method* will be used. The product will be delivered in batch

The contract with REB for transporting the students from their homes to their schools where the payment will be made when all students will reach to their schools will be used *on contract costing*, the tender of constructing the model village in Nyamagabe. The contract specify the terms of payment, first term the company will receive a half of total amount and the remaining in amount will be paid after official handover. For construction of model village, thus, *services costing method* will be used.

1.9. Additional activities

Remedial activities

Questions

1. **Differentiate product cost and costing**
2. **Choose the correct answer**
 2. a) Operating costing is applicable to:
 - A. Hospitals
 - B. Cinemas
 - C. Transport undertaking
 - D. All of the above
 2. b) The most suitable cost system where the products differ in type of material and work performed is
 - A. Operating Costing
 - B. Job costing

- C. Process costing
- D. All of these.

Answers

1. **Costing** refers to the methods and processes of determining costs of a product manufactured or services rendered. Or costing is the technique and process of ascertaining costs while **Product cost** refers to the costs incurred to create a product. These costs include direct labor, direct materials, direct expenses and overhead cost.
2. a) Answer D
2. b) Answer B

Consolidated activities

1. Choose the correct answer

In 'make or buy' decision, it is profitable to buy from outside only when the supplier's price is below the firm's own _____.

- a) Fixed Cost
 - b) Variable Cost
 - c) Total Cost
 - d) Prime Cost
2. Identify the costing methods that you may use to determine the product cost.
 3. What are the difference between job costing and contract costing?
 1. Answer (b)
 2. Costing methods
 - a) Job costing methods
 - b) Batch costing
 - c) Services costing
 - d) Contract costing
 - e) Unit costing

Q3. Difference between job costing and contract costing are the following:

Contract jobs, while they resemble jobs, have a few distinctive features:

- i) Under job costing, the cost is first allocated to cost centres and then to individual jobs. In contract costing, most of the expenses are of direct

nature, overhead forms only a small percentage of total expenditure and it represents expenses like share of head office expenses, share of central storage cost, etc.

- ii) Under job costing pricing is influenced by individual conditions and general policy of the organization. Under contract costing, pricing is influenced by specific clauses of the contract.
- iii) Under job costing, each contract is a cost unit in contract costing.
- iv) Under contract costing, the work is usually carried out at a site other than contractor's own premises. Job costing is often applied where jobs are carried out at the contractor's own premises.

Extended activities

Q1. Identify effective conditions for installation of a good costing system?

Q2. choose the correct answer

I. Process costing is suitable for _____.

- A. Hospitals
- B. Oil reefing firms.
- C. Transport firms.
- D. Brick laying firms.

II. Inter-firm comparison is one of the aims of _____,

- a) Unit costing
- b) Uniform costing
- c) Standard costing
- d) Marginal costing

Answers

Q1.

Effective conditions for installation of a good costing system

Q1.

A number of conditions and factors must be taken into account when designing a cost and management system these are

Preliminary investigations must be made before a system is installed. This help to discover weakness and inefficiency.

For accuracy of cost records, a system of material cost, labor cost and production overhead cost is essential

Nature of business enterprise must be put into consideration when designing a cost system accounting system. The system developed should be practical and must suit the business.

The system be cost effective in the benefits derived from the system must be greater than the cost of running it.

2. I. Answer b

2.II. Answer b

2.1. Key unit competence

Analyze Cost behavior for decision making.

2.2. Prerequisites (knowledge, skills, attitudes, and values)

Basic materials for a class/ lesson to be conducted: Desks, students' books, internet, flip charts, markers, case studies, chalkboard, Computers (desktops & laptops), projectors, and any other trustworthy and reliable resources to enhance learning.

2.3. Cross-cutting issues to be addressed:

- **Inclusive education:** Encourage the participation of all students during the teaching and learning process
- **Peace and value education:** During group activities, the teacher encourages students to respect their peers' opinions
- **Gender education:** From the beginning to the end of class, provide all students with equal opportunities for girls and boys to participate actively in class.
- **Financial education:** Remind students to be financially competent so they can understand and use effectively various financial skills including personal financial management, budgeting, and investing. Know how to manage your money and save responsibly.
- **Environmental sustainability:** While teaching, both teacher and students should keep in mind that protecting the environment is everyone's responsibility. They should work in good environment which help the students to get well the lesson.

2.4. Guidance on the introductory activity

- Lead small groups of students to work on introductory activity.
- During the class discussion, the students think about different possible solutions, on classification based on cost behaviour, segregation of fixed and variable cost from semi variable cost and justify their phases in front of the whole class

- The teacher should visit all groups and offer assistance as needed.
- After a set amount of time, ask the students to present and harmonize their findings.
- Explain to students that based on the sentences they are looking at; they may get different responses for the given task
- Supplement students' presentations and link students' answers on the new lesson

Possible introductory activity answers

a) Variable Cost Are costs that increase or decrease proportionately with the level of activity i.e. that portion of the cost of an activity that changes with the level of output or level of activities whereby **Fixed cost** is the cost which does not vary with the change in the volume of activity in the short run.

b) Calculation

	JUNE			JULY		
Items	Variable cost	fixed cost	semi-variable	Variable cost	fixed cost	semi-variable
Coaster		20,000,000				
Rental cost		500,000			500,000	
Taxes		80,000			80,000	
Salary	1,700,000			2,000,000		
Electricity bill	150,000			200,000		
Maintenance cost	400,000			450,000		
Fuel cost	1,100,000			1,200,000		
Telephone cost			150,000			180,000
Drivers' allowances		800,000			800,000	
Total	3,350,000	21,380,000	150,000	3,850,000	1,380,000	180,000

2.5. List of lessons and lesson development

Lesson title	Sub-heading	Learning objectives (from the syllabus or set according to the lesson title)	Number of periods
2.1 Introduction to cost behavior	2.1.2. Main classification of cost behavior	Define main classification of cost behavior	
	Variables costs		3
	Fixed costs		3
	Semi-variable costs		3
	Stepped costs or step-fixed costs		2
	2.1.2. Calculating the fixed and variable elements of semi-variables costs	Compute the different types of costs using different methods	
	Comparison method		3
	Least squares method		3
	High and low points or Range method		3
2.2. Cost-Volume Profit (CVP) Analysis.	2.2. Cost Volume analysis	Analysis the Cost-Volume-Profit (CVP)	
	2.2.1. Introduction to CVP		1
	2.2.2. Marginal Costing		3
	2.2.3. Break-Even Point (BEP)		3
2.3. End unit assessment		3	3

Lesson 1: Introduction to cost behavior

a. Learning objective

- Explain main classification of cost behavior
- Compute the different types of costs using different methods

b. Teaching resources

Basic materials for a class/ lesson to be conducted: Desks, students' books, internet, flip charts, markers, case studies, chalkboard, Computers (desktops & laptops), projectors, and any other trustworthy and reliable resources to enhance learning.

c. Prerequisites/Revision/Introduction

The students have already acquired the basic knowledge and skills related to cost classification, cost computation and cost control in S4 especially in Unit 3, Component of cost in organization and unit 7 Cost Classification and computation in Management accounting, This prior knowledge and skills acquired should help students to calculate the cost of a product and separate the fixed and variable costs from semi variable cost.

d. Learning activities

- Organize students into small groups;
- Invite students to work on the questions for learning activity in small groups.
- Walk around to help and guide students who are having difficulty
- Invite each group to share their answers with another group,
- During a class discussion, ask the group leaders to present their findings to the whole class.
- Harmonize the students' different responses to activity
- Have students review application activity
- Assess whether the objectives of the lesson have been achieved.

Possible answers for learning activity 2.1

1. Classify above costs based on its behavior?

Details	Fixed cost	Variable cost	Semi- variable cost
A. Machine cost			
B. Fuel cost			
C. Labor cost			
D. Construction(Building)			
E. Electricity cost			
F. Security wage			
G. Telephone cost			

e. Application activity 2.1

- Invite students to read, discuss in pairs the application activities in student books;
- Have some pairs to present their findings.
- Ask other pairs to supplement.
- Give constructive feedback.

Possible answers for the application activity 2.1.

Q1.

Choose the correct Answer

Answer C. Cost A is fixed, Cost B is variable and Cost C is mixed.

ANSWER

Units (output)	Costs (Y)	X2	XY
200	2,000	40,000	400,000
150	1,750	22,500	262,500
250	2,250	62,500	562,500
300	2,500	90,000	750,000
400	3,000	160,000	1,200,000
500	3,500	250,000	1,750,000
1,800	15,000	625,000	4,925,000

From the above table, we apply the normal equations:

$$(1) 15,000 = 6a + 1,800b$$

$$(2) 4,925,000 = 1,800a + 625,000b$$

Multiplying by 300 in equation (1) and by -1 in equation (2), then we subtract equation (2) from 1

$$(3) 1,800a + 540,000b = 4,500,000$$

$$(4) \underline{-1,800a - 625,000b = -4,925,000}$$

$$0 \quad -85,000b = -425,000$$

$$b = \frac{-425,000}{-85,000} = \text{FRW } 5$$

substitution is made in first equation $\text{FRW } 15,000 = 6a + 1,800 \times 5 = 15,000 = 6a + \text{FRW } 9,000$

$$a = \frac{6,000}{6} = \text{FRW } 1,000$$

From the equation: $Y = a + bx$, we segregate from total costs variable and fixed elements

Period	Output (x)	Total cost (y)	Variable cost (bx)	Fixed cost (a)
January	200	2,000	1,000	1,000
February	150	1,750	750	1,000
March	250	2,250	1,250	1,000
April	300	2,500	1,500	1,000
May	400	3,000	2,000	1,000
June	500	3,500	2,500	1,000
Total	1,800	15,000	9,000	6,000

b) High and Low /Range Methods

$$b = \frac{3,500 - 1,750}{500 - 150} = \text{FRW } 5$$

Using a segregation table as in the above method, we find the same results:

Months	Output (x)	Total cost (y)	Variable cost(bx)	Fixed cost (a)
January	200	2,000	1,000	1,000
February	150	1,750	750	1,000
March	250	2,250	1,250	1,000
April	300	2,500	1,500	1,000
May	400	3,000	2,000	1,000
June	500	3,500	2,500	1,000
Total	1800	15,000	9,000	6,000

Lesson 2: Cost Volume Profit

a. Learning Objectives.

- Explain cost volume profit
- Calculate cost Volume profit

b. Teaching resources

Basic materials for a class/ lesson to be conducted: Desks, students' books, internet, flip charts, markers, case studies, chalkboard, Computers (desktops & laptops), projectors, and any other trustworthy and reliable resources to enhance learning.

c. Prerequisites/Revision/Introduction

The students have already acquired the basic knowledge and skills related to cost classification, cost computation and cost control in S4 especially in Unit 3, Component of cost in organization and unit 7 Cost Classification and computation in Management accounting. This prior knowledge and skills acquired should help students to Calculate the cost of a product and indicates the relationship between cost and volume and relationship between cost and profit .

d. Learning activities 2.2

- Organize students into small groups;
- Invite students to work on the questions for learning activity 1.3 in small groups.

- Walk around to help and guide students who are having difficulty with their assignments.
- Invite each group to share their answers with another group, and encourage each another when they have greater difficulty completing this activity 1.3
- During a class discussion, ask the group leaders to present their findings to the whole class.
- As a teacher, harmonize the students' different responses to Activity 1.3
- Have students review application activity 1.3 and assess whether the objectives of the lesson have been met.

Possible answers for Learning Activity 2.2.

Question 1

Cost-Volume-Profit analysis is the study of the effects of changes on future profit of changes in fixed cost, variable cost, sale price, quantity and mix. There is a direct relationship between cost, volume of output and profit. CPV analysis examines the relationship of cost and profit to the volume of production to maximize the profit of the firm.

2) Break-even point before revising cost structure

$$\text{Agent Revenue} = \frac{10,000 \times 5}{100} = \text{FRW } 500$$

$$\text{Contribution per Unit} = 500 - 350 = \text{FRW } 150$$

$$\text{Break - Even Point} = \frac{150,000}{100} = 1,000 \text{ Clients}$$

Break-even point after Revising cost structure

$$\text{Agent Revenue} = \frac{10,000 \times 4}{100} = \text{FRW } 400$$

$$\text{Contribution per Unit} = 400 - 300 = \text{FRW } 100$$

$$\text{Break - Even Point} = \frac{150,000}{100} = 1,000 \text{ Clients}$$

$$\text{3. Unit sales to attain target profit} = \frac{\text{Fixed expenses} + \text{Target Profit}}{\text{Contribution Per Unit}}$$

$$\begin{aligned} \text{Number of customer needed to attain target profit} &= \frac{150,000 + 50,000}{100} \\ &= 2,000 \text{ clients} \end{aligned}$$

e. Application activity 2.2

- Invite students to read, discuss in pairs the application activities in student books;
- Have some pairs to present their findings.
- Ask other pairs to supplement.
- Give constructive feedback.

Possible answers for the application activity 2.2

1. correct answer

Answer C. c) FRW 1,350,000

a. Answer

2. a High low method

	Output (units)	Total cost FRW Million
Highest	4,200	54,000
Lowest	2,900	41,000
High-low	<u>1,300</u>	<u>13,000</u>

$$\text{Variable cost per unit} = \frac{\text{High cost} - \text{Low cost}}{\text{high output} - \text{low output}}$$

$$\text{Variable cost per unit} = \frac{13000}{1300} = 10,000,000 \text{ FRI}$$

At 4,200units

Total cost	FRW million
	54,000
Less variable cost(4,200 ×FRW10million)	<u>42,000</u>
= fixed cost	12,000

Or, at 2,900 units

	RWF million
Total cost	41,000
Less variable cost (2,900 × FRW10million)	<u>29,000</u>
=fixed cost	<u>12,000</u>

2.6. Summary of the unit

The accountant's view of cost behavior differs from that of the economist. The accountant assumes that total cost and total revenue vary on a straight-line basis as the volume of output and sales increases. The economist sees total cost varying in a non-linear manner due to economies of scale and sees total revenue gradually leveling off as customers reach the point where they do not wish to buy more of the item.

A semi-variable cost is "a cost containing both fixed and variable elements and which is thus partly affected by fluctuations in the level of activity. Semi-variable cost should be separated into fixed and variable elements. For this purpose, the following 3 methods are mostly used: Comparison method, Least squares method, High and low points or Range method

Cost-Volume-Profit analysis is the study of the effects of changes on future profit of changes in fixed cost, variable cost, sale price, quantity and mix. There is a direct relationship between cost, volume of output and profit. CPV analysis examines the relationship of cost and profit to the volume of production to maximize the profit of the firm.

This unit provides appropriate knowledge and skills to the students about cost behavior, segregation of fixed and variable cost from semi Variable cost and then the cost volume profit analysis.

2.7. Additional Information for Teachers

The content provided in the student's textbook has holistically covered the information that a student needs in this unit. However, the teacher should look for more application activities to supplement the ones presented in the main content. This will help students to get the required skills to compute the cost of a product and evaluate the costing method used to compute the cost of a product.

SKILLS LAB 2

• **Guidance to the lab**

- Form manageable groups in your class
- Share them the printed exercises.
- Give them clear instruction on what they have to do, by when and how.
- Ask each group to select the representatives (note taker, time keeper, presenter)
- Move around the groups as you provide necessary clarifications and guidance
- Give necessary constructive feedback as you conclude the lesson

- **Build**

- Form mixed manageable groups from class
- Given the skills lab from the students’ book by sharing them the printed guidance.
- Let each team have the secretary or representative (note taker, time keeper, and presenter)
- Ensure they have papers where to write the necessary notes from the findings.

- **Practice**

- -Give them clear instruction on what they have to do, by when and how.
- -Ensure that the structure, data given are clear and understandable to everyone.
- -Move around the groups as you provide necessary clarifications and guidance.

- **Present**

- Randomly, choose any one team’ representative to present their findings.
- Allow remaining students to ask questions for more clarification and understanding

- **Conclusion**

- Teacher emphasizes on the objective on the skills lab reminding students that they have to use knowledge and skills acquired in correction if errors.
- Give necessary constructive feedback as you conclude the lesson with the possible answers to the following answers

1. Linear equation $Y = a + bX$

Variable Cost per unit(b) = $\frac{\text{CHANGE IN COST}}{\text{CHANGE IN OUTPUT}}$

Fixed cost (a) = total cost - total variable cost

Variable cost per unit = $\frac{4,000,000 - 3,500,000}{7,500 - 5,000} = 600 \text{ FRW}$

Year	number clients	Total Cost(FRW)	Total revenue (FRW)	Tot variable cost(FRW)	Total fixed cost(FRW)
1	5000	3,500,000	5,000,000	3,000,000	500,000
2	7500	5,000,000	7,500,000	4,500,000	500,000

1. Contribution for students for first year 3,000,000 FRW and the contribution for second year will be FRW 4500,000.
2. Contribution for school is FRW 5000,000

2.7 End unit assessment

- Distribute assessment sheets to the students.
- Give clear and concise instructions.
- Invigilate the assessment.
- Collect the assessment sheet.
- Give clear and concise constructive feedback.

Possible Answers to end unit assessment activities

1. Breakeven point is the level of output or sales at which the business does not make profit nor incur the loss. At that level, total revenue is equal to the total cost or Break-even point where the business is neither incurring profit nor loss. This is the turnover that enables enterprise to cover all expenses without profit or loss.
- 2) Correct Answer **b) Relevant range**

Answer

	Output	Total cost
	Units	FRW'000'
Highest	53,000	820,000
Lowest	32,000	505,000
Deduct the lowest output/costs from the highest output/costs.		
	<i>Output</i> Units 53,000	<i>Total cost</i> FRW'000' 820,000
Highest		
Lowest	32,000	505,000
Increase	<u>21,000</u>	315,000

$$\text{Variable cost} = \frac{315000}{21000} = \text{FRW } 15,000$$

At 53,000 units		:FRW'000'
Total cost		820,000
Less variable cost(53,000×FRW15,000)		<u>795,000</u>
=fixed cost		<u>25,000</u>
At 32,000units:		:FRW'000'
Total cost		505,000
Less variable cost(32,000×FRW15,000)		<u>480,000</u>
=fixed cost		<u>25,000</u>

'What are the expected costs when output is 52,000 units?' What we need to do is build up the total cost from the fixed and variable elements at this level of output.

	FRW'000'
Fixed cost	25,000
Add variable cost (52,000×FRW15,000)	<u>780,000</u>
=Total cost	<u>805,000</u>

4.

Quantity (kg)	Price (FRW)	Variable cost (FRW)	Fixed cost (FRW)	Revenue	Total Cost(FRW)	BEP
20,000	20	240,000	400000	400,000	640,000	(240,000)
40,000	20	480,000	400 000	800,000	880,000	(80,000)
50,000	20	600,000	400,000	1000,000	1,000,000	0
60,000	20	720,000	400,000	1200,000	1,120,000	80,000
80,000	20	960,000	400,000	1,600,000	1,360,000	240,000

a) BEP in quantity is 50,000kg (Third line) and the BEP in Value is FRW 1,000,000(Third line)

b) Quantity = $\frac{200,000 + 400,000}{20 - 12} = 200,000 \text{ kg}$

Q.5.correct **Answer (c)** which does not change in total during a given period despite changes in output.

2.8. Additional activities

Remedial Activities

1. Choose the correct answer

- Q1. Baddy uses the high-low method of estimating costs. Baddy had total costs of FRW 50,000 at its lowest level of activity, when 5,000 units were sold. When, at its highest level of activity, sales equaled 12,000 units, total costs were FRW 78,000. Buddy would estimate the fixed cost to be
- a) FRW 20,000
 - b) FRW 30,000
 - c) FRW 40,000
 - d) FRW 50,000
- Q2. A salesman receives a fixed salary of FRW 300 per month plus commission of FRW 100 for each sale confirmed in the month. What is the salesman's monthly salary for the month if his confirmed sales are as follows?

Number of sales	Salary (FRW)
4	?
8	?
15	?

Answer

Q1. Correct answer b) 30,000 FRW

Q2.

Number of sales	Salary (FRW)
4	$300 + (100 \times 4) = 700$
8	$300 + (100 \times 8) = 1,100$
15	$300 + (100 \times 15) = 1,800$

Consolidated activities

- 1) ABC company sells shoes for FRW 450. The variable cost is FRW 200 per unit. The fixed costs are FRW 750,000. The company wants to have a profit of FRW 250,000. How many units do they have to sell to achieve this goal?
- a) 3,000
 - b) 4,000

- c) 5,000
- d) 6,000

Q2. The following information is extracted from the books of SULFO –RWANDA Industries for the year ended 31st December 2010.

Period	Cost (FRW)	units Produced
1	25,000	2,000
2	30,000	2,500

You are required to segregate the above costs into fixed and variable elements using the Comparison method

Q3. A business has fixed costs of FRW 250,000,000, it sells just one product for a price of FRW 80,000 and the variable costs of production are FRW 60,000. How many units of the product must the business sell in order to make a profit of FRW 150,000,000?

Q4. The costs of operating the maintenance department of a computer manufacturer for the last four months have been as follows.

Months	cost '000' FRW	Production Volume (Units)
1	110,000	7,000
2	115,000	8,000
3	111,000	7,700
4	97,000	6,000

Calculate the costs that should be expected in month five when output is expected to be 7,500 units

Answer

1. Correct answer b) 4,000

2. Variable Cost per unit = $\frac{\text{Change in cost}}{\text{Change in output}} = \frac{5000}{500} = \text{FRW } 10$

Therefore :

Period 1.

Variable cost = 10 x 2000 = FRW 20,000

Fixed cost = 25,000 - 20,000 = FRW 5,000

Total Cost FRW 25,000

Period 2.

Variable cost = 10 x 2500 = FRW 25,000

Fixed cost = 30,000 - 25,000 = FRW 5,000

Total cost FRW 30,000

Q3.

$$\text{Target profit} = \frac{250,000,000\text{FRW} + 150,000,000}{80000\text{FRW} - 60000} = 20,000 \text{ Units}$$

4.

	<i>Output (units)</i>	<i>Total cost</i>
	FRW'000'	FRW'000'
Highest	8,000	115,000
Lowest	6,000	97,000
High-low	<u>2,000</u>	<u>18,000</u>

$$\text{Variable Cost} = \frac{\text{High cost} - \text{Low cost}}{\text{high output} - \text{low output}}$$

$$\text{Variable Cost} = \frac{8000}{2000} = 9000 \text{ frw}$$

At 8,000 units	
Total cost	FRW 000'
	115,000
Less variable cost(8,000× FRW 9,000)	72,000
=fixed cost	43,000
So,at 7,500 units	FRW'000'
Fixed cost	43,000
Variable cost(7,500× FRW 9,000)	67,500
Total cost	110,500

Extended activities

Q1. How would each of the following costs be classified according to their behavior?

Cost	Variable cost	Fixed cost	Semi-variable	Step fixed cost
Stores department costs which include FRW 5,000 of insurance premium and an average of FRW 100 cost per materials receipt or issue				
Machinery depreciation based upon machine hours used				
Salary costs of lecturers in a training college where one lecturer is required for every 200 students enrolled				
Buildings insurance for a building housing the stores, the factory and the restaurant				

Q2.

Categorize these costs(Link the cost column and category of cost column)

cost	category of cost
sales commission	Functional cost
Rent	variable cost
Research and Develop cost	Fixed Cost

Answer

Q3. The following information is extracted from the books of SULFO –RWANDA Industries for the year ended 31st st December 2010.

Quantity	8	3	2	10	11	3	6	5	6	8
Cost('000')	4	12	1	12	9	4	9	6	1	14

You are required to segregate the above costs into fixed and variable elements using Least square method

Answer

1.

Cost	Variable cost	Fixed cost	Semi-variable	Step fixed cost
Stores department costs which include RWF5,000 of insurance premium and an average of RWF100 cost per materials receipt or issue			X	
Machinery depreciation based upon machine hours used	X			
Salary costs of lecturers in a training college where one lecturer is required for every 200 students enrolled				X
Buildings insurance for a building housing the stores, the factory and the restaurant		X		

2.

cost		category of cost
sales commission		Functional cost
Rent		variable cost
Research and Develop cost		Fixed Cost

3. Straight line equation is $y = a + bx$.

The normal equations are

$$\sum y = na + b\sum x$$

$$\sum xy = a\sum x + b\sum x^2$$

x	Y(FRW'00)	x ²	Xy
8	4	64	32
3	12	9	36
2	1	4	2
10	12	100	120
11	9	121	99
3	4	9	12
6	9	36	54
5	6	25	30
6	1	36	6
8	14	64	112
$\Sigma x = 62$	$\Sigma y = 72$	$\Sigma x^2 = 468$	$\Sigma xy = 503$

Mean of $x_i = 6.2$ Mean $y_i = 7.2$

Substituting these values in the normal equations, $(1) \times 62 - (2) \times 10$,

$$10a + 62b = 72 \dots (1) \dots \times 62 \dots \dots \dots 620a + 3,844b = 4,464$$

$$62a + 468b = 503 \dots (2) \dots \times 10 \dots \dots \dots \underline{620a} + \underline{4,680b} = \underline{5,030}$$

$$0 \quad -836b = -566$$

$$-836b = -566$$

$$b = 566/836 = 0.677 \text{ FRW } \times 1,000 = 677 \text{ FRW}$$

Substituting $b = 677 \text{ FRW}$ in equation (1),

$$10a + 62(677) = 72,000$$

$$10a + 41,974 = 72,000$$

$$10a = 72,000 - 41,974$$

$$10a = 30,026$$

$$a = 30,026/10 = 3,002.6$$

Therefore, the equation becomes,

$$y = a + bx$$

$$y = 3,002.6 + 677x$$

3.1. Key unit competence

Use the costing methods and take decision related to costing methods

3.2. Prerequisites (knowledge, skills, attitudes, and values)

The students have already acquired the basic knowledge and skills from unit 2 S5 cost behavior analysis and senior 5, Unit1, structure of costing system in organization. This prior knowledge and skills acquired should help students to know the costing methods and calculation of costing methods.

3.3. Cross-cutting issues to be addressed:

- **Inclusive education:** Encourage the participation of all students during the teaching and learning process.
- **Peace and value education:** During group activities, the teacher encourages students to respect their peers' opinions
- **Gender education:** From the beginning to the end of class, provide all students with equal opportunities for girls and boys to participate actively in class.
- **Financial education:** Remind students to be financially competent so they can understand and use effectively various financial skills including personal financial management, budgeting and investing. Know how to manage your money and save responsibly.
- **Environmental sustainability:** While teaching, both teacher and students should keep in mind that protecting the environment is everyone's responsibility. They should work in good environment which help the students to get well the lesson.

3.4. Guidance on the introductory activity.

- Lead small groups of students to work on introductory activity.
- During the class discussion, the students think about different possible solutions, on classification based on cost behavior, segregation of fixed and variable cost from semi variable cost and justify their phases in front of the whole class

- The teacher should visit all groups and offer assistance as needed.
- After a set amount of time, ask the students to present and harmonize their findings.
- Supplement students' presentations and link students' answers on the new lesson

Possible introductory activity

1. Flat-screen and mobile phone
2. Cost information with non-cost information such as personal observations of operations, and non-financial performance measures such quality and customer satisfactions.
3. Job costing methods and ABC methods.

3.5. List of lessons and lesson development

Lesson title	Sub-heading	Learning objectives (from the syllabus or set according to the lesson title)	Number of periods
3.1 Costing methods	3.1.1 Introduction to costing methods	Explain and calculate the different costing methods	2P
	3.1.2 Calculation based on costing methods		
	a. Job costing		3P
	b. Process costing		3P
	c. Services costing		2P
	d. Activity-Based Costing (ABC)		2P
3.2 Decision making	3.2.1. Introduction to decision making	Decide according to different costing techniques	2P
	3.2.2. Marginal costing and decision making	Explain the process of decision making using Marginal costing	4P
	3.2.3. Absorption costing and decision making	Explain the process of decision making using Absorption costing	3P

3.2.4. Break-even point and decision making	Explain the process of decision making using BEP	3P
3.2.5. Activity-Based costing and decision making	Explain the process of decision making using Activity Based costing	3P
3.2.6. Processing costing and decision making	Explain the process of decision making using Process Costing	3P
3.2.7. CVP and decision making	Explain the process of decision making using CVP	3P
3.3. End unit assessment		3P

Lesson 1: Costing methods

a. Learning objective

- Explain the different costing methods.
- Calculate costs based on different costing methods.

b. Teaching resources

Basic materials for a class/ lesson to be conducted: Desks, students' books, internet, flip charts, markers, case studies, chalkboard, Computers (desktops & laptops), projectors, and any other trustworthy and reliable resources to enhance learning.

c. Prerequisites/Revision/Introduction

The students have already acquired the basic knowledge and skills from unit 2 S.5 (cost behavior analysis) and senior 5, Unit1 (structure of costing system in organization). This prior knowledge and skills acquired should help students to know the costing methods, costing techniques and costing technique decisions.

d. Learning activities

- Invite students to sit in small groups;
- Invite students to work in groups and do introductory activity from in their students book;
- Move around the class to facilitate when needed and bring more clarity to any challenges they may encounter during their work;
- Identify groups with different work steps.

- Invite each group with different activities to present their answers in a class discussion;
- As a teacher, harmonize the learning from the students' presentation
- Guide them to explore examples from the student book

Possible Answers for learning activity 3.1

1. On the picture, there are calculator, Rwandan coins, Rwandan note and pen.
2. We are going to record accounting information calculated
 - a) **By-product:** A by-product is that product which is similarly produced at the same time and from the same process as the main product.
 - b) **Joint products:** Joint products are two or more products which are output from the same processing operation but are not distinguishable up to their point of separation.

	Frw	Frw
Fuel and lubricants		400
Wages: driver	150	
Mate	<u>80</u>	230
Share of annual costs		<u>320</u>
Total cost		<u>950</u>

Total ton- kilometers are:

$$(3*20)+(2*10)+(5*30)+(0*60)$$

$$60+20+150+0$$

$$=230$$

Total kilometers travelled are:

$$20+10+30+60=120\text{km}$$

(a) cost per ton -kilometer	= FRW <u>950</u>
	230
	= FRW 4.13
(b) cost per kilometre	= FRW <u>950</u>
	120
	= FRW 7.92

e. Application activity 3.1

- Invite students to read, discuss in pairs the application activities in student books;
- Have some pairs to present their findings.
- Ask other pairs to supplement.
- Give constructive feedback.

Possible application activity answer 3.1

Answers:

1. D
2. D
- 3.

a) By-product: A by-product is that product which is similarly produced at the same time and from the same process as the main product.

b) Joint products: Joint products are two or more products which are output from the same processing operation but are not distinguishable up to their point of separation.

- 4.

	FRW	FRW
Fuel and lubricants		400
Wages: driver	150	
Mate	80	230
Share of annual costs		320
Total cost		950

Total ton -kilometers are:

$$\begin{aligned} & (3*20)+(2*10)+(5*30)+(0*60) \\ & 60+20 \quad \quad \quad Q \\ & \quad \quad \quad \quad \quad \quad +150+0 \\ & =230 \end{aligned}$$

Total kilometers travelled are:

$$20+10+30+60=120\text{km}$$

(a) cost per ton -kilometer	= FRW $\frac{950}{230}$
	= FRW 4.13
(b) cost per kilometre	= FRW $\frac{950}{120}$
	= FRW 7.92

Lesson 2: Decision making

a. Learning objectives:

- Explain decision making process
- Explain the process of decision making using Marginal costing
- Explain the process of decision-making using Absorption costing
- Explain the process of decision making using Activity Based costing
- Explain the process of decision making using Process Costing
- Explain the process of decision making using CVP

b. Teaching resources

Basic materials for a class/ lesson to be conducted: Desks, students' books, internet, flip charts, markers, case studies, chalkboard, Computers (desktops & laptops), projectors, and any other trustworthy and reliable resources to enhance learning.

c. Prerequisites/Revision/Introduction

The students have already acquired the basic knowledge and skills from S4, unit 7 Cost Classification and computation in Management accounting, senior five unit 1 and unit 2 especially structure costing system and cost behavior analysis. This prior knowledge and skills acquired should help students to know the costing techniques such as Absorption Costing, Marginal Costing, Activity Based Costing, Process Costing and decisions related to costing techniques.

d. Learning activities

- Individually, invite students to work on the activity 3.1 from the S5 Management accounting student's book;
- Move around for facilitating students where necessary and give more clarification on eventual challenges they may face during their work;

- Invite students to share their results to their neighbours
- Individually, invite students to share their findings to the whole class
- As a teacher, harmonize the findings from presentations and use different probing questions to help students to explore examples and the content given in the student’s book to enhance skills on costing methods and decision making processes
- Invite students individually to comment on the general conclusion from findings
- Ask students to do the application activity 3.1 and evaluate whether lesson objectives were achieved to assess their competences.

Possible Answers for Activity 3.1

1. Costing method used on each strategy
 - a) Strategy 1. Activities based costing
 - b) Strategy 2 Marginal costing technique
 - c) Strategy 3. Absorption costing method
 - d) Strategy 4. Make or Buy strategy
2. The best strategy is strategy 2.

The company set the price based on cost of additional units; and consider the fixed cost absorbed during the production process, then marginal contribution has a positive figure and net operating profit

e. Application activity 3.2

- Invite students to read, discuss in pairs the application activities in student books;
- Have some pairs to present their findings.
- Ask other pairs to supplement.
- Give constructive feedback.

Answers for the application activity 3.2

1. a) answer D 30,000
2. Resource limits

$$\begin{aligned}
 \text{Material requirements} &= (3\text{kg} \times 2,000) + (4\text{kg} \times 6,000) + (1\text{kg} \times 1,000) \\
 &\quad + (2\text{kg} \times 4,000) \\
 &= 39,000\text{kg}
 \end{aligned}$$

But only 30,000kg are available

$$\begin{aligned}\text{Labour hour requirements} &= (5 \times 2,000) + (3 \times 6,000) + (1 \times 1,000) \\ &\quad + (2 \times 4,000) \\ &= 37,000 \text{ hours and}\end{aligned}$$

40,000 hours are available

$$\begin{aligned}\text{Machine hour requirements} &= (3 \times 2,000) + (2 \times 6,000) + (2 \times 1,000) \\ &\quad + (4 \times 4,000) \\ &= 36,000 \text{ hours}\end{aligned}$$

And 38,000 hours are available So only the materials are in short supply

3.6. Summary of the unit

Costing is the process or activity of determining the costs incurred on various types of inputs used in the organization and apportioning it to different products and activities of a company. Costing is used for many different purposes such as fixing selling price of products, analyzing costs associated with different products and activities to facilitate decisions on product mix and methods, analysis of costs and profitability for investment decisions and cost control.

- In management accounting there are five costing methods such as job costing, batch costing, services costing, unit costing and contract costing, this unit will help us to calculate the cost of product by using each costing method and selecting appropriate methods that we can use in our business.
- This unit describes the costing techniques used in cost determination such as marginal costing, absorption costing, process costing, Activity Based Costing and cost, volume, profit analysis and we analyzed the possible decision on each costing technique.

3.7. Additional Information for Teachers

The content provided in the student's textbook has holistically covered the information that a student needs in this unit. However, the teacher should look for more application activities to supplement the ones presented in the main content. This will help students to get the required skills to compute the cost of a product and evaluate the costing method used to compute the cost of a product.

SKILLS LAB

Guidance to the lab

- Form manageable groups in your class
- Share them the printed exercises.
- Give them clear instructions on what they have to do, by when and how.
- Ask each group to select the representatives (note taker, time keeper, presenter)
- Move around the groups as you provide necessary clarifications and guidance
- Give room for students to present their prepared Financial Statements
- Give necessary constructive feedback as you conclude the lesson

ANSWER TO THE SKILLS LAB

a) A good business is the piggery business which makes a contribution of FRW 2,500 FRW Compared to FRW 3000 of poultry Business

	Piggery (FRW)	Poultry (FRW)
Selling price	100,000	10,000
Labour cost(each)	20,000	3,000
Material cost	30,000	3,000
Direct expenses	25,000	1,000
Total variable Cost	75,000	7,000
Contribution per unit	25,000	3,000

a). Break point in quantity for piggery business = $\frac{100000}{25000} = 40 \text{ pigs}$

b). Break point in quantity for piggery business = $\frac{1500000}{3000} = 500 \text{ chicken}$

c) The best business is piggery business because it requires a sales of 40 pigs to cover initial investment and based on payback period , it requires a period one year to cover initial investment

d) Net profit based on absorption costing

	Piggery (FRW)	Poultry (FRW)
Selling price	100,000	10,000
Labour cost (each)	20,000	3,000

Material cost	30,000	3,000
Direct expenses	25,000	1,000
Total variable Cost	75,000	7,000
Contribution per unit	25,000	3,000
Total Contribution	1,250,000	450,000
Fixed cost	1,000,000	1,500,000
Net Profit /loss	250,000	(1,050,000)

Best project is Piggery business with a net profit of FRW 250,000 compared to the loss of FRW 1,050,000 obtained from poultry

3.8 End unit assessment

- Distribute assessment sheets to the students
- Give clear and concise instructions
- Invigilate the assessment
- Collect the assessment sheet
- Give clear and concise constructive feedback

Answers to end unit assessment activities

1. Margin of safety is the difference between the actual sales and sales at break even point. At break even point we have seen there is no profit or loss. It is only after the break even point that the profit starts. The more the actual sales are from the break even point the more margin of safety will be. Margin of safety indicates the strength of the business
2. a) Answer C 201,429

$$i) \text{ P/V Ratio} = \frac{\text{Change in profits } 10,000}{\text{Change in sales } 40,000} = \frac{1}{4} \text{ or } 25\%$$

$$\text{Fixed Expenses} = \text{Contribution} - \text{Profit}$$

$$= (\text{P/V Ratio} \times \text{Sales}) - \text{Profit} (1/4 \times 3,00,000) - 40,000 = \\ \text{FRW } 75,000 - \text{FRW } 40,000 = \text{FRW } 35,000$$

$$ii) \text{ Break Even Point} = \frac{\text{Fixed Costs}}{\text{P/V Ratio}} = \frac{35000}{0.25} = 140,000 \text{FRW}$$

iii) Sales required to earn a profit of FRW 80,000

$$\text{Sales} = \frac{35000 + 80,000}{0.25} = \text{FRW } 460,000$$

iv) The profit when sales are FRW5,000,000 Profit=(P/V Ratio x Sales) – Fixed Expenses

$$(0.25 \times 50000) - 35,000 \text{ FRW}$$

$$= \text{FRW } 125,000 - \text{FRW } 35,000 = \text{FRW } 90,000$$

v) Margin of safety of a profit of FRW 100,000

$$\text{Margin of Safety} = \frac{100,000}{25\%} = \text{FRW } 400,000$$

3.9. Additional activities

Remedial activities

Q1. Define Activity Based Costing

Q2. Differentiate marginal Costing and Absorption Costing

3. KUKI Ltd manufacturing company finds that while it costs to make component X, the same is available in the market at FRW 5.75 each, with all assurance of continued supply. The breakdown of cost is:

Details	FRW
Materials	2.75 each
Labour	1.75 each
Variable overheads	0.50 each
Depreciation and other fixed cost	1.25 each
Total	6.25 each

a) Should the company make or buy the component?

b) What should be your decision if the supplier offered component at FRW 4.85 each?

Answer

Q1. Marginal costing is the ascertainment of marginal costs by differentiating between fixed costs and variable costs and to see the effects of profit of changes in volume or type of output.

Q2. In **marginal costing**, marginal cost is determined by bifurcating fixed cost and variable cost. Only variable costs are charged to operation, whereas the fixed cost is excluded from it and are charged to profit and loss account for the period while **Absorption costing** or otherwise known as full costing, is a costing technique in which all costs, whether fixed or variable are absorbed by the total units produced.

3. a)

Details	FRW /EACH
Materials	2.75
Labour	1.75
Variable overheads	0.50
Total	5.00

a) The purchase cost of the above component is FRW 5.75 each. If the company is having spare capacity which cannot be filled with more remunerative jobs, it is recommended that the above component be manufactured in the company since the marginal cost at FRW 5.00 each is less than the purchase cost of FRW 5.75 .

b) In the event of purchase cost of FRW 4.85 each being less than the marginal cost of FRW 5.00 each, it is recommended that the component be bought from the supplier as this results in a saving of FRW 0.15 each. The spare capacity thus available can be utilized for other purposes, as far as possible.

Consolidated questions

1. The trading results of ABC company Ltd for the first year of the business which ended 31 December 2008 are expected as follows:

Sales (at 5 FRW Per Unit)	FRW	400,000 FRW
Variable Cost		
Material	160,000	
Labor	64,000	
Variable Over head	40,000	
fixed Over head	60,000	324,000
Profit		76,000

During 2008 the factory has been working at 50% Capacity and marketing manager has estimated that the quantity sold could be doubled in 2009 if the selling price was reduced to 4 per unit. No change is anticipated in unit variable

cost but certain administrative cost changes to cope with additional volume of work increases fixed overhead by FRW 10000.

Required

- Evaluate the marketing manager proposal.
- Assuming the market price was reduced as proposed, unit variable cost remaining as in 2008 and fixed overhead increased by FRW 10,000. Calculate the quantity would need to be sold in 2009 to yield a profit of FRW 105,000-

Q2. MFCo manufacture three products, the selling price and cost details of which areas follows.

	<i>Product M</i>	<i>Product F</i>	<i>Product S</i>
	<i>RWF'000 per unit</i>	<i>RWF'000 per unit</i>	<i>RWF'000 per unit</i>
Selling price	129	137	141
Direct material(RWF8,000/kg)	32	16	40
Direct labour (FRW 6,000/hour)	30	36	24
Variable overhead	10	12	8
Fixed overhead	15	20	14

In a period when direct labour is restricted in supply, which of the following ranks the products from the most profitable to the least profitable according to use of direct labour?

- M,F,S
- F,S,M
- S,M,F
- S,F,M

ANSWER

- During year 2008, the sales were FRW 400,000-at FRW 5 per unit. It means the unit sold: $\frac{400000}{5} = 80,000 \text{ Unit}$:

Marginal cost per unit was:

$$\text{Material} = \frac{160000}{80000} = 2 \text{ FRW}$$

$$\text{Labour} = \frac{4000}{10000} = 0.8FRW$$

$$\text{Labour} = \frac{10000}{30000} = 0.5FRW$$

Marginal cost per unit FRW 3.3

- a) In 2009 if selling price is reduced from FRW 5 to FRW 4 Then sales will be doubled. it means the units produced and sold would be 16,0000 units at this level of output, the profit will be as under :

Marginal costing profit and loss Account for the year ended 2009

	FRW	FRW
Sales @4 (16,0000x40)		640,000
Variable Cost		
Material (160000X FRW 2)	320,000	
Labor (160000X FRW 2)	128,000	
Variable Overhead (160000X FRW 2)	80,000	528,000
Contribution		112,000
Less fixed over Head		70,000
profit		42,000

The market manager's proposal cannot be accepted because as a result of the reduction in selling price and the increase in fixed overheads, the profit in 2009 would be FRW 42,000 whereas the profit in 2008 was FRW 76,000.in spite of the increase in sales. There will be less profit in 2009.the decision based on the above calculations will not be in favour of the market Manager's proposal.

Selling price per unit 4

Less marginal cost per unit 3.3

Contribution per unit 0.70

Contribution required = fixed cost +required profit= FRW70,000+ FRW 105,000= FRW 175,000

$$\text{Required Quantity} = \frac{175000}{0.70} = 250000 FRW$$

2. answer D

Extended Activity

Q1. IHIRWE produces the following cost data related to the production of product Y.

Data	FRW
Selling price per unit	80
Variable cost per unit 30 pence	30
Fixed cost	3,000
Desired level of profit 4000	4,000

- Calculate the break - even point?
- Calculate the level of output that can help the company to generate FRW 4,000 as a profit?

Q2. Alpha ltd produces tubes for motor vehicles. The following information was provided for the year 2010:

Production	20,000 tubes
Sales	15,000 tubes
Production Costs	FRW 4,400,000
Direct Materials	2,400,000
Direct Labour	600,000
Variable overheads	500,000
fixed overheads	900,000
selling and Administration	
sales commission	250,000
General Expenses	160,000
Overhead(fixed)	240,000

The company sells each tube at a price of FRW 300

Required

- Profit and loss Account on the basis of absorption costing
- Profit and loss Account on the basis of Marginal costing

ANSWER

1. ANSWER

Contribution = $80 - 30 = \text{FRW } 50$

a) Break - even point in quantity = $\frac{3000}{50} = \text{FRW } 600$

b) Output Level at a profit of

2. ABSORPTION COSTING PROFIT AND LOSS ACCOUNT

FOR THE YEAR ENDING 31st DECEMBER 2010

	Period 1	
Sales		4,500,000
cost of goods sold		
direct material	2,400,000	
direct labor	600,000	
variable overhead	500,000	
fixed overhead	900,000	
	4,400,000	
less closing stock	1,100,000	
product cost of sales		3,300,000
other Cost	500	
Gross profit		1,200,000
Sales commission	250,000	
General Expenses	160,000	
Overhead(fixed)	240,000	650,000
Net Profit		550,000

Production of 20,000 tubes =4,400,000

The following formula gives the value of production costs for the closing stock (not sold)

$$\leftrightarrow \frac{\text{Volume Produced}-\text{Volume sold} \times \text{Production Overheads}}{\text{Volume Produced}}$$

$$\leftrightarrow \frac{5,000 \times 44,000}{20,000} = \text{FRW}1,100,000$$

MARGINAL COSTING PROFIT AND LOSS ACCOUNT

FOR THE YEAR ENDING 31stDECEMBER 2010

Sales		4,500,000
cost of goods sold		
direct material	2,400,000	
direct labor	600,000	
variable overhead	500,000	
	3,500,000	
less closing stock	875,000	
product cost of sales		2,625,000
Gross contribution		1,875,000
Gross profit		
Sales commission	250,000	
General Expenses	160,000	410,000
net contribution		1,465,000
less fixed cost		
fixed overhead	900,000	
Overhead(fixed)	240,000	1,140,000
Net profit		325,000

Working 2.

Marginal cost of 2,000 tubes = FRW 3,500,000

Marginal cost of 5,000 tubes = $350,000 \times \frac{5000}{20,000}$ = FRW 875,000

The difference in profit in absorption costing and marginal costing approaches is due to the difference in the closing stock of finished goods

Unit

4

CASH MANAGEMENT PROCEDURES IN ORGANIZATION

4.1. Key Unit competence

To be able to describe the cash management procedures in organization

4.2. Prerequisite (knowledge, skills, attitudes and values)

During this unit, students need to revise some contents studied in previous lessons like the preparation of financial statements in senior 4, unit 10. This unit requires going back and reading again the preparation of preparation of financial statements such income statement and balance sheet with adjustments which were studied in the module of financial accounting senior 5

4.3. Cross-cutting issues to be addressed

Note: The examples below are just to guide you on how to address cross-cutting issues throughout the unit but this does not mean that these are the only ones. You can address and give students opportunities to discuss all the crosscutting issues thereby taking into consideration their environment or community.

1. **Financial Education:** financial education in this unit should cover a range of themes including financial goal setting, budgeting, responsible borrowing, and consumer rights. This will be delivered through interactive and entertainment-based classroom training, reinforced with take-home tools and posters.
2. **Gender education:** Emphasis throughout this unit has to be put on how both male and female have the same opportunities when it comes to the implementation of and respecting the cash procedures in organization, there is no procedure specifically reserved or meant for a particular gender but everyone should strive to have an organization with efficient cash management procedures.
3. **Inclusive education:** In addition to all having equal opportunities to study cash flows management, emphasis has to be put on how all regardless of our background, economic or social setup have right to

study without discrimination because our needs are the same. Students need to understand that this unit should not discriminate but promote inclusiveness of all...etc.

4. Refer to other cross-cutting issues as identified in the curriculum framework.

4.4. Guidance on introductory activity

This introductory activity intends to attract ~~arise~~ students' attention and interest on what are the cash management procedures of any organization and how they are followed

- Guide students to read the case study from the text book
- Guide them to work in pairs
- Have some pairs make presentations?
- Give constructive feedback and guide towards the lesson (you can use additional simulating questions)

Possible Answers to introductory activity

Answers:

- i) Transport activity, unloading cereals from the truck, production of cereals flour in the factory, packing of cereals flour in envelopes, sales of produced goods with a direct cash payment, record and analysis of cash flows, the banking of cash flows
- ii) Driver and manpower, producers and production managers, sales and accounting managers
- iii) The first batch of procedures and analysis concerns the cash outflows and the second one for cash inflows

4.5. List of lessons and lesson development

Heading	Lesson title/Sub-heading	Learning objectives (from the syllabus or set according to the lesson title)	Number of periods
4 . 1 . Introduction	4.1.1 Definition of concepts	Explain clearly cash management procedures	2
	4.1.2 Types of cash flow activities	Appreciate the use of cash within the business	3
	4.1.3 Objectives of cash management	Explain clearly cash management procedures	2
	4.1.4 Tools of cash management	Justify cash management procedures	3
	4.1.5 Techniques of cash-flow management	Appreciate the use of cash within the business	3
	4.1.6 Purpose of cash management	Explain and justify clearly cash management procedures	3
Cash flow statement	Purpose of cash flow statement	Define cash flow statement	3
	Steps of preparing cash flows statement	Make clear the steps of cash flow statement preparation	3
	Methods used to prepare cash flow statement	Explain cash flows information	3
	Prepare cash flow statement	Prepare clearly cash flow statement	4
	Cash flow information analysis	Recognize cash flow statement	5

Use of financial and non financial performance measures	Introduction to Financial and non-financial performance measures	Explain the financial and non financial measures.	2
	Financial performance measures	Measure and interpret the financial performance measures	14
	Trend analysis		
	Common-size analysis		
	Ratio analysis		
4.3.3 Non-financial performance measures		4	
End unit assessment			3

Lesson 1: Introduction to cash management

a. Learning objective

- Explain clearly cash management procedures
- Appreciate the use of cash within the business
- Justify cash management procedures

b. Teaching resources

Basic materials for a class/ lesson to be conducted: Desks, students' books, internet, flip charts, markers and case studies related to inflows and outflows of cash within a business (*such as EBM and its invoices of wheat flower for examples, transports tickets*) and any other trustworthy and reliable resources to enhance learning.

c. Prerequisites/Revision/Introduction

Students have the basic knowledge on preparation of income statement without adjustments which will help them to prepare it using adjustments.

d. Learning activities

Activity 4.1

- Help students to form small groups
- Ask them to read the case study
- Guide them while they are discussing

- Distribute the flip charts, markers, *invoices of wheat flower for examples and transports tickets sample*
- Ask the group representatives to present their results
- Give the constructive feedback

Possible Answers to activity 4.1

1. The situation faced up starts from cash flows determination; Analysis and revision of cash management strategy; determination of cash activities which implies outflows such as investments, cash payments on supplies, salaries; and inflows such as acquisition of cash liquidity from borrowing and opening cash balances then performance measurement
2. **Cash flows, Cash flow statement**, cash management, cash management strategy, inflows and outflows

e. Application Activity 4.1

- Help students to form groups accordingly
- Guide them where they do not understand
- Each group should have time to present to their classmates
- Give constructive feedback

Possible Answers to Application Activity 4.1

Cash flows Cash flows are inflows and outflows and in cash equivalentsee. These cash equivalences are cash received and paid on operating, investing, or financing activities in the statement of cash flows, and depending also on the nature of the transaction.

Cash flow statement is a statement that provides valuable information about a company's gross payments and receipts and allows insights into its future income needs.

Cash management is about dealing with liquidity management and the investment of funds. Cash management function ensures that minimum requirements for liquidity in the organization are met and that any investments are within the organization's rules and regulations, as well as offering the best return, risk and liquidity available.

The operating activities section of the statement of cash flows is generally regarded as the most important section since it provides cash flow information related to the daily operations of the business. This section answers the question, "How much cash did we generate from the daily activities of our core business?" Owners, creditors, and managers are most interested in cash flow generated from daily activities rather than from a one-time issuance of stock or a one-time sale of land.

The objectives of cash management are:

The prime objective of cash management is to channelize the flow of cash from the surplus to deficit units to maintain the appropriate liquidity position of the organization. Other important objectives of cash management are discussed as follows:

- Planning of Cash Flows
- Synchronizing Cash Flows
- Optimizing Cash Holding
- To Control Cash Flow

The purpose of any cash management system

1. To Control Cash Flows

This purpose is a clear-cut because the most business owners want to increase the amount of money flowing into their business at the same time by minimizing the cash leaving their business, reducing operational expenses and other costs. A currency recycler, for example, recycles the same cash that comes in through transactions to fund the employee floats and cash registers.

2. To Optimize Cash Levels for the Business

To optimizing cash levels is essential to control the cash flow. If the business inflow in terms of cash are not available for the use (for e.g., when the business manager has outstanding unpaid invoices or money is sitting in the cash registers), he may not have the liquidity that business needs. Thus, any cash management software might have functions which will help optimize the cash levels, including:

Cash analytics

Cash forecasting

Cash status

3. To Enable More Efficient Cash Planning

The right cash management system helps optimize cash and this allows cash manager to plan more effectively. The use of automated cash management systems to collect and provide data will help to make more informed decisions.

1. To enable more Effective Cash Management
2. Having the right cash management system in place is a key here. A good management system allows the business owner to see cash as it flows through the business, giving him/her a bird's eye view of where cash is leaving the business and where it's entering. The business owner

Lesson 2: Cash flow statement

a. Learning objectives

- Define cash flow statement
- Make clear the steps of cash flow statement preparation
- Explain cash flows information

b. Teaching resources

Basic materials for a class/ lesson to be conducted: Desks, students' books, internet, flip charts, markers, case study of for e.g., a company which manufactures the home equipments and supplies or any other trustworthy and reliable resources to enhance learning.

c. Prerequisites/Revision/Introduction (Guidance on how to start the lesson)

As they have studied the income statement and the balance sheet in unit 10 of S4 and unit 2 of senior 5 in the subject of financial accounting, they know the elements of an income statement and Balance Sheet with their formats which will be used to prepare the statement of cash flows mainly with revaluation and disposal as adjustments.

d. Learning activities 4.2

- Help students to form small groups
- Ask them to read the case study carefully
- Guide them while they are discussing on the conversation
- Distribute the flip charts and markers
- Ask the group representatives to present their results
- Give the constructive feedback

Possible Answers to Learning Activity 4.2

- John is the Chief Executive Officer, Linda Uwimana is the Chief Finance Officer and Steve Kayira the treasurer.
- Steve prepares a bank reconciliation statement or cash book, John Karamaga prepares synthetic yearly financial statements or notes to board or meeting of shareholders while Linda Uwimana prepares the yearly financial statements.
- Determination of cash flows from operating activities, investment activities and financing activities

e. Application Activity 4.2

- Help students to form groups accordingly
- Guide them where they do not understand
- Each group should have time to present their view and the analysis of cash flows information to their classmates
- Give constructive feedback

Possible Answers to Application Activity 4.2

Question 1

Answer

Free cash flow: A Free cash flow is a performance measure that is calculated as cash provided by operating activities minus capital expenditures.

Operating cash flow ratio is a cash flow performance measure that is calculated as cash provided by operating activities divided by current liabilities.

Capital expenditure ratio is a cash flow performance measure that is calculated as cash provided by operating activities divided by capital expenditures.

Question 2

Answer

The answer may be no if one considers the use of analytical tools for cash flow statements such as Free cash flow, capital expenditure, operating cash flow ratios. For example, the net free cash flow is negative since it is given by FRW (16,856) less FRW 8,565 which equals (FRW 25,421). This value means that the company spent more on investments compared to net cash provided/used by operating activities

Question 3

Answer

The following is the statement of Cash Flow for **Dusabe D., for the year ending 31 December 22X5.**

Cash flow statement for the year ended 31 December 22X5		
Net cash flow from operating activities (note 1)		21,620
Returns on investments and servicing of finance		
Receipts from sale of fixed assets		3,820
Financing		
Loan repaid to J. Fundi (10,000-7,500=2500)	(2,500)	
Drawings	<u>(22,630)</u>	<u>(25,130)</u>
		310
NOTES		
Reconciliation of net profit to net cash inflow,		
Net profit		
Depreciation		1,800
Profit on sale of van		(620)
Increase in doubtful debt provision (see * where FRW 200= FRW 800 from (22X5) less FRW 600 from (22X4)		200
Increase in stock		(5,400)
Decrease in debtors (8,800-7,700)		1,100
Increase in creditors		1,300
		21,620
Analysis of changes in cash during the year		
Balance at 1 January 22X5		410
Net cash inflow		310
Balance at 31 December 22X5		720

Lesson 3: Use of financial and non financial performance measures

a. Learning objectives

- Explain the financial and non-financial measures
- Interpret the financial and non-financial measures
- Measuring the use of cash performance management

b. Teaching resources

Basic materials for a class/ lesson to be conducted: Desks, students' books, internet, flip charts, markers, printed financial statements (such income statement and balance for at least 2 accounting periods) for any company and any other trustworthy and reliable resources to enhance learning.

c. Prerequisites/Revision/Introduction (Guidance on how to start the lesson)

As they have studied the direct method of a cash flow in unit 10 of senior 4, and unit 2 of senior 5, they know how to prepare it and will use the acquired knowledge and skills to perform financial and non-financial performance analysis

d. Learning activities

- Help students to form small groups
- Ask them to read the case study
- Guide them while they are discussing
- Distribute the flip charts and markers
- Ask the group representatives to present their results
- Give the constructive feedback

Possible Answers to activity 4.3.

- Sandy Masaka is the Chief Executive Officer of a fast-food restaurant, Dave Gasana is the Chief Financial Officer, and Karen Mugwiza, the purchasing manager,
- Analysis of financial information to determine financial condition of each company, assurance of long-term financial sustainability.
- Provision of financial information related to product costs and sales for decision making.

d) **Trend analysis** evaluates an organization's financial information over a period of time. Periods may be measured in months, quarters, or years, depending on the circumstances; **Common-size analysis** which has two reasons for being used: 1) to evaluate information from one period to the next within a company and 2) to evaluate a company relative to its competitors. Common-size analysis answers such questions as "how do our current assets as a percent of total assets compared with last year?" and "how does our net income as a percent of net sales compared with that of our competitors?"; **Financial ratio analysis** uses four categories of ratios to evaluate the financial health of an organization. These are

e. Application Activity 4.3

- Form small groups
- Distribute sheets in which questions are written
- Facilitate discussions in pairs
- Provide constructive feedback and deeper explanations

Possible Answers to application activity 4.3

a) *Using the meaningful trend analysis*, the explanation of how the percent change from one period to the next is calculated, follows:

Income Statement of Ruhinguka Corneille for the year ending 31 December 21X5 and 31 December 20X4

	21X5 (FRW)	21X4 (FRW)	Amount Change	Percent
Net Sales	35,119	30,990	4,129	13.3%
Cost of goods sold	12,693	11,088	<u>1,605</u>	14.5%
Gross margin	22,426	19,902	2,524	12.7%
Selling and administrative expenses	13,158	11,358		
Other operating expenses	<u>819</u>	<u>313</u>		
Operating income	8,449	8,231		
Interest expense	733	355		
Other income (expenses; net)	<u>6,477</u>	<u>988</u>		
Income before taxes	14,193	8,864		

Income tax expense	<u>2,384</u>	<u>2,040</u>		
Net income	<u>11,809</u>	<u>6,824</u>		

For example,

Net sales increased by $\frac{FRW 4,129}{FRW 30,990} = 13,3\%$ and Cost of Goods sold

increased by 14.5%, resulting in a 12.7% increase in gross margin.

a) The appropriate financial analysis and interpretation with the common-size analysis

Income Statement of Ruhinguka Corneille for the year ending 31 December 21X5 and 31 December 20X4

	20X5 (FRW)		20X4 (FRW)	
	Amount	Percent	Amount	Percent
Net sales	35,119	100%	30,990	100%
Cost of goods sold	<u>12,693</u>	<u>36.1%</u>	<u>11,088</u>	35.8%
Gross margin	22,426	63.9%	19,902	64.2%
Selling and administrative expenses	13,158	37.5%	11,358	36.7%
Other operating expenses	<u>819</u>	<u>2.3%</u>	<u>313</u>	1.0%
Operating income	8,449	24.1%	8,231	26.6%
Interest expense	733	2.1	355	1.1%
Other income (expense, net)	<u>6,477</u>	<u>18.4%</u>	<u>988</u>	3.2%
Income before taxes	14,193	40.4%	8,864	28.6%
Income tax expense	2,384	6.8%	2,040	6.6%
Net income	11,809	33.6%	6,824	22.0%

Cost of goods sold increased from 35.8% of net sales in 20X4 to 36.1% in 20X5, which resulted in a decrease in gross margin from 64.2% to 63.9%. Selling and administrative expenses increased from 36.7% to 37.5%, while other operating expenses increased from 1% to 2.3%. Operating income decreased from 26.6% to 24.1%. Interest expense increased from 1.1% to 2.1% and other income increased from 3.2% to 18.4%. Income before taxes increased from 28.6% to 40.4%. Income taxes increased slightly. Net income increased from 22% to 33.6%.

In general, managers prefer expenses as a percent of net sales to decrease over time, and profit figures as a percent of net sales to increase over time.

- a) Name and explain tree ratios used to evaluate profitability. Assess at least two of the profitability performance ratios and interpret them with the use of above financial information. **Gross margin ratio** indicates the gross margin generated for each Rwandan franc in net sales and is calculated as gross margin (which is net sales minus cost of goods sold) divided by net sales

$$\text{Gross Margin Ratio} = \frac{(\text{Net Sale} - \text{Cost of goods sold})}{\text{Net sales}} = \frac{\text{Frw } 22,426}{35,119} = 0.639$$

$\approx 64 \text{ percent}$

Profit margin ratio indicates the profit generated for each Rwandan franc in net sales and it is calculated as net income divided by net sales:

$$\text{Profit margin ratio} = \frac{\text{Net Income}}{\text{Net sales}} = \frac{\text{Frw } 11,809}{35,119} = 0.34 \approx 33.6 \text{ percent}$$

Return on assets indicates how much net income was generated from each Rwandan franc in average assets invested, Return on assets is net income divided by average total assets:

$$\text{Return on Asset ratio} = \frac{\text{Net income}}{\text{Average total assets}} = \frac{\text{Frw } 11,809}{\left\{ \frac{72,921 + 48,671}{2} \right\}} = 19.4 \text{ percent}$$

4.6. Summary of the unit

This unit describes the main cash flows such as inflows and outflows as stated by the net balance in the bottom of the cash flow statement, as prepared by finance department of any organization. The following adjustments of disposal and revaluation of noncurrent assets aims at ascertaining the financial performance of a business through the statement of cash flow (indirect method) with the aim of knowing the movement of cash in a business.

4.7. Additional information for teachers

With regard to the additional information for teachers, they are recommended to use additional exercises from other books such as Business Accounting 1 of Frank W. and Alan S. (2005) on preparation of cash flow statement to make the content more understandable and applied. This will help to strengthen the teaching-learning process on preparation cash management procedures.

SKILLS LAB

Guidance to the teacher:

- Form manageable groups in your class
- Share them the printed exercises.
- Give them clear instruction on what they have to do, by when and how.
- Ask each group to select the representatives (note taker, time keeper, presenter)
- Move around the groups as you provide necessary clarifications and guidance
- Give room for students to present their prepared and analyzed Cash Flow Statement with ratio analysis
- Give necessary constructive feedback as you conclude the lesson

ANSWER TO THE SKILLS LAB

Answer

Comment on the liquidity position of the company

	Formula	2021 FRW '000'	2022 FRW '000'
i) Gross profit margin	$\frac{\text{gross profit}}{\text{Sales revenue}} \times 100$	$\frac{5,000}{20,000} \times 100 = 25\%$	$\frac{7,000}{28,000} \times 100 = 25\%$
ii) Inventory turnover	$\frac{\text{average inventory}}{\text{Costs of Sales}} \times 365$	$\left[\frac{(5,000+2,000)/2}{15,000} \right] \times 365 = 85 \text{ days}$	$\frac{3,000 + 2,000/2}{21,000} \times 365 = 43 \text{ days}$
iii) Return on equity	$\frac{\text{Net profit tax and dividends}}{\text{capital} + \text{Reserves}} \times 100$	$\frac{1,200}{13,000} \times 100 = 9.2\%$	$\frac{2,000}{14,100} \times 100 = 14.2\%$
iv) Return on assets	$\frac{\text{net profit}}{\text{Total Assests}} \times 100$	$\frac{1,200}{15,500} \times 100 = 7.74$	$\frac{2,000}{20,300} \times 100 = 9.85$
v) Acid test Ratio	$\frac{\text{current assets} - \text{Inventory}}{\text{Current Liabilities}}$	$\frac{4,500 - 2,000}{2,500} = 1:1$	$\frac{6,300 - 3,000}{1,200} = 2.75:1$
vi) Current ratio	$\frac{\text{current assets}}{\text{Current Liabilities}}$	$\frac{4,500}{2,500} = 1.8:1$	$\frac{6,300}{1,200} = 5.25:1$
vii) Financial leverage	$\frac{\text{long term liabilities}}{\text{Capital} + \text{reserves} + \text{LTL}} \times 100$		$\frac{5,000}{19,100} \times 100 = 26\%$

The liquidity position of the company increases over the year 2021-2022 from ratio 1:1-2.75:1 and 1.8:1-5.25:1 that is acid test ratio and current ratio respectively.

4.8. End unit assessment

- Distribute assessment sheets to the students
- Give clear and concise instructions
- Invigilate the assessment
- Collect the assessment sheet
- Give clear and concise constructive feedback

Answers to end unit assessment activities

End unit assessment

Question 1

Answer

The analysis of a company's financial information typically follows a three-pronged approach. First, trends within a company's own financial information are analyzed, such as sales and earnings from one year to the next, using two methods (trend analysis and common-size analysis). Second, financial measures are compared between competitors. Finally, financial ratios are compared to industry averages.

Question 2:

Answer

The answer is c

Question 3:

Answer

Cash flows from operating activities	
Net income	FRW 124,000
Adjustments (to convert net income to cash provided by operating activities)	
Add back depreciation expense	24,000
Add back loss on sale of equipment	6,000
Increase in accounts receivable	(60,000)
Increase in merchandise inventory	(66,000)
Decrease in prepaid expenses	2,000
Increase in accounts payable	1,000
Decrease in income tax payable	<u>(9,000)</u>
Cash provided by operating activities	FRW <u>22,000</u>
Cash flows from investing activities	
Purchase of equipment	(67,000)
Proceeds from sales of equipments	5,000
Purchase of long-term investments	<u>(12,000)</u>
Cash used by investing activities	<u>(74,000)</u>
Cash flows from financing activities	<u>(46,000)</u>

Principal payment on bonds	(18,000)
Proceeds from issuance of common stock	4,000
Payment of cash dividends	(32,000)
Cash used by financing activities	
Net decrease in cash	FRW (98,000)
Cash at beginning of year	130,000
Cash at end of year	FRW <u>32,000</u>

CAPITAL EXPENDITURE RATIO is cash provided by operating activities divided by capital expenditures. This ratio measures the company's ability to generate enough cash from daily operations to cover capital expenditures. A ratio in excess of 1.0, for example, indicates the company was able to generate enough operating cash to cover investments in property, plant, and equipment. The capital expenditure ratio for *L. BCG Ltd.* is as follows:

Operating Cash Flow Ratio =	Cash Provided by operating Activities/ Capital expenditures
<i>BCG Ltd.</i> 0.43 =	FRW 32,000/74,000

FREE CASH FLOW ANALYSIS

Free cash flow is cash provided by operating activities minus capital expenditures as follows:

Free cash flow = Cash provided by operating activities – Capital expenditures

The cash provided by operating activities comes from the bottom of the operating activities section of the statement of cash flows. The capital expenditures amount comes from information within the investing activities section of the statement of cash flows. The free cash flow amount is calculated using information from each company's statement of cash flows.

Free cash flow	=	Cash Provided by operating Activities - Capital expenditures
<i>BCG Ltd.</i> FRW (42,000) =		FRW 32,000 – 74,000

The results tell us that the company don't generate enough cash (**FRW 42,000**) from daily operations to cover capital expenditures (**FRW 74,000**)

4.9. Additional activities

Remedial activities

Question 1

Guidance to the teacher

- Distribute posters of any fast-food restaurant or any other
- Share with the students the cross-cutting issue of financial education
- Give them clear instruction on what they have to do, by when and how.
- Ask each student to present the financial perspective within a balanced scorecard

Assume Chicken Ltd, the fast-food restaurant, which uses a balanced scorecard. Provide brief explanation of the following perspectives of the balanced scorecard that are considered by the restaurant.

1. Financial
2. Internal business process
3. Learning and growth
4. Customer

Answer

The balanced scorecard is a balanced set of measures that organizations use to motivate employees and evaluate performance. These measures are typically separated into four perspectives

- **Financial**, measures that shareholders, creditors, and other stakeholders use to evaluate financial performance.
- **Internal business process**, measures that management uses to evaluate efficiency of existing business processes.
- **Learning and growth** measures that management uses to evaluate effectiveness of employee training.
- **Customer**, measures that management uses to evaluate whether the organization is meeting customer expectations.

Consolidated activities

The following are the balance sheets of Thomas H. as at 31 December 2019 and 31 December 2020.

	31.12.2019		31.12.2020	
	FRW	FRW	FRW	FRW
Fixed assets				
Premises at cost		25,000		28,800
Current assets				
Stock	12,500		12,850	
Debtors	21,650		23,140	
Cash and bank balances	4,300		5,620	
	38,450		41,610	
Less current liabilities				
Creditors	(11,350)		(11,120)	
Working capital		27,100		30,490
		52,100		59,290
Financed by:				
Capital				
Opening balances b/d		52,660		52,100
Add net profit for year		16,550		25,440
		69,210		77,540
Less Drawings		(17,110)		(18,250)
		52,100		59,290

Note: for simplicity, no depreciation has been charged

Required:

1. Prepare the cash flow with the use of indirect method

Answer

Thomas H.	
Cash Flow Statement for the year ended 31 December 2020	
	FRW
Net cash flow from operating activities (see note below)	23,370
Investing activities	
Payment to acquire extra premises	(3,800)
Financing activities	

Drawings	(18,250)
Increase in cash	1,320

Note:

	FRW	FRW
Reconciliation of net profit to net cash inflow		
Net profit		25,440
Less cash used for:		
Increase in stock	350	
Increase in debtors	1,490	
Decrease in creditors	230	
		(2,070)
Net cash flow from operating activities		23,370
Analysis of changes in cash during the year:		FRW
Balance at 1 January 2020		4,300
Net cash inflow		1,320
Balance at 31 December 2020		5,620

Question 2

- a) What are the four categories of ratios used to evaluate the financial health of an organization?

Answer

The four categories of ratios are as follows

Ratios used to measure profitability (focus is on the income statement)

Ratios used to measure short-term liquidity (focus is on short-term liabilities)

Ratios used to measure long-term solvency (focus is on long-term liabilities)

Ratios used to measure market valuation (focus is on market value of the company)

Extended activities

Question 1

Answer

The inventory turnover ratio can be converted to the average sale period, which indicates how many days it takes on average to sell the company's inventory,

Question 2

Answer

Ruhago L.,		
Cash Flow Statement for the year ended 31 December 2021		
	FRW	FRW
Net cash flow from operating activities (see note below)		12,700
Investing activities		
Receipts from sale of fixed assets		900
Financing activities		
Capital introduced	600	
Loan repaid to John G.,	(6,000)	
Drawings	(8,560)	
		(13,960)
Decrease in cash		(360)

Notes:

Reconciliation of net profit to net cash inflow:		
	FRW	FRW
Net profit		11,070
Depreciation		2,610
Loss on sale of fixed assets		450
Increase in bad debts provision		380
Decrease in stock		2,320
Increase in creditors		1,590
Increase in debtors		(5,720)
Net cash flow from operating activities		12,700
Analysis of changes in cash during the year:		
	FRW	FRW
Balance at 1 January 2021		4,060
Net cash inflow		(360)
Balance at 31 December 2021		3,700

5.1. Key Unit competence

Use effectively and efficiently cash balances for better management

5.2. Prerequisite (knowledge, skills, attitudes and values)

During this unit, students need to revise some contents studied in previous lessons like the preparation of financial statements in senior 4, unit 10. This unit requires going back and reading again the preparation of preparation of financial statements such income statement and balance sheet with adjustments which were studied in the module of financial accounting senior 5

5.3. Cross-cutting issues to be addressed

- Financial Education: financial education in this unit should cover a range of themes including financial goal setting, budgeting, responsible borrowing, and consumer rights. This will be delivered through interactive and entertainment-based classroom training, reinforced with take-home tools and posters
- **Inclusive education:** In addition to all having equal opportunities to study cash flows management, emphasis has to be put on how all regardless of our background, economic or social setup have right to study without discrimination because our needs are the same. Students need to understand that this unit should not discriminate but promote inclusiveness of all...etc.

5.4. Guidance on introductory activity

This introductory activity intends to attract students' attention and interest on what are the cash management procedures of any organization and how they are followed

- Guide students to read the case study from the text book
- Guide them to work in pairs
- Have some pairs make presentations?
- Give constructive feedback and guide towards the lesson (you can use additional simulating questions)

Possible Answers to introductory activity

Answers:

- a) The appropriate report may focus on the statements of cash flows such as bank reconciliation statement and store ledger card
- b) The elements of effective cash management procedure are based on the efficient decision making which include:
 - i) Accurate and timely cash flow analysis and forecasting as the efficient decision making process,
 - ii) Maximizing returns from cash balances as the receipts acceleration strategy
 - iii) Minimizing financing and borrowing costs as a good strategy to manage outflows
 - iv) Efficient banking arrangements. For example, centralization and rationalization of bank accounts enable economies of scale and a reduction in bank fees and administration costs, while access to electronic payment and collection methods increases efficiency.
 - v) Efficient accounts processing arrangements for receipts and payments reduce transaction costs. For example, centralized infrastructure for accounts processing enables economies of scale benefits to be achieved, while the use of a central financial system minimizes risks associated with accessing and using information from disparate systems.
 - 6) efficient debtor management and collection of receivables and
 - vi) Effective control of payments and disbursements.

5.5. List of lessons and lesson development

Heading	Lesson title/Sub-heading	Learning objectives (from the syllabus or set according to the lesson title)	Number of periods
5.1 Liquidity and cash balance management tools	Definition of liquidity	Explain liquidity assets	1
	5.1.2 Liquidity assets	Apply the cash management tools.	1
	5.1.3 Cash balance Management tool		3
	Make informed decisions regarding the management of cash balances within an organization	Interpret the cash management tools	3
	Characteristics of the main types of cash receipts and payments.		2
5.2 Explain and apply cash management measures.	5.2.1 Cash management measures.	Apply the cash management measures.	4
	5.2.2 Statutory and other regulations relating to the management of cash balances.		3
End unit assessment			3

Lesson 1: Liquidity and cash balance management tools

a. Learning objective

- Explain clearly cash management procedures
- Appreciate the use of cash within the business
- Justify cash management procedures

b. Teaching resources

Basic materials for a class/ lesson to be conducted: Desks, students' books, internet, flip charts, markers, case studies related to inflows and outflows of cash within a business (*such as EBM and its invoices of wheat flour for examples, transports tickets*), poster of if possible the POS (point of sale) and a bank reconciliation statement or any other trustworthy and reliable resources to enhance learning.

c. Prerequisites/Revision/Introduction

Students should have the basic knowledge and skills required in the preparation of income statement and balance sheet with adjustments which will help them to prepare it using adjustments.

d. Learning activities

- Help students to form small groups
- Ask them to read the case study
- Guide them while they are discussing
- Distribute the flip charts, markers, and posters of EBM, POS and possible *invoices on inflows and outflows sample*
- Ask the group representatives to present their results
- Give the constructive feedback

Possible Answers to activity 5.1

- i) Assurance that payments on transport activity, unloading cereals from the truck, production of cereals flour in the factory, packing of cereals flour in envelopes are done on time and within organizational rules and regulations. Assurance that sales of produced goods with a direct cash payment or on credit; Record, analyze and report all cash inflows, banking of cash inflows and perform all cash management measures for an effective decision making. Assurance of procedures for dealing with cash are applied

ii) The EBM as a cash and inventory management tool may help to manage cash inflows and outflows, stock/inventory management, tax compliance, and others

e. Application Activity 5.1

- Help students to form groups accordingly
- Guide them where they do not understand
- Each group should have time to present to their classmates
- Give constructive feedback

Possible Answers to Application Activity 5.1

Question 1

- Reconciliation to amount of cash/cheques/credit card vouchers

Question 2

The elements of effective cash management based on the efficient decision making include:

- Accurate and timely cash flow analysis and forecasting as the efficient decision making process,
- Maximizing returns from cash balances as the receipts acceleration strategy
- Minimizing financing and borrowing costs as a good strategy to manage outflows
- Efficient banking arrangements. For example, centralization and rationalization of bank accounts enables economies of scale and a reduction in bank fees and administration costs, while access to electronic payment and collection methods increases efficiency.
- Efficient accounts processing arrangements for receipts and payments reduce transaction costs. For example, centralized infrastructure for accounts processing enables economies of scale benefits to be achieved, while the use of a central financial system minimizes risks associated with accessing and using information from disparate systems.
- Efficient debtor management and collection of receivables and
- Effective control of payments and disbursements.

Lesson 2: Explain and apply cash management measures

a. Learning objectives

- Explain cash management measures
- Apply cash management measures.

b. Teaching resources

Basic materials for a class/ lesson to be conducted: Desks, students' books, internet, flip charts, markers, case study of for e.g., a company which manufactures the home equipments and supplies (*such as EBM and invoices produced from it, transports tickets*), poster of if possible the POS (point of sale) and a bank reconciliation statement despite the cash flow statement or any other trustworthy and reliable resources to enhance learning.

c. Prerequisites/Revision/Introduction (Guidance on how to start the lesson)

As they have studied the income statement and the balance sheet in unit 10 of S4 and unit 2 of senior 5 in the subject of financial accounting, they know the elements of an income statement and Balance Sheet with their formats which will be used to prepare the statement of cash flows mainly with revaluation and disposal as adjustments.

d. Learning activities

- Help students to form small groups
- Ask them to read the case study carefully
- Guide them while they are discussing on the conversation
- Distribute the flip charts and markers
- Ask the group representatives to present their results
- Give the constructive feedback

Possible Answers to Learning Activity 5.2

Many people think that if we are making profits then there should be no shortage of cash. This is not necessarily so. Let's look at a few instances where, although reasonable profits are being made by each of the following businesses, they could find themselves short of cash, maybe not now, but at some time in the future.

For example, Nsengiyumva G., trader at Muhanga is making FRW 60,000 a year profits. However, his drawings have been over FRW 100,000 a year for some time. His company has been over-generous with sales on credit terms to debtors, and last year extended the time in which debtors could pay from two months to five months. In addition, it has taken on quite a few extra customers who are not creditworthy and such sales may result in bad debts in the future. From that time up today, a lot of money has been spent in investing and financing activities, but no income will result in the near future. This businesses may fail or be wounded up because of cash shortages, despite adequate profits being made

e. Application Activity 5.2

- Help students to form groups accordingly
- Guide them where they do not understand
- Each group should have time to present their view and the analysis of various ratio to their classmates
- Give constructive feedback

Possible Answers to Application Activity 5.2

Question 1

There no stock on the numerator in the calculation of current ratio

Question 2

b. Current assets less inventories/Current liabilities

Question 3:

The trade receivables' collection period is 72 days.

Workings:

	Days
Inventory holding period	38
Add Trade receivables' collection period	X
Less trade payables' payment period	(45)
Cash operating cycle	65

The trade receivables' collection period in days is $65+45-38= 72$ days

5.6. Summary of the unit

This unit describes the main cash flows such as inflows and outflows as stated by the net balance in the bottom of the cash flow statement, as prepared by finance department of any organization. The following adjustments of disposal and revaluation of noncurrent assets aims at ascertaining the financial performance of a business through the statement of cash flow (indirect method) with the aim of knowing the movement of cash in a business.

5.7. Additional information for teachers

Because of limited time, the unit does not contain enough exercises. In this regard the teacher is recommended to use additional exercises on preparation of financial statements from different sources such as textbooks from different writers to make the content more understandable. This will help to strengthen the teaching-learning on preparation of financial statements.

SKILLS LAB

- Guidance to the teacher:

Form manageable groups in your class

Share them the printed exercises.

Give them clear instruction on what they have to do, by when and how.

Ask each group to select the representatives (note taker, time keeper, and presenter)

Move around the groups as you provide necessary clarifications and guidance

- Think of a financial statement that is appropriate to report this financial information.
- What will be the forecast cash balance for 31 January 22X4?

A. FRW 61m

A. (FRW11m)

A. FRW 39m

A. FRW 32m

Give room for students to present their prepared and analyzed Cash Flow Statement

Give necessary constructive feedback as you conclude the lesson

ANSWER TO THE SKILLS LAB

The statement of cash flows

The correct cash balance as per 31 January 22X4 is **FRW 39m** (50 +15 – 26), A incorrectly adds payments and subtracts receipts, B calculates the net cash flow and D includes depreciation but it is not a cash item.

5.8. End unit assessment

- Distribute assessment sheets to the students
- Give clear and concise instructions
- Invigilate the assessment
- Collect the assessment sheet
- Give clear and concise constructive feedback

Answers to end unit assessment activities

End unit assessment

Question 1

Answer

Something that is generally considered as sufficiently liquid to be described as 'cash' in this context is that one which can be definitely be turned into cash within three months. Not only cash includes the cash balances and bank balances, it also includes funds invested in cash equivalents. These cash equivalents consist of the temporary investments of cash not required at present by the business, such as funds put on short-term deposit with a bank. Such investments must be readily convertible into cash or available as cash within a short-term period. Other examples include: the bank, further loans or increase the overdraft facility.

Question 2:

Answer: the cash operating cycle is 92 days

Workings

Inventory holding period	84 days
Trade receivables' collection period	51 days
	135 days
Less trade payables' payment period	(43 days)
Cash operating cycle	92 days

5.9. Additional activities

Remedial activities

Question 1

A business had sales of **FRW** 790 million during the year and cost of sales of **FRW** 593 million. Inventory at the year-end was valued at **FRW** 68 million, trade receivables were **FRW** 102 million and trade payables were **FRW** 57 million. What is the cash operating cycle of the business?

- a) 30 days
- b) 40 days
- c) 54 days
- d) 124 days

Answer is c

Where the cash operating cycle of the business is 54 days. **The workings are as follow:**

$$\text{Inventory holding period} = \frac{\text{FRW}68,000,000}{\text{FRW}593,000,000} \times 365 = 42 \text{ days}$$

$$\text{Trade receivables' collection} = \frac{\text{FRW}102,000,000}{\text{FRW}790,000,000} \times 365 = 47 \text{ days}$$

$$\text{Trade payables' payment} = \frac{\text{FRW}57,000,000}{\text{FRW}593,000,000} \times 365 = (35 \text{ days})$$

$$\text{Cash operating cycle} = 54 \text{ days}$$

Consolidation activities

In a retail business, where payment is received from customers by cash, cheque and debit/credit card, what reconciliation should be carried out at the end of each day?

- a) Reconciliation to bank statement
- b) Reconciliation to trade receivables
- c) Reconciliation to cash book
- d) Reconciliation to amount of cash/cheques/credit card vouchers

Answer

d. Reconciliation to amount of cash/cheques/credit card vouchers

Extended activities

Set out below are the statement of profit or loss and statement of financial position for M.H., manufacturing Ltd:

M.H., manufacturing Ltd, Statement of profit or loss for the year ended December 31, 2020	
	FRW
Revenue	1,350,000
Cost of goods sold	<u>837,200</u>
Gross profit	513,200
Less expenses	<u>274,200</u>
Profit from operations	<u>239,200</u>

Balance sheet as per December 31, for M.H., manufacturing Ltd		
	FRW	
Non-current assets		2,428,300
Current assets		
Inventory	156,300	
Trade receivables	225,000	
Cash and cash equivalents	<u>10,200</u>	
	391,500	
Trade payables	<u>(169,800)</u>	
Net current assets		<u>221,700</u>
TOTAL		<u>2,650,000</u>
Equity		<u>2,000,000</u>
Retained earnings		<u>650,000</u>
TOTAL		<u>2,650,000</u>

Required:

Find the operating cycle

Possible Answer

Let's calculate the individual working capital ratios,

$$\text{Inventory holding period} = \frac{156,300}{837,200} \times 365 = 68 \text{ days}$$

$$\text{Trade receivables' collection period} = \frac{\text{FRW } 225,000}{1,350,400} \times 365 = 61 \text{ days}$$

$$\text{Trade payables' payment period} = \frac{\text{FRW } 169,800}{837,200} \times 365 = 74 \text{ days}$$

We can use the inventory, trade receivables and trade payables ratios to calculate the cash operating cycle or cash ratio for Mariam Manufacturing Ltd, as follows:

	Days
Inventory holding period	68
Trade receivables' collection period	<u>61</u>
	129
Less trade payables' payment period	(74)
Cash operating cycle	<u>55</u>

6.1. Key Unit competence

To be able to identify and record cost accounts used in organization.

6.2. Prerequisite (knowledge, skills, attitudes and values)

During this unit, students need to revise some contents from the recording of financial transaction, the computation of cost (senior 4), Structure of costing system within organization, Cost behaviors analysis and costing methods and decision making (senior 5). Further reading goes back again to the cost statement and cost ascertainment with their specific account records.

6.3. Cross-cutting issues to be addressed

Note: The examples below are just to guide you on how to address cross-cutting issues throughout the unit but this does not mean that these are the only ones. You can address and give students opportunities to discuss all the crosscutting issues where possible taking consideration of their environment or community.

1. **Gender education:** Emphasis throughout this unit has to be put on how both male and female have the same opportunities when it comes participation in the activities of identifying cost accounts in organization.
2. **Inclusive education:** In addition to all having equal opportunities to study cost accounts, emphasis has to be put on how we (all), regardless of our background, economic or social setup have right to study that do not discriminate as our needs are the same. Students need to understand that this unit does not discriminate but promote inclusiveness of all.
3. **Financial Education:** With financial education, learners may describe strategies to reduce spending based on effective cost accounts and increase savings to become financially fit. In every lesson, learners can share briefly their progress towards their goals: how much strategies worked and what needs to improve on. While looking at financial management and institutions, learners need to appreciate the need for managing their finances and proper ways of managing their cost accounts.

- 4. Peace and Values:** Right before the lesson begins; there are quite a lot of opportunities for teachers to promote peace and values among learners. Being punctual for activities (time management), involvement in various activities (teamwork), keeping their school environment clean (responsibility), greeting one another are among such opportunities (empathy). In a lesson, the teacher encourages learners to greet one another, create a conducive learning environment, clean the chalkboard, arrange the classroom and assist one another with pens, books, class work, among others. Also, in case of conflicts within a lesson, take time to address the conflicts and discuss with learners appropriate measures to resolve conflicts.

6.4. Guidance on introductory activity

This introductory activity intends to attract students' attention and interest on cost statement preparation for well recording all cost under cost accounts system.

- Guide students to read the case study from the text book
- Guide them to work in pairs
- Have some pairs make presentations?
- Give constructive feedback and guide towards the lesson (you can use additional simulating questions)

Possible Answers to introductory activity

Answers:

1. A mistake of this company is non recording of cost information
2. To record all information. In principle, transactions must be recorded daily into the cost books basically maintained under inter-locking or integrated cost accounting system

6.5. List of lessons/sub-heading

Headings	Sub-headings	Learning objectives (from the syllabus or set according to the lesson title)	Number of periods
6.1 Introduction to cost accounts for accounting systems	6.1.1 Interlocking cost accounts	Identify the different cost accounts	8
	6.1.2 Integrated cost accounts		6
6.2 Recording and analysis of information relating to cost accounts.	6.2.1 Recording by interlocking system	Explain the content of cost accounts	8
	6.2.2. Reconciliation of cost and financial accounts		5
	6.2.3. Memorandum reconciliation accounts		5
	6.2.4. Recording by integrated system		5
6.3 Ending unit assessment			3

Lesson 1: Introduction to cost accounts

a. Learning objective

Identify the different cost accounts

b. Teaching resources

Basic materials for a class/ lesson to be conducted: Desks, students' books, internet, flip charts, markers, case studies and any other trustworthy and reliable resources to enhance learning.

c. Prerequisites/Revision/Introduction

Students have the basic knowledge on preparation of cost statement without to know how to record cost under interlocking system and integrated system in cost accounting which will help them to record very well all cost in an organization.

d. Learning activities

Activity 6.1

- Help students to form small groups as possible.
- Ask them to observe the picture.
- Guide students while they are discussing on the picture
- Distribute the flip charts, markers and pens into formed groups.
- Ask the group representatives to present their observations
- Give the constructive feedback

Possible Answers to learning activity 6.1

1. A) we have two accountants who are recording information in books.
B. We have also the materials used in recording information Such as computer, books, Rwandan coin, and pens.
2. 2. Recording the cost accounting information.

e. Application Activity 6.1

- Help students to form groups accordingly
- Guide them where they do not understand
- Each group should have time to present to their classmates
- Give constructive feedback

Possible Answers to Application Activity 6.1

Q. 1.

- i) is a single accounting system which contains both financial and cost accounts that is, there is no division between financial and cost accounts
- ii) Interlocking accounting system is a system in which company records his transactions on the basic of financial accounting principles and cost accounting principles separately. It means, there will be two records of accounts. One is financial accounts record and second is cost accounts record.
- iii) The cost ledger is the main ledger and records impersonal accounts i.e accounts relating to income and expenditure

Q.2.

- a) **Degree of integration:** This should be determined early in advance. Some business firms may integrate up to the stage of prime cost or factory cost. On the other hand, many undertakings integrate the whole of the records.
- b) **Provisions for accrued expenses,** prepayments and stocks should be dealt with by transfer to suitable suspense accounts, so that the balance remaining in each control account represents the charges for the periods.

Lesson 2: Recording and analysis of information relating to cost accounts

a. Learning objectives

Explain the content of cost accounts

b. Teaching resources

Basic materials for a class/ lesson to be conducted: Desks, students' books, internet, flip charts, markers, case studies and any other trustworthy and reliable resources to enhance learning, relative of books of prime entry

c. Prerequisites/Revision/Introduction (Guidance on how to start the lesson)

As studied from journalizing financial transactions (S4, unit 3), each accounting transaction is recorded more than once as double entry principles argued. However, certain costing systems opposite the rule.

d. Learning activities

- Help students to form small groups
- Ask them to read the case study
- Guide them while they are discussing
- Distribute the flip charts and markers
- Ask the group representatives to present their results
- Give the constructive feedback

Possible Answers to learning activity 6.2.

Answer:

1. I think accountants record monetary information or help to manage the finance of the business
2. Accounting is for recording, classifying, summarizing the accounting information and interpreting the results thereafter.
3. It is necessary for company to have the basic knowledge of recording accounting information, because this will help to make informed decisions like employing such employee (s) or not, spending in this or that, employing professional accountant or not, investing in this or that, purchase material and analyze all costs.

e. Application Activity 6.2.

- Request students to form group
- Distribute the printed application sheets
- Guide students in discussion
- Help them to understand the question
- One of group representatives presents its results and help the whole class to make conclusion.
- Give them a clear and constructive feedback

Possible Answers to application activity 6.2.

Answers: 6.2:

1.
 - a) Notional rent: It shows the nominal rent charge of premises owned by the company. This shows the cost of ~~the~~ these premises rather than renting these premises to outsiders.
 - b) Dividends received: A dividend is a share of profits and retained earnings that a company pays out to its shareholders and owners.

- c) Notional interest :is that interest which is charged by the management on the capital invested by the Owners (the main purpose of this charge is to show the nominal cost of the capital employed in the business rather than investing it outside the business
- d) The double entry method : In this system, the cost ledger includes the creditors' control account, the cash account, the provision for depreciation account and the debtors' control account in place of the general ledger cost control account.
- e) The third entry method: This method is similar to the double entry method but incorporates an extra account called the cost control account in which the costs are collected that can be analyzed in memorandum account which is outside the double entry system.
- f) The cost control account then enables the costs to be charged to finished goods account and other accounts by using it as the double entry

2. The advantages to a business firm of using an integrated cost accounting system:

- a) Accounting policies are standardized.
 - b) There is no need for duplication source documents.
 - c) There is no problem of reconciliation as there will only be one profit amount.
 - d) 4.Cost data can be presented promptly and regularly
 - e) The system is economical and easy to understand.
 - f) Integrated accounting helps in widening the outlook of the accountant and his staff and in return they appreciate the entire accounting system.
 - g) All cost data and accounts are automatically checked and thus cost figures are accurate.
 - h) All the accounts are maintained in an objective form; the process of cost ascertainment and cost control is facilitated.
3. Possible causes of differences between reported profit in cost accounting and financial accounting under the non-integrated cost accounting system are that some items appear only in financial accounts and others items appear in cost accounting only.

Items appearing in financial.

Financial expenses

- a) Fines and penalties
- b) Donations
- c) Interest on bank loans
- d) Stamp duty paid on issue of shares
- e) Losses from sale of fixed assets

Financial income

- a) Rent receivable
- b) Interest received on bank deposits
- c) Dividends received
- d) Profit from sale of fixed assets

Items appearing in cost accounting

- a) Notional interest
- b) Notional rent
- c) Difference bases of stock valuation
- d) Overheads: in the financial accounts, the actual overheads expenses are charged to profit and loss accounts.

In cost accounts the overheads are absorbed at predetermined rate.

6.6. Summary of the unit

This unit summarizes the methods used. In order to run the business efficiently and successfully, it is necessary to use a suitable accounting system. This system should clearly state whether cost and financial transactions are to be kept integrated or separately (non-integrated). When cost and financial accounting records are integrated, the system in question is referred to as integrated or integral accounting. If cost and financial transactions are kept separately, the system is referred to as a non-integrated accounting or cost control system. While it is a non-integrated accounting system that requires reconciliation between financial and cost accounts, integrated accounting does not require reconciliation between two sets of accounts.

6.7. Additional information

The teacher is recommended to use additional exercises on cost accounting entry with integrated system and interlocking system in order for more comprehension. This will emphasize strengthening teaching and learning about capturing transactions in the cost accounts system.

SKILLS LAB

Identify anyone manufacturing company in your origin community. Visit that company and find out if the company keeps any records. Identify the records

that are kept and the kind of company information such records capture. Analyze the identified records, interpret them and advise this company on what to do to be able to earn desired profit. Generate a report of your findings.

6.8. Guidance to the teacher

Build:

- Give students clear guidance on the activity they are going to undertake
- Help them form groups according to their proximity
- Provide timelines for this activity
- Remember students need enough time to carry on the field visit, you can as well support them get the required permissions to enter manufacturing company's premises.
- Remind students that they will provide a report at the end of this activity (Feel free to include any necessary key component of the report needed)
- Remind students to behave appropriately while visiting the companies

Practice:

- Students visit the manufacturing companies found in their local area
- Students collect and analyze data found
- Students compile a report that include (key costs found, their interpretations and the advice given to the company owners)

Present:

- Students present the report to the entire class
- Fellow students can ask questions and the teacher guide / complement students presentations
- There will be no specific advice since all advices depends on what students found on field.

Project Assignment:

Here you provide any relevant project activity that students can work on to help them develop and exhibit necessary skills required under this unit.

POSSIBLE ANSWERS:

Possible costs that can be found in a manufacturing company:

1. Raw material costs
2. Labour costs
3. Overheads (all indirect costs)
4. Directs expenses

6.8. End unit assessment

- a) Distribute assessment sheets to the students
- b) Give clear and concise instructions
- c) Invigilate the assessment
- d) Collect the assessment sheet
- e) Give clear and concise constructive feedback

Answers to end unit assessment activities

Answers:U.6

1. A
2. C
3. A
4. A

5. MEMORANDUM RECONCILIATION

	FRW –	FRW
Profit as per cost accounts		23,100
Add: Opening stock of Finished goods	300	
Notional rent	1,500	
Depreciation	500	
Dividend received	1,300	
Interest income	1,900	
Miscellaneous income	<u>2,800</u>	
		8,300
Less: Opening stock of raw material	400	
Closing stock of raw material	300	
Closing stock of finished goods	300	
Loss on sale	2,100	
Interest paid	800	
Corporation tax	3,300	
Company donation	800	
Dividend paid	700	
		<u>(8,700)</u>
		22,700

MEMORANDUM RECONCILIATION ACCOUNT (Vertical format)

Items not debited in cost A/Cs		Profit as per cost accounts	23,100
Difference Opening stock of raw material	400	<u>Items not credited in cost A/Cs</u>	
Closing stock of raw material	300	Difference in Opening stock of Finished goods	300
Closing stock of finished goods	300	Notional rent	1,500
Loss on sale	2,100	Depreciation	500
Interest paid	800	Dividend received	1,300
Corporation tax	3,300	Interest income	1,900
Company donation	800	Miscellaneous income	2,800
Dividend paid	700		
Profit as per financial A/C			
	31,400		31,400

6.9. Additional activities

Remedial activities

1. **Outline the advantages to a business firm of using an integrated cost accounting system.**

ANSWER

1. The advantages to a business firm of using an integrated cost accounting system:
 - a) Accounting policies are standardized.
 - b) There is no need for duplication source documents.
 - c) There is no problem of reconciliation as there will only be one profit amount.
 - d) Cost data can be presented promptly and regularly.
 - e) The system is economical and easy to understand.
 - f) Integrated accounting helps in widening the outlook of the accountant and his staff and in return they appreciate the entire accounting system.

- g) All cost data and accounts are automatically checked and thus cost figures are accurate.
- h) All the accounts are maintained in an objective form; the process of cost ascertainment and cost control is facilitated.

2. In this, cost of materials, wages and overheads of each job undertaken is posted.

- a) General ledger adjustment account
- b) Stores ledger control accounts
- c) Work- in-progress ledger
- d) Finished goods control account

ANSWERS

2.A

3. Briefly differentiate interlocking system and integrated system

ANSWER

Integrated system refers to the accounting system where a single set of accounts are prepared instead of two separate set of accounts. While interlocking systems, two separate set of accounts are prepared.

Consolidation activities

- 1. Loss of material by fire is debited to:
 - a) Financial Profit and Loss A/C
 - b) Costing Profit and Loss A/C
 - c) Contract A/C
 - d) Contractee's A/C

ANSWER:

1.B

- 2. The following figures have been extracted from the costing records and financial books of a factory. You are required to pass the necessary entries in the cost journal:

	FRW
Purchases	390,000

Carriage inward	5,850
Stores issues	358,800
Productive wages	346,320
Unproductive wages	121,680
Work-on- cost	348,400
Material used in repairs	3,120
Cost of completed jobs	1,280,630

ANSWER

COST JOURNAL

	Particulars	Debit FRW	Credit FRW
	Store ledger control a/c		
1	To cost ledger control a/c (being purchase of materials)	390,000	390,000
	Store ledger control a/c		
2	To cost ledger control a/c (being carriage inward treated as part of material cost)	5,850	5,850
	Work-in-progress ledger control a/c		
3	To stores ledger control a/c (stores issues to production)	358,800	358,800
	Wages control a/c		
4	To cost ledger control a/c (being direct wages paid)	346,320	346,320
	Factory Overheads control a/c		
5	To cost ledger control a/c (being indirect wages incurred)	121,680	121,680

6	Factory overheads control A/C To cost ledger control A/C (Being works overhead incurred)	348,680	348,680
7	Factory overheads control A/C To Store ledger control A/C (Being material used in repairs)	3,120	3,120
8	Finished stock ledger control A/C To work-in-progress ledger control A/C	1,280,630	1,280,630

Extended activities

1. What is an interlocking bookkeeping system?
 - a) A single, combined system containing both cost and financial accounting records
 - b) A system combining cost accounting and management accounting
 - c) A system with high secured access
 - d) A system where separate accounts are kept for cost accounting and for financial accounting

Answer

1.A

2. The following information is extracted from MUGENZI ' S books on 31 March 2011: Opening stock of materials: FRW 250,000 Closing stock of materials: FRW 300,000 Purchases of materials: FRW 1,200,000 Return to supplier.....: FRW 200,000 Indirect materials issued..... FRW 120,000 Direct wages..... FRW 260,000 Indirect wages..... FRW 80,000 Factory expenses..... FRW 110,000 Production overheads recovered: FRW 300,000 (The producer used interlocking cost account system)
 - i) Determine the value of direct materials issued to production department
 - ii) Record the entry in cost accounts
 - iii) Identify whether the production overheads account is over or undercharges
 - iv) Determine the amount of production overhead account over or under charged

ANSWER:

Raw material issued: 250,000+1,200,000-

$$(300,000+120,000+300,000)=830,000$$

Dr	Store ledger control account	Cr
-----------	-------------------------------------	-----------

Balance b/d	250,000	General ledger adjust.acc	200,000
General ledger adjust.acc	1,200,000	W.I.P Ledger control acc	830,000
		Production overheads acc.	120,000
		Balance c/d	300,000

Dr	General ledger adjustment account	Cr
-----------	--	-----------

Store ledger control acc.200,000	Store ledger control acc. 1,200,000
	Wages control account 340,000
	Production overheads acc.110,000

Dr	Work-in-progress ledger control account	Cr
-----------	--	-----------

Store ledger control account	830,000
Wages control account	260,000
Production overheads acc	300,000

Wages control account

Dr		Cr
-----------	--	-----------

General ledger adjust.acc. 340,000	W.I.P ledger control acc.(direct wage) 260,000
	Production O/H A/C (indirect wage)80,000

Dr

Production overheads account	Cr
-------------------------------------	-----------

Store ledger control a/c 120,000

Wages control a/c 80,000

General ledger adjust.a/c 110,000

W-I-P ledger control A/C 300,000

COSTING PROFIT & LOSS A/C 10,000

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