
Economics

For Rwandan Schools

Senior Four
Teacher's Guide

REB

Rwanda Education Board



©2020 Rwanda Education Board

All rights reserved

This book is property of the Government of Rwanda.

Credit must be given to REB when the content is quoted.



FOREWORD

Dear teacher,

Rwanda Education Board is honoured to present Senior four economics teacher's guide which serves as a guide to competence-based teaching and learning to ensure consistency and coherence in the learning of the economics subject. The Rwandan educational philosophy is to ensure that learners achieve full potential at every level of education which will prepare them to be well integrated in society and exploit employment opportunities.

In line with efforts to improve the quality of education, the government of Rwanda emphasizes the importance of aligning teaching and learning materials with the syllabus to facilitate their learning process. Many factors influence what they learn, how well they learn and the competences they acquire. Those factors include the relevance of the specific content, the quality of teachers' pedagogical approaches, the assessment strategies and the instructional materials available. We paid special attention to the activities that facilitate the learning process in which learners can develop ideas and make new discoveries during concrete activities carried out individually or with peers. With the help of the teachers, learners will gain appropriate skills and be able to apply what they have learnt in real life situations. Hence, they will be able to develop certain values and attitudes allowing them to make a difference not only to their own life but also to the nation.

This is in contrast to traditional learning theories which view learning mainly as a process of acquiring knowledge from the more knowledgeable who is mostly the teacher. In competence-based curriculum, learning is considered as a process of active building and developing of knowledge and understanding, skills and values and attitude by the learner where concepts are mainly introduced by an activity, situation or scenario that helps the learner to construct knowledge, develop skills and acquire positive attitudes and values.

In addition, such active learning engages learners in doing things and thinking about the things they are doing and they are encouraged to bring their own real experiences and knowledge into the learning processes. In view of this, your role is to:

- Plan your lessons and prepare appropriate teaching materials.
- Organize group discussions for learners considering the importance of social constructivism suggesting that learning occurs more effectively when the learner works collaboratively with more knowledgeable and experienced people.
- Engage learners through active learning methods such as inquiry methods, group discussions, research, investigative activities and group and individual work activities.

- Provide supervised opportunities for learners 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 learners' contributions in the class activities.
- Guide learners towards the harmonization of their findings.
- Encourage individual, peer and group evaluation of the work done in the classroom and use appropriate competence-based assessment approaches and methods.

To facilitate you in your teaching activities, the content of this teacher's guide is self-explanatory so that you can easily use it. Even though this teacher's guide contains the answers for all activities given in the learner's book, you are requested to work through each question and activity before judging learner's findings.

I wish to sincerely extend my appreciation to REB staff who organized the editing process of this teacher's guide. Special gratitude also goes to lecturers, teachers, illustrators and designers who supported the exercise throughout. Any comment or contribution would be welcome to the improvement of this textbook for the next edition.

Dr. NDAYAMBAJE Irénée

Director General, REB

ACKNOWLEDGEMENT

I wish to express my appreciation to all the people who played a major role in editing process of this Economics teacher's guide for Senior four. It would not have been successful without their active participation.

Special thanks are given to those who gave their time to read and refine this textbook to meet the needs of competence based curriculum. I owe gratitude to different Universities and schools in Rwanda that allowed their staff to work with REB to edit this book. I therefore, wish to extend my sincere gratitude to lecturers, teachers, illustrators, designers and all other individuals whose efforts in one way or the other contributed to the success of this edition.

Finally, my word of gratitude goes to the Rwanda Education Board staff particularly those from Curriculum, Teaching and Learning Resources Department who were involved in the whole process of editorial work.

Joan Murungi,
Head of CTRLD

Contents

Part 1: Introduction

Section 1: Basic information	1
1.1. Organisation of the Book.....	1
1.2. The Structure of the Syllabus.....	2
1.3. Background Information on the New Curriculum.....	3
1.4. Rationale of Teaching and Learning Economics.....	3
1.5. Types of Competences and Their Acquisition.....	3
1.6. Cross-Cutting Issues to be Included During Learning.....	6
1.7. Special Needs Education and Inclusivity.....	8
Section 2: Preparing to teach and the teaching process	10
2.1. Methods, Techniques and Strategies of Teaching Economics.....	10
2.2. Important attitudes in learning of Economics	14
2.3. Learner's role in learning Economics	15
2.4. Teacher's Role in Learning and Teaching	16
2.5. Teaching resources	17
Sample Lesson Plan.....	23
Section 3: Assessment and Evaluation methods	27
3.1. Types of assessment	27
3.3. Reporting to parents	31

Part 2: Units Section

Unit 1: Basic Economic Concepts and the Importance of Economics.....	33
Unit 2: Fundamental Principles of Economics.....	42
Unit 3: Nature and Scope of Economics.....	49
Unit 4: Equations and Fractions in Economic Models.....	53
Unit 5: Theory of Demand.....	59
Unit 6: Theory of Supply.....	66
Unit 7: Equilibrium and Price Determination.....	71
Unit 8: Elasticity.....	76
Unit 9: Consumer Theory.....	81
Unit 10: Price Mechanism.....	86
Unit 11: Introduction to the Theory of Production.....	92
Unit 12: Input-Output Relationship (Production Function).....	106
Unit 13: Theory of the Firm.....	113
Unit 14: Theory of the Cost.....	120
Unit 15: Revenues and Profits of A Firm.....	132

Part 1: Introduction

Section 1: Basic information

1.1 Organisation of the book

This Teacher's Guide is organised into **two** main sections or parts. **Part 1** is the general introduction section detailing pedagogical issues. **Part 2** is the main topics area. It gives the details of the expected learning **units** as organised in the Learner's Book. The main elements of Part 2 are:

- (a) **Topic Area** - detailing the various **Sub-topic Areas** and the units covered under the topic area.
- (b) **Unit Heading** – this is accompanied by some text in the learner's book to motivate the learners. Also, the total number of lessons per unit is given.
- (c) **Key Unit Competence**: This is the competence, which will be achieved once learners have met all the learning objectives in the unit.
- (d) Outline of **main sections** in the unit – is a quick summary of the subtopics covered under the unit.
- (e) **Learning Objectives**: The content in this area is broken down into three categories of learning objectives, that is, knowledge and understanding; skills; attitudes and values.
 - (i) **Knowledge and understanding**: As in the existing curriculum, knowledge and understanding is very important.
 - (ii) **Skills**: It is through the skills that learners apply their learning and engage in higher order thinking. These skills relate to the upper levels of Bloom's taxonomy. They lead to deep rather than surface learning.
- (iii) **Attitudes and values**: Truly engaging with the learning requires appropriate attitudes and values that relate to the unit.
- (f) **Links to other subjects**: It is important for learners to gain an understanding of the interconnections between different subjects so that learning in each subject is reinforced across the curriculum. This platform does exactly that. It prepares the teacher to pass this information to the learners so that they are aware.
- (g) **Assessment criteria**: This is meant to evaluate whether learners have succeeded in achieving the Key Unit Competence(s) intended. This section will help the teacher in assessing whether the unit objectives have been met.
- (h) **Background information**: This is the introduction part of the unit. It aims at giving insights to the teacher on the subject matter.
- (i) **Additional information for the teacher**: This section gives more information than what the syllabus recommends for purposes of preparing the teacher to answer tough questions from learners.
- (j) **Learning Activities**: These activities are given per lesson and have these sub-sections:
 - (i) Lesson titles.
 - (ii) Specific objectives of the

lesson.– Materials and learning resources.

- (iii) Teaching methodology.
- (iv) Suggested teaching/learning approach.
- (v) Generic competencies covered.
- (vi) Cross-cutting issues covered.
- (vii) Special needs and multi-ability learning.
- (viii) Formative assessment.
- (ix) Extended exercises/activities for fast learners and remedial (reinforcement) exercises/activities for slow learners.
- (x) Answers to self-evaluation exercises.

These activities are repeated in all lessons until the end of the unit. They are followed by the answers on the Unit Assessment questions at the end of every unit.

1.2 The Structure of the syllabus

Economics is taught and learned in senior secondary schools as a **core subject**. At every grade, the syllabus is structured in **Topic areas, Sub-topic areas** and then further broken down into **Units**. The units have the following elements:

- (a) Each Unit is aligned with the **Number of Lessons**.
- (b) Each Unit has a **Key Unit Competence** whose achievement is pursued by all teaching and learning activities undertaken by both the teacher and the learners.
- (c) Each Key Unit Competence is broken into three types of **Learning Objectives** as follows:
 - (i) **Type I:** Learning objectives relating to Knowledge and Understanding. These are

associated with Lower Order Thinking Skills or **LOTS**.

- (ii) **Type II and Type III:** These learning objectives relate to acquisition of skills, Attitudes and Values. They are associated with Higher Order Thinking Skills or **HOTS**. – These learning Objectives are actually considered to be the ones targeted by the present reviewed syllabus.
- (d) Each Unit has a **Content** area which indicates the scope of coverage of what a teacher should teach and student should learn in line with stated learning objectives.
- (e) Each Unit suggests **Learning Activities** that are expected to engage learners in an interactive learning process as much as possible (learner-centred and participatory approach).
- (f) Finally, each Unit is linked to Other Subjects, its **Assessment Criteria** and the Materials (or Resources) that are expected to be used in teaching and learning process.
- (g) In all, the Economics Senior 4 level has got **two** Topic Areas namely:
 - (i) General Introduction to Economics
 - (ii) Microeconomics
- (h) These Topic Areas are further divided into **four Sub-topic areas** as follows:
 - (i) Basic economic concepts and principles.
 - (ii) Principle tools of economic analysis
 - (iii) Price theory.
 - (iv) Production theory.

As for units, there are a total of **15** units in Economics Senior 4.

1.3 Background Information on new curriculum

The goal to develop:

- (a) A competence-based society.
- (b) The globalisation process.
- (c) The growth of the world market and competition at the global level.
- (d) A shift from knowledge-based to competence-based curriculum.

All these necessitated a comprehensive review of the national curriculum to address the required skills in the Rwandan education system.

It is against this background that the syllabus at secondary level was reviewed. This ensures that it is responsive to the needs of the learner. The syllabus curriculum shifts from knowledge-based learning to competence-based learning.

Competence-based learning refers to systems of instruction, assessment, grading, and academic reporting. It is based on learners demonstrating that they have acquired and learned the prerequisite knowledge, skills and attitudes as they progress through their education. Apart from being integrative, the newly revised syllabus guides the interaction between the teacher and the learner in the learning process. It further puts greater emphasis on skills a learner should acquire during each unit of learning. As a competence-based curriculum, it elaborates on the three aspects of **knowledge, skills and attitudes** in Economics.

1.4 Rationale of Teaching and Learning Economics

Economics is concerned with the study of how scarce resources are allocated, given the unlimited wants of a society.

Economic decisions crucially influence the quality of life experienced by people throughout the world. The study of Economics can help individuals, groups and societies make choices that assist them improve their quality of life.

Economics prepares students for the real world of work through career paths like Entrepreneurship, Management, Business, Accounting and Finance, Marketing, Tourism, Statistics, International Economics and Policies, Agriculture Economics, Environmental Studies, and Development Studies. It also gives students the critical knowledge and skills to communicate ideas using the language and tools of the discipline of economics. Furthermore it provides a useful foundation not only for further study in Economics but also for study in other Social Science subjects, including History, Politics and International relations.

1.5 Types of Competences and their acquisition

Competencies are statements of the characteristics that learners should demonstrate. It indicates their preparedness and the ability to perform independently in professional practice. The two types of competencies envisaged in this curriculum are **basic competences** and **generic competences**.

a) Basic competences

Basic competences are addressed in the stated broad subject competences and in objectives highlighted year on year basis and in each of units of learning. They include:

i) **Literacy**

- Reading a variety of texts accurately and quickly.
- Expressing ideas, messages and events through writing legible texts in good hand-writing with correctly spelt words.
- Communicating ideas effectively.
- Listening carefully for understanding and seeking clarification when necessary.

ii) **Numeracy**

- Computing accurately using the four mathematical operations such as +, -, x and :-.
- Manipulating numbers, mathematical symbols, quantities, shapes and figures to accomplish a task involving calculations, measurements and estimations.
- Use numerical patterns and relationships to solve problems related to everyday activities like commercial context and financial management.
- Interpreting basic statistical data and other information using tables, diagrams, pie charts and graphs.

iii) **ICT and digital competences**

- Locating, extracting, recording and interpreting information from various sources.
- Assessing, retrieving and exchanging information via internet or cell phones.
- Using cell phones and internet for

leisure and for money transactions.

- Using computer keyboard and mouse to write and store information.
- Using information and communication technologies to enhance learning and teaching (all subjects).

iv) **Citizenship and national identity**

- Relating the impact of historical events on past and present national and cultural identity.
- Understanding the historical and cultural roots of Rwandan society and how the local infrastructure functions in relation to the global environment.
- Demonstrating respect for cultural identities and expressing the role of the national language in social and cultural context.
- Advocating for the historical, cultural and geographical heritage of the nation within the global dimension.
- Showing national consciousness, a strong sense of belonging and patriotic spirit.
- Advocating for a harmonious and cohesive society and working with people from diverse cultural backgrounds.

v) **Entrepreneurship and business development**

- Applying entrepreneurial attitudes and approaches to challenges and opportunities in school and in life.
- Understanding the obligations of the different parties involved in

employment.

- Planning and managing micro projects and small and medium enterprises.
- Creation of employment and keeping proper books of accounts.
- Risk-taking in business ventures and in other initiatives.
- Evaluating resources needed for a business.

b) Generic competences

The generic competencies are competences that must be emphasised and reflected in the learning process. They are briefly described below and teachers must ensure that learners are engaged in tasks that help them to acquire the competences.

(i) Critical thinking and problem solving skills: The acquisition of such skills will help learners to think imaginatively, innovatively and broadly and be able to evaluate and find solutions to problems encountered in their surroundings.

(ii) Creativity and innovation: The acquisition of such skills will help learners to take initiatives and use imagination beyond knowledge provided in classroom to generate new ideas and construct new concepts.

(iii) Research skills: This will help learners to find answers to questions based on existing information and concepts and use it to explain phenomena from gathered information.

(iv) Communication in official languages: Teachers, irrespective of

being language teachers should ensure the proper use of the language of instruction by learners. The teachers should communicate clearly and confidently. They should convey ideas effectively through spoken and written English by applying appropriate grammar and relevant vocabulary.

(v) Cooperation, interpersonal management and life skills: This will help the learner to cooperate in a team in whatever task assigned and to practice positive ethical moral values and while respecting rights, feelings and views of others. Perform practical activities related to environmental conservation and protection. Advocate for personal, family and community health, hygiene and nutrition and responding creatively to a variety of challenges encountered in life.

(vi) Lifelong learning: The acquisition of such skills will help learners to update knowledge and skills with minimum external support. The learners will be able to cope with evolution of knowledge advances for personal fulfilment in areas that are relevant to their improvement and development.

Economics as a subject and developing the competences

The national policy documents based on national aspirations identify some 'basic Competencies' alongside the 'Generic Competencies' that will develop **higher order critical thinking skills** and help the student learn Economics for application in real life. The nature of learning activities which are mainly inquiry oriented contribute to the achievement of those competences. Through observations, experimentation, and presentation of information during

the learning process, the student will not only develop deductive and inductive skills but also acquire cooperation and communication, critical thinking and problem-solving skills. This will be realised when learners make presentations leading to inferences and conclusions at the end of learning unit. This will be achieved through student group work and cooperative learning of Economics, which in turn will promote interpersonal relations and teamwork.

1.6 Cross-cutting issues to be infused during learning

These are emerging issues which need to be incorporated in the learning process. Each of the cross-cutting issues has its own important programme of learning reflecting key national priorities. This learning is integrated into the syllabuses of subjects across the curriculum rather than each issue having a dedicated timetable slot of its own. As a result of this integration, the learning activities in the units of subjects across the curriculum incorporate all the learning associated with the cross-cutting issues. The eight cross-cutting issues are:

a) *Peace and Values Education*

The need for Peace and Values Education in the curriculum is obvious. Peace is clearly critical for society to flourish and for every individual to focus on personal achievement and their contribution to the success of the nation. Values education forms a key element of the strategy for ensuring young people recognise the importance of contributing to society, working for peace and harmony and being committed to avoiding conflict.

b) *Financial Education*

Financial education makes a strong contribution to the wider aims of education. It makes learning relevant to real life situations. It aims at a comprehensive financial education program as a precondition for achieving financial inclusion target and improves the financial capability of Rwandans. Financial education has a key role of not only improving knowledge of personal but also transforming this knowledge into action. It provides the tools for sound money management practices on earnings, spending, saving, borrowing and investing. Financial education enables people to take appropriate financial services both formal and informal that is available to them and encourages financial behaviours that enhance their overall economic well-being.

c) *Standardisation Culture*

Standardisation culture develops learners' understanding of the importance of standards as a pillar of economic development and in the practices, activities and lifestyle of the citizens. It is intended that the adoption of standardisation culture should have an impact upon health improvement, economic growth, industrialisation, trade and general welfare of the people. While education is the foundation and strength of our nation, standards are one of the key pillars of sustainable economic development.

d) *Genocide Studies*

Genocide Studies provides young people with an understanding of the circumstances leading to the genocide

and the remarkable story of recovery and re-establishing national unity. Genocide Studies helps learners to comprehend the role of every individual in ensuring nothing of the sort ever happens again.

The intent of a cross-cutting curriculum around the topic of genocide is to fight against genocide, genocide denial, and genocide ideology; and to equip learners with a more fundamental and comprehensive understanding of the genocide, thereby preventing further human rights violations in the future and enabling Rwanda's population of young people to more competently and thoughtfully enter the workforce. So, it needs to be emphasised.

e) ***Environment and sustainability***

The growing awareness of the impact of the human race on the environment has led to recognition of the need to ensure our young people understand the importance of sustainability as they grow up and become responsible for the world around them. Hence Environment and Sustainability is a very important cross-cutting issue. Learners need basic knowledge from the natural sciences, social sciences and humanities to understand and interpret principles of sustainability. They also need skills and attitudes that will enable them in their everyday life to address the environment and climate change issue and to have a sustainable livelihood.

f) ***Gender education***

There is a strong moral imperative to afford every individual their basic human rights and gender inequality results

in women and girls being treated less favourably than men. A strongly negative impact of unequal treatment, which affects the nation as a whole, is the fact that it results in women being held back and their talents and abilities not being fully realised. With a good understanding of the principles of Gender Equality, it is intended that future generations will ensure that the potential of the whole population is realised.

g) ***Comprehensive sexuality education (HIV and AIDS, STI, Family planning, Gender equality and reproductive health)***

Comprehensive sexuality education, which is age appropriate, gender sensitive and life skills based can provide young people with the knowledge and skills to make informed decisions about their sexuality and life style. Preparing children and young people for the transition to adulthood has been one of humanity's greatest challenges with human sexuality and relationships at its core.

Few young people receive adequate preparations for their sexual lives. This leaves them potentially vulnerable to coercion, abuse and exploitation. Unintended pregnancy and sexually transmitted infections (STIs) including HIV and AIDS. Many young people approach adulthood faced with conflicting and confusing messages about sexuality and gender. This is often exacerbated by embarrassment, silence, disapproval and open discussion of sexual matters by adults (parents, teachers) at very time when it is most needed.

Comprehensive sexuality education supports a rights - based approach in which values such as respect, acceptance tolerance, equality, empathy and reciprocity are inextricably linked to universally agreed human rights. A clear message concerning these dangers and how they can be avoided, from right across the curriculum, is the best way to ensure that young people understand the risks and know how to stay healthy.

h) ***Inclusive Education***

Inclusive education involves ensuring all learners are engaged in education and that they are welcomed by other learners so that everyone can achieve their potential. Inclusive practice embraces every individual regardless of gender or ability including those with learning difficulties and disabilities. The almost focus of inclusive curriculum is on ensuring participation in education of learners with different learning styles and other difficulties. To be successful, it entails a range of issues including teacher's positive attitudes, adapting the learning resources, differentiation of teaching and learning methods and working together. Overall, the benefits of an inclusive curriculum extend to all learners.

1.7 Special needs education and inclusivity

All Rwandans have the right to access education regardless of their different social economic or political background. The underminings of this provision would naturally hold that all citizens benefit from the same menu of educational programs.

The possibility of this assumption is the focus of special needs education. The critical issue is that we have persons/ learners who are totally different in their ways of living and learning as opposed to the majority. The difference can either be emotional, physical, sensory and intellectual learning challenges traditionally known as mental retardation. These learners equally have the right to benefit from the free and compulsory basic education in the nearby ordinary/ mainstream schools. Therefore, the schools' role is to enrol them and also set strategies to provide relevant education to them. The teacher therefore is requested to consider each learner's needs during teaching and learning process. Assessment strategies and conditions should also be standardised to the needs of these learners. Also, ensure that you include learners with special educational needs in classroom activities as much as possible.

The special needs children can fall in any of the following common categories:

- Physical difficulties.
- Visual difficulties.
- Hearing difficulties.
- Mental difficulties.
- Genocide traumatised learners

The teacher should identify such cases and help facilitate the affected learners learning. For example, learners with visual and hearing difficulties should sit near the teacher's table for easy supervision and assistance. The following are some suggestions on how to support special needs children in your class.

(a) Learners with physical difficulties

In this group of learners, the affected

areas are normally some body parts, especially the limbs. There may be partial or total loss of use of the limbs. In case the legs are affected, the learners will need assistance during activities that involve movement. This could be during a nature walk and other activities that learners have to stand for some reason. The teacher should organise for the learner's ease of movement around. The learner should also be given time to catch up with the others.

In case the hands are affected, the learners should be given more time to finish their work. In both cases, the learners should not be pressurised to do things that can cause injury or ridicule.

(b) Learners with visual difficulties

These learners normally have problems with their eyesight. They should sit in a position where they are able to see the chalkboard without straining

Note: The learner could be longsighted or short sighted.

The material to be observed should be brought closer to the learner and a magnifying lens used where necessary. The teacher should use large diagrams, charts and labels. In some cases, the learners can be allowed to touch and feel whatever they are looking at. Other learners can assist by reading aloud. The lighting system in the classroom can also be improved.

The teacher should read aloud most of the things he/she writes on the chalkboard.

(c) Learners with hearing difficulties

The affected part in this case is the ear. The learner should have **hearing aids**. The teacher should use as many visual

aids as possible. They should also project their voice and always talk while facing the learners. Use of gestures and signs while talking helps the learner figure out what the teacher is saying as well.

(d) Learners with speech difficulties

A common example in a normal class is the **stammer**. They always speak with a lot of difficulties. The teacher should be patient with them and encourage such learners to express themselves in their own way. Such learners should be given more written exercises.

(e) Learners with mental difficulties

The teacher should try to identify the nature and level of the mental difficulty. Learners with mental difficulties should then be given special assistance and attention at an individual level. They can be given special tests or assessments. In general, all the learners with difficulties should be reinforced promptly. This encourages and motivates them. The teacher and the rest of the class should never ridicule learners with any of the difficulties. Note that generally, people with any kind of disability can be very sensitive to any kind of negative comments or criticism.

Remind them that 'Disability is not inability'.

The teacher should avoid giving privileges where the learners do not deserve them. Treat them fairly but not with undue favours. In extreme cases it can be recommended for the learners to join a special school.

(f) Genocide traumatised learners

Studies have shown that learners from families that were affected by genocide suffer post-traumatic stress disorder

(PTSD). As such, they need to be treated as a special case. As a teacher, you need to be careful when dealing with such learners. Also, the teacher needs to be in control especially when the topic under discussion touches on genocide issues. Any language that may elicit emotional reactions from learners either by fellow learners or by the teacher him or herself should be avoided.

Section 2: Preparing to teach and the teaching process

2.1 Methods, techniques and strategies of teaching Economics

Methods

Teaching methods are the approaches that the teacher employs during a lesson. The two main teaching methods are teacher-centred and learner-centred.

In the ***teacher-centred method***, the teacher is the active participant in giving knowledge, skills and attitudes to the learner who is a passive recipient. The teacher may therefore use such approaches like dictating notes, reading a passage from the course book or giving a lecture to the class. The learners are generally not actively involved in the lesson. This method is mostly used when the teacher intends to cover broader areas in a short time or in areas where the students or learners do not require many explanations. This method **should be avoided at all costs** because the learner is not fully involved.

The ***learner-centred method*** or the ***activity-oriented*** is the opposite of teacher-centred method. In this method, the learners are active participants in the learning process. Learners are the doers of the activities. This method **should be advocated for**. The teacher's role in this method is that of a guide and a facilitator in the learning process. The learners are required to examine, find out, determine,

give their opinions (in discussions), draw comparisons and participate in debates and projects among others. Learning is all about the learner. The teacher's role in this method is to find out whether the learner has acquired the required skills. He or she observes the learner's participation and evaluates them after the lesson. The teacher may also come in to help the learner understand a concept or assist in explaining some concepts. This method **should be employed across all units**.

Techniques

Techniques are basically the specific activities that the learners are involved in during a lesson.

Learner-centred activities may include group discussions, role-playing, question-answer approach, drawing of graphs or dramatising. The teacher should use the most appropriate technique during a lesson to enhance learning and acquisition of knowledge and skills.

Strategies

Apart from the methods and techniques that can be used to teach Economics, a teacher can also change his or her strategy to aid further understanding of the subject. Strategies are the sequences or procedures that can be applied to make the lesson interesting. The strategy to be adopted is mainly indicated in the lesson plan. The teacher indicates the activities to be performed both by the learner and the teacher from the start of the lesson till the end. This kind of arrangement helps the teacher to consistently refer to the activity or strategy that best suits a particular lesson or topic.

Teaching techniques

Methods, techniques and strategies are

usually confused to mean the same. These terms, though related, refer to different activities in the course of teaching. Below are some of the teaching techniques that teachers can use in teaching Economics. They include, but not limited to:

- a) Teacher exposition
- b) Group discussions and activities
- c) Education tours to relevant sites
- d) Inquiry
- e) Debates
- f) Projects
- g) Simulation
- h) Role-playing and dramatisation
- i) Question and answer
- j) Lectures
- k) Use of resource persons

(a) Teacher exposition

Teacher exposition is the technique used when introducing new concepts, especially when introducing new topics. The teacher often uses this method to explain concepts that the students are meeting for the first time. The teacher should therefore ensure that the students understand these new concepts before going deep in the coverage of the content. This technique is mainly teacher-centred since the teacher provides background information to any new concept. This provides students with the opportunity to understand the concepts, thereby understanding the topic well.

(b) Group discussion and activities

Holding a class discussion is one of the most effective techniques of teaching Economics. The role of the teacher is that of a facilitator. The teacher can divide the students into groups of manageable members. The teacher can then assign each

group a discussion topic. The teacher can also hold a whole class discussion where each student is encouraged to participate by giving opinions, asking questions and contributing to the discussion fully. When holding discussions, the teacher should encourage students to give local examples and provide solutions they can identify with in their local areas.

(c) Education tours to relevant sites

Organising an educational tour to relevant sites is a very important technique that teachers can use to ensure effective learning. Students get to learn and understand better what they learn in class. Moreover, the students will be able to break the monotonous class lessons. Such tours, such as to the local market, will enable the students to collect information for themselves. This will enhance first-hand information collection.

Before leading the students to an education trip, the teacher should prepare adequately for the trip, treating it as a lesson like any other. It is advisable that the teacher is aware of the places of fieldwork, having visited the places previously. This is necessary because it enables the teacher to identify the areas or points of interest and therefore develop the lesson and its objectives. If it is a visit to a nearby market, the teacher must first ask permission from the relevant local authority and prepare some respondents on the questions the students are likely to ask. The teacher should then ensure that the actual time and day of visit is adhered to. The teacher needs to prepare students on the areas of visit. The students also

require to be prepared in terms of their expected behaviour, the questions they should ask and the activities they will be involved in. Some of the activities include observing, drawing sketches, making notes, collecting specimens or samples, measuring, classifying, listening and interviewing among others.

After the visit, the teacher should give the students opportunity to report on what they saw and their opinion about the trip and areas of the study.

The following are some of the advantages of using education tours:

- i) Students learn to be independent in gathering information.
- ii) It exposes the students to real life situations.
- iii) Students develop the skill of leadership and the spirit of teamwork.
- iv) It enables the learners to develop the skills of observation, data collection, note-taking, interviewing and analysis among others.
- v) It is a valuable break from the classroom monotony.

(d) Inquiry

This is a quest to find out more about a given issue. In this technique, the student attempts to carry out further investigation on a topic of learning for purposes of getting a solution to a given problem. The investigation may involve reading several sources in order to analyse the information. After carrying out an inquiry, the students should make their findings known to the rest of the members of the class. For instance, the students

may be asked to find out from the local environment how various economic activities are influencing the environment.

(e) Debates

The use of debates in class is highly encouraged. This is because debates enable the students to defend a particular line of thought, thereby learning from one another. The students prepare adequately as they gather the points for debate. The teacher should identify appropriate topics for debate, which have sufficient points for and against, to allow the learners enough time to give their points. There are adequate topics that can generate issues for debate, such as significance of early marriages in rapid population growth of a country.

A class debate should only be organised after the students have gained some knowledge on a given issue, in order to apply or recall the knowledge they have acquired.

Debates are also useful to the learner as they instill in the learner the urge of being confident to speak to a multitude of people. The fear of standing and speaking in front of other disappears as one gets used to talking in front of fellow students during debates.

(f) Simulation

This is the use of games to reinforce what has already been covered in class. The teacher can identify a topic with several points, needed for scoring, such as factors that affect demand. The teacher can then divide the class into 2 or 3 groups to

compete in a game of scoring points. For instance, the group that names the highest number of factors affecting demand wins the game. This game helps the students to remember with ease the specific factors.

(g) Projects

The use of projects is appropriate in Economics, more so to emphasise the skills learnt in class. The students are assigned specific activities after a given topic, so as to reinforce their rate of learning and also to provide them with an opportunity to apply the knowledge and skills acquired. Projects may be in form of investigation as to why people may prefer imported commodities over locally manufactured goods and vice versa. The teacher should visit each group to find out what they are doing and provide the necessary guidance. The teacher should assess the participation of individual students and grade them.

(h) Role-playing and dramatisation

This involves the students acting out a given situation to imitate its occurrence. The teacher is called upon to identify suitable topics that can be acted out by more than three students, such as a market scene. The students are assigned specific roles, of which they need to be given time to memorise the words and actions. This technique works better if the topic to be acted out has already been taught, since the students already have some prior knowledge about the topic.

These techniques assist the students to express themselves thus enabling them

to remember more of what they learn in class.

(i) Question and answer

The use of question and answer is the most commonly used teaching technique. The questions asked by the teacher in the course of the lesson should assist the teacher to gauge the level of understanding of the students. It also allows the students to participate in the lesson, as they ask questions. The teacher should ask guiding or leading questions that involve all members of the class. The questions asked by the teacher should vary from low order questions that require students to recall knowledge gained, to high order questions that require the students to analyse or synthesise information before responding to the questions asked. The questions should be short and clear and relevant to the topic of discussion. The teacher should distribute the questions to all members of the class, without relying on those students whose hands are up.

The teacher needs to reinforce the students so as to encourage them to participate actively in the lesson. The teacher should correct incorrect responses by the students. The teacher should not answer all the questions asked during the lesson. He or she can ask the students to respond to a question asked by the other students, but clarify the responses given by the students.

(j) Lectures

Although lecturing is a teacher-centred technique, it becomes appropriate when used for five minutes to introduce or

summarise a lesson or discussion. A lecture should be kept brief and interesting so as to act as a stimulus to a class discussion or debate. A lecture should not contain information the students can acquire from books or other sources, but contains information that is either new to them or difficult to obtain. A good lecture should be accompanied by thought-provoking questions. A good example of lecture points is effects of under-population in a developing country.

(k) Use of resource persons

This is the use of experts in certain fields of Economics to come and offer a talk to the students. For instance, in the area around the school, there exists a knowledgeable person who supplies some products such as vegetables or fruits to the school. Such a person can be invited to share their knowledge with the students. After identifying the resource person, agreeing on the areas of discussion and the time of the lesson, the resource person will talk to the students.

After confirming with the resource person, the teacher should prepare the students by telling them who the resource person is, the day and time of the talk and how they are expected to conduct themselves during the talk. The teacher should encourage the students to ask the resource person questions related to the topic of discussion in class. This will enable the resource person to clarify issues which the students do not understand. They should also make notes from the talk. After the resource person has left, the teacher should go over the points raised with the

class, to clarify or correct any errors that may have been pointed out.

2.2 Important attitudes in learning of Economics

1. In learners

There are certain useful attitudes, which the teacher should help to develop in the learners as they carry out various activities and research in Economics. Economics as a problem-solving discipline is expected to make an impact on a learner's general behaviour.

The nature of the subject demands learners to be honest with themselves as they work out the given problems to the economic models and make unbiased conclusions. They should be aware of the danger involved in making generalisations out of limited information, feeling tired or being unable to finish the assignment. They should be open-minded and able to distinguish between propaganda and truth.

Some of the attitudes that learners should develop include:

- (a) **Practical approach to problem solving** - Learners should seek answers to their questions and problems by carrying out investigations wherever possible.
- (b) **Responsibility** – Learners should be responsible enough to effect tasks apportioned and take good care of the resources given to them.
- (c) **Cooperation** – Learners will often be working in groups while carrying out the activities and need therefore to cooperate with all other members

of the group.

- (d) **Curiosity** – Learners should have a curious attitude as they observe things and events around them. This is the first step towards solving a problem.
- (e) **Self-confidence** – Learners should have the will to attempt to solve a problem. The feeling of self-confidence can be strengthened in young learners if they experience many small successes that win approval and encouragement from the teacher. The problems which learners attempt to solve should not be so difficult that they lead to frustration.
- (f) **Honesty** – As they make observations, record, analyse results and draw conclusions.

2. In teachers

- (a) Engage learners in variety of learning activities.
- (b) Apply appropriate teaching and assessment methods.
- (c) Adjust instructions to the level of the learner.
- (d) Be creative as much as possible to entice the attention of the learner.
- (e) Make connections or relations with other subjects.
- (f) Show a high level of mastering knowledge of the content.
- (g) Develop effective discipline skills to adequately manage the classroom.
- (h) Be a good communicator.
- (i) Guide and counsel your students more often.
- (j) Have passion for the learner as you teach them.

2.3 Learner's role in learning Economics

Learning takes place only when the student has internally digested and assimilated the material to be learnt. As such, learning is a highly personal and individual process. It therefore means that a learner must be actively engaged in the learning exercise.

For active participation in learning, the learner must:

1. Develop the curiosity, powers of observation and enquiry by exploring the local environment.
2. Raise questions about what is observed.
3. Suggest solutions to those questions and carry out investigations to search for answers.

The competence-based approach considers the learning process to involve the construction of meaning by learners. Simply, it emphasises the need for students to think about scientific activity in order to make sense of and understand the scientific concepts being introduced. In this new dispensation, learners are in the driver's seat, which implies they will construct their knowledge by posing questions, planning investigation, conducting their own experiments, analysing and communicating results. More specifically, when engaging in inquiry, learners will describe objects and events, ask questions, construct explanations, test those explanations against current scientific knowledge, and communicate their ideas to others. By so doing, the learners will take ownership of the learning process.

Learners' activities are indicated against each learning unit reflecting their appropriate engagement in the learning process. Even though they do not necessarily take place simultaneously in each and every Economics lesson and for all levels, over time, learners get involved in the following activities:

- (a) Observing and writing down what they have seen.
- (b) Pursuing questions which they have identified on their own even if introduced by the teacher.
- (c) Taking part in planning research with appropriate controls to answer specific questions.
- (d) Using and developing skills of gathering data directly by observation or measurement and by using secondary sources.
- (e) Using and developing skills of organising and interpreting data, reasoning, proposing explanations, making predictions based on what they think or find out.
- (f) Working collaboratively with others, communicating their own ideas and considering others' ideas.
- (g) Expressing themselves using appropriate scientific terms and representations in writing and talk.
- (h) Engaging in lively public discussions in defence of their work and explanations.
- (i) Applying their learning in real-life contexts.
- (j) Reflecting self-critically about the processes and outcomes of their inquiries.

During this reciprocal interaction,

what learners will acquire is not only content knowledge, but also a number of skills. These skills include how to approach a problem, identify important resources, design and carry out hands-on investigations, analyse and interpret data, and, perhaps most importantly, recognise when they have answered the question or solved the problem.

2.4 Teacher's role in learning and teaching

The teacher is one of the most important resources in the classroom. The teacher's role is central to the successful implementation of the learning programme in the school. The role of the teacher will remain critical. However, instead of being the "sage on the stage"; the teacher will rather be the "**guide on the side**" who acts as a facilitator in a variety of ways. Some of these ways include:

- (a) Encouraging and accepting learner autonomy and initiative.
- (b) Using raw data and primary sources, along with manipulative, interactive, and physical materials.
- (c) Using cognitive terminology such as classify, analyse, predict, and create when framing tasks.
- (d) Allowing learner responses to drive lessons, shift instructional strategies, and alter content.
- (e) Familiarising themselves with learners' understandings of concepts before sharing your own understanding of those concepts;
- (f) Encouraging learners to engage in dialogue, both with the teacher and

one another.

- (g) Engaging learners in experiences that pose contradictions to their initial hypotheses and then encouraging discussion.
- (h) Providing time for learners to construct relationships and create metaphors.
- (i) Nurturing learners' natural curiosity;
- (j) Organising the classroom to create a suitable learning environment.
- (k) Preparing appropriate materials for learning activities.
- (l) Motivating learners to make them ready for learning.
- (m) Co-ordinating learners' activities so that the desired objectives can be achieved.
- (n) Assessing learners' activities and suggesting solutions to their problems.
- (o) Assisting learners to consolidate their activities by summarising the key points learnt.

From time to time, the teacher should interact with the learners individually or in groups, to diagnose their weaknesses and frustrations, appraise their efforts, imagination and excitement. This will assist and guide them in the task of learning. The teacher must make an effort to teach learners how to team up but still have each learner directly involved in working with materials, consulting with the teacher and with fellow learners. Remember that whatever you do during the class, the interests of the learner remain paramount! Therefore, the teacher should allow and encourage the learners to:

- (i) Explore their local environment.

- (ii) Ask questions about things and events.
- (iii) Make observations.
- (iv) Perform simple investigations and experiments to seek answers to their questions.
- (v) Talk to each other and to the other learners about their experiences, interests, problems, successes and even frustrations.
- (vi) Play and make models of things that interest them.

2.5 Teaching resources

These refer to things that the teacher requires during the teaching process. Some of these things include:

- (a) The classroom.
- (b) Textbooks.
- (c) Wall charts and wall maps.
- (d) Business journals and magazines.
- (e) Resource persons.
- (f) Social facilities such as health centres, other learning institutions and community organisations.
- (g) Enterprises such as agricultural farms and industries, among others.

Classroom as a learning environment

Classroom generally refers to the place where learning takes place. Students learn from everything that happens around them, such as the things that they hear, see, touch, taste, smell and play with. It is therefore important for the teacher to make his classroom an attractive and stimulating environment. This can be done by:

- (i) Carefully arranging the furniture and desks.

- (ii) Putting up learning and teaching aids on the walls. Examples are wall charts or pictures or photographs.
- (iii) Displaying models.
- (iv) Providing objects for play for example toys.
- (v) Having a display corner in the classroom where learners display their work.
- (vi) Securing a storage area.

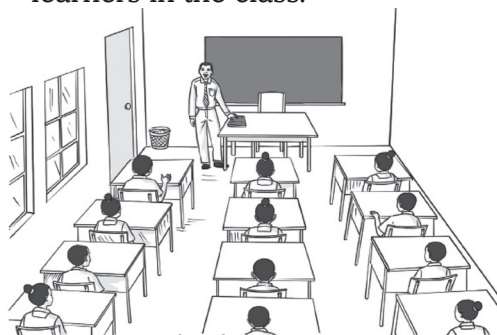
The materials in the classroom should get the students thinking and asking questions about what is around them and encourage them to do worthwhile activities.

Classroom organisation

A well-organised classroom is an asset to good Economics teaching. However, there is no one correct style to suit all classrooms and situations. The teacher should consider the following factors when organising the classroom:

- Furniture should be well arranged so as to allow free movement of learners and the teacher.
- Set a corner for storing materials so as not to obstruct learners or distract them.
- The number of learners in the class, their gender and their ages.
- Learners should be reasonably spread out so that they do not interfere with one another's activities.
- The series of lessons or activities going on for a number of days or weeks such as individual or group work or whole class.
- Classroom itself, that is, positions of windows, doors such that learners face the lighted areas of the room.
- Personal preferences. But these should be in the interest of the

learners especially where you normally stand, you should be able to communicate with all learners, and also have a general view of all learners in the class.



Sample classroom setting

Grouping learners for learning

Most of the Economics activities are carried out in groups. Therefore, the teacher should place 2 or 3 desks against each other and then have a group of learners sitting around those desks. In certain activities, the teacher may wish to carry out a demonstration. In this case, the learners should be sitting or standing in a semi-circle, or arranged around an empty shape of letter “U” such that each learner can see what the teacher is doing clearly and without obstruction or pushing. If the learners are involved in individual work, each learner can work on the floor or on the desk or a portion of the desk if they are sharing. In this case, they need not face each other.

Grouping learners for learning has increasingly become popular in recent years. In fact, the shift from knowledge-based to competence curriculum will make grouping the norm in the teaching process. Grouping learners can be informed by one or all of the following:

- Similar ability grouping
- Mixed ability grouping
- Similar interests grouping
- Needs grouping
- Friendship grouping
- Gender grouping

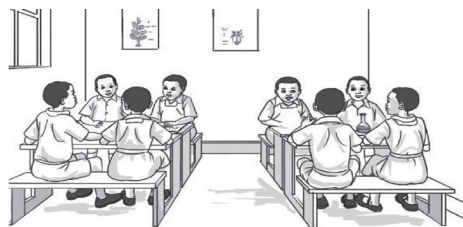
In Economics, groupings are commonly those of types (a), (b), (c) and (d). Grouping learners has several advantages such as:

- The individual learner's progress and needs can easily be observed.
- The teacher-learner relationship is enhanced.
- A teacher can easily attend to the needs and problems of a small group.
- Materials that were inadequate for individual work can now easily be shared.
- Learners can learn from one another.
- Cooperation among learners can easily be developed.
- Many learners accept correction from the teacher more readily and without feeling humiliated when they are in a small group rather than the whole class.
- Learners' creativity, responsibility and leadership skills can easily be developed.
- Learners can work at their own pace.

The type of "grouping" that a teacher may choose depends on:

- The topic or task to be tackled.
- The materials available.
- Ability of learners in the class (fast, average, slow).

However, the teacher must be flexible enough to adjust or change his/her type of grouping to cope with new situations.



Sample grouping in a classroom setting

There is no fixed number of learners that a group must have. This again will be dictated by such factors as the task to be done, the materials, characteristics of learners in your class, size and the space available. However, groups should on average have between **four to seven learners**. You can also resort to pair work depending on the nature of the content being taught at the time.

There is no one method or approach to teaching that is appropriate to all lessons. A teacher should, therefore, choose wisely the method to use or a combination of methods depending on the nature of the topic or subtopic at hand.

Safety in the classroom

Learners in secondary school are active and curious. As such, they are inclined to getting harmed and injured. They should therefore be constantly protected from sources of injury and harm. The teacher is therefore advised to take strict safety precautions whenever learners are in class or outside the classroom. Some areas that may need consideration as far as safety is concerned include:

- During discussions of the group activities

- During nature walks and field visits. Learners should avoid handling or touching things unnecessarily.

Remember, according to Rwanda laws, the teacher is responsible for the safety of the children during the period he or she is handling them.

2.6 The content map

All Rwandans have the right to access education regardless of their different needs.

2.7 Planning to teach

The three most important documents in planning to teach are the syllabus, the schemes of work and the lesson plan. The syllabus is provided for already.

- a) The syllabus
- b) Schemes of work
- c) Lesson plan

a) The Syllabus

The syllabus contains the content to be taught at a specific level over a specified period. It also contains:

- The topic areas and sub-topic areas
- The rationale of teaching the subject at that level.
- The learning objectives and aims intended to be achieved.
- The learning activities.
- Links to other subjects, if any.
- Assessment criteria.
- Reference materials.
- The key unit competences to be acquired by the learners in a given unit.
- The specific outcomes expected of the learners after being taught.

Usually, the curriculum developers endeavor to organise the content of the syllabus in the order of how it should be taught. However, there are times when the teacher may have to reorganise some of the content to conform to the principles of effective teaching and learning. The learning principles dictate that a learner understands better when material is organised systematically and taught from the known to the unknown, each concept building on the other.

b) Schemes of work

From the syllabus, a teacher prepares a scheme of work. A scheme of work is a carefully programmed plan of action towards expected goals and coverage. The teacher has to carefully consider the syllabus and determine how much of the syllabus content can be covered over a period of one term.

The arrangement of the scheme of work should be designed so that concepts build up progressively from the previous ones. A scheme of work is essential because it:

- a) Helps the learners to link the subject matter from one topic to another.
- b) Provides continuity and cohesiveness in teaching the content from one topic to another and one sub-topic to another.
- c) Gives direction to each lesson.
- d) Helps the teacher to determine learning materials and resources in advance.
- e) Provides an opportunity for the teacher to relate the general outcomes, the specific outcomes and the content to be taught in order to ensure harmony.

A scheme of work may be planned for a week, a month, a term or a year.

The contents of the scheme of work may vary from one teacher to another. However every scheme of work must have the following characteristics.

- a) The content, that is, the syllabus topic area, sub-topic area and Unit to be taught.
- b) Key unit competence
- c) Lesson
- d) Learning objectives
- e) The outcomes, that is, the general topic outcomes and the specific sub-topic outcomes.
- f) The learning resources and reference materials
- g) Learning activities, that is, the activities the learners will be expected to do to facilitate the learning.
- h) The week and the number of lessons allocated to each topic.
- i) The teaching methods and techniques.
- j) The skills.
- k) The reference resources, that is, the reference books to be used including the learner's textbooks as well as other textbooks. This also includes teaching aids that may be used.
- l) Observations/self-evaluation
- m) Comments from school director (DOS)

In addition, the schemes of work show the day when a specific lesson will be taught and how long it is intended to take.

- Week** - Refers to the week in the term e.g. 1, 2, 3.
- Key unit competence** - Gives the competence learners are expected to achieve at the end of the unit.
- Lesson** - Refers to the lesson being taught in that week e.g. lesson 1, 2, 3 and 4. This shows which lesson is single and which one is a double lesson.
- Date** - Is the day when the lesson will be taught.
- Sub-unit** - A subset of the Unit which is a smaller component of the unit e.g. under the unit "Theory of demand," one could have "Factors determining prices in the market" as a sub-unit.
- Objective** - What learners are expected to achieve at the end of the lesson.
- Learning resources** - Any materials that will be used by the students and the teacher for learning and teaching.
- References** - Are books or other materials that will be consulted or used in the teaching process. Books that students will use should also be shown here; indicating the actual pages.

Observations/self-evaluation

- This should be a brief report on the progress of the lesson planned in the scheme of work. Such reports could include: 'taught as planned'. 'Not taught due to abrupt visit by Country Director of Education.' 'Children did not follow the lesson, it will be repeated on specific date.

Comments from director of school

– Space left for comments by the school director.

Below is a sample scheme of work for your familiarisation.

Sample Lesson Plan

Term	Date	Subject	Class	Unit N°	Lesson N°	Duration	Class size
1 st Term	12/01/2016	Economics	S4	5	8 of 26	40min	40
Type of Special Educational Needs and number of learners							
				1 learner with vision impairment.		2 learners with hearing difficulties.	
Topic area:							
Microeconomics							
Sub-topic area:							
Price theory							
Unit title:							
Theory of demand							
Key Unit Competence							
By the end of this period, the learner should be able to draw and explain the demand curve.							
Title of the lesson:							
The law of demand							
Instructional objective:							
Given a ruler, sheets of paper and a pencil, the learner should be able to:							
<ul style="list-style-type: none"> - Interpret the data in Activity 5.13 in the Learner's Book on page 87 correctly. - Use the data in the table (demand schedule) of Activity 5.13 and draw the demand curve accurately. - Describe the slope of the curve accordingly. - Make an accurate comment on the curve they have drawn. 							
Plan for this class:							
Inside the classroom							
Learning Materials :							
Charts showing different quantities purchased at different prices.							
References							
Jim Beingana et al; Economics Learner's Book Senior 4, page 87.							

Description of learning activities			Competences and cross cutting issues to be addressed
Timing for each step	Teacher activities	Learner activities	
Introduction 5 minutes	<ul style="list-style-type: none"> ⊖ Engage learners in question-answer forum. (i) Ask them to define the law of demand. (ii) Ask them to explain what happens to the quantity demanded when price falls. ⊖ Arrange learners in groups. ⊖ Set up charts on the board 	Respond to the questions asked by the teacher. Some possible answers are: <ul style="list-style-type: none"> (i) The law of demand states that “the higher the price of a commodity, the lower its quantity demanded and the lower the price, the higher its quantity demanded, <i>ceteris paribus</i>.” (ii) When price of a commodity falls or reduces, normally, quantity demanded for that commodity increases. ⊖ Attempt Activity 5.13 on page 87 in the Learners’ Book. 	<ul style="list-style-type: none"> ⊖ Critical thinking when learners are interpreting the table. ⊖ Lifelong skills as they draw the graph using information from the table. ⊖ Cooperation and interpersonal skills when they are working in groups.

Development of the lesson

20 minutes

- ⌘ Guiding the learners to illustrate the graph as given in Activity 5.13.
- ⌘ Moderating the discussion and explaining the law of demand.
- ⌘ Explaining the new terms like ceteris paribus.

⌘ Going through the table given in Activity 5.13.

Activity 5.13

- ⌘ In Musanze market, the amount of Irish potatoes bought was recorded against the price in a table as shown below.

Price per sack (Rwf)	10000	15000	25000	30000	41000	50000
Quantity of sacks bought	350	280	200	175	80	60

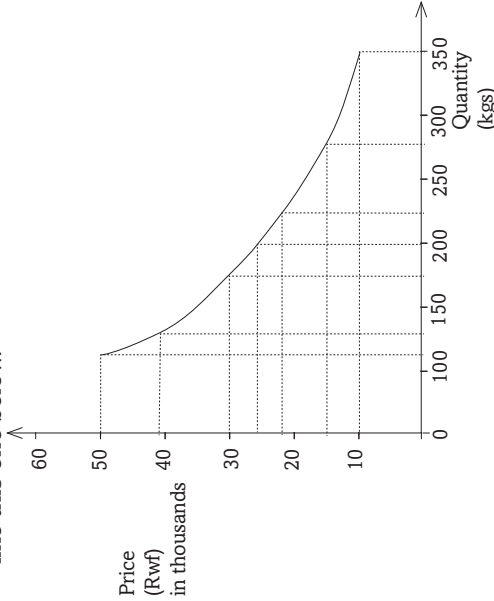
- (a) Using the information in the table above, draw a graph plotting the above figures.

From the graph drawn,

- (b) Describe the slope of the graph.

- (c) Comment on your answer.

- Illustrating the graph as required in (a) above. It should look like this one below.



- Analysing their graph and deriving an accurate comment showing that,

- (a) **The higher the price, the lower the quantity demanded.**

- Stating the meaning of ceteris paribus.
- “**holding other factors constant’ or assuming that other factors are constant.**”

⌘ Financial

education showing how price increase affect people’s expenditures.

<p>Conclusion Summary 10 minutes</p>	<ul style="list-style-type: none"> ⌘ State the law of demand. 	<p>Answering questions</p> <ul style="list-style-type: none"> - The law of demand states that “the higher the price of a commodity, the lower its quantity demanded and the lower the price, the higher its quantity demanded, ceteris paribus.” - Ceteris paribus implies holding other factors constant. 	<ul style="list-style-type: none"> ⌘ Cooperation and interpersonal skills through working in groups.
<p>Teacher self-evaluation 5 minutes</p>	<ul style="list-style-type: none"> ⌘ Learner drew demand curve accurately. ⌘ Learner stated the law of demand. ⌘ Learner defined ceteris paribus. <p>Conclusion Lesson objectives achieved.</p>		

This Teacher's Guide has been written to help you guide students to learn Economics in the most enjoyable and captivating manner. You are reminded to always arouse the curiosity of learners as you teach. Some things that you may do before you go for a lesson include:

- Go through the expected learning outcomes – this should help you guide the manner of teaching.
- Read through the unit for the lesson in advance to get an overview of the content required.
- Form a mental picture of the teaching situation and the ways in which you will interact with learners when dealing with the suggested activities.
- Collect the materials that will be needed during the lesson in advance.
- In some cases, try out the suggested activities in advance to avoid embarrassments in case the Activity needed some facilities that you were not aware of to be used during the lesson.

Remember: The suggested teaching activities in this book are just a guide. You may not need to follow them to the letter! Feel free to incorporate other innovative teaching methods that will help in delivering the intended content optimally.

Section 3: Assessment and Evaluation methods

Assessment is the process of evaluating the teaching and learning processes. It is done through collecting and interpreting evidence of individual learner progress in learning. It also involves making judgment

about learner's achievements measured against defined standards. Assessment is an integral part of the teaching and learning processes. In the new competence-based curriculum assessment must also be competence-based; whereby a learner is given a complex situation related to his/her everyday life and asked to try to overcome the situation by applying what he/she learned.

3.1 Types of assessment

The two types of assessment that will be employed in the new curriculum is **formative** and **summative** assessment.

1. Formative and continuous assessment (assessment for learning)

Formative or continuous assessment involves formal and informal methods used by schools to check whether learning is taking place. When a teacher is planning his/her lesson, he/she should establish criteria for performance and behaviour changes at the beginning of a unit. Then at the end of every unit, the teacher should ensure that all the learners have mastered the stated key unit competencies basing on the criteria stated, before going to the next unit. The teacher will assess how well each learner masters both the subject matter and the generic competencies described in the syllabus and from this, the teacher will gain a picture of the all-round progress of the learner. The teacher will use one or a combination of the following:

ensure that all the learners have mastered the stated key unit competencies basing on the criteria stated, before going to the next unit. The teacher will assess how well each learner masters both the subjects matter and the generic competencies described in the syllabus and from this, the teacher will gain a picture of the all-round progress of the learner. The teacher will use one or a combination of the following:

- (a) Written tests
- (b) Practical work or Activity
- (c) Observation
- (d) Oral questions or interviews
- (e) Drawing
- (f) Project work

(a) Written tests

Under this, learners are given questions or tasks and are required to respond in writing. Examples of written tests are: short answer type questions, structured type questions, filling blanks, multiple choice questions, true-false questions and matching items.

(b) Practical work or Activity

In this category, learners are required to perform a task or solve a problem practically. The teacher then assesses the finished work by looking at the materials used, procedures followed, whether it works or not or whether it is finished. He or she then awards marks accordingly.

(c) Observation

This involves the teacher observing learners as they perform a practical task to assess acquisition of skills and attitude

change. The teacher checks ability of the learner to measure, classify, communicate findings, etc. He or she also assesses the learner curiosity, patience, teamwork and co-operation spirit among others.

(d) Oral questions or interviews

Asking learner's questions which require a verbal response such as naming parts of human body, a system or short explanations of a process such as digestion can also be used to assess a learner's level of competence.

(e) Drawing

This involves asking learners to draw something they have observed or learnt about. They can also collect data and draw graphs and interpret the graph and give conclusions. This helps to assess their skill in communication through recording.

(f) Project work

In a project, learners undertake a comprehensive study of something in real life over a period of time such as several weeks or even months after which they present a report. In project work, let learners begin from planning stage (come up with a schedule of events), execute the plan, analyse the results and look back (reflect on the challenges encountered during the project and come up with solutions to those challenges (problem-solving skills).

A teacher can use one or several of these assessment methods depending on the subtopic being studied or the purpose for which assessment is required.

When should the teacher assess learning progress?

The teacher should decide whether to assess learners at the end of the lesson or at any other appropriate time when enough content has been covered. The general criteria to be used to gauge learner achievement in the various generic competency areas are given in the table below.

Name of Learner	COMM	I&C	CT	RS	LL	PS	C&I
A	Red	Blue	Yellow	Blue	Red	Green	Yellow
B	Yellow	Red	Blue	Yellow	Blue	Red	Blue
C	Green	Blue	Red	Yellow	Blue	Red	Yellow
D	Yellow	Green	Yellow	Red	Yellow	Yellow	Green
E	Red	Blue	Yellow	Blue	Yellow	Red	Blue
F	Blue	Yellow	Red	Yellow	Blue	Green	Red
G	Yellow	Green	Blue	Yellow	Red	Blue	Green

KEY: Red – Poor

COMM – Communication in English

Green – Good

I & C – Interpersonal skills & Co-operation

Yellow – Excellent

CT – Critical Thinking

Blue – Average

RS – Research Skills

LL – Lifelong skills

PS – Problems solving skills

C & I – Creativity & Innovation

Allocate marks for each colour and calculate the marks that the learner has attained. Grade the learners based on how they have scored here and in the various tests given to assess skills acquisition and attitude change.

2. Summative assessment (assessment of learning)

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

It can be internal school based assessment or external assessment in the form of national examinations. School based summative assessment should take place once at the end of each term and once

at the end of the year. School summative assessment average scores for each subject will be weighted and included in the final national examinations grade. School based assessment average grade will contribute a certain percentage as teachers gain more experience and confidence in assessment techniques and in the third year of the implementation of the new curriculum it will contribute 10% of the final grade, but will be progressively increased. Districts will be supported to continue their initiative to organise a common test per class for all the schools to evaluate the performance and the achievement level of learners in individual schools. External summative assessment will be done at the end of S3.

a) Item writing in summative assessment

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

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

(i) Identify topic areas to be tested on from the subject syllabus.

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

b) Structure and format of the examination

There will be three papers in the Economics subject. Time: three hours (3). Paper 1 will be based on the basic principles of economics while paper 2 will consist of applications of the basic principles of economics. Emphasis will be placed on the mastering of economics phenomenon, the understanding of concepts and the ability to function in various situations within each domain of economics.

3.2 Record Keeping

This is gathering facts and evidence from assessment instruments and using them to judge the learner's performance by assigning an indicator against the set criteria or standard. Whatever assessment procedures used shall generate data in the form of scores which will be carefully recorded and stored in a portfolio because they will contribute for remedial actions, for alternative instructional strategy and feed back to the learner and to the parents to check the learning progress and to advice accordingly or to the final assessment of the learners.

This portfolio is a folder (or binder or even a digital collection) containing the learner's work as well as the learner's evaluation of the strengths and weaknesses of the work. Portfolios reflect not only work produced (such as papers and assignments), but also it is a record of the activities undertaken over time as part of learner learning. The portfolio output (formative assessment) will be considered only as enough for three years of Advanced level. Besides, it will serve as a verification tool for each learner that he/she attended the whole learning before he/she undergoes the summative assessment for the subject. The results

from the portfolio will contribute 50% on summative assessment of each year.

3.3 Reporting to parents

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

Refer to Learner's Book pages 1-20

TOPIC AREA 1: GENERAL INTRODUCTION TO ECONOMICS

SUB-TOPIC AREA 1.1: BASIC ECONOMIC CONCEPTS AND PRINCIPLES

Introduction

In this unit the main sub-topics to be covered are:

- Meaning, origin and importance of studying Economics.

- Basic concepts used in Economics.
- Economic agents and economic activities.
- Economic systems.

Key unit competence: At the end of 10 lessons, Learners should be able to explain the basic concepts of economics and the importance of Economics.

Unit learning objectives

As you teach this unit you should ensure that learners acquire the following skills, values and attitudes;

Knowledge and understanding	Skills	Attitudes and values
<ul style="list-style-type: none"> - Explain the origin and importance of studying Economics. - Explain the basic terms used in Economics. - Distinguish between needs and wants, and goods and services. - Explain an economic system - Identify the various forms and characteristics of economic systems. 	<ul style="list-style-type: none"> - Describe the importance of studying economics. - Use Economic concepts appropriately when describing the importance of Economics. - Use examples to differentiate between needs and wants, and between goods and services. - Analyse the various types of economic systems. - Describe the tasks performed by an economic system. - Justify the economic system under which the Rwandan economy operates 	<ul style="list-style-type: none"> - Appreciate the power of Economics in describing and influencing aspects. - Appreciate that different people have different perspectives on needs and wants. - Be aware of the operation and role of different economic systems in resource allocation and be able to advocate for the one appropriate for their country.

Additional information for the teacher

Economics involves the use of scarce resources to satisfy unlimited wants. It is important as a teacher to prepare examples showing how resources are scarce and how wants are unlimited and cannot be satisfied by the resources that we have. Use examples that students are familiar with. Begin from learners own experiences. Explain the origin of Economics to the learners.

You should also appreciate the fact that this unit has links to other subjects such as Business Activity, Market Study in Entrepreneurship and Economic activities, factors of production and population in Geography. Therefore, learners may have prior knowledge and hence begin the lesson with question and answer to find out if learners have prior information on the subject which you can build as you teach this unit.

Cross-cutting issues

When teaching this unit, it is important to emphasise to the learners the need for proper use of resources especially financial resources, emphasise the need for budgeting in the process of using the scarce resources to satisfy our unlimited wants.

Emphasise the importance of environment conservation when teaching this unit as well. Explain to the learners that in order for development to be sustainable, as resources are exploited from the environment, they should be conserved even for future generations.

LESSON 1: Meaning and the origin of economics

Begin this sub-topic by asking learners what they know about economics as this

will make it easy for them to understand the meaning and the origin of economics an area of study. Let the learners carry the activity related to this sub-topic in the learners' book.

Specific learning outcome

By the end of this sub-topic the learner should be able to:

- Define economics.
- Explain the origin of economics.

Preparation for the lesson

- As a teacher, you should organise the class in groups of say five depending on the size of class in which they will work out the following activities that the teacher will provide to them.
- The teacher should also be equipped with necessary information and materials that will enable him guide the learners and attend to their questions appropriately.
- The teacher makes sure that the class is organised and these materials are available to enable them carry out the activities; relevant Economics textbooks are available in the library, stationery, internet connectivity where possible.
- The teacher should use a particular method that is appropriate to the level of learners and to the particular topic under consideration.
- The teacher should also choose appropriate teaching aids that will make the lesson more attractive to the learner.

Teaching/ learning resources: Text books, stationery (papers), computers and internet access.

Interactive learning: Group discussions, question and answer, group work and guided discovery should be used so that all learners participate in the lesson.

Improvisation: Ensure where necessary you improvise for learners who have learning challenges.

Teaching/learning activities:

Carrying out research on the meaning and origin of Economics, doing presentations on their findings concerning the meaning and the origin of economics, asking and answering question and taking notes.

Further activities: Learners should be encouraged to read from their books on the meaning and origin of economics.

Encourage learners to work in groups as much as possible to inculcate in them a culture of co-operation and ability to develop communication skills among the learners.

Extended and remedial activities

Leave time towards the end of the lesson to find out if the slow learners have understood the concepts and in case they have not yet understood the concepts under consideration, give the remedial activity below:

(a) Learners to find out the importance of Economics

Response to Activity 1.1

Learners give their own ideas but they should all be related to Scarcity.

Ref to ECONOMICS Learner's book 4

(a) Origin of Economics.

Sub Unit 1.1.2.

(b) Importance of Economics sub Unit 1.2

(c) Basic terms used in Economics Sub unit 1.3

Activity 1.3

Sub unit 1.1.1

Meaning of Economics

Assessment

Use open-ended questions to inculcate a culture of thinking and problem solving among the learners.

LESSON 2:Importance of studying Economics

Begin by asking learners to explain with specific examples from their economy the importance of studying economics.

Specific learning outcome

By the end of this sub-topic, learners should be able to explain the importance of studying economics.

Preparation for the lesson

- The teacher should prepare the learners for discussion by informing them for group discussion hence appreciating discussion as a teaching-learning method.
- The teacher should ensure that the class is clean to avoid interruptions.
- The teacher should make sure that necessary teaching aid are available.
- The teacher should organise the learners into groups in which they do the activities given to them by the teacher.

Teaching/Learning resources:

Economics students' book, Economics journals, internet access, Economics magazines.

Interactive learning: Use of question and answer, discussions on the importance of studying Economics. Make sure that all learners participate in the discussion ensuring that slow learners are also involved in the discussion.

Teaching/Learning methods: Question and answer, discussion method, guided discovery.

Teaching/Learning activities

Discussions on the importance of studying Economics, presentations and taking notes

Further activities – Learners to do research on basic concept in Economics.

Extended and remedial activities

Give extra exercises to fast learners and pay attention to slow learners by giving them extra hours explaining to them concepts that they may have not understood.

Activity 1.4

Ref to ECONOMICS Learner's book 4
Sub unit 1.2

Assessment

Use open-ended questions to assess if learners were able to acquire targeted knowledge, skills and values.

LESSON 3: Basic concepts in Economics

Since learners are now familiar with Economics as an area of study, list a few concepts used in economics and find out from the learners the meaning of those

concepts. When teaching this sub-topic begin with the very familiar concepts such as resources, wealth, goods to make it easy for the learners to grasp these concepts.

Specific learning outcome

By the end of this sub-topic learners should be able to explain the various concepts used in Economics.

Preparation for the lesson

- The teacher should identify the resources from which the learners will undertake research.
- The teacher should do advance study on resources, wealth, price, and economic agents so as to be to guide and attend to the learners questions appropriately.

Teaching/Learning resources
Economics students' book, Economics journals, internet access and Economics magazines.

Interactive learning – Group discussions and group presentations

Teaching/Learning methods – Discussion method, Question and answer.

Teaching/Learning activities Carrying out research on economic concepts, class presentations and taking notes.

Further activities – Reading about the sub-topic in learners' books and other Economics books in the library.

Emphasise to the learners, the need for proper use of resources in order to conserve the environment so as to ensure sustainable development. Learners to do

research on economic activities carried out in their locality.

Extended and remedial activities

Give additional questions/work to the fast learners and give more time in attending to slow learners.

Activity 1.5

Ref to ECONOMICS Learner's book 4

Sub unit 1.3, 1.4 and 1.5

Assessment

Emphasise open-ended questions to encourage critical thinking.

Give learners group assignments to encourage corporation among students.

Economic activities

Ask learners to identify the major economic activities that take place in their localities. Take the learners through the major economic activities in which these economic activities exist. Such as the primary sector, manufacturing and tertiary sectors where under primary sector there are economic activities like farming and mining. While in manufacturing there is processing and construction. In tertiary sector, economic activities include transport, banking, insurance among others.

Specific learning outcome

By the end of this sub-topic, learners should be able define economic activities, identify the major production sectors in which the various economic activities exist and identify the economic activities taking place in Rwanda.

Preparation for the lesson

- Divide learners into groups of six.
- Prepare additional work for slow learners and fast learners to work as remedial work in case it becomes necessary.

Teaching/ learning resources

Recommended Economics textbooks, Newspaper articles on Economics, internet access, audio media on Economics and Economics journals.

Interactive learning – Brain storming, use of question and answer, group discussions.

Teaching/Learning methods - Discussion method, question and answer

Teaching/Learning activities Carrying out debates, asking and answering questions, taking notes. Working on Activity 6

Further activities – Reading learners' books and other learning resources to find out what economic systems are.

Activity 1.6

Case Study.

Learners give their own ideas.

Ref to ECONOMICS Learner's book 4

Sub Unit 1.4:

LESSON 4: Economic systems

Begin the lesson by providing a case study to learners (case study 2 in learners' book). Ask learners to identify the major economic systems. These economic systems are traditional economic systemes, free enterprise economy, command economy and mixed economic systems.

Specific learning outcome

By the end of this sub-topic learners should be able to:

- Define an economic system.
- Identify the types of economic systems and their characteristics.
- Explain the advantages and disadvantages of the different types of economic systems.

Preparation for the lesson

- Ensure that the class is clean and conducive for teaching-learning.
- Divide in small groups and organize the class to facilitate group discussion.
- Make sure that the learners have the necessary learning materials.

Teaching/learning resources:

Recommended Economics textbooks, Newspaper articles on economics, internet access, audio media on economics, economics journals

Interactive learning – Group discussions question and answer

Teaching/ Learning methods-

Discussion method, question and answer

Teaching/Learning activities

- Provide a case study to the learners with a list of countries and how resources in those countries are owned, controlled, allocated and distributed; **Case study 2.**
- Organise learners in small groups basing on the case study above. Ask

them to identify the different types of economic systems that exist in the world.

- Through question and answer session with the learners, ask them to identify the characteristics of the above economic systems.
- Through debates in their small groups, ask learners to explain the advantages and disadvantages of a capitalist economic system.

Further activities – Reading Economics text books, further research on economic systems.

Extended and remedial activities

Provide additional home work to fast learners and provide additional explanations to slow learners

Activity 1.7, 1.8, 1.9

Ref to ECONOMICS Learner's book 4

Sub Unit 1.4 and 1.5 on Economic systems

Assessment

Provide learners with assignments for presentation to evaluate their communication and critical thinking skills

Answers to Unit Assessment

1 (a) Economics is a science, which studies how humans use scarce resources that have alternative uses to satisfy their unlimited wants or desires

(b) Reasons for studying Economics

- It prepares students for further studies in the area of business.
- It enables students understand that resources are scarce and hence get knowledge on how they can be put to better use.
- It prepares students for employment in various fields such as policy makers, economic planners hence improving on their livelihoods.
- It helps students understand and appreciate the economic problems in region and countries.
- It helps students understand the basic economic concepts and how to apply them in life.

2 (a) **Price:** This refers to the rate at which a commodity is exchanged in the market or it is the relative value of a commodity expressed in monetary terms.

Wealth: Wealth refers to the stock of assets held by an individual, a firm or an organisation at any particular moment of time.

Wants: Wants are those human desires whose satisfaction is not necessary for sustaining life.

Goods: These are tangible items which satisfy human desires.

Commodities: These are things that are produced by use of factors of production and are used by man to satisfy his desires.

Economic agents: Economic agents are the major decision making units in an economy.

(b) An economic system refers to the general organisation and structure of an economy which deals with the ownership of resources, control and allocation of resources and the general distribution of goods and services.

The major economic systems are free enterprise economy, command economy and mixed economy.

3 (a) **A country may adopt a free enterprise economy because it has the following advantages**

- In a free enterprise economy, there is competition which improves efficiency leading to production of better quality products.
- Free enterprise economy promotes consumer sovereignty where consumers influence the production process.
- It encourages people to work hard for better living and resource accumulation.
- There is increased output since producers produce and supply more goods and services in order to earn more profits.
- Efficient firms in a free enterprise economy increase the level of employment because of increased investment.
- There is optimum allocation of resources since resources are

allocated where they are highly demanded and inefficient firms are driven out of the industry.

- It reduces the burden of government participation in resource allocation

(b) A country may adopt a command economy because it has the following advantages

- It is easy to implement government policies since government is in direct control of production.
- It reduces income inequalities because it eliminates private ownership of property and competition.
- It can lead to efficiency in production. This is because production is directed by the state in order to achieve social objectives.
- It promotes social welfare since the objective of production is not profit maximisation but achieving the best for the community.
- It promotes economic stability because all economic decisions carried out by the central planning authority.
- Consumers are protected from exploitation since essential services are provided by the state cheaply.

(c) A country may adopt a mixed economic system because it has the following advantages

- Mixed economy offers more employment opportunities from both the government and the private sector.
- Mixed system promotes fair distribution of resources due to government intervention in the allocation of resources.

- It promotes regional balances in development since government intervention reduces the influence of price mechanism in resource allocation.
- There is control of monopoly tendencies in the economy by the anti-monopoly policies set by the government.
- It promotes stability in prices because of the price control measures that governments put in place in mixed economies.
- There is increased investment in mixed economies because the private sector is promoted.
- There is proper allocation of resources due to existence of the central planning authority which ensures that resources are allocated in the most efficient manner.
- Under a mixed economy, public goods and services which would not be provided by private sector alone are provided by the government.

(a) Limitations of a free enterprise economy

- It creates income inequalities in a society. This is because the few who own the means of production will become richer as the majority becomes poorer.
- Free enterprise economy tends to encourage capital intensive technology leading to unemployment.
- It leads to creation of monopoly as a result of inefficient firms being driven out of production.
- It leads to misallocation of resources

as it may encourage production of luxurious products that are demanded by the rich.

- Production in a free enterprise economy is profit motivated which leads to exploitation of consumers in form of high prices.
- Due to absence of government intervention, there is a high degree of duplication of goods and services.

(b) Limitations of a command/planned economy

- Planned economy is characterised by production of poor quality products due to absence of competition and failure to respond to consumers demands since production targets are set out by a planning authority.
- There is lack of motivation and individual initiative and this leads to limited innovation in the production process.
- Central planning under a planned economy results into bureaucracy which delays decision making, time wastage and promotes inefficiency.
- There is lack of consumer sovereignty in a planned economy. The right of the consumer to determine the process of resource allocation does not exist in a planned economy while freedom of choice is also limited.
- It increases administrative costs on the part of the government as government agencies will be actively involved in resource allocation and distribution, all of which increases costs to the government.

- This system tends to be characterised by mismanagement of resources because corruption and nepotism are always rampant.

C Limitations of a mixed economy

- Government interference under a mixed economy may undermine the private sector.
- Government participation in production in a mixed economy may result into state monopolies.
- The participation of both the private sector and the state may lead to duplication of services.
- Due to the participation of the government and the private sector in the production process, there may be over exploitation of resources.

Refer to Learner's Book pages 21-33

TOPIC AREA 1: GENERAL INTRODUCTION TO ECONOMICS

SUB-TOPIC AREA 1.1: BASIC ECONOMIC CONCEPTS AND PRINCIPLES

Introduction

In this unit, the main sub-topics to be covered are:

- Meaning/definitions of Scarcity; choice and opportunity cost
- The relationship between scarcity, choice and opportunity cost.
- Production possibility frontier (PPF).

- Shifts in the PPF and its relevancy.
- Economic questions; (what, how, for whom, where and when to produce).

Key unit competence: At the end of 9 lessons, the Learner should be able to explain the fundamental economic principles and their applicability to daily life.

Unit learning objectives

As you teach this unit, you should ensure that learners acquire the following skills, values and attitudes:

Knowledge and understanding	Skills	Attitudes and values
Identify the fundamental principles of Economics.	Describe the applicability of the fundamental economic principles in the economic world.	Appreciate the option of choice in terms of resources and make good use of available resources.
Explain the relationship between the fundamental principles of Economics using the possibility production frontier (PPF).	Illustrate the fundamental economic principles using the PPF.	
Explain why the PPF shifts.	Assess the influence of fundamental economic principles on the performance of societies, companies and nations.	
State the basic economic questions(what, where, why, when, who and how).	Analyse the implication of shifts in the PPF on economic growth. Analyse the applicability of the basic economic questions in the economic world.	

Additional information for the teacher

As a teacher, make sure that you have understood the unit well. Do thorough research on definitions from dictionaries, Economics books and any relevant material.

Fundamental principles of economics are concerned with the three fundamental economic problems of scarcity, choice and opportunity cost. To make the concept be easily understood by the learners prepare a list of items that would satisfy the different needs of learners and draw their attention to the fact that given the resources they have they cannot satisfy all their needs at once hence the need to prioritize and make choice which also means foregoing other items

As a teacher you should also appreciate the fact that this unit has links to other subjects such as Mathematics, functions and graphs as it involves drawing illustrations. Practice in advance therefore how to do the different calculations and how to draw the different illustrations.

Cross-cutting issues

When teaching this unit, financial education should be emphasised.

Financial education, inform learners that since resources are scarce there is need to be aware of financial issues such as the need for saving, the need for budgeting and prioritising when making financial decisions

LESSON 1: Meaning of fundamental principles of Economics

The basic principles of economics explain

that human wants are unlimited and the resources to satisfy them are limited and therefore these principles show the fundamental problems of man in his bid to try and use the scarce resources to satisfy unlimited wants. They include scarcity, choice and opportunity cost.

Learning outcome

By the end of this sub-topic the learner should be able to explain the fundamental principles of Economics.

Preparation for the lesson

- The teacher should ensure that the class is clean.
- The teacher should ensure that the teaching/learning materials are available.
- The teacher should use a particular method that is appropriate to the level of learners and to the particular topic under consideration.
- The teacher should also choose appropriate teaching aids that will make the lesson more attractive to the learners.

Teaching/Learning resources

Recommended students books, internet access, newspaper articles on Economics, economic journals.

Interactive learning- Use of question and answer, group discussions and debates.

Teaching/Learning methods –

Demonstration, discussion, question and answer methods.

Teaching/Learning activities.

Studying case study 3, answering questions.

Further Activities – Learners to read through Learners’ Book and other relevant Economics materials and find out what the fundamentals principles are

Extended and remedial activities

Provide extended activities to fast learners such as additional exercises and remedial activities to slow learners.

Assessment

Give learners practical exercise by providing them with a case study where they will be required to show how they can use scarce resources to satisfy their needs. Here you will be able assess their knowledge and understanding, attitude change and values attained.

LESSON 2: The relationship between the fundamental economic principles

The PPF indicates what is attainable and what is not attainable given the level of resources. Because of scarcity of resources, the producer cannot produce the same level of output for both the two goods but will make choice to either produce more of X and less of Y and vice-versa. If the producer more of X he foregoes units of Y (opportunity cost) as shown by the PPF.

Learning outcome

By the of this sub-topic, learners should be able to explain the relationship between scarcity, choice and opportunity cost.

Preparation for the lesson:

- The teacher should make sure that the class is clean.
- The teacher should ensure that there is order in class.

- Organise the class in small groups.

Teaching/Learning resources

Recommended students books, internet access, newspaper articles on economics, Economics journals.

Interactive learning

Use of question and answer method, group discussions. Involve all the learners ensuring that slow learners also participate in the lesson.

Teaching/Learning methods –

Discussion method, question and answer method.

Teaching/Learning activities -

Illustrating the relationship between the fundamental principles of economics using the PPF. Activity 8, answering questions and taking notes.

Further activities

Carrying out further research on the relationship between the fundamental principles of economics.

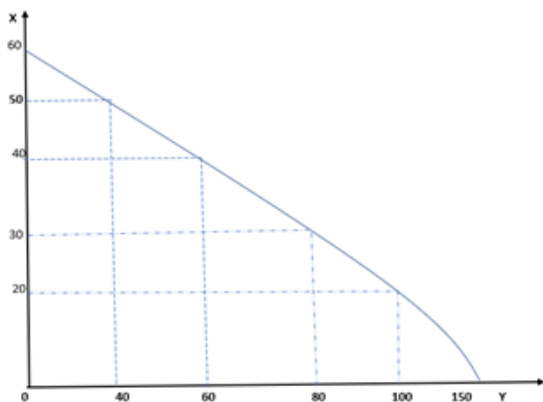
Extended and remedial activities

Provide extra work to fast learners to do and give remedial work to slow learners and endeavor to assist them grasp the concepts.

Answer to Activity 2.1

(a) the firm can increase technology and resources use in production of X increase on production of Trousers (X).

(b) Production Possibility Frontier (PPF)



(c) Refer to SUSB UNIT 2.2: for the assumptions and importance of the PPF.

Assessment

Learners to do research on different types of PPF.

LESSON 3: The production possibility frontier/PPF

The PPF is a locus of points showing the possible combinations of two commodities that can be produced when all the resources are fully utilised. It is also called the transformation curve or the opportunity cost curve.

Assumptions of the PPF

- It assumes that only two commodities are produced.
- It assumes that the level of technology is fixed and constant.
- It assumes that all resources are fully utilised.
- It assumes that similar resources will be used to produce either or both of the two goods.

Learning outcome

By the end of this sub-topic, learners should be able to define the PPF, explain

the assumptions of the PPF, illustrate the PPF and explain the importance of the PPF.

Preparation for the lesson

- The teacher should ensure that the teaching-learning materials are available.
- The teacher should prepare work to be given to students for illustrating the PPF.

Teaching/Learning resources:

Recommended students books, internet access, newspaper articles on Economics, economic journals.

Interactive learning

Use learner centered methods such as question and answer, discussion method and group work so that all participate in the lesson. Ensure that slow learners are also involved in the lesson.

Teaching/Learning activities

Drawing the PPF using that information provided in **Activity 7**, carrying out debates, asking and answering questions, taking notes.

Further activities – Doing exercises on illustration of the PPF, further reading on the sub-topic in the learners' book.

Extended and remedial activities

Learners to draw PPF on their own and describe it. They should submit their work for checking.

Assessment

Provide continuous assessment tests on the illustration of the PPF to the learners to assess whether the learners have acquired accuracy skills.

Answer to activity 2.2.

Ref to ECONOMICS Learner's book 4

Sub unit 2.3 for the relationship between scarcity, choice and opportunity cost.

LESSON 4: Shifts in the Production possibility frontier (PPF)

The PPF may shift inwards or outwards. A shift of the PPF inwards indicates economic decline while a shift outwards indicates economic growth.

An outward shift from indicates economic growth and this may be due to any of the following reasons:

- Discovery of new natural resources.
- Advancement in technology that leads to production of more goods and services.
- Expansion of markets that encourages production of more goods and services.
- Improvement in the skills of labour that results into efficiency in production.
- Increased investment as a result of improved entrepreneurship skills

An inward shift from indicated economic decline as it indicates a reduction in the quantity produced of both Y and X.

Learning outcome

By the end of this sub-topic, the learner

should be able to:

- Illustrate shifts in the PPF.
- Explain reasons for the inward and outward shifts in the PPF.

Preparation for the lesson

- The teacher should instruct the learners to undertake research on the shifts in PPF by preparing and showing them the relevant reference materials where they can get the necessary information such as relevant textbooks and internet websites.
- Organise the learners in small groups.

Teaching/Learning resources:

Recommended students books, internet access, newspaper articles on economics, Economics journals

Interactive learning

Group work, discussion, question and answer among other learner centered methods should be used to encourage learner participation in the lesson

Teaching/learning methods – Discussion, question and answer and pair work/debates.

Improvisation- Ensure to improvise for learners who are slow in learning

Learning activities - Illustrating the inward shift and the outward shift of the PPF. **Activity 9**, asking and answering questions, taking notes

Further activities

Reading from the learners' book and working on activity 9 for discussion

Extended and remedial activities

Learners to visit their neighbouring business people and ask them what they considered first before starting such businesses.

Activity 2.2 and 2.3

Ref to ECONOMICS Learner's book 4

Sub Unit 2.3 and 2.4 for Shifts in the PPF

Assessment

Give assignments to the learners to assess their research skills as well as creativity and innovation skills.

LESSON 5: Economic questions

There are a number of fundamental economic questions that are faced by all countries as they try to allocate resources in the production of goods and services. These fundamental economic questions include; what to produce, how to produce, when to produce, where to produce and for whom to produce?

Lesson objectives

By the end of this sub-topics the learner should be able to identify the different economic questions that a firm has to answer as it carries production activities.

Preparation for the lesson

- Identify any firm for example Inyange industries and list examples of some decisions that it has to make. Like on location, tools and equipments to use, human resources to employ, time to engage in production and the nature of goods to produce among others.

To be used as a case study by the learners.

- Divide learners in small groups.
- Organize the sitting arrangement according to learners groups.

Teaching/ Learning resources

Recommended students books, internet access, newspaper articles on economics, Economics journals

Interactive learning

Divide the class in to small groups and assign to each group work from the case study to discuss and presentation.

Teaching/Learning methods – Question and answer method, case study, discussion method.

Improvisation

Make improvised materials for use by special needs learners.

Teaching/Learning activities – Answering questions, taking notes

Further activities

Reading from the learners' book and working on case study 4.

Extended and remedial activities

Provide additional work to the learners for discussion and where slow are not on the same pace with the rest provide remedial activities to them.

Activity 2.4

Ref to ECONOMICS Learner's book 4

Sub Unit 2.5

Assessment

Give continuous assessment tests to the learners to assess their knowledge and understanding.

Answers to the Unit Assessment

1. Fundamental economic principles are the basic principles of Economics explain that human wants are unlimited and the resources to satisfy them are limited. Therefore, these principles show the fundamental problems of humans in their bid to try and use the scarce resources to satisfy unlimited wants. They include scarcity, choice and opportunity cost.

2. Relationship between the fundamental economic principles.

Because of scarcity of resources, the producer cannot produce the same level of output for both the two goods but will make choice to either produce more of X or less of Y and vice-versa. If the producer produces more of X he foregoes units of Y (opportunity cost) as shown by the PPF in the Learner's Book.

3. A shift outwards by the PPF indicates economic growth while a shift inwards by the PPF indicates economic decline as shown by the illustrations in the Learner's Book.

An outward shift indicates economic growth and this may be due to any of the following reasons;

- Discovery of new natural resources.
- Advancement in technology that

leads to production of more goods and services.

- Expansion of markets that encourages production of more goods and services.
- Improvement in the skills of labour that results into efficiency in production.
- Increased investment as a result of improved entrepreneurship skills.

An inward shift indicates economic decline as it indicates a reduction in the quantity produced of both Y and X.

4. Major economic questions

What to produce: Here the firm needs to decide on the nature of the goods to produce whether to produce capital goods or consumer goods.

How to produce: This is another question that the producer needs to take a decision on. The producer will decide on the methods and techniques to be used in the production of goods and or services.

When to produce: The producer is required to decide whether to produce now or to produce in future.

Where to produce: The producer will have to decide on the location of his/her firm or industry.

For whom to produce: The producer will consider the target consumers that will use the goods he/she will produce. The produce may be for the young, the rich or the poor, for the rural people or for the urban people.

Refer to Learner's Book pages 34-39

TOPIC AREA 1: GENERAL INTRODUCTION TO ECONOMICS

SUB-TOPIC AREA 1.1: BASIC ECONOMIC CONCEPTS AND PRINCIPLES

This unit deals with the methodology of studying Economics. While some scholars regarded Economics as a science, which therefore ought to be studied like other natural sciences like Physics, others regarded it an art. The modern Economists are in agreement that economics is a social science that studies human behaviour (unlike natural sciences like physics that study nature) and thus uses scientific enquiry (based on observations and deductions) to build models that explain human behavior.

This unit is divided into the following sub-topics:

- i. Nature of Economics.
- ii. Positive and normative economics.
- iii. Economic variables.
- iv. Branches of Economics.

Key unit competence

At the end of the 8 lessons, the learner should be able explain the nature of Economics as a social science and identify the branches of Economics and economic variables. As you teach this unit, ensure that the learner acquires the following skills, values and attitudes:

Knowledge and understanding	Skills	Attitudes and values
<ul style="list-style-type: none"> - Explain the nature of Economics as a science and as an art. - Distinguish between normative and positive Economics. - Distinguish between endogenous and exogenous variables. - Distinguish between microeconomics and macroeconomics. 	<ul style="list-style-type: none"> - Describe the nature of Economics with respect to other sciences. - Analyse the importance of economic variables in describing the economic phenomenon. - Compare and contrast microeconomics and macroeconomics and their relevance in the economy. 	<p>Appreciate the nature of Economics as a science or an art and show the concern for the society and the entire economy.</p>

Additional notes for the teacher

Economics is a social science just like Sociology, Political Science, History and Psychology. However, it should be emphasised that Economics is only concerned with the study of how humans make Economic decisions like production and consumptions and not all aspects of human life. For example, how human beings interact in society is the domain of Sociology and how they make political decisions is the domain of Political Science. The branches of Economics are categorised based on the approach of analysis (normative and positive Economics) and the scope (microeconomics and macroeconomics). Do thorough research on categories of economics.

Cross-cutting issues

While teaching this topic, it will be important to consider the widening nature and scope of Economics to encompass the effects of human activities, especially economic activities, on the environment and sustainability of human race. The massive extraction of raw material has led to depletion of those materials, use of biofuels has resulted to global warming and thus the climate change that is affecting millions of farmers and threatening their livelihoods.

Environmental economics and sustainable development Economics are new branches of Economics that are emerging to ensure the environment is conserved and the resources are used prudently to ensure sustainability.

LESSON 1: Nature of Economics

Begin this sub-topic by organising learners into groups to carry out activity 3.1. This will give the learners ideas on

whether Economics can be classified as a science or an art. This will form a foundation of the presentation of the rest of the sub-topic.

Specific learning outcome: By the end of the sub-topic, the learner should be able to explain the nature of Economics as a social science.

Preparation: Ensure you have a diagrammatic representation of the steps in scientific enquiry used in developing economic models, newspaper articles on economics of climate change and other relevant resources for introducing the sub-topic.

Teaching and learning resources Economics learners books, internet access, magazines, journals and relevant newspaper articles.

Teaching/Learning methods:

Group discussions, questions and answer, expository method.

Learning/Teaching activities:

Class discussions, taking notes and class presentations.

Further activities

Learners to do research on the different types of Economics, make notes and present to the teacher for checking.

LESSON 2: Positive and normative economics

Begin by engaging learners in **Activity 3.2**. Use **Activity 3.2** as a foundation to present the distinction between positive and normative economics

Specific learning outcomes: By the end of the sub-topic, the learner should be able to distinguish between positive and normative Economics.

Preparation: Ensure that you have formulated normative and positive statements that cover topical economic issues in Rwanda that learners can identify with.

Teaching and learning resources: Economics learner's textbooks, internet access, newspaper articles and journals.

Teaching/Learning methods

Discussion, question and answer, expository method

Learning/Teaching activities: Class discussions, taking notes, class presentations.

Remedial activities

Learners to read the learners book and any other reference economic material and find out what economic variables are.

Economic variables

At this level, the learners are familiar with what Economics entails. Begin this sub-topic by involving the learners in **Activity 3.3**. While economic variables are numerous, direct learners into making abroad distinction between variables that can be changed and those that cannot be changed hence the classification of exogenous and endogenous variables.

Specific learning outcomes: By the end of the sub-topic, the learner should be able to distinguish between exogenous and endogenous variables

Preparation: Research on the examples of the exogenous and endogenous variables and localise your examples to Rwandan economic situation.

Teaching/ Learning resources

Economics textbooks, internet access and newspaper articles.

Teaching and learning methods:

Discussion expository method, question and answers.

Learning/teaching activities:

Class discussions, taking notes, class presentations.

Further activities

Learners to discuss more endogenous and exogenous factors.

Answer to activity 3.2

Ref to ECONOMICS Learner's book 4

Sub unit 3.2 for Positive and normative economics. Students give their opinions.

LESSON 3: Branches of Economics

Begin this sub-topic by engaging the learners in **Activity 3.4**. Economics can be divided into numerous branches but the main branches are microeconomics and macroeconomics. There is needed to go further give learners the examples of units and decisions under the two branches. Individuals, households (families) and firms and the decisions they make about production and consumption fall under microeconomics. Macroeconomics deals with the totality of all the economic agents within the economy.

You need also to go further and emphasise that these are merely the traditional branches and over time other branches like development Economics, institutional Economics and industrial economics have emerged.

Specific learning outcomes: By the end of the sub-topic the learner should be able to distinguish between microeconomics and macroeconomics.

Preparation: Make sure you have newspaper articles or economic journals covering an aspect of each branch. For example, you

may find an article about inflation, economic growth, a survey on individual consumer patterns, a firm's behaviour (investment or production). These examples need to be relevant to Rwanda to enable learners identify with them.

Teaching and learning resources

Economics textbooks, magazines and newspaper articles and internet connection.

Teaching and learning methods:

Class discussions, expository method, question and answers.

Learning/Teaching activities

Class discussions, taking notes and class presentations

Cross cutting issues

Besides the broad categorisation of Economics into microeconomics and macroeconomics branches, environmental Economics and sustainable development Economics are new branches of Economics that are emerging to ensure the environment is conserved and the resources are used prudently to ensure sustainability.

In sub-Saharan Africa, which includes Rwanda, reproductive health has been a serious issue that has threatened economies and households especially due to maternal health and child mortality as well as HIV and AIDS. These concerns have led to emergence of health Economics as a branch of Economics that cuts across microeconomics and macroeconomics aspects. While teaching this sub-topic, you need to bring out these cross cutting issues.

Further activities

Learners to do research on different fields that deal with microeconomics and macroeconomics.

Answers to Unit Assessment

1. (i) **Positive Economics** is a branch of Economics that studies variables the way they are and the way they exist in real life. Positive economics is factual and can be verified. It uses objective explanations. **Normative Economics** is a branch of Economics that studies variables the way they ought to be, as a desirable condition. It uses subjective explanations.
 - (ii) **Endogenous factors** are internal forces which originate from within the system, and occur within a particular model. **Exogenous factors** originate from outside the system.
 - (iii) **Microeconomics** is a branch of Economics that studies individual units of the economy such as households, firms or prices of commodities. **Macroeconomics** is a branch of Economics that studies all units of the economy as an aggregate. It looks at the economy as a single functioning unit.
2. (i) Study of the functioning of prices in an economy: **macroeconomics**.
 - (ii) Rwanda's economy is growing at a fast rate: **macroeconomics**.
 - (iii) Study of employment levels and unemployment levels in the economy: **macroeconomic**.
 - (iv) Study of the operation of firms: **microeconomic**.
 - (v) Taxation: **macroeconomic**
 - (vi) Every member of labour force in the country should be employed: **macroeconomic**.

Refer to Learner's Book pages 40 - 69

**TOPIC AREA 1: GENERAL
INTRODUCTION TO ECONOMICS**

**SUB-TOPIC AREA 1.2:
PRINCIPLES TOOLS OF
ECONOMIC ANALYSIS**

Introduction

This unit will introduce the learner to mathematical tools that are used in solving economic problems. Understanding basic Mathematics is important in Economics which has a deep relationship with both Mathematics and Statistics. There is no need to worry however for learners who may not be very competent in Mathematics since the topic is meant to help in analysis of Economics and

proficiency can be progressively achieved. The main sub-topics to be covered in this unit will be:

- i. Linear and nonlinear equations.
- ii. Simultaneous and differential equations.
- iii. Economic graphs using linear, nonlinear, simultaneous and differential equations.
- iv. Solution of economic problems using fractions.

Key unit competence

At the end of 20 lessons in this unit, the learners should be able to describe economic phenomenon using mathematical tools.

Knowledge and understanding	Skills	Attitudes and values
<ul style="list-style-type: none"> - Solve linear, nonlinear, simultaneous and differential equations as applied in Economics. - Sketch economic graphs using linear, nonlinear, simultaneous and differential equations. - Solve economic problems using fractions. 	<ul style="list-style-type: none"> - Apply linear, nonlinear, simultaneous and differential equations to economic phenomenon. - Illustrate economic graphs using linear and nonlinear, simultaneous and differential equations. - Use fractions to analyse economic phenomenon/situations. 	<ul style="list-style-type: none"> - Adopt mathematical tools in solving economic problems in real life.

Additional information for the teacher

Some learners may be weak in Mathematics and therefore get discouraged in the study of Economics. Ensure that learners understand that their skills can be improved over time. Furthermore, this unit should not be made too mathematical to the disadvantage of the learners who are not too adept in mathematics. Introduce learners to this unit from the known to unknown.

LESSON 1: Linear and nonlinear equations

This is the introductory sub-topic in this unit. Introduce the unit by discussing the simplest linear equations of the form $a + bx = q$. Ensure that the numbers used are correctly interpreted as either parameters or coefficients and the accompanying signs are also given meanings. These equations should also be related to economic problems they address for example demand equation or supply equation. Then discuss nonlinear equations like polynomials, quadratic functions and exponential functions.

Specific learning outcome: By the end of the sub-topic the learner should be able to solve linear and nonlinear equations as applied in Economics.

Preparation: Freshen your skills in Mathematics and instruct your learners to do the same. Ensure you have ample examples that will help learner do sufficient practice. Finally prepare teaching notes for the sub-topic.

Teaching/Learning resources:

Economics textbooks, journal, internet, and Mathematics textbooks.

Teaching and learning methods

Class discussions, questions and answers, expository method and use of illustrations

Teaching/Learning activities: Class presentations, taking notes, research and calculations.

Further activity

If G-Mart supermarket targeted sales revenue of 80 million FRW determine the advertising expenditure that it would have to incur. Use $y = 15 + 5x$

LESSON 2: Simultaneous and differential equations

This sub-topic builds on the knowledge in subtopic one. It is important for the learners to familiarise themselves with the methods of solving simultaneous equations such as elimination method and substitution method. Give them prior notice to revisit the simultaneous methods and basic calculus in their Mathematics texts. Applicability for simultaneous equations is in market equilibrium while differential equations are used in analysis of marginal utility, marginal profits, marginal costs and marginal costs. Ensure the learners understand the equations before you introduce their applicability.

Specific learning outcome: By the end of the sub-topic, the learner should be able to solve simultaneous and differential equations as applied in Economics.

Teaching/Learning resources:

Economics textbooks, journal, internet, mathematics textbooks.

Teaching and learning methods:

Class discussions, questions and answers, expository method and use of illustrations

Teaching/learning activities: Class presentations, taking notes and research, calculations.

Further activities

Determine Q and P from the below simultaneous equation.

1. $Q + 6P = 10$
 $Q = 20 - 4P$
2. $4P + 6Q = -3$
 $3P - 5Q = 14$

Activity 4.4

GROUP A

(1)

$$Q = 3P + 2$$

$$Q = 2 - P$$

$$Q - 3P = 2$$

$$Q + P = 2$$

$$Q - 3P = 2$$

$$Q + P = 2$$

$$Q - 3P = 2$$

$$Q + P = 2$$

$$-4P / -4 = 0 / -4$$

P = 0

(2)

$$3P + 7Q = 10$$

$$4P - Q = 3$$

$$3P + 7Q = 10$$

$$4P - Q = 3$$

$$12P + 28Q = 40$$

$$12P - 3Q = 9$$

$$0 + 31Q / 31 = 49 / 31$$

$$Q = 49 / 31$$

$$4P - 49 / 31 = 3$$

$$4P = 3 + 49 / 31$$

$$P = 568 / 31$$

18.3

(3)

$$5P + 10Q = 10$$

$$2P - Q = 1$$

$$2 \mid 5P + 10Q = 10$$

$$5 \mid 2P - Q = 1$$

$$- \mid 10P + 20Q = 20$$

$$10P - 5Q = 5$$

$$0 + 25Q / 25 = 15 / 25$$

$$Q = 3 / 5$$

$$2P - Q = 1$$

$$2P - 3 / 5 = 1$$

$$2P = 8 / 5$$

P = 8 / 10

(4)

$$\mid 2P + Q = 7$$

$$3P + Q = 10$$

$$3 \mid 2P + Q = 7$$

$$2 \mid 3P + Q = 10$$

$$- \mid 6P + 3Q = 21$$

$$3P + 2Q = 20$$

$$0 + Q = 1$$

Q = 1

$$2P + Q = 7$$

$$2P + 1 = 7$$

$$2P = 6$$

P = 3

GROUP B

(5)

$$\mid 5P + 3Q = 7$$

$$4P - 5Q = 3$$

$$4 | 5P + 3Q = 7$$

$$5 | 4P - 5Q = 3$$

$$- | 20P + 12Q = 28$$

$$20P - 25Q = 15$$

$$0 - 37Q/37 = 13/37$$

$$\mathbf{Q = 13/37}$$

$$5P + 3Q = 7$$

$$5P = 7 - 3(13/37)$$

$$5P = 220/37$$

$$\mathbf{P = 220/185}$$

(6)

$$4P + 6Q = -13$$

$$3P - 5Q = 14$$

$$3 | 4P + 6Q = -13$$

$$4 | 3P + 5Q = 14$$

$$- | 12P + 18Q = -39$$

$$12P - 20Q = 56$$

$$38Q/38 = (-95)/38$$

$$\mathbf{Q = (-95)/38}$$

$$3P - 5Q = 14$$

$$3P = 14 + 5((-95)/38)$$

$$3P = 57/38$$

$$\mathbf{P = 57/190}$$

(7)

$$6P + 3Q = 1$$

$$4P - 2Q = 2$$

$$| 6P + 3Q = 1$$

$$4P - 2Q = 2$$

$$4 | 6P + 3Q = 1$$

$$6 | 4P + 2Q = 2$$

$$- | 24P + 12Q = 4$$

$$24P - 12Q = 12$$

$$24Q/24 = (-8)/24$$

$$\mathbf{Q = (-1)/3}$$

$$3P - 5Q = 14$$

$$3P - 5((-1)/3) = 14$$

$$3P = 14 - 5/3$$

$$3P = 37/3$$

$$P = 37/6$$

$$\mathbf{P = 6.16}$$

(8)

$$3P + 5Q = 12$$

$$6P - 4Q = 3$$

$$6 | 3P + 5Q = 12$$

$$3 | 6P - 4Q = 3$$

$$- | 18P + 30Q = 72$$

$$18P - 12Q = 9$$

$$42Q/42 = 81/42$$

$$\mathbf{Q = 63/42}$$

$$3P + 5Q = 12$$

$$3P = 12 - 5(63/42)$$

$$3P = 12 - 315/42$$

$$3P/3 = 189/42$$

$$\mathbf{P = 1.5}$$

GROUP C

(9)

$$6P + 3Q = 2$$

$$P + Q = 1$$

$$1 | 6P + 3Q = 2$$

$$6 | P + Q = 1$$

$$- | 6P + 3Q = 2$$

$$6P + 6Q = 6$$

$$(-3Q)/(-3) = 4/(-3)$$

$$Q = -1.25$$

$$P + Q = 1$$

$$P - 1.25 = 1$$

$$P = 1 + 1.25$$

$$P = 2.25$$

(10)

$$2P + Q = 7$$

$$4P + Q = 11$$

$$4 \mid 2P + Q = 7$$

$$2 \mid 4P + Q = 11$$

$$\mid 8P + 4Q = 28$$

$$8P + 2Q = 22$$

$$2Q/2 = 6/2$$

$$Q = 3$$

$$2P + Q = 7$$

$$2P + 3 = 7$$

$$2P = 4$$

$$P = 2$$

(11)

$$5P + 7Q = 12$$

$$6P - 3Q = 3$$

$$6 \mid 5P + 7Q = 12$$

$$5 \mid 6P - 3Q = 3$$

$$\mid 30P + 42Q = 72$$

$$30P - 15Q = 15$$

$$57Q/57 = 57/57$$

$$Q = 1$$

$$6P - 3Q = 3$$

$$6P - 3(1) = 3$$

$$6P = 6$$

$$P = 1$$

(12)

$$2P + 3Z = 2$$

$$6P - 12Z = 13$$

$$6 \mid 2P + 3Z = 2$$

$$2 \mid 6P + 12Z = 13$$

$$\mid 12P + 18Z = 12$$

$$12P + 24Z = 26$$

$$42Z/42 = (-14)/42$$

$$Z = (-1)/3$$

$$2P + 3((-1)/3) = 2$$

$$2P - 1 = 2$$

$$2P = 3$$

$$P = 1.5$$

LESSON 3: Economic graphs using linear, nonlinear, simultaneous and differential equations

Using the background knowledge of the learner from the previous sub-topics and Mathematics, discuss the various shapes of the graphs formed by the linear equations, nonlinear equations, differential equations and simultaneous equations. Ensure that the learners are able not only to draw but also interpret each of the graphs.

Specific learning outcomes: By the end of the sub-topic, the learner should be able to sketch economic graphs using the linear, nonlinear, and simultaneous and differential equations.

Preparation: Ensure learners are given tasks well ahead of the beginning of the sub-topic for them to research on and practice. Further, ensure you have detailed notes with graphs ready for effective delivery. The equations to be used for graphs need to be tested before the lessons to ensure they produce the desired graphs.

Teaching/Learning resources:

Economics textbooks, journal, internet, and Mathematics textbooks.

Teaching and learning methods:

Class discussions, questions and answers, expository method and use of illustrations

Teaching/Learning Activities: class presentations, taking notes, drawing and interpreting curves, research and calculations

Further activities

Given that $TR = 120Q - 2.5Q^2$, find marginal revenue function and hence illustrate on a graph.

LESSON 4: Solution of economic problems using fractions

The concept of fractions in Economics is most applicable in the computation of elasticity which is actually a ratio expressed in percentage. Begin the sub-topic by discussing how fractions are solved and then their application in computation of elasticity.

Specific learning outcome: By the end of subtopic, the learner should be able to solve economic problems using fractions

Preparation: Ensure you have necessary teaching notes

Teaching/Learning resources:

Economics textbooks, journal, internet, mathematics textbook.

Teaching and learning methods:

Class discussions, questions and answers, expository method and use of illustrations.

Teaching/Learning activities: Class presentations, taking notes,, research,

calculations.

Further activity

A farmer has 20 dairy cattle, 30 sheep, 50 chicken and 10 donkeys. Express as a fraction the number of: cattle, sheep, chicken and donkey.

Answers to Unit Assessment

1. Get the information from the newspapers, business magazines and journals or official statistical books having the required information. Thereafter, draw the graph.
2. Reasons why some sectors of the economy get a bigger share than others.
 - (i) Such sectors earn a country more income than others.
 - (ii) Such sectors employ more people than others.
 - (iii) Resources are easily available in such sectors
 - (iv) The sectors getting bigger shares may be the essential sectors, that cannot be ignored in the economy

Refer to Learner's Book pages 70-108

TOPIC AREA 2: MICRO ECONOMICS

SUB-TOPIC AREA 1.1: PRICE THEORY

Introduction

Demand theory is a central pillar in Economics. To understand how the economy functions, one has to understand demand because to a larger extent, the level of demand determines how much the producers produce for the market and the prices that prevail in the market. While lack of demand presents an economic problem, excess demand is also a problem that must be contended with. In this unit, demand is defined, its types and determinants discussed and its

relationship with the price analysed.

In this unit, the main sub topics covered are:

- i. Types of prices and markets.
- ii. Price determination in the market.
- iii. Law of demand.
- iv. Types of demand and its determinants.
- v. Demand schedules and curves.

Key unit competence

At the end of 22 lessons, the learner should be able to determine their consumption habits in the market. As you teach this unit, ensure learners acquire the following skills, attitudes and values:

Knowledge and understanding	Skills	Attitudes and values
<ul style="list-style-type: none"> - Identify different types of prices and markets. - Explain how prices of commodities are determined in the markets. - State the law of demand and explain the types of demand and describe the shape of the demand curve. - Identify possible determining factors of demand. - Distinguish between normal and abnormal demand curves and between change in demand and quantity demanded. 	<ul style="list-style-type: none"> - Analyse the factors that determine prices in the market. - Examine the factors determining demand. - Use the demand curve to illustrate the law of demand and the relationship between price and quantity demanded. - Analyse the factors that may lead to violation of the law of demand. 	<ul style="list-style-type: none"> - Appreciation that demand is a relationship between price and quantity demanded and that demand is sensitive to changes in the determining factors.

Additional information for the teacher

In view of the key unit competence, contextualising the theory to reflect the local conditions and examples is important. Rather than use textbook examples, it is important to find relevant examples in the community that learners can use to analyze their own consumption habits. For example, instead of analysing the demand for cheese and hamburgers using dollars as currency for unit price, use avocado, banana or mangoes and Rwandan Franc (FRW) as currency for unit price.

Conducting a field study to help learners appreciate the pricing mechanism in action and collect data for use in class in developing demand schedules and drawing demand curves will be very pertinent in effective delivery of this unit.

Cross-cutting issues

In view of the recent financial crisis that affected the global demand for goods and services and hence slowing down the economic growth of African countries including Rwanda, take time to assist the learners appreciate the role of demand in the economy and the interrelationship of the countries of the world (globalisation) and how this eventually affect the local demand.

For example, a local farmer supplying fresh produce to a restaurant in Akagera National Park will sell less or fetch lower prices per unit if financial crises affect America which is a source market for tourist coming to Rwanda. With lower number of tourists, the quantity demanded of the farmer's produce will be less.

LESSON 1: Types of prices and markets

Begin this sub topic by engaging the learners in activity 5.1. Summarise the learner's presentations that anchor the rest of the subtopic. Ensure you present the definition of terms used in this subtopic (price and market) from the onset to enable learners follow the discussion.

Specific learner outcomes: By the end of the subtopic, the learner should be able to identify different types of prices and markets.

Preparation: If possible prepare for a field trip to a market and direct learners to make observations. These observations would be important for introduction of this sub topic. Compile a list of commodities and their respective prices from the local markets. Newspaper cutting would be critical source of information for other types of market (like capital market and foreign exchange market).

Teaching and learning resources: Newspaper articles, Economics textbooks, foreign exchange reports and photographs.

Teaching and learning methods: Discussions, question and answers, expository method, debates, simulations.

Learning/Teaching activities class discussions, taking notes, class presentations, field trip and role playing (Activity 5.2).

Cross-cutting issues

Financial education: emphasise the importance of budgeting to give priority to basic needs, this also ensures that consumers do not engage in impulse buying.

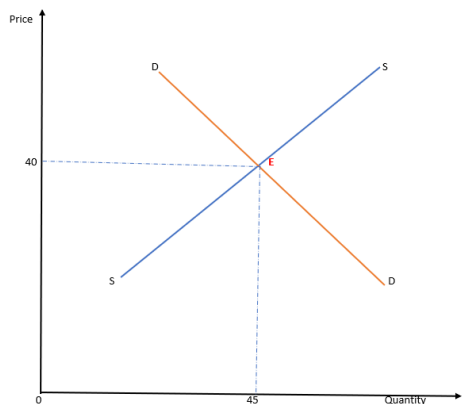
Environment, climate change and sustainability. Point out that buying and selling is efficient and sustained in clean environment. Buyers and sellers with health complications occasioned by unclean environment are less productive.

Activity 51

Learners discuss and come up with their ideas which should be in line with Sub unit 5.1 in the Learners Book 4

Activity 5.2

Learners role play sellers and buyers in the market and come up with their ideas which should be in line with Sub unit 5.1.1 in the Learners Book 4



Equilibrium price is 40 and equilibrium quantity is 45

Further activity

Discuss different types of prices in the market.

LESSO 2: Price determination in the market

At this level, the learners are familiar with the concept of price and market. Build on these concepts to explain how prices are determined in the market.

Specific learning outcomes: By the end of the sub topic, the learner should be able

to explain how prices of commodities are determined in the market.

Preparation: Prepare a detailed presentation based on the field study in subtopic one to explain the concept of price determination. Ensure that you emphasise on the central role played by scarcity in the price determination by using relevant examples like fuel shortage and the effects of famine on the price of food commodities. Prepare presentation on other factors like competition, government policy, type of product and demand and supply forces and ensure the examples are as localised as possible.

Teaching and learning resources

Economics text books, journals, magazines and newspaper articles, internet, field study reports and audio-visual.

Teaching and learning methods:

Expository method, discussions, questions and answers.

Learning/Teaching activities

Class discussions, taking notes, class presentations, interpretation of photographs (Activity 5.5).

LESSON 3: Demand and its determinants

Begin this sub-topic with learners' presentations of the Activities 5.7 and 5.8, summarise them and give operational definitions. It will necessary for you to explain the law of demand early in the subtopic so that learners can relate demand to the price discussed in the previous subtopic. This is also the time to introduce the graphical approach in the analysis of the demand theory (use it to show the law of demand). Explain

determinants of demand showing the effects of varying each determinant to quantity demanded. Involve the learners in this scenario analysis.

Specific learning outcomes: By the end of the sub topic. The learner should be able to explain the concept of demand, state the law of demand and identify possible determining factors of demand.

Preparation: Arrange for the learners to carry out Activities 5.7 and 5.8 prior to the beginning of this sub-topic. Collect enough information on demand trends of a local commodity. For example, demand for gumboots/umbrella and demand for plastic bags in Kigali after the government ban.

Teaching/Learning resources

Economics textbooks, newspaper/magazines articles, internet and graphs/demand curves.

Teaching/Learning methods: Expository method, discussions, guided discovery, questions and answers and illustrations.

Learning/Teaching activities: Class discussions, taking notes, class presentations, drawing and interpreting graphs and simulations

LESSON 4: Demand schedules and curves

Begin the sub topic by engaging the learners in **Activity 5.14**. When teaching this sub topic ensure that the data used to plot the demand curves is presented in schedules that learners are involved in preparing (at least one of the schedules) to give relevance to the content. Some learners will find it easier to understand concepts when illustrated graphically so be prepared to use these graphs to show the changes in quantity demanded, normal and abnormal goods (in respect

to the obedience of the law of demand).

Specific learning outcomes: By the end of the sub topic, the learner should be able to;

- i. describe the shape of the demand curves.
- ii. distinguish between the normal and abnormal demand curves and between change in demand and change in quantity demanded.

Preparation: Ensure that you have demand schedules to be used in class for plotting the demand curves. You may need to involve the learners in preparation of the demand schedules. This involvement is important for understanding of this sub topic.

Teaching/Learning resources

Economics textbooks, fieldwork reports, newspapers and internet.

Teaching/Learning methods:

Expository method, discussions, questions and answers and illustrations.

Learning/Teaching activities: Class discussions, taking notes and class presentations.

Further activity

Differentiate the normal and abnormal demand curves using illustration.

Activity 5.4

Refer to sub unit 5.1.2 in Learners Book 4

Refer to sub unit 5.1.3 in Learners Book 4 on price determination in the market

Refer to sub unit 5.1.4 in Learners Book 4 for factors determining price in the market

Answers to Unit Assessment

1.
 - i.) **Demand** refers to the desire and willingness backed by the ability to purchase a particular good or service at a given time. It implies that the buyer has a need that can be satisfied by the commodity in question, and he is able to pay the price at which that commodity is selling.
 - ii.) **Quantity demanded** is the amount of the commodity that buyers are able and willing to purchase at different prices in a given period of time. Buyers shall be willing to purchase different amounts of a commodity at different prices.
 - iii.) **Effective demand** is the desire backed by the ability to purchase a commodity at a given price and the actual buying of the commodity. Effective demand means that the consumer wants the commodity, he has the required amount of money to buy it, the commodity exists in the market, and he actually buys it.
 - iv.) **Market demand for the commodity** refers to the total demand for all consumers of a particular commodity in the market at a particular time.
2.
 - i.) **Price** refers to the relative value of a commodity expressed in some monetary terms. Different commodities in a market have different market values expressed in monetary terms.
 - ii.)
 - **Demand and supply:** The interaction between the forces of demand and supply determine the price in the market. When

demand exceeds supply, there is a rise in the price level and when supply exceeds demand, there is a fall in the price level. When the market forces of demand and supply are allowed to interact without interference, equilibrium is attained in the market where quantity demanded is equal to quantity supplied.

- **Sales auction (bidding):** This is where there is one seller and many buyers competing for the available commodity. Each buyer offers the price he is willing to pay the commodity. The one offering the highest price takes the commodity. Such a method is usually used in awarding contracts in the construction industry.
- **Price legislation:** This is where the price is fixed by the government. It is either maximum price legislation or minimum price legislation. It becomes illegal for one to buy or sell below or above the legislated price.
- **Haggling/Bargaining:** This is negotiation between the buyer and the seller. The seller demands for a higher price while the buyer offers a lower price. Each of them keeps adjusting until they reach a price upon which they all agree to exchange.
- **Resale price maintenance:** This is where prices are fixed by the producer up to the retail level. For instance retail prices for Newspapers, Air time cards, etc are determined by the producers.
- **Treaties (agreements):** These

are agreements between buyers and sellers or sellers alone on prices at which they should buy/sell a particular commodity. This is usually done to avoid sellers underselling each other through competition.

- **Price leadership (Imperfect collusion):** This is where the biggest and low cost firm in the industry (price leader) or the oldest firm (**barometric price leadership**) sets the price for other firms in the industry to follow. Such a firm enjoys economies of scale. It has a wide experience in the market and it is a market leader.

3.

Commodity market is a market that is involved in the exchange of consumer goods. **Capital market** is a market that deals in the buying and selling of financial products. The commodities sold on a capital market are basically financial products usually called securities like shares, debentures and government bonds.

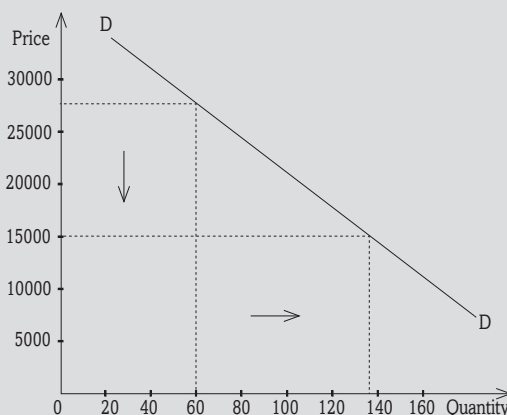
4.

- This states that “**the higher the price, the lower the quantity demanded and the lower the price, the higher the quantity demanded of a commodity, ceteris paribus.**”
- Change in taste and preferences: Change in fashion, education, religion, habit, sex etc affects the consumption patterns of the population which in turn influences demand for a particular commodity. For instance, if a large proportion of the population converts to Islam, the demand for

pork reduces.

- Change in the size and structure population: It affects aggregate demand by increasing consumption. As the population of the country increases, total consumption is also affected.
- Past levels of income: The higher the past level of income, the higher the demand and vice versa. This is because the consumer will be used to high spending.
- Price expectations: When prices are expected to increase in the future, quantity demanded increases in the current period. This is because buyers tend to make more purchases and stocking for fear of paying higher prices in the days to come.

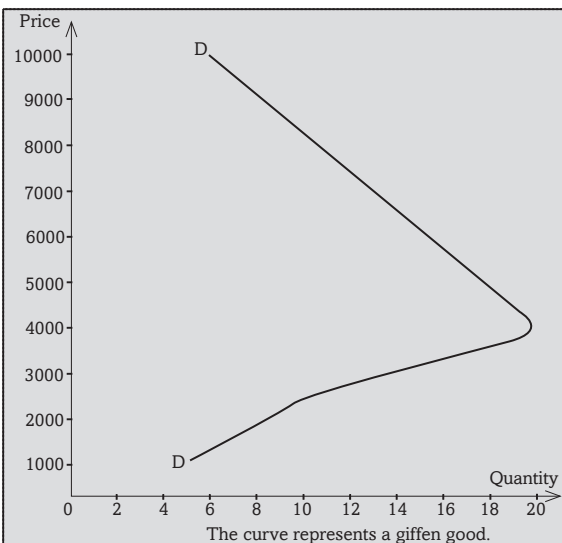
5.



6.

- Goods of ostentation (luxuries). These are goods that have a conspicuous consumption. They are consumed to emphasise the status of the consumer. **Giffen goods** are those cheap items that are largely consumed by low income earners and take a large portion of their income such as cheap foodstuffs.

ii)



7. **Joint demand:** This is demand for commodities that are used together such that increase in demand for one commodity leads to increase in demand for another. **Competitive demand** There are commodities that serve the same purpose. For such commodities, increase in demand for one reduces the demand for the other.

8

Change in demand

- Increase in consumer income
- Population increase
- Favourable government policy

9. $2p = 24Q_d$ and $12 + 2p = Q_s$

$$Q_d = 24 - 2p \text{ and } 12 + 2p = Q_s$$

$$24 - 2p = 12 + 2p$$

$$12 = 4p$$

$$3 = p$$

$$Q_d = 24 - (3)2$$

$$Q_d = 18$$

\therefore Equilibrium Price = 3 Frw

Equilibrium Quantities = 18 Kg

10.

- **Change in the real income of the buyer** resulting from changes in price. Assuming the money income of the consumer remains constant, when the price increase, the amount of goods that one's income can purchase reduce.
- Consumption behaviour of **low-income earners**. Low-income earners usually buy less when the price is high and buy more when the price is low.
- It is because of **presence of substitutes**. When the price of a commodity increases, and that of its substitute remains constant, consumers substitute goods whose prices have increased with those whose prices have remained constant (substitution effect).

Refer to Learner's Book pages 109-128

TOPIC AREA 2: MICROECONOMICS

SUB-TOPIC AREA 2.1: PRICE THEORY

Introduction

Just like the theory of demand, the theory of supply is very important in the analysis of market behaviors and the economy. Low quantities supplied cause shortage in the market and subsequent scarcity increase the price of goods making them unaffordable by consumers. Excess supply may also overwhelm the demand hence poor prices for the consumer. The economy requires a balance and hence the need to understand the theory of supply. Suppliers in this case may

be individuals, firms and government agencies. Homogeneity of the diverse types of suppliers is assumed.

In this unit, the main sub topics to be covered are:

- i. Concept of market supply.
- ii. Determinants of market supply.
- iii. Law of supply.
- iv. Supply schedules and curves.

Key unit competence

At the end of 24 lessons the learner should be able to the determinants of the market supply, as you teach this topic ensure that learners acquire the following skills, attitudes and values:

Knowledge and understanding	Skills	Attitudes and values
<ul style="list-style-type: none"> - Explain the concept of market supply. - State the law of supply and explain using supply schedules and curves. - Identify factors that determine the quantity supplied in the market. - Distinguish between normal and abnormal supply curves and change in supply and quantity supplied. 	<ul style="list-style-type: none"> - Evaluate the determinants of the quantity supplied in the market. - Use the supply curve to illustrate the relationship between price and quantity supplied. - Analyse what factors may lead to the violation of the law of supply. 	<ul style="list-style-type: none"> - Adjust the supply of commodities based on variations in the determinants of supply in the market.

Additional information to the teacher

Supply is normally affected by shocks (unexpected events) that may be either localised or global. It is important to highlight such shocks to help the learners in understanding those factors that may not be found in the textbook. For example, while rainfall is important, flooding may reduce crop yield. This flooding and mudslides may happen as unexpected event of an otherwise normal rainfall pattern. Political elections and campaigns may also keep farmers away from their farms, this extends to social unrest from unexpected event that has either political or economic dimensions.

LESSON 1: Concept of supply

Begin this sub-topic with group Activity 1. Since learners are conversant with use of curves from the previous unit, use this knowledge to show the concept of supply and show that while the demand and price are inversely related, supply and price are positively related.

Specific learning outcome: By the end of the sub topic, the learner should be able to explain the concept of supply.

Preparation: Ensure that you have, besides your notes the newspaper articles detailing scenarios such as oversupply of maize or shortage due to climatic conditions, use a local example.

Teaching Learning resources: Use Economics textbooks, newspaper articles, prepared supply curves, internet and audio-visual resources.

Teaching and learning methods: Expository methods, discussions, questions and answers.

Learning/Teaching activities Class discussions, taking notes and class presentations.

Further activity

Discuss different factors that affect supply of rice in your locality.

Activity 6.1

Refer to sub unit 6.1 in Learners Book 4 for meaning of supply

LESSON 2: Determinants of supply

You need begin this sub topic with group Activity 62. This subunit involves exploring scenarios after each factor and therefore need to involve the learners throughout. Let the learners explore how changes in each factor affect the quantity supplied to the market. For example, what would happen to the supply of horticulture if the government introduced a subsidy to the inputs like fertiliser? Allow learners explore such questions as you facilitate their understanding by making summary presentations.

Specific learning outcome: By the end of the sub topic the learner should be able to identify the factors affecting the quantity supplied to the market.

Preparation: Have enough situations to use for simulating the changes in supply as each of the factors is varied. You need therefore to conduct research on commodities market trends and factors especially in Rwanda. Instruct the learners to carry out a case study and prepare presentations in class.

Teaching/Learning resources:

Use Economics textbooks, newspaper articles, prepared supply curves, internet and audio-visual resources.

Teaching and learning methods:

Expository methods, discussions, questions and answers.

Learning/Teaching activities:

Class discussions, taking notes, class presentations and case study

Cross-cutting issues

Climate change: The supply, especially of agricultural commodities, is largely affected by the climate. The climate change experienced due to global warming has affected the patterns and amount of rainfall resulting to severe shortages in supply of food.

Genocide studies: Before and during the occurrence of the Genocide against the Tutsi in our country, there were severe cases of civil unrest, massive displacement of people from their homes and closure of businesses. As a result, there was little or no supply of goods to the market. Encourage learners to realise the importance of tolerance and peace amongst them at school, in their families and the whole society at large.

HIV and AIDS: Let learners know that this disease affects the health of the workers. It thus reduces their level of productivity. This eventually affects the quantity of goods supplied to the market.

Activity 6.2

Refer to sub unit 6.2. in Learners Book 4 for factors that influence supply

LESSON 3: Law of supply

Begin this subtopic with **Activity 6**. Using the background information the learners have on the law of demand illustrate that the quantity supplied has a positive relationship with the price, this means as the price of a given commodity increase the suppliers are willing to supply more

to the market. It would be important to show this using a simplified supply curve that should be positively sloping.

Specific learning outcome: By the end of this sub topic the learner should be able to state the law of supply and explain it using supply curve and schedules.

Preparation: Ensure that you have supply schedules from which you will require the learners to prepare the supply curves and then deduce the law of supply from them.

Teaching/Learning resources: Use economics textbooks, newspaper articles, prepared supply curves, internet and audio-visual resources

Teaching and learning method:

Expository methods, discussions, questions and answers.

Learning/Teaching activities: Class discussions, taking notes and class presentations.

Further activity

Under what circumstance do the supply of a commodity may be more than its demand.

LESSON 4: Supply schedules and curves

Begin this sub-topic with **Activity 9**. Facilitate the learners to use their knowledge from **Unit 5** to carry out the Activity 9 tasks. It will be important to bring out the shape of the abnormal curves through **Activity 10** carried out by the learners. The abnormal supply curves, just like the abnormal demand curves don't obey the law of supply. Change in supply is the shift in the supply curve will change in the quantity supplied is the movement along the supply curve. Use the supply curves to illustrate this.

Specific learning outcomes: By the end of the sub topic the learner should be able to distinguish between the normal and the abnormal supply curve and between the change in quantity supplied and the change in supply.

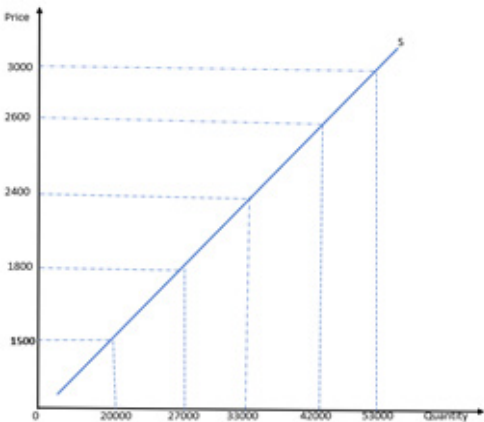
Preparation: Ensure you have done research on the various types of supply, changes in supply, changes in quantity supplied and abnormal curves. Give learners a task on documentary research on the above issues and let them prepare for a presentation in class.

Teaching/Learning resources: Use economics textbooks, newspaper articles, prepared supply curves, internet and audio-visual resources.

Teaching and learning methods: Expository methods, discussions, questions and answers,

Learning/Teaching activities: Class discussions, taking notes and class presentations.

Activity 6.6

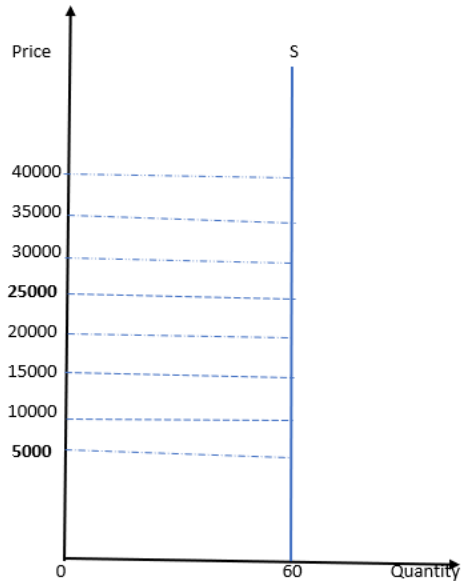


The higher the price the higher the quantity supplied.

Activity 6.9

Learners give their figures and illustrate the curves in reference to **Sub unit 6.6 Learners book 4** on Individual and market supply schedules and the curves.

Activity 6.10

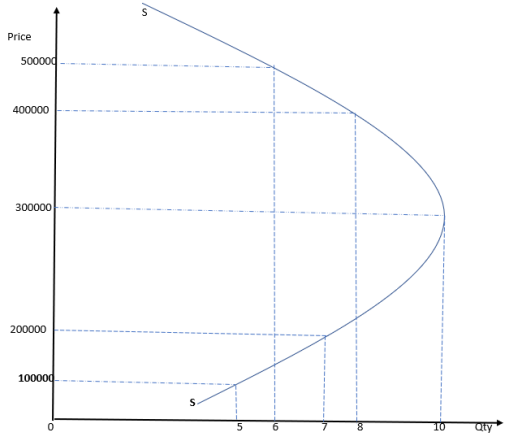


(b) The curve is vertical (perfectly inelastic)

(c) One is vertical (perfectly inelastic) while the other is up warding sloping from left to right (elastic)

2

Quantity



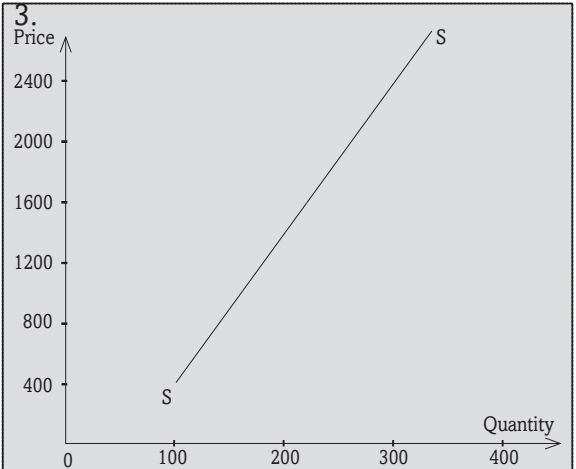
The curves do not follow the law of demand.

Answers to Unit Assessment

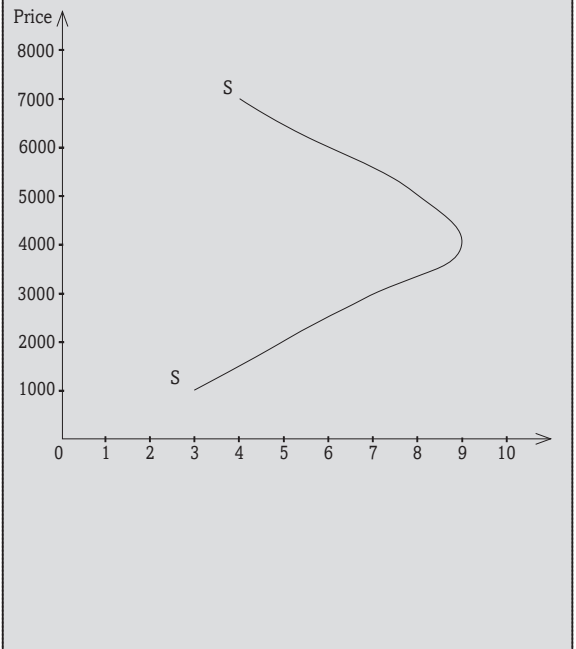
1. Supply refers to the amount of goods and services that are available in the market. **Quantity supplied** refers to the amount of a particular commodity that producers/suppliers are able and willing to bring to the market for sale at a certain price in a given period of time.

2.

- Unfavorable climatic condition
- Increase in the cost of production
- Unfavourable government policy
- Change in taste of the product to consumers
- Reduction in price of the substitute



4.



Refer to Learner's Book pages 129-140

TOPIC AREA 2: MICROECONOMICS

SUB-TOPIC AREA 2.1: PRICE THEORY

Introduction

This topic deals with the interactions between the demand and supply in the market. A state of equilibrium exists where the quantity demanded and the quantity supplied is equal. This conclusion assumes that there is no interference in the market operations by the government. In reality, the government does interfere with the market operations for the purpose of advancing the consumer welfare and in such situations the price is not determined by the market operations and there exists no market equilibrium.

The main sub topics covered in this unit are:

- i. Meaning of equilibrium price and equilibrium quantity.
- ii. Deriving market equilibrium using joint demand and supply schedules and curves.
- iii. Equilibrium conditions and equilibrium equations.
- iv. Effects of changes in demand and supply on equilibrium.

Key unit competence

At the end of the 11 lessons, the learner should be able to determine the equilibrium position in the market.

As you teach this unit, ensure that the learners have acquired the following skills, attitudes and values:

Knowledge and understanding	skills	Attitudes and values
<ul style="list-style-type: none"> - State the equilibrium condition of markets. - Identify the equilibrium using schedules and curves. - Solve equilibrium equations. - Explain the effect of changes in the demand and supply on equilibrium position. 	<ul style="list-style-type: none"> - Illustrate the equilibrium point and the effects of changes in demand and supply on the equilibrium. - Calculate and interpret equilibrium equations. - Analyse the effects of changes in demand and supply on the equilibrium point. 	<ul style="list-style-type: none"> - Meaning of equilibrium price and quantity. - Deriving market equilibrium. - Using joint demand and supply schedule and curves. - Equilibrium conditions and equilibrium equations'. - Effects of changes in demand and supply on equilibrium (illustrations and expectations).

Additional information for the teacher

Interactions of demand and supply are what brings about market equilibrium and may seem smooth in the textbook. Unless the reason that may hinder its operation in reality is brought out, the learners may find it difficult to reconcile the reality with the theory. The determination of prices in the market through the market equilibrium is possible in a particular market, not nationwide market. For example, the potato market in Kigali, not the entire country. So at the national level, excess supply/demand may exist while Kigali market has an equilibrium.

LESSON 1: Meaning of equilibrium price and equilibrium quantity

Begin this subtopic with **Activity 7.1**. This will help learning by discovery. Equilibrium is a position of balance (stability) where two things are equal and there is no tendency to change. In context of this subtopic, equilibrium entails the prices and the quantities in the market. Supply and demand curves generated by **Activity 7.2** will illustrate the concept of equilibrium price and quantity. At equilibrium, the price demanded by the suppliers for their produce is the same that the buyers are willing to pay hence,

Quantity demanded = quantity supplied

Specific learning outcome: By the end of the sub-topic, the learner should be able to state the equilibrium condition of the markets.

Preparation: ensure that you undertake **activity 7:2** prior to attending class and that it satisfies the definitions you intend to replicate in class. Note that there are different definitions of equilibrium

condition from different economists that satisfy the same conditions and it would be important to conduct research on those definitions in order to give variety to the learners.

Teaching/Learning resources

Use Economics textbooks, economics journals, internet and audio-visual resources.

Teaching and learning methods

Expository methods, discussions, questions and answers.

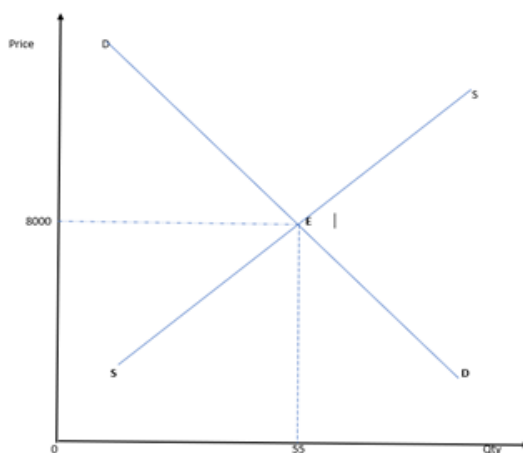
Learning/Teaching activities

Class discussions, taking notes, class presentations, drawing and interpreting graphs/curves.

Activity 7.1

- A balance can be brought about by equating the kilograms in each object
- Quantity demanded will be greater than quantity supplied and price would increase
- Equating the quantity demanded to quantity supplied by influencing the determinants of demand and supply

Activity 7.2



LESSON 2: Driving market equilibrium using joint demand and supply schedules and curves

This sub-topic builds largely on the previous sub-topic. By further use of the supply and demand curves from **Activity 7.2**, use **Activity 7.3** to illustrate the equilibrium quantity and equilibrium price and then show excess supply or demand would be adjusted to maintain the equilibrium.

Specific learning outcomes: By the end of the sub-topic, the learner should be able to identify the equilibrium position using schedules and curves.

Preparation: Apart from **Activity 7.3**, ensure you have more scenarios so that learners are able to manipulate the information in the **Activity 7.1** and generate more schedules which they subsequently use to determine new equilibrium positions.

Teaching/Learning resources:

Use Economics textbooks, newspaper articles, demand and supply schedules, internet and audio-visual resources.

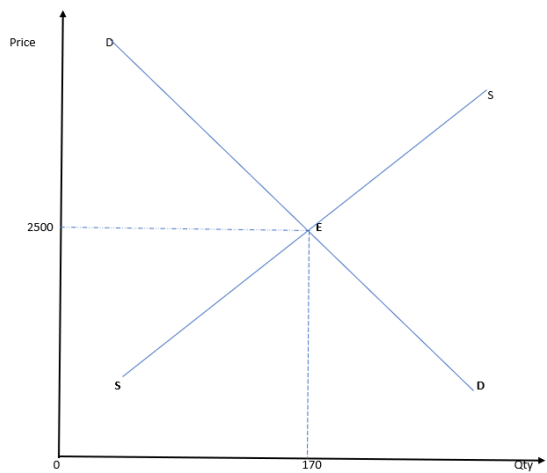
Teaching and learning methods expository methods, discussions, questions and answers.

Learning/Teaching activities

Class discussions, taking notes, class presentations, drawing and interpreting curves.

Activity 7.3

Price	2000	2100	2200	2300	2400	2500	2600
Quantity demanded	190	186	182	178	174	170	166
Quantity supplied	130	138	146	154	162	170	178



LESSON 3: Equilibrium conditions and equations

This sub-topic introduces the demand and supply equations and the mathematical derivation of the market equilibrium position. The unit utilises the knowledge learn and mastered in unit four and therefore it is important to freshen up on that unit. Start by reminding the learners the main equations learnt in **Unit 4**, especially the concept of the slope (gradient). Since the demand curve slopes downwards to the right, it has a negative slope and is represented by the equation shown below:

$Q_d = a - bp$ where a =parameter representing autonomous demand (that is not influenced by price of the

commodity) and b =parameter that shows the effects of price on quantity demanded.

The supply curve slopes upwards to the right hence has a positive gradient. It is represented by the equation shown below.

$Q_s = -a + bp$ where a =parameter showing supply at price zero (negative means no producer would supply goods when the market price is zero) and b = parameter associating the price with quantity supplied.

Thus as you teacher you need to use mathematical skills (and demand of the same skills from the learners) to show that $Q_s = Q_d$ at the equilibrium point.

Engage the learners in **Activity 7.4**

Specific Learning outcome: By the end of the subtopic, the learner should be to solve equilibrium equations

Preparation: Ensure that you freshen up on the equations studied in **Unit 4** and that the learners do the same. Besides the **Activity 7.4** prescribed, prepare more examples and derive the equations from the schedules in **Activity 7.2** so that you can prove proof to learners in class of the applicability of the theoretical demand and supply equations in literature.

Teaching/Learning resources: Use Economics textbooks, journals and internet

Teaching and learning methods:

Expository methods, discussions, questions and answers.

Learning/Teaching activities:

Class discussions, taking notes, and class

presentations.

Further activity

Determine equilibrium price and equilibrium quantity from each of the following:

(i) $Q_d = 7 - 2p$ and $Q_s = 10 - 3p$

(ii) $Q_s = 7 - 2p$ and $Q_d = 11 - 4p$

LESSON 4: Effects of changes in demand and supply on equilibrium

Begin this sub-topic by engaging learners in scenarios where you vary one of the factors affecting supply or one affecting demand and plot the changes in the equilibrium position curves. Change in price is expected to bring about movements in the demand and supply curves while other factors will shift the demand and the supply curves either inwards or outwards. The equilibrium price and quantity are expected change as the demand or supply changes (due to change in one or more of the determinants).

Specific learning outcomes: By the end of the sub-topic, the learner should be able to explain the effects of changes in demand or supply on the equilibrium position.

Preparation: ensure you are familiar with the movements and shifts in the demand and supply curve and how the changes in the factors affecting each impact on the equilibrium position. You need to research on this area well before class time and prepare equilibrium position shifts in advance.

Teaching/learning resources: Use Economics textbooks, journals and internet.

Teaching and learning methods:

Expository methods, discussions, questions and answers.

Learning/teaching activities:

Class discussions, taking notes and class presentations.

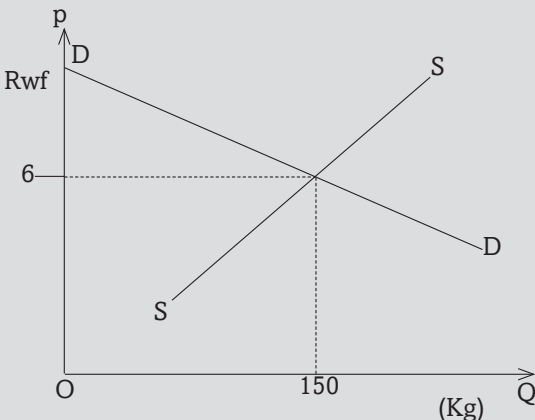
Answers to Unit Assessment

1. **Equilibrium price** is that price ruling in the market where quantity supplied is equal to quantity demanded. At that price, the amount of commodities brought to the market by suppliers is wholly bought by the buyers and there is no excess or shortages in the market.

Equilibrium price and quantity occur when quantity demanded is equal quantity supply.

From the table in the activity above as the price keeps increasing, buyers are willing to purchase less and less kilograms of meat.

2.



Equilibrium price is 5000 FRW.

Equilibrium quantity is 40kg.

$$3. Q_d - 4p = 136 \Rightarrow Q_d = 4p + 136$$

$$Q_s = 6p + 124$$

$$\text{but } Q_d = Q_s$$

$$6p = 136 - 124 + 4p$$

$$2p = 12$$

$$p = 6.$$

If $p = 6$

$$Q_s = 6p + 124$$

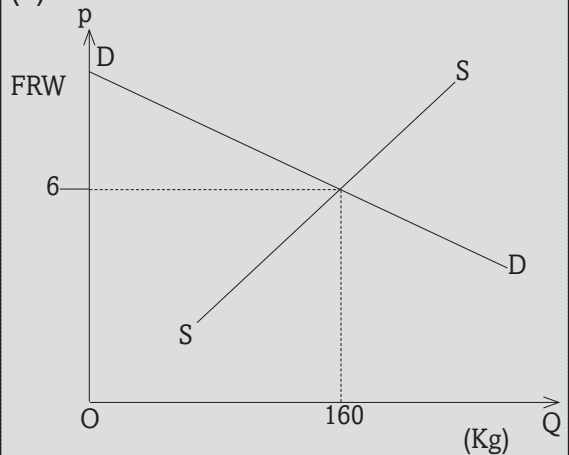
$$Q_s = 6(6) + 124$$

$$Q_s = 36 + 124$$

$$= 160$$

Equilibrium price 6 FRW Equilibrium quantity = 160

(ii)



Refer to Learner's Book pages 141-170

TOPIC AREA 2: MICROECONOMICS

SUB-TOPIC AREA 2.1: PRICE THEORY

Introduction

Elasticity is important in explaining economic behaviours, especially how demand responds to price and income changes. This consequently shows why the prices of some goods remain unchanged for longer periods even as incomes change or why quantity demanded for some commodities does not increase even with the fall in price.

The main sub-topics covered in this unit will be:

- i. Concept of elasticity and types of elasticity.
- ii. Different types of elasticity of demand and their interpretations.
- iii. Determinants of the elasticity of demand.
- iv. Determinants of elasticity of supply.

Key unit competence

At the end of 20 lessons, the learners should be able to interpret the variations in percentages of quantity demanded and supplied due to changes in their determinants. As you teach this unit, ensure that the learners acquire the following skills, attitudes and values.

Knowledge and understanding	Skills	Attitudes and values
<ul style="list-style-type: none"> - Explain the concept of elasticity and the different types of elasticity. - Identify the different types of elasticity of demand and the interpretations. - Explain the determinants of elasticity of demand. - Identify the factors that influence the elasticity of supply. 	<ul style="list-style-type: none"> - Explain the different types of elasticity of demand. - Calculate and interpret the different types of demand. - Calculate and interpret elasticity of supply. 	<ul style="list-style-type: none"> - Purchase commodities based on variations in their determinants. - Supply commodities based on variations in their determinants.

Additional information to the teacher

LESSON 1: Concept of elasticity and types of elasticity

This sub-topic and the other sub-topics in **Unit 8** heavily rely on the knowledge that was acquired in **Unit 7**. Give the learners a task to carry out **Activity 8.1** prior to the start of this sub-topic. Begin the sub-topic with the presentations by the learners on **Activity 8.1** conducted. Elasticity is the measure of responsiveness of the dependent variable due to changes in the independent variables. In this sub-topic, the dependent variables are demand and supply while the independent variables are the price, consumer incomes and the price of the related commodities.

Specific learning outcomes: By the end of the sub-topic the learner should be able to explain the concept of elasticity and the different types of elasticity.

Preparation: Ensure that you have issued to the learners **Activity 8.1** to be conducted prior to the start of the sub-topic. Prepare class notes that summarise the expected responses of the learners.

Teaching/Learning resources: Economics textbooks, journal and internet.

Teaching and learning methods: Class discussions, questions and answers and expository method.

Teaching/Learning activities: Class presentations, taking notes, drawing and interpreting curves and research.

LESSON 2: Different types of elasticity of demand and their interpretations

Elasticity of demand is the measure of degree of responsiveness of demand of a commodity to changes in factors that affects demand. These factors are mainly price of the commodity, income of the consumer and the price of the related commodities. This sub-topic therefore deals with the price elasticity of demand, income elasticity of demand and cross elasticity of demand. Note that elasticity of demand (whatever type) can be either elastic or inelastic. Interpretation of the elasticity is based on the size and sign. Elasticity of less than one means inelastic and more than one means elastic. Zero means perfectly inelastic and 1 means unitary elastic. When the price elasticity of demand is infinite, it shows that the elasticity is perfectly elastic. The income elasticity of demand can be negative. This would mean that the commodity is inferior. In cross elasticity of demand, negative implies the commodities are compliments, positive implies they are substitutes and zero means they are unrelated.

Begin this sub-topic with activity 8.5 and use the demand curves to ensure that learners can visualize the idea of elasticity. Emphasise on interpretations and practical applications by different economic agents (governments to increase tax revenues, firms to increase profits)

Specific learning outcome: By the end of the sub-topic, the learner should be able to identify the different types of elasticity of demand and their interpretations

Preparations: Freshen on the mathematical skills and alert the learners to do the same. It is important to use familiar demand and supply schedules, so ensure you have them and enough examples before the start of the sub-topic.

Teaching/Learning resources:

Economics textbooks, journal and internet.

Teaching and Learning methods: class discussions, questions and answers, expository method and use of illustrations.

Teaching/Learning activities: Class presentations, taking notes, drawing and interpreting curves, research, calculations.

Further activity

With an aid of a diagram, illustrate how point elasticity of demand is determined.

LESSON 3: The determinants of the elasticity of demand

Begin this sub-topic with **Activity 8.11**. Note that the determinants of the elasticity of demand refer to price elasticity of demand. Ensure that learner's participation is maximised by encouraging class discussion.

Specific learning outcome: By the end of the sub-topic, the learner should be able to explain the determinants of elasticity of demand.

Preparation: Ensure that you have detailed teaching notes with ample examples relating to commodities that learners can relate with. For example use bread and cakes as substitutes, or mangoes and pineapples.

Teaching/Learning resources:

Economics textbooks, journal and internet.

Teaching and learning methods:

Class discussions, questions and answers and expository method.

Teaching/learning activities: class presentations, taking notes, research

Further activity

With an aid of a diagram, illustrate how point elasticity of demand is determined

LESSON 4: Determinants of elasticity of supply

Elasticity of supply as defined in subtopic one is the measure of degree of responsiveness of quantity supplied of a commodity to the changes in factors affecting supply. It's the extent to which the quantity supplied responds to changes in the determinants of supply. Begin this sub-topic by relating elasticity of supply with the factors determinants of supply discussed in previous topics and facilitate the learners in class discussions. Ensure that learners have time to make presentations on the research tasks given.

Specific learning outcome: By the end of this sub-topic, the learners should be able to identify the factors that influence the elasticity of supply.

Preparations: Ensure you have detailed teaching notes and you have given learners research tasks prior to the commencement of the sub-topic.

Teaching/Learning resources:

Economics textbooks, journal and internet

Teaching and learning methods:

Class discussions, questions and answers and expository method

Teaching/Learning activities: class presentations, taking notes and research.

Answers to Unit Assessment

1. **Elasticity of demand** is a measure of the degree of responsiveness of quantity demanded of a commodity to changes in factors that affect demand. When factors that influence quantity demanded such as price of the commodity, income of the consumer, or price of related commodities change, the quantity demanded of a commodity responds

Elasticity of supply refers to a measure of the degree of responsiveness of quantity demanded of a commodity to changes in factors that affect supply.

$$2. PED = (-) \frac{\Delta Q}{\Delta P} \times \frac{Q}{P}$$

$$(i) \Delta Q = 20 - 25 = 5 \text{ kg}$$

$$\Delta P = 7500 - 500 = 2500/=$$

$$Q = 25$$

$$\Rightarrow (-) \frac{-5}{2500} \times \frac{25000}{25} = \frac{2}{5} = 0.4$$

(ii) Inelastic - Because the ratio is less than 1.

$$3.(a) \frac{CED}{PX} = \frac{\Delta QA}{\Delta PB} \times \frac{PB}{QA} \Rightarrow \frac{\Delta QY}{\Delta PX} \times \frac{PX}{QY}$$

$$\Delta QY = 65 - 70 = -5$$

$$\Delta QX = 4000 - 2000 = 2000$$

$$PX = 2000$$

$$QY = 70 \Rightarrow \frac{-5}{2000} \times \frac{2000}{70} = \frac{-5}{70}$$

(b) Commodity x and y are complements

(c) Car and petrol

Pen and ink

$$4. YED = \frac{DQ}{DY} \times \frac{Y}{Q} \\ = \frac{-30}{60} \times \frac{100}{160} = \frac{-5}{8}$$

The good is an inferior good.

The % change in income = 60 %

5. **Price elasticity of demand helps government to decide which commodities to tax or not.** Government levies taxes with various objectives. Taxes may be used as sources of revenue, or used to reduce consumption of particular commodities. In order to **increase tax revenue**, the government should tax more commodities with **inelastic demand**. For reduction of consumption of a commodity, the government should target commodities with **elastic demand**.

6. Price elasticity of demand facilitates the producer to decide whether to increase or decrease the price in order to increase **total revenue**.

$$7. PES = \frac{DQ}{DP} \times \frac{P}{Q_1}$$

$$DQ = 50 - 100 = -50$$

$$DP = 1500 - 3000 = -1500$$

$$P = 3000$$

$$Q = 100 = \frac{-50}{-3000} \times \frac{3000}{100} = 1$$

$$PES = \frac{-50}{-1500} \times \frac{3000}{100} = 1$$

8.

- i.) Elasticity of supply refers to a measure of the degree of responsiveness of quantity demanded of a commodity to changes in factors that affect supply.
- ii.) Cross elasticity of demand is a measure of the degree of responsiveness of quantity demanded of one commodity X to changes in price of another commodity.

iii.) Price elasticity of demand refers to a measure of the degree of responsiveness of quantity demanded of a commodity to changes in its own price.

iv.) Income elasticity of demand is a measure of the degree of responsiveness of quantity demanded of a commodity to change in consumer's income.

Elasticity of demand is a measure of the degree of responsiveness.

Refer to Learner's Book pages 171-193

TOPIC AREA 2: MICROECONOMICS

SUB-TOPIC AREA 2.1: PRICE THEORY

Introduction

This topic provides an analysis of the behaviour of individual consumer. It provides a basis of the consumer decisions that each individual consumer make based on a set of assumptions. The key assumption is that the consumer seeks to maximise the utility (satisfaction) derived from the consumption of a bundle of goods on which he/she spends all his/her income. The unit therefore uses the concept of graphs and mathematical applications to analyse the consumer behaviour and therefore it is important to ensure learners are familiar with their use.

The main sub-topics to be covered in this unit are as follows:

- i. Concept of utility, types and determinants of utility.
- ii. Law of diminishing marginal utility and marginal rate of substitution.
- iii. Indifference curve and budget line
- iv. Consumer equilibrium.
- v. Consumer surplus and producer surplus.

Key unit competence

At the end of the 22 lessons, the learner should be able to discuss the concept of utility and how it influences consumer's choice in the allocation of their spending. As you teach this topic, ensure that the learners acquire the following skills, attitudes and values:

Knowledge and understanding	Skills	Attitudes and values
<ul style="list-style-type: none"> - Distinguish between total utility and marginal utility. - Explore the various types of utility. - Describe the factors influencing utility. - State the law of diminishing marginal rate of substitution. - State the assumptions of budget line and the indifference curves. - Determine the optimal consumption level using a budget line and indifference curves. - Distinguish between consumer and producer surplus. 	<ul style="list-style-type: none"> - Illustrate the law of diminishing marginal utility and marginal rate of substitution. - Determine and illustrate the slope of a budget line. - Illustrate consumer equilibrium (optimal) and consumer levels by using a budget line and indifference curves. 	<ul style="list-style-type: none"> - Appreciate the relationship between utility and consumer's spending habits.

Additional information for the teacher

This sub-topic will introduce new concepts such as utility, indifference curves, marginal utility and will also require learners to have a better understanding of differential equations skills (calculus). As a teacher make sure that you have clear knowledge about the topic. The consumer of consumer equilibrium discussed in this topic does not mean the state of balance as seen in the theory of equilibrium discussed earlier. Further, utility and its analysis may seem abstract and therefore you need to improvise as you teach this unit so that learners do not encounter difficulties in internalising key concepts presented.

LESSON 1: Concept of utility and types

Activity 9.1 is an important starting point for this sub-topic. This main focus of the learners should be the consumer and not the supplier. Reasons for their behavior need to be well catalogued by the learners in the field study. Before proceeding in this subtopic, ensure that the term utility and its elements such as total utility and marginal utility are well explained to the learners. Show the learners the appearance of the total utility and the marginal utility curves and let them carry out **Activity 9.5**, after which you present the relationship between the two.

Specific learning outcomes: By the end of the sub-topic, the learner should be able to distinguish between total utility and marginal utility, explore various types of utility and identify factors influencing utility.

Preparation: Ensure that learners are

properly prepared for the field study and that they have relevant questions ready. Organise the learners in groups to prepare presentations in class and make sure that you have detailed teaching notes to introduce this sub-topic.

Teaching/Learning resources:

Economics textbooks, journal, internet and market research.

Teaching and learning methods:

Class discussions, questions and answers, expository method and field study.

Teaching/Learning activities: Class presentations, taking notes, collecting and analysing data, calculating, solving problems, drawing and interpreting curves.

LESSON 2: Law of diminishing marginal utility and marginal rate of substitution

The law states that as more and more units of a good is consumed while other factors remaining constant, satisfaction from extra unit consumed reduces. Begin this unit by referring the learners to **Activity 9.5** that shows the graph with reducing marginal utility. Guide the learner in the thought process **Activity 9.7** and discuss their thoughts. Note that the MRS cannot be discussed before introducing the concept of the budget line though conclusive discussion on the budget line will be done over the subsequent two subtopics.

Specific learning outcome: By the end of the sub-topic, the learner should be able to state the law of diminishing marginal utility and marginal rate of substitution.

Preparation: This sub-topic will require

mathematical applications and therefore take time to freshen out on the differential equations and the gradient. Ensure also that you have teaching notes that are comprehensive complete with budget line drawings.

Teaching/Learning resources:

Economics textbooks, journal and internet.

Teaching and learning methods:

Class discussions, questions and answers, expository method and use of illustrations.

Teaching/Learning activities:

Class presentations, taking notes, research, calculating and solving problems, drawing budget line and interpreting.

LESSON 3: Indifference curve and budget line

The indifference curves are locus of points showing various combinations of two goods that give the consumer the same level of utility. Begin by discussing the budget line, reasons for its shifts and rotations (show this graphically). Discuss the features of indifference curve before presenting its drawing. Discuss with the learners how and why it shifts and the meaning of the shifts.

Specific learning outcome: By the end of the sub-topic, the learner should be able to state the assumptions of the budget line and the indifference curves and draw them.

Preparation: There is need for you to do enough research in the books, journals and internet and prepare detailed teaching notes.

Teaching/Learning resources: Economics textbooks, journal and

internet.

Teaching and learning methods:

Class discussions, questions and answers, expository method and use of illustrations.

Teaching/Learning activities:

Class presentations, taking notes, research, drawing and interpreting budget lines and indifference curves.

LESSON 4: Consumer equilibrium

Consumer equilibrium shows the optimal level of satisfaction derived from consumption of a bundle of goods at a given level of income. This is represented by a point of tangency between the budget line and the indifference curve from the interior. Begin the subtopic by bringing together the budget line and the indifference curve. Show that the MRS is zero at the point of tangency.

Specific learning outcome: By the end of the sub-topic, the learner should be able to determine the optimal consumption level using a budget line and indifference curves.

Preparation: ensure that you are able to determine the consumer equilibrium by calculation and by use of indifference curve (refer to **figure 9:10** in the learners textbook and conduct further research.

Teaching/Learning resources:

Economics textbooks, journal and internet.

Teaching and learning methods:

Class discussions, questions and answers, expository method and use of illustration.

Teaching/learning activities:

Class presentations, taking notes, research,

solving problems, drawing and interpreting graphs.

Consumer surplus and producer surplus

Consumer surplus is the difference between the price that consumers are willing and able to pay and the price that they actually pay. The consumer surplus therefore represent a saving (increasing consumer welfare). The producer surplus on the other hand is the difference between the price that the producer is ready and willing to accept for his/her commodity and what he/she actually receives. The consumer and producer surpluses are better shown by graphical illustrations.

Begin this sub-topic with **Activity 9.13** and ensure the learners are fully involved. Present the two concepts by use of budget lines.

Specific learning outcome: By the end of the sub-topic, the learner should be able to distinguish between the consumer and producer surplus.

Preparation: Conduct a research, possibly with the involvement of the learners on the prevailing market prices of the commodities and the prices that the consumers are actually willing to pay. Do the same with producers. Where the field study is not possible, research on suitable examples to use in class.

Teaching/Learning resources:

Economics textbooks, journal, internet and field study.

Teaching and learning methods:

Class discussions, questions and answers, expository method and use of illustrations.

Teaching/Learning activities: Class

presentations, taking notes, research, drawing and interpreting consumer surplus and producer surplus.

Further activity

Learners to do research on the prices of different commodities in the market nearby and what consumers are willing to pay for them.

Answers to Unit Assessment

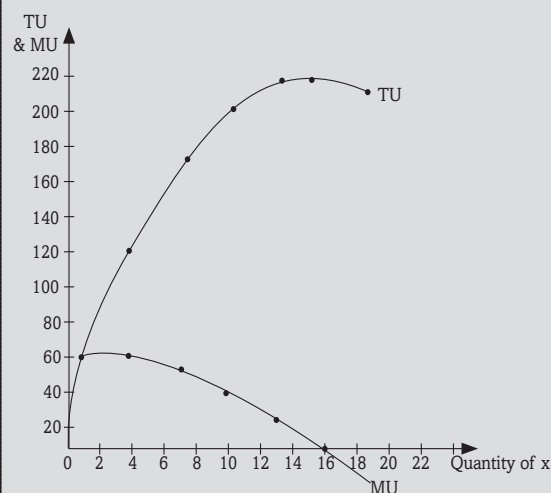
1. **Total utility (TU)** is the satisfaction that is derived from the consumption of all units of a commodity. For instance, if one person takes one bottle of a coke and another takes two bottles, the two may not get the same utility. **Marginal utility (MU)** is the additional satisfaction that is derived from the consumption of an additional unit of a commodity.

2.

(i)

Quantity	1	4	7	10	13	16	19
TU	60	120	165	195	210	210	207
MU	60	60	45	30	15	0	-3

(iii)



3. (i) Marginal utility reaches its

maximum.

(ii) Units of commodity x, a saturation points is reached beyond which additional consumption of the commodity yields dissatisfaction.

(iii) Beyond Q^3 there is a disutility.

4 **Disutility** is the negative satisfaction that is derived from the over consumption of a good or service. For instance, if you consume too much soda to the extent of vomiting you will have gone into dissatisfaction.

5 **A budget line** is a line that shows various combinations of two commodities that a consumer can purchase using his fixed income. **An indifference curve** is a curve that shows various combinations of two commodities that give the consumer equal satisfaction.

6. Let quality of meat be m and sugar be s

$$\cancel{2000m} + \cancel{20}25s = 50000$$

$$\cancel{20}m + \cancel{2}25s = 500$$

$$4m + 5s = 100$$

$$\text{If } m = 0$$

$$5s = 100$$

$$5 \quad 5$$

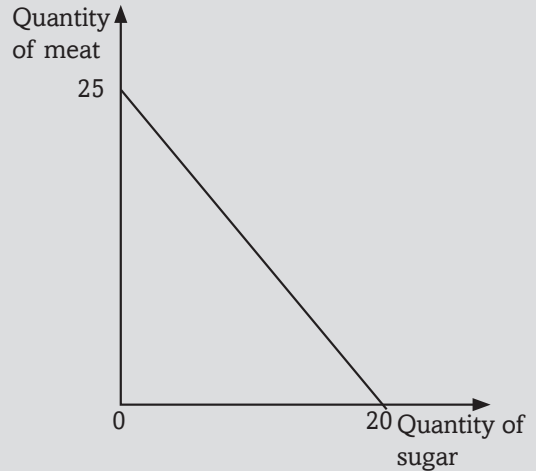
$$s = 20$$

$$\text{and if } s = 0$$

$$4m + 5(0) = 100$$

$$4m = 100$$

$$m = 25$$



7.

- Indifference curves are convex to the origin.
- Indifference curves are parallel to each other.
- Indifference curve do not touch the X or Y axis except when the two commodities X and Z are complete substitutes.
- Many indifference curves on the same graph make up an indifference map.
- All combinations along the indifference curve give the same satisfaction.

8. 1st unit = 2000-1600=400 FRW

2nd unit = 1800-1000=200 FRW

3rd unit = 1600-1600= 0 FRW

Consumer surplus = 600 FRW

9. **Substitution effect** is the response of consumers to the commodity whose price has changed while that of its close substitute remains constant.

Real income is the amount of goods and services that a consumer can purchase using a unit of his money income.

10. Producer surplus

1st unit = 1000-500=500

2nd unit = 1000-600=400

3rd unit = 1000-700=300

Refer to Learner's Book pages 194 -222

**TOPIC AREA 2: MICROECONOMICS
SUB - TOPIC AREA 2.1 : PRICE
THEORY**

Introduction

Price mechanism is a system where prices, determined by the interaction of demand and supply, are allowed to determine how resources (land, labour, capital and entrepreneurship) are allocated in the market (economy) without the interference of the government or its agencies. The resources will be attracted to highest returns and therefore sectors with low level of returns and greater risks like agriculture will get low level of resources as private entrepreneurs shy away. This is likely to aggravate levels of poverty or endanger food security. It is because of this reason that the

government may justify its interference with the price mechanism.

The main sub-topics covered in this unit are:

- i. Operation of price mechanism.
- ii. Advantages and disadvantages of price mechanism.
- iii. Causes and effects of price fluctuations.
- iv. Methods and effects of price control.
- v. International commodity agreement.

Key unit competence

At the end of 11 lessons the learners should be able to analyse the role of price mechanism in the allocation of resources. As you teach this unit, ensure that the learners acquire the following skills, attitudes and values:

Knowledge and understanding	Skills	Attitudes and values
<ul style="list-style-type: none"> - Explain how the price mechanism operates. - Identify the advantages and disadvantages of the price mechanism. - Explain the causes and effects of price fluctuations. - Explain methods and effects of price control. - State the objectives of the international commodity agreement (ICA). 	<ul style="list-style-type: none"> - Describe the operation of the price mechanism in the allocation of resources. - Analyse the impact of price fluctuations in an economy. - Justify government interference in price mechanisms. - Use illustrations to justify the various methods of price controls. - Examine the effects of various price controls in Rwanda. - Assess the roles and problems of ICA. 	<ul style="list-style-type: none"> - Advocate for government interference in the allocation of resources.

Additional notes for the teacher

In developing countries including Rwanda and all the countries of the East Africa community, the operation of the price mechanism is impaired by too much participation of government agencies in the market which distorts the market. Presence of the government in sectors like agriculture may be justified by need to reduce the market fluctuations and therefore protect both the consumers and producers as well as prevent devastating food shortages occasioned by frequent droughts. The government subsidies are also important in reducing the cost of production hence mitigate the effects of high food prices on inflation and the welfare of the poor citizens. The government is therefore justified to interfere in the market. Operation of the price mechanism is what is called market liberalisation.

LESSON 1: Operation of price mechanism

Resource allocation and utilisation is determined by the prices through the interaction of demand and supply in the market in absence of interference by the government. Begin this subunit by refreshing the learner's knowledge of **Unit 7**. With this background information guide the learners in undertaking **Activity 10.1** and **Activity 10.2**. By the use of market equilibrium diagrams demonstrate how the price mechanism operates.

Specific learning outcome: By the end of the sub-topic, the learner should be able to explain how the price mechanism operates.

Preparation: Refresh your knowledge

of **Unit 7** and give a task to the learners to do the same. Give out the case study (**Activity 10.1**) for the learners to familiarise themselves before the class. Research on the level of liberalisation in Rwanda by sectors and prepare comprehensive teaching notes.

Teaching/Learning resources: Economics textbooks, regulatory bulletin, newspaper articles, government websites, journal and internet.

Teaching and learning methods: Class discussions, questions and answers, expository method, case study and illustrations.

Teaching/Learning activities: Class presentations, taking notes, drawing and interpreting curves and research.

Further Activity

Learners to do research on the importance of price mechanism to an economy.

LESSON 2: Advantages and disadvantages of price mechanism

The price mechanism has both advantages and disadvantages. Allow the learners to give you their perceived advantages and disadvantages and then summarise.

Specific learning outcome: By the end of the sub-topic, the learners should be able to identify the advantages and disadvantages of price mechanism.

Preparation: Conduct research and prepare detailed teaching notes.

Teaching/Learning resources: Economics textbooks, journals, internet and newspaper articles.

Teaching and learning methods:

Class discussions, questions and answers, expository method and use of illustrations.

Teaching/Learning activities: Class presentations, taking notes and research.

Further Activity

Learners to discuss the effects of price fluctuations on consumers.

LESSON 3: Causes and effects of price fluctuations

This sub-topic deals with the reasons why price fluctuate by wide margins. The prices considered are the prices of agricultural products. Begin the sub-topic with **Activity 10.4** and give the learners the task to conduct **Activity 10.5**. The learners will also benefit from the data from the local markets for agricultural output like cabbages and milk. Discuss the cobweb model.

Specific learning outcome: By the end of the sub-topic, the learner should be able to explain the causes and effects of price fluctuations.

Preparation: Visit the Institute of Statistics of Rwanda and study the trends in the prices of agricultural products to reveal the patterns. Conduct in-depth research from the books and the internet sources and prepare teaching notes. Ensure that you issue task in **Activity 10.5** before the commencement of the subtopic.

Teaching/Learning resources

Economics textbooks, journals, internet, field study and interviews with resource persons.

Teaching and learning methods:

Class discussions, questions and answers, expository method and use of illustrations.

Teaching/Learning activities: Class presentations, taking notes, drawing and interpreting curves (cobweb models) and research.

Cross-cutting issues

Climate change and sustainability: The fluctuations in prices may be due to variations in yields caused by changes in climate. Emphasise this aspect to learners and the need to ensure conservation of the environment to ensure sustainability of our agriculture

LESSON 4: Methods and effects of price control

Methods used to reduce the disadvantages of price mechanism include taxation, price control, economic planning, consumer associations, government subsidies, ant trust laws, nationalisation, buffer stock and stabilisation funds. In discussing the effects of price control, use the consumer surplus curves to show welfare loss. Further, use the equilibrium market condition curves to show the emergence of the black market economy as a result of artificial shortages created. Discuss other effects, both good and adverse.

Specific learning outcome: By the end of the sub-topic, the learner should be able to explain methods and effects of price control.

Preparation: Ensure you have researched on the methods used in Rwanda and areas where price control is done or where the government has

intervened through price controls, subsidy, nationalisation, establishment of monopoly by legislation like in power sector and prepare teaching notes.

Teaching/Learning resources: Economics textbooks, journal and internet.

Teaching and learning methods: Class discussions, questions and answers, expository method and use of illustrations

Teaching/Learning Activities: Class presentations, taking notes, drawing and interpreting curves (consumer welfare under price controls) and research.

International commodity agreement

Begin this sub-topic by instructing the learners to undertake tasks under **Activity 10.13**. conduct a class discussion centered on the roles played by ICA and factors limiting the success of these agreements to meet their objectives.

Specific learning outcome: by the end of the subtopic the learner should be able to state the objectives of the international commodity agreement (ICA).

Preparation: Prepare teaching notes based on your research for efficient delivery in class.

Teaching/Learning resources: economics textbooks, journal, internet and newspaper articles.

Teaching and learning methods: Class discussions, questions and answers, expository method and internet.

Teaching/Learning activities: Class presentations, taking notes and research.

Further Activity

A part from ICO and ITTA, learners to research on more International Commodity Agreement.

Answers to Unit Assessment

1. Price mechanism is a system in a free enterprise economy in which resources allocation and prices are determined by forces of demand and supply with little or no government interference.
2.
 - Price mechanism promotes income inequality. Resource owners earn more incomes than those without. Those with more earn more and those with less earn less.
 - The high cost and inefficient firms are pushed out of business by the most efficient ones. This kind of competition may result into a monopoly in the long run.
 - The desire to maximise profits is high under price mechanism. This profit oriented motive can make producers to supply us with sub standard or counterfeit products, or exploit consumers who have little information about the market.
 - Since there is no government control in price mechanism, there may be introduction of harmful and illegal products to the market.
 - Too much competition may eliminate upcoming and small firms from the market. This may lead to unexploitation of some resources.

3.

- Price mechanism promotes efficient allocation and use of resources. Due to competition and desire to maximise profits, resource owners allocate them more efficiently to avoid wastages.
- Under price mechanism, producers aim at maximising profits. The desire to maximise profits encourages research, invention and innovation. This leads to an increase in production and improvement in technology, resulting into economic growth.
- There is competition between producers. Competition leads to efficiency in production. Producers will cut on origination or costs so as to compete favourably in the market.
- There is speculation under price mechanism. Speculators ensure steady supply of commodities. Consumers are offered a chance to access commodities all the time throughout.
- Price mechanism encourages acquisition and distribution of commodities from areas where supply is high to areas where there is little or no supply. This also ensures a ready supply of commodities to the consumers.

4.

- Different countries have different economic interests and difficulties. Conflicting interests of members especially producers against consumers limit the successful

functioning of commodity agreements.

- Sometimes member countries agree on a fixed quota that each member should produce. Some countries however produce beyond the fixed quotas.
- Countries do not produce proportionately equal amounts. Members that produce large amounts dominate others. The agreements tend to favour large producers than small ones.
- Different countries are endowed differently with resources. This brings about differences in costs of production which may bring about disagreements on prices.
- If members contribute a small share of the world output, they cannot influence the price on the world market. This comes when some producers of a particular commodity are not members.
- The functioning of these agreements requires independent organs to effectively operationalise them. There is lack of effective supervision to implement the established quotas. Some countries may violet the established quotas.

5.

- Most developing countries lack efficient storage facilities to keep the surplus output.
- Lack of sufficient funds by marketing boards to run the activities of buying and handling the surplus output. The activities of buffer stock system involve

high costs to run.

- Mismanagement and corruption in marketing boards by board members and staff. This affects the proper functioning of buffer stocks.
- The buffer stock system increases government responsibilities. The government directly involves

itself in actual buying and selling of commodities. This may have an effect on efficiency in other strategic areas like security.

- The system requires a lot of market research. Decisions on how much, when to buy and /or sell require much of research. This makes it costly.

Refer to Learner's Book pages 223-251

TOPIC AREA 2: MICROECONOMICS

SUB-TOPIC AREA 2.2: PRODUCTION THEORY

Introduction

In this unit the main sub-topics to be covered are:

- Meaning, purpose, types and levels of production.

Factors of production;

- **Land:** Meaning, features, rewards, rent and role of land.
- **Labour:** Meaning, characteristics of labour, reward, labour mobility, labour efficiency, division of labour and specialisation.
- **Capital:** Meaning, forms, supply

and its determining factors, reward, role, capital accumulation (meaning, determining factors and limitations).

- **Entrepreneur:** Meaning, characteristics, functions, reward, entrepreneur supply and limitations.

Key unit competence: By the end of 11 lessons, the Learner should be able to analyse the types and levels of production, factors of production, characteristics and rewards to factors of production and explain the advantages and disadvantages of specialisation.

Unit learning objectives

As you teach this unit you should ensure that learners acquire the following skills, values and attitudes;

Knowledge and understanding	Skills	Attitudes and values
<ul style="list-style-type: none"> • Explain the purpose of production. • Explain the types and levels of production. • Identify the factors of production. • Identify the characteristics, rewards and role of each factor of production • Explain the advantages and disadvantages of specialisation and division of labour 	<ul style="list-style-type: none"> • Describe the types and levels of production • Analyse the role of factors of production in • The production process • Examine the role of specialisation in resource utilisation for efficiency in production • Examine the factors influencing capital accumulation in Rwanda • Account for the limited supply of entrepreneurs in Rwanda 	<ul style="list-style-type: none"> • Acknowledge the levels through which production passes and specialise accordingly • Appreciate the importance of factors of production in the production process and use them efficiently

Additional information for the teacher

Production involves transforming raw materials into finished that can satisfy peoples' needs. This quite a familiar topic on which the learners may have prior knowledge, when introducing this unit therefore use question and answer to find out what the learners already about production. Also prepare a list of examples of enterprises that are engaged in the production of goods and services which the learners may also be familiar with as this will make it easy for the learners to understand what is involved in production.

As a teacher you should also appreciate the fact that you can set knowledge on production from other subjects such as production in Geography and agribusiness in Entrepreneurship.

Cross-cutting issues

When teaching this unit, it is important to consider the effect of genocide on production and standardisation culture.

On genocide, consider the fact that genocide resulted into loss of manpower causing a reduction in the country's output.

Standardisation culture involves developing a culture of fairness, correctness and accuracy. Emphasise to the learners the fact that producing quality products is very important and being fair to the consumers and employees for one's production enterprise to be competitive.

LESSON 1: Definition and purpose of production

Production is the process through which resources are converted into final

goods ready for consumption or into intermediate goods which can be used to produce other goods and services.

The main purpose of production is to satisfy man's needs and wants through provision of goods and services.

Learning outcome

By the end of this sub-topic the learner should be able to:

- Define the term production.
- Explain the purpose of production.

Preparation for the lesson

- The teacher should use a particular method that is appropriate to the level of learners and to the particular topic under consideration.
- The teacher should also choose appropriate teaching aids that will make the lesson more attractive to the learners.
- Prepare a case study of any production facility and identify the production activities carried out by the firm.

Teaching/Learning resources

Recommended students books, internet access, newspaper articles on economics and economic journals.

Interactive learning- Use class discussions, question and answer and case studies to ensure that all learners are involved.

Teaching/Learning methods - Case study, question and answer, discussion method and pair work/debates.

Improvisation – Ensure to improvise for slow learners and other learners who may have learning challenges.

Teaching/Learning activities

- Ask learners to identify production facilities in their location and identify the production activities the firms carry out and make presentations.
- Ask the learners to explain the meaning and the purpose of production.

Extended and remedial activities

Provide extra work to fast learners and remedial work to slow learners.

Assessment

Give assignments to the learners to assess their research skills as well as creativity and innovation skills.

Further activities

Learners to discuss the importance of production in the economy.

LESSON 2: Levels of production

Production takes the following stages/levels:

- Primary production
- Secondary production
- Tertiary production

Learning outcome

By the end of this sub topic the learner should be able to:

- Identify the levels of production.
- Explain the levels of production.
- Identify the economic activities in the different levels of production.

Preparation for the lesson

- Make sure that the class is clean.
- Ensure that learners keep time to lesson disruptions.
- The teacher should use simple terms to the level of learners.

Teaching/Learning resources

Recommended students books, internet access, newspaper articles on Economics, economic journals.

Interactive learning: Involve all the learners during the lesson by using learner centred methods like question and answer, discussion, group work among others.

Teaching/Learning method:

Question and answer, discussion and case study

Teaching/Learning activities:

- Organise a study trip to a sugar factory and when there ask learners to observe the stages through which the production of sugar undergoes.
- In groups of five, let learners discuss their findings from the study trip.
- In their groups ask learners to identify and explain the levels of production and make presentations.

Further activities – Further reading from learners' books and relevant Economics resources.

Extended and remedial activities:

Learners to research on the levels of production in their society.

Assessment

Use open-ended questions to assess learners if learners have acquired skills, knowledge and understanding required.

LESSON 3: Types of production

The main types of production are:

- Direct production.
- Indirect production.

Guide learners to explain the above factors of production.

Learning outcome

By the end of this sub-topic, the learner should be able to:

- Identify the types of production.
- Explain the types of production.

Preparation for the lesson

- Producing for selling.
- Organise the class in groups.

Teaching/Learning resources:

Recommended students books, internet access, newspaper articles on Economics and economic journals.

Interactive learning: Involve all the learners during the lesson by using learner centered methods like question and answer, discussion, group work among others.

Teaching /Learningactivities:

- Present the case study to the learners on a manila paper **Case study 5**.
- Ask learners in small groups identify and explain the types of production.

Teaching/Learning methods:

Question and answer, discussion and case study.

Further activities: Further reading from learners' books and relevant economics resources.

Extended and remedial activities:

Provide extra work to fast learners and remedial work to slow learners.

Assessment

Give group assignments to the learners to encourage of cooperation among the learners.

Further activity

Production is a activity. Discuss.

LESSON 4: Factors of production

Factors of production refer to all productive inputs used in the production of goods and services and the major ones are capital, labour, land and entrepreneurship.

Learning outcome

By the end of this sub-topic, the learner should be able to:

- Explain the meaning/define factors of factors of production.
- Identify the factors of production.

Preparation for the lesson

- The teacher should make sure that class environment is conducive for teaching.
- The teacher should make adequate preparation to be able to attend to the learners questions.

- Prepare the necessary teaching aids to make the lesson attractive to the learners.

Teaching/Learning resources:

Recommended students books, internet access, newspaper articles on economics, economic journals.

Interactive learning: Involve all the learners during the lesson by using learner centred methods like question and answer, discussion, group work among others.

Teaching methods: Question and answer, discussion, case study and group work.

Teaching/Learning activities:

- In small groups, ask learners to define and identify the factors of production with the use of a production facility like bread factory as an example.

Further activities: Further reading from learners' books and relevant economics resources

Extended and remedial activities

Provide extra work to fast learners and remedial work to slow learners.

Assessment

Give group assignments to the learners to encourage cooperation among the learners.

LESSON 5: Land as a factor of production

Land refers to all the free gifts of nature which are not human, found on earth,

beneath or above. It includes soil, forests, mountains, oceans, minerals, air etc. The reward to land for its contribution in the production process is rent.

Learning outcome

By the end of this sub- topic the learner should be able to:

- Define land as a factor of production.
- Identify the characteristics of land.
- Explain the role land plays in the production process.
- Identify the reward to land for its contribution in the production process.

Preparation for teaching

- The teacher should make sure that class environment is conducive for teaching.
- The teacher should make adequate preparation to be able attend to the learners questions.
- Prepare the necessary teaching aids to make the lesson attractive to the learners.

Teaching/Learning resources:

Recommended students books, internet access, newspaper articles on Economics and economic journals.

Interactive learning: Involve all the learners during the lesson by using learner centered methods like question and answer, discussion, group work among others.

Teaching/Learning methods:

Question and answer, discussion, case study, group work

Teaching /learning activities

- Through their small groups and using the example of a bread factory ask learners to explain the meaning of land and identify its characteristics and the role it plays in the production process.
- Ask learners to identify the reward to land in the production process.

Further Activities - Further reading from learners' books and relevant Economics resources.

Extended and remedial activities

Learners to discuss the determinants of rates as a reward for land.

Assessment

Give continuous exercises to the learners to assess learners' knowledge, understanding and skills.

LESSON 6:Capital as a factor of production

Capital refers to all human made resources used in the production of goods and services and can be categorised as follows:

- Fixed capital
- Liquid capital
- Human capital

The reward to capital is interest, whose rate will depend on the demand and supply of capital.

Capital plays an important role in production such as promoting technological progress, facilitates economic growth, promotion of factor mobility, facilitates industrialisation,

facilitates employment creation, promotes research and innovation, promotes specialisation in the production process, facilitates production of quality goods and services, facilitates resource renewal and reduces dependence.

Learning outcome

By the end of this sub-topic, the learner should be able to:

- Define capital.
- Identify the forms of capital.
- Explain the role capital plays in the production process.
- Identify the reward to capital for its contribution in the production process.

Preparation for the lesson

- The teacher should ensure that the class is clean.
- The teacher should identify and assemble the different resources/ items to present to the class to use as examples of capital.
- Prepare the relevant teaching-learning materials.
- Organise the sitting arrangement in a group form.

Teaching/Learning resources:

Recommended students books, internet access, newspaper articles on economics and economics journal.

Interactive learning: Involve all the learners during the lesson by using learner centered methods like question and answer, discussion, group work among others

Teaching/Learning methods:

Question and answer, discussion, case study and group work.

Teaching /Learning activities:

- On a manila paper make a list of items that constitute capital (i.e. money and non-money resources like equipment and others) and hang it in class.
- Ask learners in groups of five to define capital and identify the forms of capital using the list provided above and make presentations.
- In a class discussion, ask learners to explain the role capital plays in the production process.
- Guide the learners as they make their presentations.

Further Activities: Further reading from learners' books and relevant economics resources.

Extended and remedial activities

Provide extra work to fast learners and remedial work to slow learners.

Assessment

Use open ended questions to assess learners' acquisition of targeted skills, knowledge and understanding.

LESSON 7: Capital accumulation

Capital accumulation refers to the process of increasing a country's stock of capital assets over a given period of time. Capital accumulation can either be gross capital accumulation or net capital accumulation (net investment).

Gross capital accumulation refers to

the total expenditure on capital assets including replacement of worn out capital assets plus new assets while net investment refers to the addition to the existing volume of capital or expenditure on new assets only.

The level of capital accumulation is influenced by; the level of income in an economy, political climate in the country, government policies on saving and investment, rate of capital inflows and outflows, the level of development of financial institutions, population structure in terms of growth rate and age, the size of the market and the level of entrepreneurship.

Learning outcome

By the end of his sub-topic the learner should be able to define capital accumulation, explain factors that influence capital accumulation and explain the factors that limit capital accumulation in an economy.

Preparation for the lesson

- Prepare the list of the necessary references to be referred to the learners for reference.
- Prepare the necessary teaching learning aids to the lesson attractive to the learners.
- Organise the learners in groups and organise the sitting arrangement in groups.
- Make sure that the class is clean and that learners keep time to avoid interruptions.

Teaching/Learning resources:

Recommended students books, internet access, newspaper articles on economics and economic journals.

Interactive learning: Involve all the learners during the lesson by using learner centered methods like question and answer, discussion, group work among others.

Teaching/Learning methods:

Question and answer, discussion, case study, and group work.

Teaching /Learning activities:

- Ask learners to carry out research on capital accumulation after providing to them the relevant reference materials like textbooks and internet websites.
- Let the learners working in groups of six, explain the meaning of capital accumulation and make presentations.
- Through small group discussions ask learners to identify the factors that influence capital accumulation.
- Through question and answer, ask the learners to identify and explain the factors that limit capital accumulation.

Further Activities: Further reading from learners’ books and relevant Economics resources.

Extended and remedial activities

Provide extra work to fast learners and remedial work to slow learners.

Assessment

Use open ended questions to assess learners’ acquisition of targeted skills, knowledge and understanding and attitudes and values.

LESSON 8: Labour as a factor of production

Labour: Its meaning, characteristics, role, mobility and efficiency.

Labour refers to any physical and mental effort directed towards production of goods and services. Labour can either be skilled, semi- skilled or unskilled.

Skilled labour is well trained and experienced. It is the most desired labour in the economy because it has practical knowledge and its productivity is high. Semi-skilled labour is labour that has some little education and little working experience and its productivity is higher than that of unskilled labour while unskilled labour is labour in its raw form, labour that is not educated and has no practical experience in any particular job. The reward to labour is wages.

Characteristics of labour

Labour has some characteristics which distinguish it from other factors of production. Guide learners to identify and explain these characteristics.

Labour mobility and efficiency

Labour mobility is the ease with which labour can move from one occupation to another or from one geographical area to another. The movement of labour from one occupation to another is known as occupational mobility while the movement between geographical areas is known as geographical mobility of labour. However labour can move within the same occupation either vertically or horizontally.

Vertical mobility of labour is the movement of a worker from one job to another job within the same occupation and changes status, for example from a messenger to a typist, from a clerk to a banker etc, While horizontal mobility is the movement of labour from one job to another at the same level in a given industry.

Labour efficiency

Labour efficiency is the ability of labour to produce the greatest quality and quantity of output in the shortest time possible. In other words it is the productivity of a unit of labour per unit of time.

Learning outcome

By the end of this subtopic the learner should be able to:

- Define labour.
- Identify the characteristics of labour.
- Explain the role played by labour in the production process.
- Explain the difference between labour mobility and labour efficiency.
- Identify the reward to labour for its contribution in the production process.

Preparation for the lesson

- Ensure that the class is clean.
- Prepare for the lesson adequately to be able to guide the learners effectively.
- Organise the sitting arrangement in such a way as to allow flexibility in movement by the teacher and the learners.

Teaching/Learning resources:

Recommended students books, internet access, newspaper articles on Economics, economics journals.

Interactive learning: Involve all the learners during the lesson by using learner centered methods like question and answer, discussion, group work among others

Teaching/Learning methods:

Question and answer, discussion, case study, group work.

Teaching/Learning activities:

- Ask learners in pairs to identify the work done by different workers in their school from.
- After identifying the worker done by the workers in their school, ask them to define labour, identify the characteristics of labour and explain the role played by labour in the production process.
- Through debates ask learners to define labour mobility and labour efficiency.
- Through brainstorming ask learners to identify the reward to labour for its contribution in the production process.
- Guide the learners as they carry out the above activities.

Further Activities: Further reading from learners' books and relevant Economics resources.

Extended and remedial activities

Provide extra work on the determinants of wages to fast learners and remedial work to slow learners

Assessment

Ask open-ended questions to assess learners' acquisition of targeted skills, knowledge and understanding and attitudes and values.

LESSON 9: Division of labour and specialisation

Specialisation refers to an economic situation where resources are concentrated in production of relatively few commodities in which one is most efficient. In case of labour specialisation refers to the allocation of tasks among workers so that each worker concentrates on the task where he is most efficient.

Division of labour

Division of labour is a situation where the production process is divided into a series of repetitive tasks and each worker is responsible for a particular task where he can perform better.

Forms of specialisation

Specialisation is of the following forms:

- Specialisation by craft.
- Specialisation by process.
- International specialisation.

Advantages and disadvantages of specialisation and division of labour

Specialisation and division of labour have a number of advantages and disadvantages. Guide learners to identify and explain these advantages and disadvantages

Learning outcome

By the end of this sub-topic, the learner should be able to:

- Explain the difference between division of labour and specialisation.
- Explain the forms of specialisation.
- Explain the advantages and disadvantages of specialisation process.

Preparation for the lesson

- Organise learners in small groups.
- Ensure that the class is clean.
- Ensure the availability of teaching-learning materials.

Teaching/Learning resources:

Recommended students books, internet access, newspaper articles on economics, economics journal.

Interactive learning: Involve all the learners during the lesson by using learner centered methods like question and answer, discussion, group work among others.

Teaching/Learning methods:

Question and answer, discussion, study trips, and group work.

Teaching /Learning activities:

- Organise a trip to a production facility, ask learners to observe how work is organised and distributed among workers.
- Basing on their observation above, ask learners in small groups to explain the difference between division of labour and specialisation

- Ask the learners in small groups to explain the advantages and disadvantages of specialisation.
- Through brainstorming ask learners to identify the forms of specialisation.

Further activities: Further reading from learners' books and relevant Economics resources.

Extended and remedial activities

Provide extra work to fast learners and remedial work to slow learners.

Assessment

Ask open-ended questions to assess learners' acquisition of targeted skills, knowledge and understanding and attitudes and values

LESSON 10: Entrepreneurship

Meaning, features/characteristics, functions, reward and supply of entrepreneurs

Entrepreneurship is the capacity and willingness to develop, organise and manage a business venture along with any of its risks in order to make a profit.

An entrepreneur is a person who organises and co-ordinates other factors of production to produce goods and services. He/she hires labour and land and looks for capital and combines these factors into appropriate proportion to produce goods and services. The entrepreneur is rewarded profit for his/her contribution in the production process.

Characteristics of entrepreneurs

Entrepreneurs have the following characteristics:

Initiative, perceiving opportunities, persistence, information gathering, problem solving, self-confidence, self-critical, persuasion, assertiveness and risk taker

Guide learners to explain the above characteristics.

Functions of entrepreneurs

He organises other factors of production, he undertakes risks, bears the burden of risks and uncertainties in business, co-ordinates other factors of production. It is the entrepreneur who sets goals and co-ordinates other factors of production to produce goods and services, he is decision maker. All the decisions of the firm are undertaken by the entrepreneur, directs the development of the enterprise, develops concrete plans for the development of the enterprise, he is an initiator; the starting of any business enterprise is the result of the initiative of the entrepreneur, He is an innovator; an entrepreneur introduces new methods of production to improve the quality and quantity of output.

Barriers to entrepreneurship development

These are the factors that hinder or limit the development of entrepreneurship. They hinder people from acquiring and practicing entrepreneurial skills and also prevent the practicing entrepreneurs from achieving full benefits that entrepreneurship has to offer. They include the following:

Poor entrepreneurship skills, lack of business and technical skills, lack of mobility and exposure, lack of business ethics, Career dependency, lack of role models in entrepreneurship, lack of motivation, lack of access to finance, low purchasing power and poor infrastructures.

NB. It is the same factors that influence the supply of entrepreneurs. Guide learners to explain the above factors

Learning outcome

By the end of this sub-topic learners should be able to:

- Define entrepreneurship and an entrepreneur.
- Explain the characteristics and functions of entrepreneurs.
- Explain the factors limiting the supply of entrepreneurs in Rwanda.
- Identify the reward to entrepreneurship as a factor of production.

Preparation for the lesson

- Make adequate planning for the lesson.
- Organise learners in groups.
- Identify key terms to be used when teaching and simplify them in advance for the learners.
- Ensure relevant teaching-learning materials are available for use when teaching.

Teaching/Learning resources:

Recommended students books, internet

access, newspaper articles on economics, economic journals.

Interactive learning: Involve all the learners during the lesson by using learner centered methods like question and answer, discussion, group work among others.

Teaching/Learning methods:

Question and answer, discussion, study trips and group work.

Teaching/ learning activities:

- In small groups ask learners to identify people who have successfully started businesses in Rwanda and identify their enterprises and the products they produce.

Activity 18

- Basing on the identified entrepreneurs, ask learners in small groups to explain the meaning of entrepreneur and entrepreneurship.
- Arrange learners in groups to discuss the characteristics of entrepreneurs.
- Ask learners in pairs to discuss the factors that limit the supply of entrepreneurs in Rwanda.
- Through question and answer session with the learners, ask learners to identify the reward to entrepreneurship as a factor of production.

Further Activities: Further reading from learners' books and relevant economics resources.

Extended and remedial activities

Provide extra work to fast learners and remedial work to slow learners.

Assessment

Assign projects to the learners to assess if they have been able to acquire lifelong skills.

Answers to unit Assessment

1 (a) Production is the process through which resources are converted into final goods ready for consumption or into intermediate goods which can be used to produce other goods and services.

(b) Advantages of division of labour

- It increases efficiency and the ability of labour.
- It saves time that would have been wasted in moving from one job to another.
- It increases production.
- It leads to creation of more employment opportunities as many occupations and tasks are created.
- It leads to production of better quality goods and services due to the fact that workers become perfect in performance of their tasks.
- It minimises costs and time of training of workers since a worker can easily be trained for operation of a single task.
- It increases occupational mobility of labour because workers become more professionals in their tasks which increase their mobility.
- It makes the use of machines and other tools possible.

2 (a) Functions of an entrepreneur

- Organises other factors of production.
- Undertakes risks. He bears the burden of risks and uncertainties in business.
- Co-ordinates other factors of production. It is the entrepreneur sets goals and co-ordinates other factors of production to produce goods and services.
- Is decision maker. All the decisions of the firm are undertaken by the entrepreneur.
- Directs the development of the enterprise. An entrepreneur develops concrete plans for the development of the enterprise.
- Is an initiator; the starting of any business enterprise is the result of the initiative of the entrepreneur.
- Is an innovator; an entrepreneur introduces new methods of production to improve the quality and quantity of output.

(b) Barriers to entrepreneurship development

- Poor entrepreneurship skills.
- Lack of business and technical skills.
- Lack of mobility and exposure.
- Lack of business ethics.
- Career dependency.
- Lack of role models in entrepreneurship.
- Lack of motivation.

- Lack of access to finance.
- Low purchasing power.
- Poor infrastructures.

3 (a) The factors of production are:

- Land whose reward is rent.
- Capital which is rewarded interest.
- Labour whose reward are wages.
- Entrepreneurship which is rewarded profit.

(b) Factors that influence the level of capital accumulation

- The level of income in an economy.

- Political climate in the country.
- Government policies on saving and investment.
- Rate of capital inflows and outflows.
- The level of development of financial institutions.
- Population structure in terms of growth rate and age.
- The size of the market.
- The level of entrepreneurship.

Refer to Learner's Book pages 252-265

TOPIC AREA 2: MICROECONOMICS

SUB-TOPICS 2.2: PRODUCTION THEORY

In this unit the main sub-topics to be covered are:

- Definition of the production function and its illustration/forms.
- The law of diminishing returns and returns to scale.
- Products of the firm.
- Isoquant and isocost.

Key unit competence: By the end of 11 lessons, the learner should be able to explain the relationship between inputs and outputs both in the long run and the short run, explain the law of diminishing returns and returns to scale, explain the relationship between the products of the firm and distinguish between isoquant and isocost.

Unit learning objectives

As you teach this unit you should ensure that learners acquire the following skills, values and attitudes:

Knowledge and understanding	Skills	Attitudes and values
<p>Explain the relationship between inputs and outputs both in the short run and long run.</p> <p>Identify the characteristics of short run and long run planning periods.</p> <p>Explain how production varies with planning periods.</p> <p>State the law of diminishing marginal returns and returns to scale and their assumptions.</p> <p>Differentiate between isocost and isoquant.</p>	<p>Analyse the relationship between inputs and outputs both in short run and long run.</p> <p>Illustrate the production function and products of the firm both in short run and long run.</p> <p>Calculate TP, AP & MP both in short run and long run.</p> <p>Use illustrations to distinguish between isocost and isoquant.</p>	<p>Be aware of the relationship between inputs and outputs both in short run and long run and plan to produce accordingly for profit maximisation.</p>

Additional information for the teacher

The level of output that a firm produces depends on the inputs used in the production process. This input-output relationship is called the production function. As you prepare to teach this unit ensure that you teach data that will easily express this relationship. Also practice the calculations involved and drawing the illustration so that you won't have any problem in teaching and explaining the same to the learners. Let appreciate the fact that this unit has links to other subjects such as Mathematics and Geography and therefore knowledge transfer is possible.

Cross-cutting issues

When teaching this unit, the following cross cutting issues should be emphasised:

Gender issues, let the learners recognise the fact that for output to increase in an economy, participation of both men and women in the production process is very important hence the need for programs that promote of all in economic activities, the need for empowering women such as by making it easy for them to access financial services.

Peace and values education, Inform the learners that peace is important and critical for the Rwandan economy to flourish especially after the genocide against the Tutsi and therefore the for peaceful co-existence.

LESSON 1: Definition of production function and the forms in which it can be expressed

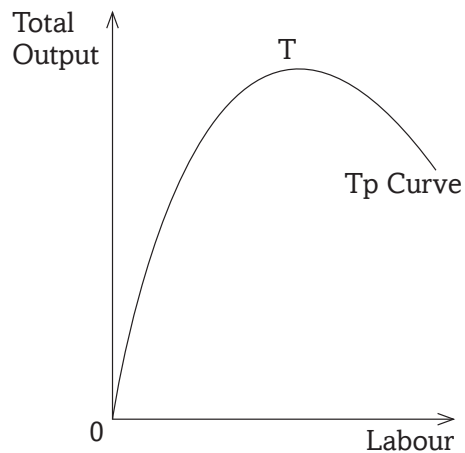
Production function is an expression of the relationship between physical quantities of inputs and output. It shows

the maximum output that can be obtained from a given quantity of physical inputs. Production function can be expressed in the following ways:

- Algebraically** e.g. $Q = f(L, K, N, M, T, \dots)$ where Q is output, K is capital, N stands for land, M is organisation, T stands for technology and L stands for labour while f stands for function/depends.
- Schedule/table**

Labour	Output
1	2
2	6
3	9
4	8

- Using a graph**



Total product curve

Learning outcome

By the end of this sub-topic, the learners should be able to:

- Explain the meaning of the production function.
- Illustrate the ways in which the production function can be expressed.

Preparation for the lesson

- Ensure that the class is clean.
- Make sure that the relevant teaching-learning materials are available.
- Organise the class in groups.

Teaching/Learning resources:

Recommended students books, internet access, newspaper articles on economics and economic journals.

Interactive learning: Involve all the learners during the lesson by using learner centered methods like question and answer, discussion, group work among others.

Teaching/Learning methods:

Question and answer, discussion and group work.

Teaching /Learning activities:

- Ask learners in pairs to think of any enterprise of their choice and identify the inputs the firm uses in order to produce a given level of output.
- Ask learners in small groups to explain the meaning of the production function and illustrate the production function.

Further Activities: Further reading from learners' books and relevant Economics resources.

Extended and remedial activities

Give additional exercises to the fast learners and remedial work to slow

learners in order to address the individual differences among learners.

Assessment

Use open ended questions to assess if learners have acquired targeted values, skills and attitudes.

LESSON 2: The law of diminishing returns and returns to scale

The law of diminishing returns

The **law of diminishing returns** states that "As more of a variable input X is added on a fixed factor, total output increases at an increasing rate and later at a decreasing rate until a point is reached where additional quantities of input X will yield diminishing marginal returns assuming all other factors remain constant". This law is also called the law of variable proportions and it has the following assumptions:

- Existence of a variable factor of production and other factors are constant.
- All units of the variable factor are homogeneous.
- The price of the product is given and constant.
- It assumes a short run period.
- It assumes that technology is constant.
- It is possible to change the proportions in which various inputs are combined.

The law of returns to scale

The law of returns to scale is an expression of the relationship between output and the scale of inputs in the long run when all inputs are increased in the same proportion. Returns to scale, in physical or money terms can be of three types:

- Constant returns to scale.
- Increasing returns to scale.
- Decreasing returns to scale.

Ask learners to explain the above returns to scale.

Assumptions of the law of returns to scale

- It assumes that all factors are variable.
- It assumes constant technology.
- It assumes that the product can be measured in physical quantities.
- Assumes perfect competition conditions.

Learning outcome

By the end of this sub topic, learners should be able to:

- State and explain the law of diminishing returns and the law of returns to scale.
- Explain the assumptions of the law of diminishing returns and returns to scale.
- Illustrate diminishing returns and returns to scale.

Preparation for the lesson

- Ensure that the class is clean.

- Make sure that the relevant teaching-learning materials are available.
- Organise the class in groups.

Teaching/learning resources:

Recommended students books, internet access, newspaper articles on Economics and economic journals.

Interactive learning- Involve all the learners during the lesson by using learner centered methods like question and answer, discussion, group work among others.

Teaching/Learning methods:

Question and answer, discussion and group work.

Teaching/Learning activities:

- Ask learners to undertake research and in small groups discuss the law of diminishing returns and the law of returns to scale.
- Ask learners to pairs to identify the assumptions of the laws of diminishing returns and returns to scale.
- Ask learner in a class discussion to illustrate diminishing returns and returns to scale.

Further Activities - Further reading on the law of return to scale and its application in real life situation.

Extended and remedial activities

Give home works to both the fast learners and slow learners so as to help them maintain their pace in studying.

Assessment

Give learners questions in class in order to develop their critical thinking skills.

LESSON 3: Products of the firm (TP, AP & MP)

Total product (TP)

Average product (AP)

$$AP = \frac{TP}{L}$$

Marginal product (MP)

$$MP_L = \frac{dTP}{dL}$$

$$MP_K = \frac{dTP}{dK}$$

Guide learners to explain the above products of the firm.

Learning outcome

By the end of this sub topic the learner should be able to:

- Calculate the products of the firm (TP, AP and MP).
- Illustrate the relationship between TP, AP and MP.

Preparation for the lesson

- Prepare the input and output ratios that will be used to calculate the products of the firm.
- Prepare the necessary teaching-learning materials.
- Make adequate planning to be able to attend to the learners' questions effectively.

Teaching/learning resources:

Recommended students' books, internet access, newspaper articles on Economics and economic journals.

Interactive learning: Involve all the learners during the lesson by using learner-centered methods like question and answer, discussion, group work among others.

Teaching/learning methods:

Question and answer, discussion and group work.

Teaching /learning activities:

- Show the learners the formulae for calculating the products of the firm.
- Provide learners input and output figures and ask them in small groups to calculate the TP, AP & MP.
- Ask learners to illustrate the relationship between TP, AP & MP.

Further Activities: Further reading from learners' books and relevant economic resources.

Extended and remedial activities

Provide extra exercises to the fast learners and remedial activities to the slow learners.

Assessment

Give learners assignments to promote a culture of research among the learners.

LESSON 4: Isoquant and isocost

Isoquant is a locus of points joining different input combinations capable of producing the same level of output. It is also referred to as the production indifference curve and its slope is known as the marginal rate of technical substitution since it shows the rate at which one input is substituted for another while maintaining the same level of output.

Isocost is a line of points joining different input combinations which exhaust the producer's income. It represents the different combinations of two inputs that a firm can buy for a given sum of money at the given price of each input. Isocosts are straight lines because factor prices remain the same whatever the outlay of the firm on the two factors.

Learning outcome

By the end of this sub-topic, the learner should be able to:

- Explain the concept of isoquant and isocost.
- Explain the properties of isoquants.
- Illustrate isoquants and isocosts.

Preparation for the lesson

- Make sure that the class is clean.
- Prepare adequately for the lesson.
- Organise the class in groups.

Teaching/Learning resources:

Recommended students books, internet access, newspaper articles on Economics and economic journals.

Teaching/Learning activities:

- Ask learners to discuss the difference between isoquant and isocost.

- Ask learners in pairs to discuss the properties of isoquants.
- Ask learners to illustrate the isoquants and isocosts.
- Ask learners to show and illustrate the firm's minimisation cost and expansion path.

Further activities: Learners to do a reasearch on the relationship between isoQuant and isocost.

Extended and remedial activities

Provide extra activities to fast learners and remedial activities to slow.

Assessment

Give open-ended questions to the learners to assess if they have acquired targeted knowledge, understanding, values and attitudes.

Answers to unit Assessment

1 (a) Production function is an expression of the relationship between physical quantities of inputs and output. It can be expressed algebraically, in a schedule/table and graphically.

2(a) **Total product (TP)** refers to total output resulting from the employment of all the factors of production.

Average product (AP) is the output per unit of a variable factor employed. It is the total product divided by the total units of a variable factor.

Marginal product (MP) is the output per unit of a variable factor employed. It is the total product divided by the total units of a variable factor.

(b) Relationship between total product, average product and marginal product

The analysis of the relationship between total, average and marginal product shows that the total, average and marginal product increase at first, reach a maximum and then start declining. MP reaches maximum first and declines, followed by AP and TP reaches maximum last and declines.

The rising, falling and negative phases of the TP, MP and AP are the different stages of the law of variable proportions.

3(a) The law of diminishing returns states that "As more of a variable input X is added on a fixed factor, total output increases at an increasing rate and later at a decreasing rate until a point is reached where additional quantities of input X will yield diminishing marginal returns assuming all other factors remain constant."

(b) Assumptions of the law of diminishing returns

- Existence of a variable factor of production and other factors are constant.
- All units of the variable factor are homogeneous.
- The price of the product is given and constant.
- It assumes a short run period.
- It assumes that technology is constant.
- It is possible to change the proportions in which various inputs are combined.

4. (a) The law of returns to scale

The law of returns to scale is an expression of the relationship between output and the scale of inputs in the long run when all inputs are increased in the same proportion.

(b) Constant returns to scale: This is a situation where an increase in inputs in an exactly proportional increase in output.

Increasing returns to scale: This is a situation where an increase in inputs results in a more than proportional increase in output.

Decreasing returns to scale: This is a situation where an increase in inputs results in a less than proportional increase in output.

5(a) Isoquant is a locus of points joining different input combinations capable of producing the same level of output while isocost is a line of points joining different input combinations which exhaust the producer's income.

(b) Properties of isoquants

- Isoquants are negatively inclined.
- An isoquant lying above and to the right of another represents a higher output level.
- No two isoquants can intersect each other.
- In between two isoquants, there can be a number of isoquants showing various levels of output.
- No isoquant can touch either axes.
- Each isoquant is convex to the origin.

Refer to Learner's Book pages 266-278

TOPIC AREA 2: MICROECONOMICS

- Survival of small scale firms.

SUB-TOPIC AREA 2.2: PRODUCTION THEORY

Unit 13: Theory of the firm

In this unit the main sub-topics to be covered are:

- Distinction between a firm, an industry and a plant.
- Objectives of a firm and factors that influence long term decisions a firm.
- Location and localisation of firms.

Key unit competence: By the end of 11 lessons, the learner should be able to explain the terms firm, industry and plant, the objectives of firms and factors that influence long term decisions of a firm, location and localisation of firms and the survival of small scale firms.

Unit learning objectives

As you teach this unit you should ensure that learners acquire the following skills, values and attitudes:

Knowledge and understanding	Skills	Attitudes and values
<p>Distinguish between a firm, plant and industry.</p> <p>State the objectives and factors influencing the long term decisions of a firm.</p> <p>Distinguish between the location and localisation of firms in an area.</p> <p>Explain the factors influencing location and localisation of firms in an area.</p> <p>Explain the merits and problems of localisation of firms in an area.</p> <p>Explain why small scale firms survive alongside large scale firms.</p>	<p>Analyse the factors that influence location and localisation of firms in an area.</p> <p>Assess the impact of localisation of firms in an area.</p> <p>Examine the factors influencing long term decisions of the firm.</p>	<p>Support the need for location and localisation of firms in an area.</p>

Additional information for the teacher

A firm is the small unit that employs factors of production to produce goods and services. When teaching this unit try to be more practical so that learners can be able to appreciate the distinction between a firm, industry and a plant and the factors that influence the location of a firm and the distinction between location and localisation. For this to happen organise study trips to different firms where learners are to observe what takes place in a firm, the factors for their location and the difference between location and localisation of firms and after which they discuss in their observations.

Cross cutting issues

When teaching this unit, the following cross cutting issue should be emphasised:

Environmental conservation and sustainability; on this cross cutting issue inform the learner that production entities need to be mindful of the environment when undertaking production decisions so that their production activities do not have negative impact on the environment. There is need therefore to environmental impact assessment before undertaking any production activity.

LESSON 1: A firm, industry and plant

A firm refers to the smallest production unit which employs factors of production under one unit control to produce goods and services while a plant is a particular facility that is used to manufacture a product or produce a substance. A combination of a group of firms engaged in the production of similar or related goods is an **industry**.

Learning outcome

- Explain the difference between a firm, plant and an industry.

Preparation for the lesson

- The teacher should use a particular method that is appropriate to the level of learners and to the particular topic under consideration.
- The teacher should also choose appropriate teaching aids that will make the lesson more attractive to the learners.
- Identify the reference materials in the library or internet to which you are to refer the learners.

Teaching/ Learning resources:

Newspapers, magazines, textbooks, journals, internet access and audio media.

Interactive learning: Involve all the learners during the lesson by using learner centered methods like question and answer, discussion, group work among others.

Teaching/Learning methods:

Question and answer, discussion and group work.

Teaching/Learning activities:

- Ask learners to visit the library carry out research on the concept of the firm, plant and industry.
- In small groups ask learners to distinguish between a firm, industry and a plant and advice them accordingly.

Further activities- Further reading on the difference between a firm, an industry and a plant.

Extended and remedial activities

Provide additional activities to the fast learners and remedial activities to slow learners.

Assessment

Ask learners to come up with a written project showing the structure of a firm to develop creativity and innovation among the learners.

LESSON 2: Objectives of firms

Different firms will have different objectives but in general firms have the following objectives:

- Profit maximisation is one of the major objectives of firms.
- Firms have an objective of increasing their share of the market.
- They have an objective of increasing their sales revenue.
- They have an objective of limiting entry of new firms in the industry.
- The objective of a firm is to improve the socio-economic welfare of its employees.
- Firms have an objective of long run survival in the market.

Factors influencing longterm decisions of a firm

- The objective of the firm.
- The level of competition.

- Cost of production.
- Government policies on business.
- Economic conditions.
- Business expectations.

Learning outcome

By the end of this sub-topic, the learner should be able to:

- Identify and explain the objectives of the firm.
- Explain the factors that influence the long term decisions of the firm.

Preparation for the lesson

- Ensure that the class is clean.
- Prepare the necessary teaching learning materials.
- Organise the learners in groups.

Teaching/ Learning resources:

Newspapers, magazines, textbooks, journals, internet access and audio media.

Interactive learning: Involve all the learners during the lesson by using learner centered methods like question and answer, discussion, group work among others.

Teaching/learning methods:

Question and answer, discussion and group work

Teaching/Learning activities:

- In pairs ask learners to discuss the objectives of a firm.

- Through brain storming ask learners to explain the factors that influence the long term decisions of a firm.

Further activities: Learners to research on the social responsibilities of the firms in the society.

Extended and remedial activities

Give extra work to fast learners and remedial activities to slow learners.

Assessment

Give tests to the learners to their knowledge and understanding of the key lesson concepts.

LESSON 3: Location and localisation of firms

Location of a firm

Location refers to the establishment of a firm or firms in a particular area.

Factors influencing location of a firm and an industry

- Availability of raw materials.
- Availability of the market.
- Government policy.
- Transport and communication network.
- Availability of power.
- Availability of labour.
- Availability of land.
- Political stability.
- Commercial institutions.

Localisation of firms

Localisation of firms refers the concentration of different firms in a particular area.

Merits of localisation

- Creation of employment.
- Development of infrastructure.
- Urbanisation.
- Improved quality.
- Improved reputation.
- Supply of skilled labour.
- External economies.
- Industrial expansion.

Demerits of localisation

- Regional imbalances
- Development of slums
- Rural urban migration
- Social problems
- Over straining infrastructure
- Diseconomies
- Increased cost of living
- Increased dependence
- Exhaustion of resources

Learning outcome

By the end of this sub topic, the learner should be able to:

- Explain the factors that influence location and localisation of firms.

- Explain the merits and demerits of localisation of firms.

Preparation for the lesson

- Ensure that learners are in class in time to avoid interruptions.
- Prepare relevant teaching-learning materials.
- Organise learners in groups.
- Identify any firm in Kigali or in any district where the school is located to act as a reference to the learners on the case of location.

Teaching/ Learning resources

Newspapers, magazines, textbooks, journals, internet access and audio media.

Interactive learning- Involve all the learners during the lesson by using learner centered methods like question and answer, discussion, group work among others.

Teaching/Learning methods- Question and answer, discussion and group work.

Teaching /Learning activities

- Ask learners to identify any firm of their choice and let them in small groups explain the factors that may have influenced the location of that firm and advice them accordingly.
- In groups ask learners to discuss the merits and demerits of localisation of firms. Refer them to any industrialised area like the special economic zone.

Further activities- Further reading on the effects of localisation and de-localisation of firms.

Extended and remedial activities

Give fast learners extra activities and remedial activities to slow learners.

Assessment

Give continuous assessment tests to assess learners' progress in acquiring targeted knowledge, skills, values and attitudes.

LESSON 4: Survival of small scale firms

Reasons for the survival of small scale firms alongside large ones

- Capital limitation
- Fear of risks
- Market limitation
- Distance between producers
- Subsidiary industries
- Personal services
- Desire for independence
- Banding together
- Sub-contracting
- Demand for a variety

Learning outcome

By the end of this sub topic, learners should be able to:

- Explain the reasons for the survival of small scale firms alongside large scale firms.

Preparation for the lesson

- Ensure that learners are in class in time to avoid interruptions.
- Prepare relevant teaching-learning materials.
- Organise learners in groups.

Teaching/ Learning resources:

Newspapers, magazines, textbooks, journals, internet access and audio media.

Interactive learning: Involve all the learners during the lesson by using learner centered methods like question and answer, discussion, group work among others.

Teaching/Learning methods:

Question and answer, discussion and group work.

Teaching /Learning activities:

- Ask learners to identify small firms and large firms in their locality.
- In small groups ask learners to explain the reasons as to why small scale firms survive alongside large scale firms.

Further activities: Further reading from learners' books and relevant economics resources.

Extended and remedial activities

Give fast learners extra activities and remedial activities to slow learners.

Assessment

Give continuous assessment tests to assess learners' progress in acquiring

targeted knowledge, skills, values and attitudes.

Answers to Unit Assessment

1 (a) A firm refers to the smallest production unit which employs factors of production under one unit control to produce goods and services while a combination of a group of firms engaged in the production of similar or related goods is an **industry**.

(b) Factors that influence location of a firm

- Availability of raw materials.
- Availability of the market.
- Government policy.
- Transport and communication network.
- Availability of power.
- Availability of labour.
- Availability of land.
- Political stability.
- Commercial institutions.

2 (a) Localisation of a firm refer to the concentration of different firms in a particular area.

(b) Advantages of localisation

- Creation of employment
- Development of infrastructure
- Urbanisation
- Improved quality
- Improved reputation of the area

- Supply of skilled labour
- Generation of external economies
- Industrial expansion

Disadvantages of localisation

- Regional imbalances
- Development of slums
- Rural urban migration
- Social problems
- Over-straining infrastructure
- Diseconomies
- Increased cost of living
- Increased dependence
- Exhaustion of resources

Reasons for the survival of small-scale firms

- Capital limitation
- Fear of risks
- Market limitation
- Distance between producers
- Subsidiary industries
- Personal services
- Desire for independence
- Banding together
- Sub-contracting
- Demand for a variety

Refer to Learner's Book pages 279-301

TOPIC AREA 2: MICROECONOMICS

SUB-TOPIC AREA 2.2: PRODUCTION THEORY

Unit 14: Theory of the cost

In this unit the main sub topics to be covered are:

- Definition and types of costs
- Variation of costs in the short run
- Relationship between short run cost curves
- Long run average costs
- Scale of production

- Advantages and disadvantages of merging.
- Economies and diseconomies of scale.

Key unit competence: By the end of 29 lessons the learner should be able to describe production costs of the firm in the short run and long, explain the types of costs and calculate different types of costs.

Unit learning objectives

As you teach this unit you should ensure that learners acquire the following skills, values and attitudes;

Knowledge and understanding	Skills	Attitudes and values
<p>Explain the meaning of the concept of cost.</p> <p>Identify different types of costs.</p> <p>Explain the variations of costs in the short run and long run.</p> <p>Explain how firms grow.</p> <p>Explain the forms, and advantages and disadvantages of the amalgamation of firms.</p> <p>Distinguish economies and diseconomies of scale.</p>	<p>Describe the different types of costs.</p> <p>Illustrate the relationship between TC, TVC, TFC, and MC in short run and long run.</p> <p>Analyse how firms grow and the likely benefits and dangers.</p> <p>Use illustrations to differentiate between economies and diseconomies of scale.</p>	<p>Acknowledge the importance of minimising cost in the production process.</p> <p>Advocate for the growth of firms in an area to enjoy economies of large scale production.</p>

Additional information for the teacher

Firms incur different kinds of costs, which may be implicit or explicit costs. It is important that as you prepare yourself to teach this unit to make adequate preparation so that you are familiar with these costs and how they are calculated. Begin the lesson by identifying the costs that learners are familiar with before moving to costs of the firm. Ask learners themselves to identify the expenditures their families make and build on this to introduce the theory of costs.

This unit also looks at the growth of firms, where the major form of growth is through merging. It is therefore important that as a teacher you are familiar with cases of firms that have ever merged so that when explaining this concept to the learners you are able to show them vivid examples. It is from this that they can appreciate merging as a method through which firms can grow.

Cross-cutting issues

When teaching this unit, the following cross cutting issues should be emphasised:

Financial education, given the fact that a firm's ability to make profits depends on its ability to manage costs/expenses, it is important for the teacher to emphasise to the learners the importance of financial awareness in terms of money management skills, budgeting, saving among other aspects of financial management.

LESSON 1: Definition and types of costs

Costs are expenses of a firm and are derived from the production function for instance costs to a firm are the payments for the different factors of production that are employed by a firm. Costs are sub divided into two:

- 1) Implicit costs
- 2) Explicit costs

Short run costs of the firm

Short run costs

Short run is a period in which the firm cannot change its plant, equipment and the scale of operations. To meet increased demand, it can only raise output by hiring more labour and raw materials or asking the existing labour force to work overtime. The short run total costs are divided into:

- I. Total fixed costs (TFC)
- II. Total Variable costs (TVC)
- III. The total cost (TC)

Learning outcome

By the end of this sub-topic, the learner should be able to:

- Explain the concept of cost.
- Explain the difference between implicit and explicit costs.
- Explain the difference between fixed costs and variable costs.
- Illustrate fixed costs, variable costs and total costs.

Preparation for the lesson

- Ensure that the class is cleaning and the general environment is conducive for teaching and learning.
- Ensure that the learners keep time.
- Organise the learners in groups.
- Identify a number of one firms expenditures that can to be used in class.

Teaching/ Learning resources:

Newspapers, magazines, textbooks, journals, internet access and audio media.

Interactive learning: Involve all the learners during the lesson by using learner centred methods like question and answer, discussion, group work among others.

Teaching/learning methods:

Question and answer, discussion and group work.

Teaching/Learning activities:

- Present a list of expenditures that a given firm may incur.
- Ask learners to explain the concept of cost.
- Ask learners in pairs to explain the difference between implicit cost and explicit costs.
- Ask learners in small groups to distinguish between fixed cost and implicit costs.

Further activities: Further reading from learners' books and relevant economics resources.

Extended and remedial activities

Give fast learners extra activities and remedial activities to slow learners.

Assessment

Engage learners in debates to develop their communication and analytical skills.

LESSON 2: Variation of costs in the short runs

The average fixed cost (AFC)

This is the total fixed cost at each level of output divided by number of units produced.

$$FC = \frac{TFC}{Q}$$

The average variable costs (AVC)

This is the total variable cost at each level of output divided by the number of units produced.

$$AVC = \frac{TVC}{Q}$$

The average total cost (ATC)

This is the average cost of producing any given output. It is given by:

$$ATC = \frac{TC}{Q} = TFC + TVC$$
$$\frac{AFC}{Q} + \frac{AVC}{Q}$$

The marginal cost (MC)

A fundamental concept for the determination of the exact level of output of a firm is the marginal cost (MC). This is an additional to total cost by producing an additional unit of output.

$$MC = \frac{\Delta FC}{\Delta Q}$$

Learning outcome

By the end of this sub - topic, the learner should be able to:

- Explain average fixed costs, average variable costs, average total costs and marginal costs.
- Calculate Average fixed costs, average variable costs, average total costs and marginal costs.
- Illustrate the average fixed costs, average variable costs average total costs and marginal costs.

Preparation for the lesson

- Ensure that the class is clean and the general environment is conducive for teaching and learning.
- Ensure that the learners keep time.
- Organise the learners in groups.
- The teacher should also choose appropriate teaching aids that will make the lesson more attractive to the learners.

Teaching/ Learning resources:

Newspapers, magazines, textbooks, journals, internet access and audio media.

Interactive learning: Involve all the learners during the lesson by using learner centred methods like question and answer, discussion, group work among others.

Teaching/Learning methods:

Question and answer, discussion and group work.

Teaching/Learning activities:

- Ask learners in small groups to explain average fixed costs, average variable costs, average total costs and marginal costs.
- Provide learners with cost figures and ask them to calculate the different costs of the firm

Further activities: Further reading from learners' books and relevant economics resources.

Extended and remedial activities

Give fast learners extra activities and remedial activities to slow learners.

Assessment

Assess learners by giving them continuous assessment tests to check their progress in acquiring targeted knowledge and understanding, skills, values and attitudes.

LESSON 3: Relationship between short run cost curves

The relationship between TC, TVC, TFC and MC

Guide learners to calculate the above costs and illustrate and explain the relationship between TC, TVC, TFC, and MC.

The relationship between MC and ATC

There is a direct relationship between the ATC and the MC.

Guide learners to illustrate and explain the relationship between ATC and MC.

Learning outcome

By the end of this sub-topic, the learner should be able to:

- Calculate costs of the firm
- Illustrate the relationship between MC, AC, AVC and AFC.
- Illustrate the relationship between MC and ATC.

Preparation for the lesson

- Make adequate preparation for the lesson.
- Ensure that learners keep time.
- Organise learners in groups.

Teaching/ learning resources:

Newspapers, magazines, textbooks, journals, internet access and audio media.

Interactive learning: Involve all the learners during the lesson by using learner centered methods like question and answer, discussion, group work among others.

Teaching/Learning methods:

Question and answer, discussion and group work.

Teaching approaches/activities:

- Present to the learners with output, TFC and TVC figures and ask them to calculate AFC, AVC, ATC and MC.
- In small groups ask learners to illustrate the relationship between different types of costs (MC, AC, AVC & AFC and MC and ATC) and make presentations and guide them accordingly.

Further activities: Further reading from learners' books and relevant Economics resources.

Extended and remedial activities

Give fast learners extra activities and remedial activities to slow learners.

Assessment

Assess learners by giving them continuous assessment tests to check their progress in acquiring targeted knowledge and understanding, skills, values and attitudes.

LESSON 4: Long run average costs

LONG RUN AVERAGE COST CURVES (LAC)

The LAC of a firm shows the minimum average cost of producing various levels of output from all possible short run average cost curves (SAC), thus the LAC is derived from the SAC curves for instance the LAC can be viewed as a series of alternative short run situations into any one of which the firm can move.

Each SAC curve represents a plant of a particular size which is suitable for a particular range of output. The firm will therefore make use of the various plants up to that level where the short run average costs fall with an increase in output. The firm will not produce beyond the minimum short run of producing various outputs from all the plants used together.

DERIVING THE LONG RUN AVERAGE COST CURVE (LAC)

Let us assume that we have five plants represented by their short run average cost curves for example SAC1, SAC2, SAC3 up to SAC5 where each curve represents the scale of the firm.

The long run average cost curve is shown as smooth curve fitted to the short run average cost curves so that it is tangent to each of them at some point.

Guide learners to illustrate and explain the shape of the long run average cost curve.

Learning outcome

By the end of this sub topic, the learner should be able to:

- Derive the long run average cost curve from a series of short run average cost curves.
- Explain the long run average cost curve.

Preparation for the lesson

- Make adequate preparation for the lesson.
- Ensure that learners keep time.

- Organise learners in groups.

Teaching/ Learning resources:

Newspapers, magazines, textbooks, journals, internet access and audio media.

Interactive learning: Involve all the learners during the lesson by using learner centred methods like question and answer, discussion, group work among others.

Teaching/learning methods:

Question and answer, discussion, group and work.

Teaching approaches/activities:

- In group discussions, ask learners to interpret the trend of costs in the short run and thereafter derive the long run average cost curve and advice them accordingly.

Further activities: Further reading from learners' books and relevant Economics resources.

Extended and remedial activities:

Give fast learners extra activities and remedial activities to slow learners.

Assessment

Assess learners by giving them continuous assessment tests to check their progress in acquiring targeted knowledge and understanding, skills, values and attitudes.

LESSON 5: Scale of production

Growth of firms

Firms grow so that they can realise their goals and objectives such as increasing sales, profit maximisation, expanding the market share. This growth may either be natural growth or internal expansion and external growth or mergers.

Natural growth

To grow naturally, a firm will need to retain enough profits in order for it to purchase new assets and new technology. As time goes on, the total of a firm's resources will increase which provides collateral security to enable it to borrow to fund further projects for expansion.

External growth/ merging

Another way in which a firm can grow is to integrate with other firms through mutual agreement or through acquisitions.

LESSON 6: Merging of firms

Forms of mergers

A merger refers to the amalgamation of firms to form an entirely new firm for different economic objectives. Mergers are of the following types:

Vertical mergers

This refers to a type of merger where firms at different stages of production integrate. A vertical merger can either be forward merger or backward merger.

Horizontal merger

This is where firms at the same stage of production and producing the similar products decide to integrate.

Conglomerate merger

This is where firms which produce commodities which are not related integrate. Such a merger is also known as a **diversifying merger**.

Reasons for backward vertical mergers

This can take place for the following reasons:

- To control supply of raw materials.
- Ensure quality and quantity of supplies.
- Establish a monopoly by controlling the source of raw materials.

Reasons for forward vertical mergers

Reasons for such a merger include:

- Control of the market by eliminating middlemen.
- To realise economies of scale.
- Accelerating development of new discoveries.
- Controlling the quality and quantity of output.

Reasons for horizontal mergers

The reasons for such a merger include:

- Elimination of competition.
- Rationalisation of capacity.
- Increase specialisation.
- Realisation of internal economies of scale.

Reasons for conglomerate mergers

The major reason for such integration is insurance against risks in case a firm anticipates a decline in future.

Learning outcome

By the end of this sub topic, the learner should be able to:

- Explain natural growth as a way of expansion.
- Explain mergers as a form of mergers.
- Explain the forms of mergers and their rationale.

Preparation for the lesson

- Ensure that class environment is conducive for teaching and learning.
- Ensure that learners keep time.
- Prepare adequately to be able to attend to learners questions effectively.
- Identify the key terms in the lesson and simplify them in advance for the learners.

Teaching/Learning resources:

Newspapers, magazines, textbooks, journals, internet access and audio media.

Interactive learning: Involve all the learners during the lesson by using learner centered methods like question and answer, discussion, group work among others.

Teaching/learning methods:

Question and answer, discussion and group work.

Teaching/Learning activities:

- Ask learners in groups of five to explain the difference between natural growth and mergers as forms of firm expansion.
- Ask learners in groups to explain the forms of mergers and explain their rationale.

Further Activities: Further reading from learners' books and relevant economics resources.

Extended and remedial activities

Give fast learners extra activities and remedial activities to slow learners.

Assessment

Give group exercises to the learners to encourage the spirit of corporation among learners.

LESSON 7: Advantages and Disadvantages of merging

Advantages of merging

- International competition.
- Economies of scale.
- Research and development.
- Increased efficiency.
- Rationalisation.
- Diversification.

Disadvantages of merging

- Diseconomies of scale.
- Limited variety to consumers.
- Higher prices.
- Monopoly.
- Low output.
- Preparation for the lesson.

Guide learners to explain the above advantages and disadvantages of specialisation.

Learning outcome

By the end of this sub-topic, the learner should be able to:

- Explain the advantages and disadvantages of mergers.
- Explain factors that may limit merging of firms.

Preparation for the lesson

- Ensure that class environment is conducive for teaching.
- Ensure that learners keep time.
- Prepare adequately to be able to attend to learners questions effectively.
- Identify the key terms in the lesson and simplify them in advance for the learners.

Teaching/learning resources

Newspapers, magazines, textbooks, journals, internet access and audio

media.

Interactive learning: Involve all the learners during the lesson by using learner centered methods like question and answer, discussion, group work among others.

Teaching/Learning methods:

Question and answer, discussion and group work.

Teaching approaches/activities:

- Ask learners in small groups to discuss the advantages and disadvantages of mergers and the factors that limit merging of firms.

Further Activities: Further reading from learners' books and relevant economic resources.

Extended and remedial activities

Learners to discuss advantages and disadvantages of merging of firms.

Assessment

Give group exercises to the learners to encourage the spirit of corporation among learners.

LESSON 8: Economies and Diseconomies of scale

Economies of scale

This refers to economies to advantages enjoyed by a firm due to expansion resulting into a fall in average costs of production. Economies of scale are categorised as internal and external economies where internal economies arise due expansion of the firm regardless of others while external economies

arise due to expansion of the industry regardless of the size of individual firms.

Internal economies of scale

Forms of internal economies

- Technical economies.
- Managerial economies.
- Marketing economies.
- Financial economies:
- Risk and survival economies:
- Research and development economies.
- Social and welfare economies.

LESSON 9: External economies

Forms of external economies

- Labour economies.
- Economies of co-operation.
- Development of commercial facilities.
- Development of social and economic infrastructure.

Diseconomies of scale

Diseconomies of scale

These are disadvantages realised by a firm as a result of expansion leading to higher average costs of production or a fall in the level of output. They are also divided into internal and external diseconomies.

Internal diseconomies

Forms of internal diseconomies

- Managerial diseconomies.
- Technical diseconomies.
- Financial diseconomies.
- Risk bearing diseconomies.
- Marketing diseconomies.

LESSON 10: External diseconomies

Forms of external diseconomies

- Labour diseconomies.
- Marketing diseconomies.
- High demand for raw materials.
- Scarcity of land.

Learning outcome

By the end of this sub-topic, the learner should be able to:

- Explain the economies of scale.
- Explain diseconomies of scale.
- Explain the types of economies and diseconomies of scale.

Preparation for the lesson

- Organise learners in groups to encourage cooperation in teaching.
- Ensure that the learners keep time.
- Make adequate preparation for the lesson.

- Arrange the sitting arrangement in groups.

Teaching/Learning resources:

Newspapers, magazines, textbooks, journals, internet access and audio media.

Interactive learning: Involve all the learners during the lesson by using learner centered methods like question and answer, discussion, group work among others.

Teaching/Learning methods:

Question and answer, case study, discussion and group work.

Teaching/Learning activities:

- Ask learners in groups to explain the difference between economies and diseconomies of scale.
- Ask learners to explain the difference between internal economies and external economies of scale.
- Ask learners in small groups identify and explain the types of internal economies and external economies of scale.
- Let learners in pairs explain the difference between internal diseconomies and external diseconomies of scale.
- Let learners in small groups identify and explain the types of internal diseconomies and external diseconomies of scale.

Further Activities: Further reading

from learners' books and relevant economic resources, home work.

Extended and remedial activities

Give fast learners extra activities and remedial activities to slow learners.

Assessment

Give group exercises to the learners to encourage the spirit of corporation among learners.

Answers to Unit Assessment

1 (a) Short run is a period of time in which the quantity of atleast one input is fixed and the quantities of other inputs can be varied while long run is a period of time in which the quantities of all inputs can be varied.

(b) Fixed costs: These are costs that do not change as output changes.

Variable costs: These are costs which change directly with output.

Average fixed costs: This is the total fixed cost at each level of output divided by number of units produced.

Average variable costs: This is the total variable cost at each level of output divided by the number of units produced.

Total costs: This is the total sum of the total fixed costs and the total variable costs.

Marginal costs: This is an additional to total cost by producing an additional unit of output.

2(a) **Implicit costs:** These are basically social costs. They are costs that cannot be included in the computation of the firm's profits while **explicit costs** are costs for items for which the firm can make specific payments or it is the actual expenditure of a firm incurred when purchasing the input factors.

(b) The LAC curve is flatter than the short run average cost curve because the LAC of a firm shows the minimum average cost of producing various levels of output from all possible short run average cost curves (SAC), thus the LAC is derived from the SAC curves i.e. the LAC can be viewed as a series of alternative short run situations into any one of which the firm can move.

3 (a) Horizontal merging is where firms at the same stage of production and producing the similar products decide to integrate while vertical merging refers to a type of merger where firms at different stages of production integrate.

(b) Advantages of merging

- International competition.
- Economies of scale.
- Research and development.
- Increased efficiency.
- Rationalisation.
- Diversification.

Disadvantages of merging

- Diseconomies of scale.
- Limited variety to consumers.

- Higher prices.
- Monopoly.
- Low output.

4(a) Economies of scale refer to advantages enjoyed by a firm due to expansion resulting into a fall in average costs of production.

(b) **Internal economies of scale**

Internal economies arise due expansion of the firm regardless of others.

Forms of internal economies

- Technical economies.
- Managerial economies.
- Marketing economies.
- Financial economies.
- Risk and survival economies.
- Research and development economies.
- Social and welfare economies.

External economies: External economies arise due to expansion of the industry regardless of the size of individual firms.

Forms of external economies

- Labour economies.
- Economies of co-operation.
- Development of commercial facilities.
- Development of social and economic infrastructure.

Refer to Learner's Book pages 302-313

TOPIC AREA 2: MICROECONOMICS

SUB-TOPIC AREA 2.2: PRODUCTION THEORY

In this unit the main sub-topics to be covered are:

- Definition of revenue and its forms.
- Calculation of revenue.
- Relationship between TR, AR and MR.
- Profits of the firm.
- Profit maximisation of a firm.

Key unit competence: By the end of 20 lessons learners should be able to discuss a firm's revenues, profit and profit maximisation of a firm.

Unit learning objectives

As you teach this unit, you should ensure that learners acquire the following skills, values and attitudes:

Knowledge and understanding	Skills	Attitudes and values
Identify the different forms of revenue.	Calculate and differentiate the different forms of revenues under different firms.	Be aware of the necessary condition for profit maximisation of the firm and make decision based on it.
Calculate the different forms of revenue.		
Explain the relationship between total, average and marginal revenue.	Illustrate the relationship between Total revenues, average revenue and marginal revenues of different firms.	
Distinguish between normal and abnormal profits of a firm.	Calculate and interpret the firms profit maximisation.	
Identify the profit maximisation of a firm.		

Additional information for the teacher

The major source of revenue to a firm is the sale of its products. For a firm to realise more revenue from its sales it needs to produce quality goods and services as well as undertaking intensive marketing of its goods and services. Besides the firm also needs innovative from time to time to ensure that its goods and services meet its customer needs.

It should also be noted that a firm's ability to make profits depends on its revenue outweighs its costs and hence the need for a firm to control its expenditure and increase in its sales revenue. Ensure that you are aware of various sales promotional methods that can a firm's sales and therefore its revenue. You should also be aware of the various types of revenue and how they are calculated.

Cross-cutting issues

When teaching this unit, the following cross-cutting issue should be emphasised;

Financial education was handled under this unit in that for a firm to realise much revenue it should be having financial management skills that will enable it control its expenditure and lay strategies of earning more revenue and these are acquired through education and training. It is also noted that when a firm realises much revenue and therefore makes profits, it has the obligation of paying taxes.

LESSON 1: Definition of revenue and forms of revenue

Revenue refers to all the earnings to a firm from selling its output. It is obtained

by multiplying output by price of the product.

Forms of revenue

Total revenue (TR)

This refers to the total earnings received by a firm by selling all its output in a given period of time. It is obtained by multiplying total product by price.

Total revenue = Total product x price

$$TR = Q \times P$$

Average revenue (AR)

This refers to the revenue per unit of output sold. It is obtained by dividing total revenue by output.

Average revenue = $\frac{\text{Total revenue}}{\text{Total output}}$

$$AR = \frac{TR}{Q}$$

Marginal revenue (MR):

This refers to the revenue from an extra unit of output sold. It is obtained by dividing the change in total revenue by the change in total product

Marginal revenue
= $\frac{\text{Change in total revenue}}{\text{Change in total product}}$

$$MR = \frac{\Delta TR}{\Delta TP}$$

Learning outcome

By the end of this sub-topic, the learner should be able to:

- Explain the concept of revenue.
- Identify and explain the forms of revenue.

Preparation for the lesson

- Organise the class in groups
- Prepare adequate teaching/ learning materials.
- Ensure the class environment is conducive for teaching and learning process.
- The teacher should use a particular method that is appropriate to the level of learners and to the particular topic under consideration.
- The teacher should also choose appropriate teaching aids that will make the lesson more attractive to the learners.

Teaching/ Learning resources:

Newspapers, magazines, journals, internet access and audio media.

Interactive learning: Involve all the learners during the lesson by using learner centered methods like question and answer, discussion, group work among others.

Teaching/Learning methods:

Question and answer, case study, discussion, group work.

Teaching /Learning activities:

- Present the learners with a list of reference materials and ask the learners to use them and carry out research on the concept of the revenue.
- Ask learners in small groups, to explain the concept of revenue.

- Ask learners in pairs to identify and explain the forms of revenue.

Further activities: Further reading from learners' books and relevant economics resources.

Extended and remedial activities

Give learners extra activities to fast learners and remedial activities to slow learners.

Activity 15.1, 15.2, 15.3

Learners should discuss and come up with their own ideas.

Refer to Sub unit 15.1 in Learners Book 4

Assessment

Give group exercises to the learners to encourage the spirit of corporation among learners.

LESSON 2: Calculation of revenue

Tell the learners to calculate:

- Total revenue (TR)
- Average revenue (AR)
- Marginal revenue (MR)

Learning outcome

By the end of this subtopic, the learner should be able to:

- Calculate total revenue (TR), average revenue (AR) and marginal revenue (MR).

Preparation for the lesson

- Organise the class in groups.
- Arrange the class to allow space for movement by the learners and the teacher.

- Prepare output and total revenue figures to be used by learners in calculating the revenues of the firm.
- Make adequate preparation before going to class to be able to guide the learners effectively.

Teaching/ Learning resources:

Newspapers, magazines, journals, internet access and audio media.

Interactive learning: Involve all the learners during the lesson by using learner centered methods like question and answer, discussion, group work among others.

Teaching/Learning methods:

Question and answer, case study, discussion and group work.

Teaching /Learning activities:

- Provide the learners with total product/output and total revenue figures.
- Ask the learners in groups of four to use the figures above and calculate average revenue (AR) and marginal revenue (MR) and make presentations in class.
- Guide the learners as they make presentations.

Further activities: Further reading from learners' books and relevant economic resources.

Extended and remedial activities

Give learners extra activities to fast learners and remedial activities to slow learners.

Assessment

Assess learners by giving them continuous assessment tests to check their progress in acquiring targeted knowledge and understanding, skills, values and attitudes.

LESSON 3: Relationship between TR, AR and MR (3 lessons)

Relationship between TR, AR and MR under perfect competition and under monopoly market structures.

Learning outcome

By the end of this sub-topic, the learner should be able to:

- Explain the relationship between total revenue (TR), average revenue (AR) and marginal revenue (MR).
- Illustrate the relationship between TR, AR and MR.

Preparation for the lesson

- Organise the class in groups.
- Arrange the class to allow space for movement by the learners and the teacher.
- Prepare output and total revenue figures to be used by learners in calculating the revenues of the firm.
- Make adequate preparation before going to class to be able to guide the learners effectively.

Teaching/ Learning resources:

Newspapers, magazines, journals, internet access and audio media.

Interactive learning: Involve all the learners during the lesson by using learner centered methods like question and answer, discussion, group work among others.

Teaching/learning methods:

Question and answer, case study, discussion and group work.

Teaching/Learning activities:

- In small groups ask learners to state and illustrate the relationship between TR, AR and MR.

Further activities: Further reading from learners’ books and relevant economics resources and doing exercises.

Extended and remedial activities

- Give extra activities to fast learners and remedial activities to slow learners.

Activity 15.4

Output (Q)	Total revenue (TR)	Average Revenue (AR)	Marginal revenue (MR)
0	-	-	-
1	50	50	50
2	100	50	50
3	150	50	50
4	200	50	50
5	250	50	50
6	300	50	50
7	350	50	50

Relationship between TR AR and MR in Activity 15.4

- (i) As TR increases, AR and MR remain constant
- (ii) $MR = AR$ at all levels of output

Assessment

Assess learners by giving them continuous assessment tests to check their progress in acquiring targeted knowledge and understanding, skills, values and attitudes

LESSON 4: Profits of the firm

Profit is the difference between total costs and total revenue.

Forms of profit

- Normal profit
- Abnormal profit
- Subnormal profit
- Windfall profits
- Gross profits
- Net profits

Guide learners to define and explain the above forms of profit.

Learning outcome

By the end of this sub topic, the learner should be able to:

- Define profits.
- Identify and explain the different forms of profit.

Preparation for the lesson

- Organise the class in groups.
- Arrange the class to allow space for movement by the learners and the teacher.
- Prepare output and total revenue figures to be used by learners in calculating the revenues of the firm.
- Make adequate preparation before going to class to be able to guide the learners effectively.

Teaching/ Learning resources:

Newspapers, magazines, journals, internet access and audio media.

Interactive learning: Involve all the learners during the lesson by using learner centered methods like question and answer, discussion, group work among others.

Teaching/Learning methods:

Question and answer, discussion and group work.

Teaching/Learning activities:

- In small groups ask learners to define profit and distinguish between the different forms of profit like normal and abnormal profit.

Further activities: Further reading from learners' books and relevant economics resources, further discussions with peers.

Extended and remedial activities

- Give extra activities to fast learners and remedial activities to slow learners.

Assessment

Assess learners by giving them continuous assessment tests to check their progress in acquiring targeted knowledge and understanding, skills, values and attitudes.

LESSON 5: Profit maximisation of a firm**Profit maximisation of a firm**

The major objective of any firm that is doing business is to maximise profits and a firm maximises profits when $MC=MR$ and the MC curve should cut the marginal revenue curve from below.

Profit maximisation under perfect competition and under monopoly.

Guide learners to illustrate how profits are maximised under different market structures.

Learning outcome

By the end of this subtopic, the learner should be able to:

- Identify the profit maximisation point of a firm under different market structures.
- Illustrate the profit maximisation point of a firm under different market structures.

Preparation for the lesson

- Organise the class in groups.
- Arrange the class to allow space for movement by the learners and the teacher.
- Prepare output and total revenue figures to be used by learners in calculating the revenues of the firm.
- Make adequate preparation before going to class to be able to guide the learners effectively.

Teaching/Learning resources:

Newspapers, magazines, journals, internet access and audio media.

Interactive learning: Involve all the learners during the lesson by using learner centered methods like question and answer, discussion, group work among others

Teaching/Learning methods:

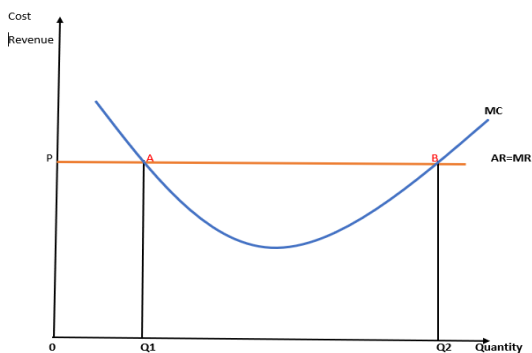
Question and answer, discussion and group work.

Teaching /Learning activities:

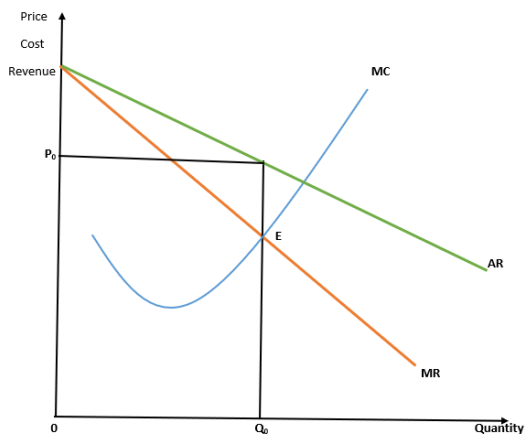
- In small groups ask learners to calculate and identify the profit maximisation position of a firm under different market structures.

Further activities- Further reading from learners' books and relevant Economics resources.

Activity 15.7



Conditions of profit maximisation under perfect competition.



Conditions of profit maximization under monopoly

Extended and remedial activities

- Give extra activities to fast learners and remedial activities to slow learners.

Assessment

Give tests to the learners to assess their knowledge and understanding of the key lesson concepts.

Answers to Unit Assessment

1 (a) Total revenue (TR) refers to the total earnings received by a firm by selling all its output in a given period of time. It is obtained by multiplying total product by price while marginal revenue (MR) refers to the revenue from an extra unit of output sold. It is obtained by dividing the change in total revenue by the change in total product.

(b) Relationship between AR and MR

- Under perfect competition marginal revenue is equal to average revenue at all levels of output.
- Under imperfect competition, average revenue is always greater than marginal revenue at all levels of output. For illustrations refer to SB.

2(a) Profit refer to the earnings to an entrepreneur as a factor of production. It is the difference between total costs and total revenue.

Normal profit refers to the minimum level of profit which can maintain a firm in business. It is realised when average cost is equal to average revenue or $AC = AR$ while **abnormal profit** refers to profit which is more and above the normal profit. It is earned if average revenue is greater than average cost.

(b) Under perfect competition a firm

cannot influence the market conditions. It is therefore a price taker. It can only make decisions concerning the output to be sold at the prevailing market price.

The firm therefore maximises profits at a point where $MC=MR$. For illustration refer to SB.

3. The role of profits in the production process

- Profits determine the allocation of resources and ensure efficiency in resource allocation.
- Profits act as a reward to an entrepreneur for undertaking insurable risks and uncertainties in business.
- Profits provide a source of finance for investment and expansion of production units.

- They stimulate innovation in the production.
- Promotes efficiency in production and resource allocation.
- Promotion of economic welfare. Profits act as a yardstick to measure economic welfare where by the higher the profits, the higher the productive efficiency and the higher the economic welfare.
 - Profits act as bonus to an entrepreneur for coordination and combining factors of production in the right quantities so as to maximise output and minimise costs.
 - Profits result into improvement in taxable capacity.