English

for Rwanda Secondary Schools

Senior Five

Teacher's Guide

Writing Team

Dan N. Bikweto
Ivan Tuhairwe

FOUNTAIN PUBLISHERS
www.fountainpublishers.co.ug

Fountain Publishers Rwanda Ltd
P.O. Box 6567 Kigali
E-mail: fountainpublishers.rwanda@gmail.com

E-mail: sales@fountainpublishers.co.ug
publishing@fountainpublishers.co.ug
Website: www.fountainpublishers.co.ug

First published 2017

ISBN 978-9970-19-417-9

Contents

Introduction

Principles of the new curriculum

Rwanda has changed from a knowledge-based to a competence-based curriculum. The Learner's Book for which this Teacher's Guide is written has been based on the new competence-based curriculum. The main changes are as follows:

Knowledge can mean learning facts or ideas without any proof of understanding; often learning by rote the words of the teacher or text.

A competence is the ability to **do something,** rather than simply to gain knowledge and be able to repeat it. It means the ability to **use** knowledge, rather than just being able to learn it.

In order for the learners to achieve these competences the new curriculum places an emphasis on **understanding, practical and cognitive skills, and values and attitudes** in addition to knowledge.

Understanding means the learners must develop the ability to express ideas in their own words, rather than just learn a definition given by a book or teacher. It means making ideas and concepts their own. It means that they can use the knowledge gained in a new context and relate it to what they already know.

Cognitive skills include the ability to think for themselves, not just reproduce the thoughts of others; to find out things for themselves rather than just listening to a teacher or reading a book; and to think creatively by coming up with their own new ideas rather than simply reproducing the ideas of others.

Practical skills mean the ability to do things with their hands and bodies, to experiment, to use tools and to make things.

Values and attitudes mean an emphasis on whether ideas or behaviour are right or wrong for a good citizen of Rwanda. It

means forming their own opinions about things, not simply accepting those of the teacher or text book. It means changing behaviour to correspond with what is considered good for a citizen of Rwanda, and judging their behaviour according to its effect on other people, on the society and the environment.

The Rwanda Education Board (REB) Curriculum Framework says:

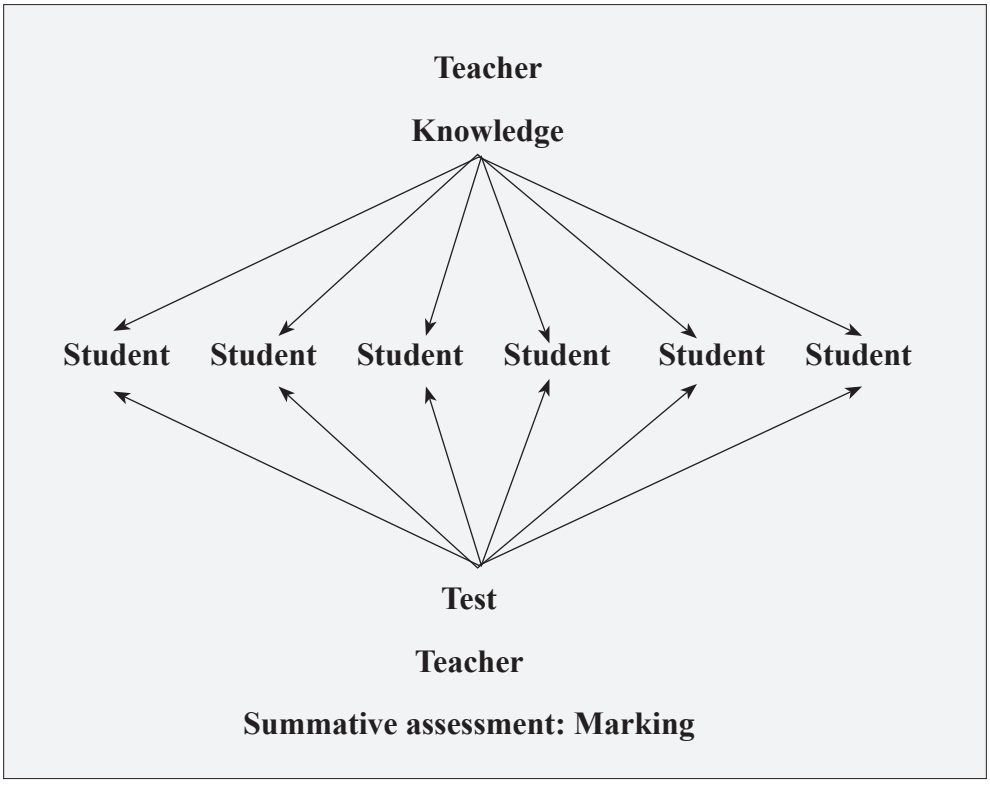
The new curriculum should address the needs of those leaving school after O or A level for the world of work or technical-vocational education, as much as it addresses the needs of those proceeding to university and should therefore become less academic, more practical, more skills-based, more oriented to the world of work and to daily life. The content needs to more closely reflect real life experiences to prepare learners better with the skills needed for life.

Changes in teaching methods and text books

These changes can only be achieved by changing our methods of teaching and therefore changing our text books.

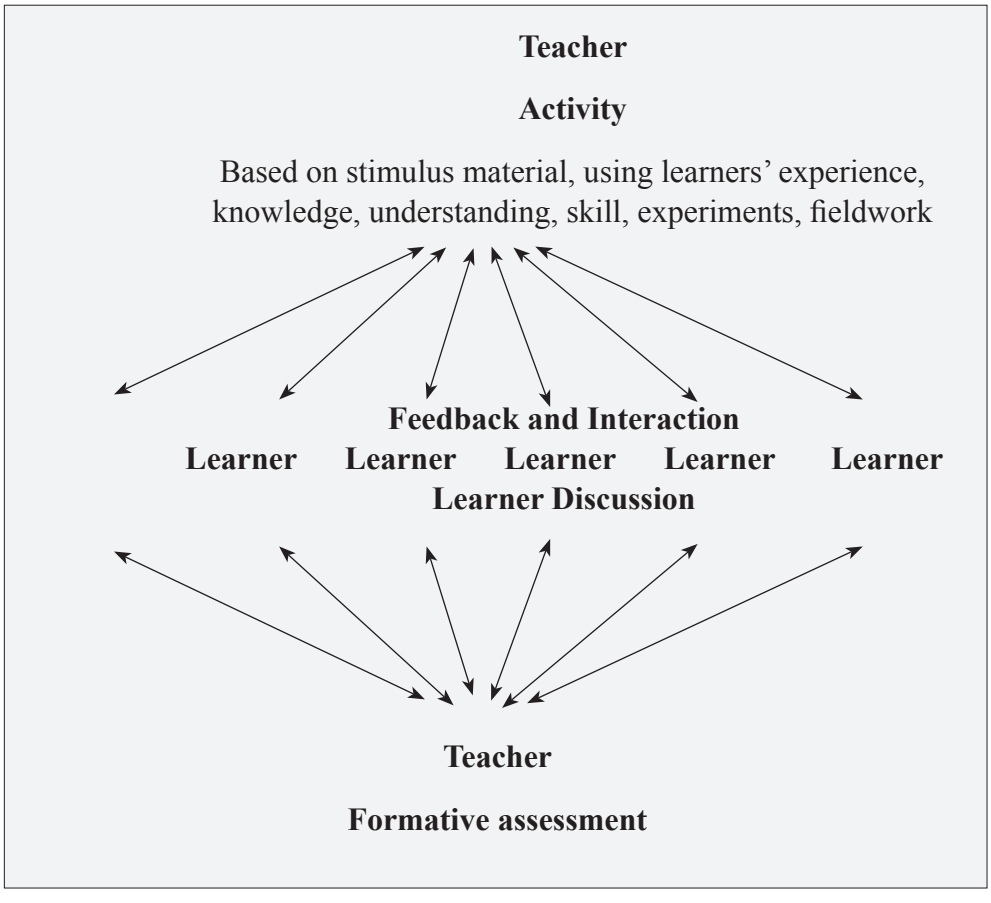
The changes in teaching methods are summarised in the diagrams below.

Previous Knowledge-based curriculum



Knowledge-based teaching is based on transferring knowledge from the teacher to the students. The teacher has knowledge and transfers this knowledge to the students by lecturing, talking, asking them to read the text book or writing notes on the blackboard for the students to copy and learn. Students learn the knowledge they are given, sometimes without fully understanding it, and are tested at the end of a unit, term or school course to see if they have remembered it. The knowledge is based mainly on the knowledge in subjects traditionally taught at university or schools and little attempt is made to make it relevant to their own lives.

New Competence-based curriculum



Competence-based learning and teaching changes the term **student** to **learner**. It is based on the idea that, as far as possible, learners should learn for themselves and become part of the learning process rather than simply absorbing knowledge given by the teacher.

Whenever possible the teacher devises an **activity** by which learners can find out things and learn for themselves. The activity may be based on:

- Material provided in the Learner's Book itself such as a photograph, map, diagram, drawing, cartoon, graph, statistics etc. or a short passage of text, a poem, a story, a newspaper article etc.

- The learners' own experience
- Learners' previous knowledge
- An experiment, fieldwork or other practical activity.

The teacher is building on the learners' own knowledge and experience or on observation or experiments rather than simply passing on knowledge. Teaching/learning becomes a two-way process of dialogue between the teacher and learners. Learners also learn from each other through discussion. Assessment also becomes a two-way process of **formative assessment.** The teacher devises an activity which the learners do to show whether they have achieved the aims of the lessons, and the teacher uses this not just to judge the learners with grades or marks, but to find out problems the learners may be having and help to solve them.

The selection of what to teach is based on the future needs of the learners when they enter the world of work, not just on the topics traditionally taught in an academic 'subject'.

Changes in text books

This means text books become **interactive.** They are based on activities which help learners to learn for themselves rather than just text to be read and remembered. **The activities become an essential and integral part of the text,** not just an extra which can be passed over. The illustrations also become an essential part of the text to be **used** in learning, not just decorations. As this Teacher's Guide shows, the activities as well as the text include not just knowledge but an emphasis on understanding, cognitive and practical skills and attitudes and values.

There are also many activities based on discussions which encourage learners to form their own ideas. This is to help in the formation of the values and attitudes which are an important part of the curriculum.

Many of the activities are to be done in groups. This is to encourage interaction amongst the learners, because learners

can often learn as much from each other as they can from the text book or the teacher.

This will be accompanied by a new style of public examination (an examination set by a central examining body such as REB through the Examination and Accreditation Department also based on activities and the testing of understanding, skills, attitudes and values as well as knowledge). By following the new styles of teaching and text books, therefore, your learners should have better chances of doing well in final public examinations.

The English Language course

This course aims at providing the necessary tools to help the learners learn English and acquire language skills to be able to learn, use and communicate in the English Language in a variety of situations. The four skills of English Language, that is, listening, speaking, reading and writing are handled throughout the book.

Listening and Speaking

The **Listening** and **Speaking** skills in English language are handled concurrently because the two skills are practically used side by side. Learners are generally inquisitive by nature and are always keen to respond to new information, hence the need to develop listening and speaking skills. Learners always want to hear new, interesting and exciting information. The teacher should always try to make the lesson as interesting and exciting as possible so as to hold the learners' attention throughout the lesson. It is important to note that the attention span of the young learners of a language is usually short. Therefore, teachers should, as much as possible, try to help learners develop good listening skills by giving interactive and interesting listening and speaking exercises.

Reading and writing

The skills of **reading** and **writing** are also handled together because they reinforce each other. It is important for the learners to learn how to read and write well not only for the sake of learning the English Language class but also for other classes especially where English is used as a medium of instruction. Emphasis should be put on the use of different **vocabulary**, **grammar** and **language structures**, **communication** skills and different **styles of writing**. Attention should also be given to sentence construction, punctuation and the use of language in practical out-of-class situations.

General Ideas on Teaching Methods

The following are some teaching methods or approaches teachers can use to facilitate effective learning in our classrooms following the competence-based approach. These methods apply to almost all subjects, so you will find them very helpful. To ensure effective applications of these methods, teacher planning and good preparation are important beforehand. The emphasis here is on methods which are important in the new competence-based approach but have less often been used in the knowledge-based approach.

Class organisation

Classes can be organised in a number of ways: individual work, whole class work, pair work, group work or project work. Each has its place in our teaching but the new curriculum, and the activities in the new Learner's Books, place more emphasis on pair work, group work and project work rather than individual work and whole class work.

- **Individual work** is suitable when learners are asked a series of individual questions in writing or to write an essay or similar piece of writing or even copying notes from the chalkboard. This is particularly suitable for knowledge-based learning where the objective is

simply to learn knowledge given by the teacher or the text book. It can be used in the new competence-based approach if the essay, questions or other written work are using knowledge learnt in a new way rather than just repeating it.

- **Whole class work** is also common in the knowledge-based approach when a teacher asks questions from the whole class. Such questions are usually closed questions testing knowledge where the answer is right or wrong. Whole class questions can also be used in the competence-based approach if they involve open questions with more than one possible answer or questions asking for opinions. However, smaller groups are probably more effective for this.
- **Pair work** is commonly used in the competence-based approach as we want learners to share ideas and get ideas from their neighbours rather than simply keep ideas to themselves. Many activities in the new text books suggest 'share with your class/desk mate / friend' or similar instructions. Learners often learn better by talking to others than simply struggling on their own.

Group work

Even more common in the new approach is group work. Many of the new syllabuses emphasise group work and discussion and reporting back from this. Learners take a more active role and talk naturally when they are allowed to work in small groups. In this way they can express their ideas rather than listening passively to the teacher, as is often the case in the whole class. Group work encourages learners to talk or do things for themselves as part of the learning process. Learners discuss, share views and interact in their learning in small groups and present their collective work to the class. To ensure that group work achieves effective learning, preparation and class management is important for teachers.

Group work must be properly organised and supervised. You must not use it as an excuse to sit back and let learners get on with it. On the other hand, learners will often not talk freely if they know the teacher is listening, so you must leave groups to talk on their own. Sometimes it is even effective to walk out of the classroom for a while to give groups a chance to get going without you listening.

The role of the teacher in group work should be to:

- **Choose the topic:** Groups can only discuss topics which they know something about and which have different points of view or opinions. You cannot **discuss** a topic like "How are volcanoes formed?" because there is only one answer to the question and answers are right or wrong. You can discuss "How can people who live near volcanoes prepare for what to do if the volcano erupts?" There are many different answers and each learner can suggest different ideas.
- **Set the objective:** Make sure groups know exactly what to discuss and have a set of clear questions to answer. It is not enough just to say 'discuss this topic'.
- **Organise the groups:** Groups should be small enough for everyone to be able to talk. It is good to mix girls and boys but do not do this if it leads to girls being too shy to talk. All-girl groups may sometimes be better.
- **Organise the seating:** Good discussion will only take place if learners **face each other in a circle.** You cannot discuss with someone else's back! If possible, classrooms may be arranged by grouping desks in circles facing each other so group work is easy and no movement is necessary. In crowded classrooms you may allow some groups to go and discuss outside.
- **Circulate and listen to progress:** It is best to do this only after giving time for discussion to start. Try to make sure all are being given a chance to speak. If you see certain people dominating groups, intervene and

ask others their ideas. If groups are having difficulty, give guidance by explaining the topic, give some extra questions or ask individuals their ideas. If groups are doing well on their own, do not interfere.

- **Decide on the language to be used:** In primary school or even up to S1 most learners will be more comfortable discussing in their own language, Kinyarwanda. It is best to let them do so if it leads to good discussion, rather than forcing them to speak English and they say nothing, or the group is dominated by one or two who are fluent in English. But try to get each group to report back their ideas at the end in English, either verbally or in writing.
- **Reporting back:** It is often a good idea to appoint a 'chairperson' who will report back to the whole class at the end, but this is not always necessary. Each member may write their own ideas, or groups may just learn from the process of discussion.

Research and report writing

Many syllabuses, especially at secondary level and especially in S4 and after, emphasise research. It is important in the competence-based approach that learners learn the art of finding out things for themselves by doing research. Research usually involves doing research through the internet, in the library, using a variety of text books where available, or using other sources such as newspapers and magazines. It can also be done in many subjects through fieldwork, involving going outside the school into the local community and collecting information. The techniques of fieldwork are explained below.

It is important that the teacher sets clear and detailed objectives for the research. This usually means setting a series of questions rather than simply giving a 'topic' for research. To ask learners to 'research' into 'entrepreneurship', 'the plants of Rwanda' or 'democracy' will not produce good results. Each will need

a series of specific questions guiding learners what to find out and report on.

Research usually leads to a report. The report writing process involves researching an issue thoroughly, collecting the information through one or more of the techniques explained in this section, and organising the information in a logical and clear manner. Up to S3 you should not place too much emphasis on the formal writing of reports. It is usually enough for learners to answer a series of questions in a questionnaire. In S4 and above you may ask for formal reports with a definite structure e.g. Title; Objectives; Methods used; Data collected; Analysis of Data; and Conclusions. The format need not be rigid and can be varied to suit the topic or learner.

Some of the units in the S1 to S3 English course teach learners about research and report writing, and you should ask the English teachers what learners are doing and even get their cooperation in sharing an exercise to write up research in your subject as part of their English course.

There is a problem when the syllabus or even the activity in the Learner's Book suggests research either on the internet or in the library, and your school does not have access to the internet which all learners can use easily, or even a library with enough books on a particular topic for all learners to do research. In many cases the Learner's Book gives some information for those who cannot do the research. In these cases it is important to encourage learners who do have access to the internet and libraries not to simply rely on the information in the Learner's Book but to go ahead and do their own research. Remember the idea of research is not just to find particular pieces of knowledge but to develop the competences involved in doing research and finding out information for themselves.

If there is an activity in the Learner's Book which involves research and there is not enough information given in the Learner's Book, you as the teacher, may have to do your own

research and give the information to the learners. This may be possible if your school only has one or two computers or one or two suitable library books. In some cases extra information has been included in this Teacher's Guide. Alternatively you may have to use a local library if one is available.

Debate and discussions

Group work involves learners in debates and discussions, and these are active ways of engaging learners in their own learning. Learners are able to conduct and collect information through research to use in debates about a particular topic or share ideas with others in the classroom. They will learn a lot in this process.

Debates are good to encourage learners to form their own opinions about a topic. Even in primary school or S1 we should encourage this, using simple topics, e.g. whether they think girls and boys should be treated equally. At this level, debates should be informal, without trying to follow the strict parliamentary rules of debating. Even in S4 – S6 the emphasis should be on the quality of the speaking, not following formal rules of 'parliamentary' debating.

Role Play and Simulation

- **Role play** is a kind of group work where learners are given a part to play, either in a discussion or a story. Acting out a role play encourages learners to participate, interact and learn through talking. Learners act as someone else. It involves putting yourself imaginatively in the place of other people and trying to think, act and talk as they would. Role play is often best used at the end of a teaching topic, when learners have learnt quite a lot about a topic or about people in a different area. Thus it helps them to think about the ideas, emotions and feelings of those people.

- **Simulation** is similar to role play, but the emphasis is on a situation rather than the people. A situation is made up similar to a real-life situation and learners can either be themselves acting in that situation or can act a role play. They are asked to play the parts of the people in the story and act it out. This helps them to understand other people and how they feel and also to think about what they themselves would do in a certain situation.

In order for a role play or simulation to be successful, enough time and teacher guidance should be given to learners to get enough information about the person and the situation to enable them to act and talk realistically when acting out the role play.

The competence-based approach is meant to teach attitudes and values as well as knowledge, understanding and skills. Role play and simulation is particularly important in teaching attitudes and values.

Science experiments

In the competence-based approach it is important that Science teaching is based on doing experiments, by which learners find out things for themselves and draw their own conclusions, not just learning in theory. If your school does not have a Science laboratory, or the laboratory is not fully equipped, it is important that you do not ignore the experiments in the Learner's Book. Try your best either to improvise with equipment you have, or even use everyday available resources to improvise. Alternatively, try to change the experiment suggested in the Learner's Book to one which your learners can do with what is available. Again, remember the objective of doing an experiment is not just to learn the result of the experiment but to learn and practise the many competences involved in doing experiments.

Research interviews and questions

There are different ways of using research interviews with people to collect information about a topic. This could include informal chats; questions for particular people prepared in advance; or standardised questionnaires by which learners work in small groups, ask the same questions to a large number of people and later convert the answers into statistical form.

Prepared questions are also useful for fieldwork and they can be used alone or with any of the above techniques purposely to collect information.

Guest speakers

Using people from outside the school with specialised knowledge and skills on a particular topic to speak to the learners is one way of altering the normal classroom teaching and learning. Through this process, learners will appreciate the importance of specialised knowledge other people in the community have and will gain respect for other members of their community, including older people who may not have had the advantage of modern schooling which they are receiving, but may have a great deal of valuable traditional knowledge and skills. This is an important value to be learnt.

The people need not be 'experts'. For instance, for History you might get someone to tell the class any custom stories about the origins of people in the area. For a topic on leadership and government someone might come and describe how chiefs are chosen in the local area. For Agriculture you might ask people to talk about the cash crops they grow or the traditional techniques they use to conserve the soil.

Visits

This links with fieldwork described below. If possible, try to visit an area like the one you are talking about in the Learner's Book. This might include a village, a plantation, a logging

area, a small-scale farm using shifting cultivation, or a market or factory in a town. If you visit, make sure learners go with a questionnaire as for fieldwork, so they know what to look for and what to find out.

Case studies

A case study is a detailed study of a particular area or topic. Presenting a case study helps learners to understand the reality of a particular topic. It helps to convert the abstract topics in the syllabus into concrete reality so learners will understand them better. For example in Geography, learners look at an actual village in a part of Rwanda to illustrate small-scale farming, and in Economics they may study an actual factory to illustrate industrialisation.

Handling learners with special learning needs

Special Education Needs (SEN) in language teaching

Disability is not inability. Learners with special needs should be catered for during and after the learning process. Most of these learners simply have a learning challenge or special need but not a disability. They need special attention in the classroom but they can comfortably learn from an all-inclusive class. Below are some examples of special needs that the language teacher might encounter in the classroom. Suggestions and tips on how to handle the various disability categories are also given.

Speech and language impairment

Some learners have speech and language impairment or disability, for example, stammering (speaking with uncontrollable breaks and pauses or repetitions of sounds or words). Some others are slow at grasping language, especially if the language is new, like in this case of teaching English as a

second language. In extreme speech impairment cases, where the learners are dumb, they may need sign language classes. These learners might not be able to fit well in the all-inclusive classroom. However, if the teacher has training in the use of sign language, the learners can participate as much and as well as the others.

Mild or slight speech and language impairment

(a) Give short and simple instructions.
(b) Always give instructions for the next tasks in advance rather than giving all instructions at once.
(c) Ask learners to repeat themselves and repeat the instructions if some of them have not heard.
(d) Be patient in expecting a response as some learners with speech impairment take longer than usual to respond.
(e) Ask open-ended questions where possible.

Short concentration span (Attention Deficiency Disorder - ADD) - Concentration span is the length of time that someone can keep their attention, thoughts and interest fixed on something.

(a) Build a range of short-focused and clearly defined tasks (activities) into the lesson.
(b) Vary the level of demand for each task.
(c) Vary the type of support and assistance to the learners.
(d) Involve the learners in activities that involve other peers, for instance, group projects.

Short-term memory

(a) Reinforce learning through repetitive tasks, for example, give questions about previous lesson(s) before proceeding to a new lesson.
(b) Give clear, simple and short easy-to-remember instructions.
(c) Allow learners enough time to process and respond to questions and other instructions.

(d) Do not press the learners in a bid to make them recall ideas faster.

Visual impairment

(a) Have/let the learners sit in the front row of the class.
(b) Use big letters where the impairment is minor.
(c) Advise the learners to get spectacles where the impairment requires them to be used.
(d) Advise the learners to acquire a Braille machine where the learner is completely blind. However, a completely blind learner will need special lessons on how to use the Braille machine and the teacher will have to either learn how to use it or get help for the sake of evaluating exercises and examinations.

Hearing impairment

(a) Speak directly to the learners.
(b) Make the learners sit at the front of the class.
(c) Reinforce speech through the use of visual teaching aids like charts and pictures.
(d) Emphasise key words through repetition.
(e) Serious impairment where a learner is completely deaf may require special attention hence such a learner needs to attend a special needs class.

The physically impaired

Lame learners should be given a chance to sit in-front to ease mobility, especially if they have wheelchairs or other devices. The school should also make facilities available to the physically disabled to ease their movement around the school. Entrances to the classrooms and other rooms in the school should be made as easily accessible as possible.

Very intelligent learners (genius learners)

This is not a disability but should be treated as a special need, especially if the learner finds it difficult to maintain interest in the lesson due to boredom. Very bright learners usually get

bored in an all-inclusive class because they understand concepts faster, and are usually far ahead of the rest of the learners, which causes boredom to them.

The teacher should give such learners extra work. The teacher can also ask them to guide weaker learners and head group projects. This will keep them active and involved in the teaching and learning process.

Gender and language learning and teaching

The issue of gender in the language classroom, though not very common, is sometimes a challenge to the Language teacher. The female learners sometimes put in more effort than the male learners. Sometimes they also perform and learn quicker than their male counterparts. This is caused by the nature of games and chores that the two categories usually engage in.

Games and activities for female learners usually involve more talking hence better language practice and acquisition while games for males usually involve more action and less talking. It is important, therefore, to be mindful about gender equality in the activities in and out of the language class. It is also important to involve the class in challenging tasks like puzzles, word games, and so on. It is also important to divide the class into gender-balanced groups for group projects and discussions. Boys should be encouraged to work with girls and vice versa in all aspects of learning.

Lesson Plan

A lesson plan is the teacher's road map of what students need to learn and how it will be done effectively during class time. Before you plan your lesson, you will first need to identify the learning objectives of the topic to be achieved in that lesson. Then, you design appropriate teaching and learning activities for the teacher and learners respectively. This is how you can be sure to obtain feedback on student learning.

The lesson plan helps the teacher conduct his or her lesson in an orderly way and it allows learners to know what they are going to be learning and how it fits into the syllabus.

Learners also feel that the lessons are handled in a logical order. Having a good lesson plan will also increase confidence in the teacher; on the other hand, not having a plan will result in complete failure for both the teacher and learners. In addition, a detailed plan clearly demonstrates that the teacher has taken the time, as well as put in, thought and effort into making the lesson.

A sample of a lesson plan

Template of a Competence – based Lesson Plan

School Name: …… Teacher's name: ……

Term	**Date**	**Subject**	**Class**	**Unit N°**	**Lesson N°**	**Duration**	**Class size**
II	4/09/2017	English	S.5	One	1 of 15	40 mins	45
Type of Special Educational Needs and number of learners				Two disabled learners (a boy and girl). *If there is no learner with a special educational need, leave this space blank.*			
Unit title	Myself and my community						
Key unit competence:	To use language in the context of myself and my community						
Title of the lesson	Describing hobbies and leisure time						
Instructional objective	**Knowledge and understanding :** How people spend their free time; importance of leisure, hobbies and internet use **Skills :** Explaining the difference between hobbies and leisure; explaining the increase in internet use **Attitude and values:** Appreciating the contribution of hobbies, leisure and internet to people's lives						
Plan for this class (location: in / outside)	Inside						
Learning materials (for all learners)	Learner's text books, photographs, computers, internet						
References	Learner's text books						

Timing for each step of the lesson	**Description of teaching and learning activities**	
	Teacher activities	
Step 1 (5 min) Introduction	Write the unit title (Myself and My Community) on the Chalkboard. Ask the learners what they expect to learn in this unit	
Step 2 (10 min) Development of the lesson	Divide the learners into groups of five. Ask them to open their textbooks on page 2 and do Activity 1: Questions (a) – (d) in their groups Ask the group leader of each group to present the answers arising from the discussion of their groups to the class	
Step 3 (5 min)	Ask the learners to carefully study **photograph**s **1 – 6** in **Activity 2** on **page 2**	
Step 4 (15 min)	When you are convinced they have thoroughly studied the photographs, ask them to answer the **questions 1 - 4** in **Activity 3 on page 3**	
Step 5 (5 min) Conclusion	Summarise the lesson. Briefly talk about other hobbies and leisure activities not mentioned in this lesson; emphasise the role played by hobbies and leisure activities in people's well-being.	
Teacher self-evaluation	Comment on your performance during the lesson, highlighting your strengths and weaknesses so that you know where to improve. **Example:** More effort needed to involve learners in group discussion.	

	Learner activities	Generic competences and cross-cutting issues to be addressed
	Respond to questions	Creativity; innovation; inclusive education
	Learners sit in groups of five Open the textbooks on page 1 and do Activity 1: Questions (a) – (d) in their groups The group leader of each group presents the answers of their groups to the class. Expected answers: Answers are based on the learners' opinions so exercise your judgment in assessing the learners' answers.	Co-operation; interpersonal relations; life skills; communication; inclusive education
	Carefully study **photographs 1 – 6** in **Activity 2** on **page 2**	Critical thinking; innovation; observation
	Answer **questions 1- 4** in **Activity 3 on page 3** **Expected answers:** 1. Watching television; reading; cooking; playing a guitar or singing; surfing the Internet; tourism 2. Opinion question (some activities depending on the learners' perceptions are either hobbies or leisure activities). 3. Opinion question but leisure time activities and hobbies are closely related with each other. 4. We need leisure in our lives to balance the stress of work and life. Leisure helps re-energise and relax people, so they can perform activities well in their lives. People use their leisure time in a number of ways: engaging in outdoor activities, entertainment such as watching movies or television or just having time to themselves. Another activity people enjoy is just socialising with family and friends. Leisure is an essential part of our lives; and the only problem with leisure is when to enjoy it. In our society we have a hard time finding time to relax and take a break from our stressful lives.	Innovation; critical thinking; lifelong learning; inclusive education
	Contribute suggestions regarding other hobbies and leisure activities not mentioned in this lesson; the role played by hobbies and leisure activities in people's well-being.	Communication; critical thinking; innovation; lifelong learning; inclusive education

Content Map

Unit	No. of Periods	Introduction	Classroom Organisation	
1	15	• Recognise when to use: **can, may, have to, paragraphs, more, fewer, no.** • State the vocabulary of hobbies, internet use, reading habits, local facilities, local government. .	• Whole class orientation • Group presentation • Pair activity • Individual	

	Equipment Required	Activities
	• Diagrams • Photographs • Pictures	• Discuss in groups about leisure time activities and internet use. • Discuss in groups about reading habits. • Write about leisure time activities, internet activities and reading habits. • Read an extract from a simplified work of literature. • Discuss in groups about community facilities and which exist in the locality. • Read texts comparing facilities, jobs, transport, etc in town and country, focusing on **can, there may be, have to, more fewer**, etc • Discuss in groups about facilities, jobs, transport, etc in town and country, paying attention to **can, there may be, have to, more, fewer**, etc • Write a comparison of facilities, jobs, transport, etc in town and country, paying attention to **can, there may be, have to, more fewer**, etc • Read texts about the provision of social services, focusing on paragraph structure • Make notes on the text, under topic headings. • Compare your notes with others • Talk about the provision of local social services, using a diagram of providers, paying attention to **provide, fund**. • Invite someone from the local council to talk about the provision of local services. • Listen to someone talking about the structure of local government. • Talk about the structure of local government, using a diagram. • Write about the provision of services in local government, using a diagram.

Unit	No. of Periods	Introduction	Classroom Organisation	
2	15	• Recognise the use of the present continuous tense, the perfect simple and continuous tenses with **since, for, ought to, must, may, might, could, when-clauses, although, despite, in spite of, more, fewer**. • List the vocabulary of climate change, greenhouse effect, species decline, wildlife protection.	• Whole class orientation • Group presentation • Pair activity • Individual	

	Equipment Required	Activities
	• Diagrams • Photographs • Pictures	• Read texts about climate change, focusing on the present continuous and the perfect simple and continuous. • Discuss in groups about climate change paying attention to the present perfect continuous. • Write sentences paying attention to the present perfect continuous. • Discuss in groups and predict the effects of climate change, paying attention to **may, could, might**. • Listen to someone describing the decline in species in Rwanda, using graphs and tables and focusing on the present perfect simple. • Present data orally in class on species decline using a graph and paying attention to the present perfect simple • Read texts on species increase and decrease, including **although, despite, in spite of** • Write sentences paying attention to **although, despite, in spite of** • Read texts on species increase and decrease, including paragraphs. Make notes under paragraph headings. • Read texts on wildlife protection and suggesting solutions, including paragraphs. • Discuss in groups and suggest solutions to wildlife problems, paying attention to **must**, **ought to**. • Plan texts on wildlife protection, with paragraphs. • Write and evaluate the text, paying attention to paragraphs.

Unit	No. of Periods	Introduction	Classroom Organisation	
3	15	• Identify when to use connectors of time • List the vocabulary of extended family, birth death, wedding customs and gender roles.	• Whole class orientation • Group presentation • Pair activity • Individual	
4	15	• Identify when to use maths phrases. • State the vocabulary of fractions, percentages, economy.	• Whole class orientation • Group presentation • Pair activity • Individual	

	Equipment Required	Activities
	• Drawing paper and pencils, • Family tree, • Pictures, • Photographs.	• Discuss in groups about extended families and define terms. • Discuss in groups about people they like in their extended family and why. • Draw a family tree • Discuss with a partner about your family tree. • Write about a family tree and describe some of the relationships. • Read texts about traditional family customs. • Discuss in groups about a ceremony, e.g. a birth or death. • Invite someone into class to talk about their wedding. • Listen to someone describing their wedding. • Discuss a wedding in groups. • Write an account of a wedding, paying attention to time connectors. • Read texts about traditional and modern gender roles in the family, focusing **on used to**. • Discuss in groups about gender roles in their family. • Write about gender roles in one's family.
	• Graphs, • Calculations.	• Read texts on the Rwandan economy, focusing on percentages. • Discuss in groups and do calculations on percentages. • Complete sentences on fractions by gap-filling. • Discuss in groups about the Rwandan economy, paying attention to percentages. • Write sentences on the economy, focusing on percentages. • Plan texts on the economy, including paragraphs, numbering and headings, paying attention to percentages. • Write and evaluate the text.

Unit	No. of Periods	Introduction	Classroom Organisation	
5	15	• Identify when to use the future perfect tense, the third conditional, phrases for cause, textual organisation. • List the vocabulary of discoveries and inventions.	• Whole class orientation • Group presentation • Pair activity • Individual	
6	15	• Recognise when to use the passive voice, connectors of time and cause/effect. • List the vocabulary of processes, cause/effect phrases.	• Whole class orientation • Group presentation • Pair activity • Individual	

	Equipment Required	Activities
	• Photographs, • Pictures.	Read texts about important discoveries and inventions. • Discuss in groups about famous inventions and discoveries. • Read about some famous African inventors and scientists, focusing on language of cause. • Write about inventions and discoveries, paying attention to the language of cause, e.g. **impact on, lead to**, etc • Research famous African scientists. They present basic information about their scientist orally in class. • Write sentences speculating about what would have happened without specific discoveries and inventions, paying attention to the third conditional. • Read texts about possible discoveries and inventions in the future, focusing on the future perfect and containing some signals of textual organisation, e.g. paragraphs, numbering, headings, and bullets. • Write about possible discoveries and inventions in the future, paying attention to the future perfect. • Plan texts about a discovery or invention • and the impact it has had, highlighting some signals of textual organisation, e.g. paragraphing, numbering, headings, bullets. • Write and evaluate texts discovery or invention and the impact it has had, paying attention to signals of textual organisation, e.g. paragraphs, numbering, headings, and bullets.
	• Diagrams, • Pictures, • Photographs.	• Read texts about a process, with a diagram, focusing on connectors of time or cause and effect. • Discuss in groups a diagram and describe the process, paying attention to **connectors of time** or **cause and effect**. • Match a sequence of pictures with a sequence of sentences, describing a process. • Write a sequence of sentences describing a process, with a diagram, paying attention to **connectors of time** or **cause and effect.**

Unit	No. of Periods	Introduction	Classroom Organisation	
7	15	• Recognise when to use the present perfect tense and the present perfect passive voice. • State the vocabulary of multinational companies and trade and multinational organisations.	• Whole class orientation • Group presentation • Pair activity • Individual	

	Equipment Required	Activities
	• Pie charts, • Pictures, • Photographs.	• Discuss in groups family connections with and visits to other countries. • Conduct a survey of family connections with and visits to another country and present the results in a table. • Write about the class' family connections with and visits to other countries. • Read texts about Rwanda's international trade, with pie charts showing countries and goods. • Discuss in groups about the pie charts. Write about the pie charts, using percentages and fractions. • Listen to someone talking about Rwanda's income, with a pie chart showing sources. • Discuss in groups about the pie chart. • Write about the pie chart, using percentages and fractions. • Practise skimming and scanning texts about multinational companies and trade. • Read an interview with the CEO of a multinational company in Rwanda, describing the company's operations. • Discuss in groups a multinational company and its operations. • Plan texts about a multinational company, with headings, paragraphs and numbering. • Write and evaluate the text

Unit	No. of Periods	Introduction	Classroom Organisation	
8	15	• Recognise when to use t**he future continuous, present continuous, present perfect continuous tenses, going to, might, may, could**. • List the vocabulary of living in another country, leisure activities, cultural differences , emotions.	• Whole class orientation • Group presentation • Pair activity • Individual	

	Equipment Required	Activities
	• Pictures, • Photographs.	• Read a letter from someone staying in a foreign country, focusing on the present perfect continuous and the present continuous tense. • Discuss in groups the letter, paying attention to the present perfect continuous tense. • Listen to someone saying what they might do while staying in a foreign city or country, focusing on **may, might, could**. • Read a letter from someone describing plans focusing on going to and future activities focusing on the future continuous. • Plan a letter from someone staying in a foreign country or in Rwanda, to friends, including recent activities, current activities, possibilities, plans and future activities. • Write and evaluate the letter paying attention to the present perfect continuous and present continuous tenses, **may, might, could, going to** and the future continuous tense. • Read about Rwandan customs and customs in another country. • Discuss in groups and compare Rwandan customs and customs in another country. • Write comparing Rwandan customs and customs in another country. • Listen to someone talking about their feelings when living in a new place. • Discuss in groups feelings when living in a new place. • Write about feelings when in a new place.

Unit	Competences practised	Numeracy	Study Skills	
1	• Lifelong learning; • Critical thinking; • Creativity and innovation; • Research and problem solving; • Cooperation; interpersonal management; life skills; ICT	• Statistical data analysis (where possible); e.g. bio data or timeline of characters; Tabular data representation (where possible)	• Describe leisure time activities, internet use, reading habits, facilities in the community, the structure of local government and the provision of social services, in speech and writing. • Compare facilities, jobs and transport in town and country in speech and writing. • Read an extract from a simplified work of literature. • Read texts about the provision of social services, the structure of local government, or the comparison of facilities in town and country. • Listen to texts about the provision of social services, the structure of local government, or the comparison of facilities in town and country. • Write a comparison of facilities in town and country.	
2	• Lifelong learning; • Critical thinking; • Creativity and innovation; • Research and problem solving; • Cooperation; • Interpersonal management; life skills; ICT	• Statistical data analysis and representation during writing analytical reports; graphic data interpretation; surveys (where possible)	• Describe climate change and its effects in speech and writing. • Describe changes in numbers of wildlife species in speech and writing. • Read texts on climate change , species increase and decrease, or on wildlife protection. • Listen to texts on climate change, species increase and decrease, or on wildlife protection. • Plan, write and evaluate texts on wildlife protection, containing paragraphs	

	Assessment Criteria	Learning Outcomes
	• Learners can describe leisure time activities, internet use, reading habits, facilities in the community, the structure of local government and the provision of social services, in speech and writing, compare facilities, jobs and transport in town and country in speech and writing, write a comparison of facilities in town and country.	• Show readiness to execute one's role and responsibility as a community member.
	• Can describe climate change and its effects, describe changes in numbers of wildlife species, plan, write and evaluate texts on wildlife protection, containing paragraphs.	• Show concern for protection and proper use of the environment. • Appreciate the relationship between climate and human activities. .

Unit	Competences practised	Numeracy	Study Skills	
3	• Lifelong learning; • Critical thinking; • Creativity and innovation; • Research and problem solving; • Cooperation; • Interpersonal management; life skills; ICT	• Statistical data analysis and representation during writing analytical reports; graphic data interpretation; surveys (where possible)	• Describe family relationships in speech and writing. • Describe a family ceremony in speech and writing. • Read texts about traditional family customs, about a wedding or about traditional and modern gender roles in the household. • Listen to texts about traditional family customs, about a wedding or about traditional and modern gender roles in the household. • Write about gender roles in one's family.	
4	• Lifelong learning; • Critical thinking; • Creativity and innovation; • research and • Problem solving; • Cooperation; • Interpersonal management; life skills, ICT	• Statistical data analysis and representation during writing analytical reports; graphic data interpretation; surveys (where possible); mathematical operations fractions and percentages; decimals; ratios	• Do calculations on fractions and percentages, write in numbers and talk through the working orally. • Read calculations, or texts on the Rwandan economy. • Listen to calculations, or texts on the Rwandan economy. • Plan, write and evaluate texts on the Rwandan economy, containing paragraphs, numbering and headings.	

	Assessment Criteria	Learning Outcomes
	• Can describe family relationships, describe a family ceremony in speech and writing, write about gender roles in one's family.	• Appreciate the importance of the role of the family in our lives, culture and heritage • Appreciate the importance of the role of the family in our lives, culture and heritage
	• Can do calculations on fractions and percentages, write in numbers and talk through the working orally, read calculations, plan, write and evaluate texts on the Rwandan economy, containing paragraphs, numbering and headings.	• Appreciate the role of mathematics and science in our daily lives.

Unit	Competences practised	Numeracy	Study Skills	
5	• Lifelong learning; • Critical thinking; • Creativity and innovation; research and • Problem solving; • Cooperation; • Interpersonal management; life skills, ICT	• Statistical data analysis and representation during writing analytical reports; graphic data interpretation; surveys (where possible)	• Describe famous discoveries and inventions, showing impact, in speech and writing. • Speculate about what would have happened in the absence of discoveries and inventions, in speech and writing. • Speculate about future discoveries and inventions, in speech and writing. • Read / listen to texts about a discovery or invention, or about African scientists, or about what would have happened in the absence of discoveries • and inventions, or about future discoveries and inventions. • Plan, write and evaluate texts about a discovery or invention and the impact it has had, showing signals of textual organisation, e.g. paragraphs, numbering, headings, bullets.	
6	• Lifelong learning; • Critical thinking; • Creativity and innovation; • Research and • Problem solving; • Cooperation; • Interpersonal management; life skills; ICT	• Statistical data analysis and representation during writing analytical reports; graphic data interpretation; surveys (where possible)	• Describe a natural, biological, environmental, industrial or mining process. • Read texts describing a natural, biological, environmental, industrial or mining process. • Listen to texts describing a natural, biological, environmental, industrial or mining process. • Plan, write and evaluate texts describing a process, paying attention to paragraphs, headings and numbering.	

	Assessment Criteria	Learning Outcomes
	• Can describe famous discoveries and inventions, showing impact, speculate about what would have happened in the absence of discoveries and inventions, speculate about future discoveries and inventions, plan, write and evaluate texts about a discovery or invention and the impact it has had, showing signals of textual organisation, e.g. paragraphs, numbering, headings, bullets.	• Appreciate how African scientists and inventors. have contributed to the world of science and our daily lives. • Value the importance of critical thinking, creativity and innovation and problem solving.
	• Can describe a natural, biological, environmental, industrial or mining process, plan, write and evaluate texts describing a process, paying attention to paragraphs, headings and numbering.	• Respect natural and industrial processes role in Rwanda's economic development.

Unit	Competences practised	Numeracy	Study Skills	
7	• Lifelong learning; • Critical thinking; • Creativity and innovation; • Research and • Problem solving; • Cooperation; • Interpersonal management; life skills; ICT	• Statistical analysis; graphic representation of data; Tabular data representation in report (where possible)	• Describe class family connections with and visits to a foreign country in speech and writing. • Describe Rwanda's international trade and sources of income in speech and writing. • Read texts about Rwanda's international trade, about Rwanda's income or about an interview with the CEO of a multinational company in Rwanda. • Listen to texts about Rwanda's international trade, about Rwanda's income or about an interview with the CEO of a multinational company in Rwanda. • Plan, write and evaluate texts about a multinational company, with headings, paragraphs and numbering.	
8	• Lifelong learning; critical thinking; creativity and innovation; research and problem solving; cooperation; interpersonal management; life skills; ICT	• Statistical analysis; graphic representation of data ; • Tabular data representation in report (where possible)	• Describe recent activities, current activities, possibilities, plans and future activities, in speech and writing. • Compare cultures and describe emotions in speech and writing. • Read a letter from someone staying in a foreign country, or describing plans, or about Rwandan customs and customs in another country. • Listen to texts about someone staying in a foreign country, or describing plans, or about Rwandan customs and customs in another country. • Write a letter describing the experience of living in a new country.	

	Assessment Criteria	Learning Outcomes
	• Can describe class family connections with and visits to a foreign country, • Describe Rwanda's international trade and sources of income, plan, write and evaluate texts about a multinational company, with headings, paragraphs and numbering.	• Appreciate the contribution of all cultures to the creation of a common global society.
	• Can describe recent activities, current activities, possibilities, plans and future activities, compare cultures and describe emotions, write a letter describing the experience of living in a new country.	• Appreciate that customs and rituals are important; they help shape the community.

Unit 1: Myself and My Community

Key unit competence: To use language in the context of myself and my community.

Number of lessons: 15

Background information

Participating in leisure activities is a wonderful way of reducing stress in our lives. As individuals we should use our leisure time productively. Individuals relate with their communities and communities, in turn, also relate with individuals. It is the responsibility of all of us to contribute to the development of our communities. We are also duty-bound to sustainably utilise community services.

English at Higher School Certificate (HSC)

Most of the activities are argumentative and logical presentations. This book has carefully catered for this by encouraging group work activities and field trips which require learners to observe, predict or speculate, justify, explain, analyse, argue, synthesise, apply and judge different situations. The activities are interesting and apply to real-life situations. The teacher's role is a multi-faceted one. You will find most of the activities require the learner's opinions, but as the judge, you will act as a moderator. For some activities, although in rare situations, you will act as an arbitrator, especially in discussions and debates where the learners disagree to come to a consensus. Show care and concern to learners who might experience some difficulty. For example, in Unit 5: Fractions and Percentages, some learners have a negative attitude towards mathematics,

and yet the new competence based curriculum integrates language with all areas of learning. Little wonder that there is mathematics, scientific stories on disciplines such as physics and chemistry and engineering, etc. Every effort has been made by the authors of this book to apply real-life situations using those science disciplines besides making them very practical and interesting. Where you are not comfortable to deliver the unit, please seek the help of a science teacher, but move with the learners and prepare beforehand so that you work with your colleague. Learning has never stopped and learning will never end. We hope you will find the material user-friendly and interesting in delivering the content to the learners.

A: Listening and Speaking

Describing hobbies and leisure time

Activity 1:

Learner's Book, page 2

Introduce the lesson by writing the unit title "Myself and My Community" on the chalkboard. Ask the learners to predict what they expect to learn in the unit and accept all possible answers.

Divide the learners into groups of five to discuss the question.

Answers are of the opinion nature so exercise your judgement on the answers the learners propose.

Difference between a hobby and leisure time activity

1. A hobby is a regular activity done for enjoyment, mostly during one's free time. Some people invest time, effort and money into hobbies which they regularly engage in.

   Leisure time is free time outside of work.
2. A hobby is done because there is a commitment behind it and satisfaction in doing it. Therefore there is a will to do it repeatedly while leisure is done just for a while.

3. Sometimes, a hobby has a financial benefit to the individual and can turn into one's means of livelihood (career), while a leisure time activity isn't.
4. A hobby is routinely done. A leisure time activity may shift depending on the interest of the individual, peer influence and other motivational factors.

Instruct learners to study the photographs in Activity 2 and answer the questions in Activity 3

Learner's Book, page 2-3

1. Watching television; reading; cooking; playing a guitar or singing; surfing the internet; tourism.
2. Opinion question (some activities depending on the learners' perception are either hobbies or leisure time activities).
3. Opinion question but leisure time activities and hobbies are closely related with each other.
4. We need leisure in our lives to balance the stress of work and life. Leisure helps re-energise and relax people, so they can perform activities well in their lives. People use their free time (leisure time) in a variety of ways: engaging in outdoor activities, entertainment like watching movies or television or just having time to themselves. Another activity people enjoy doing is just socialising with family and friends. Leisure is an essential part of our lives, and the only problem is when to enjoy it. In our society we have a hard time finding time to relax and take a break from our stressful lives.

Recounting activities

Activity 1:

Learner's Book, page 4

Divide learners into groups. Let them share how they spent their leisure time over the weekend. After the discussion, they should describe how they spent their leisure time holiday in a composition.

Describing internet activity

Learner's Book, page 4

Activity 1-3:

Learner's Book, page 4-5

Let the learners do the activities themselves. Encourage them to share their topics they have made research on with other classmates.

Let them discuss the activities that follow.

Describing reading habits

Learner's Book, page 5

Ask the learners to mention the various reading materials they read in their free time.

Instruct them to study photographs A-D in Activity 1 and answer the questions that follow. (Learner's Book, page 5-6).

Expected answers

(a) Opinion question. Exercise your judgement to assess the learners' answers.
(b) In photo B, the reader is dealing with academics while the rest are reading for pleasure. The similarity is that they are all reading.
(c) They do so as a way of spending their leisure time.
(d) It helps children develop a reading culture.

In groups, ask the learners to do Activity 2 (*Learner's Book, page 7*). The expected answers are opinion in nature. Exercise your judgement upon answers the learners give.

Reading extracts from Literature

Learner's Book, page 7

Inform the learners that Literature provides a wide range of reading materials. Literature means any materials we read from any subject but more specifically it is related to the

genres or types of novels, plays, poetry, short stories, etc. both fiction (imagined/created/unreal) and non-fiction real/concrete materials).

Fiction materials include novels, short stories, plays, poems, films etc.

Non-fiction materials include news stories, journal articles, legal documents, textbooks, documentaries, photographs, memories, dictionaries, book reports, essays etc.

Ask the learners to share with a classmate some of the literature books they have read and what the stories were about.

In groups, ask them to do Activities 1 and 2 (Learner's Book, page 7-8). The answers are of the opinion type so accept all possible suggested answers.

Ask them to individually read the story in activity 3 (Learner's Book, page 8) and do Activity 4.

Activity 4: Expected answers

Learner's Book, page 14

1. Instruct learners to go to the library and borrow a copy of "Great Expectations" by Charles Dickens. Ask them to read it and answer the questions. Invite volunteers to share their answers with the class.
2. Expected answers.

Notes for the teacher

Formal versus informal language

We use **formal language** in situations that are serious or that involve people we don't know well. **Informal language** is more commonly used in situations that are more relaxed and involve people we know well. Formal language is more common when we write; informal language is more common when we speak.

Slang, on the other hand, is the use of very informal words and expressions which are not considered as standard in one's language or dialect. You will know if a word or a group of words (phrase) is slang if it has any two of the following attributes:

(a) It lowers formal language through the misuse of a word by giving it another meaning.
(b) Slang is specific to a particular group or peer group.
(c) Slang is considered taboo in terms of formal standards of using the English language.
(d) Slang displaces a common and widely accepted term.

Reasons why slang is used include replacing a certain term, keeping secrets from other groups of people etc.

Common slang example: smokin, (smoking),vibe (talking), hi (hello), t's up (hello), yap (yes), k (okay), yo (you are), fon (phone), gdnyt (good night), tz (it is), plz (please), sm1 (someone).

Ask the learners to mention the slang language they use in everyday communication. They should share the meaning of each slang word/expression. Carry out this exercise as an oral class activity.

Now turn to the extract they read from "Great Expectations". Ask them to use their knowledge to identify some formal/ informal and slang language that Charles Dickens employs; and the functionality/reason/ or effectiveness of the author's use such language.

Expected answers

In the extract, Charles Dickens basically uses informal language and slang to bring out the following effects:

(a) Magwitch and Pimp are both uneducated and, as a result, their communication cannot use the expected standard English.
(b) Magwitch is an ex-prisoner and a renegade. He is hunted by the authorities. He tries to use slang to disguise his real identity.

(c) To give a strong effect / force to his statements so that Pip responds to them without delay, he mixes colloquialism with slang to scare the young boy.

3. Some examples of slang and informal language and their meaning from the extract include the following:

(a) Mag (slang) short for 'Magwitch' means a bird associated with theft. Magwitch was convicted for theft.

(b) Magwitch shouts out to Pip, "Give it mouth" (informal language). By this informal statement Magwitch cruelly asks Pip to repeat his name to find out if Pip was not deceiving him or otherwise.

(c) Magwitch also refers to Pip as "Young dog" (informal language) to scare young Pip so that he does Mag's wish.

(d) Magwitch again says, "Now lookee here!" (informal language) to draw pip's attention to his message. There is so much informal language and slang used in the extract.

Instruct learners to clearly scrutinise the language and discuss its effects. You may carry out this activity as a group assignment and ask group secretaries to share their answers with the class.

Activity 5:

Learner's Book, page 14

Opinion nature question so accept possible answers.

Notes for the teacher about the plot of "Great Expectations" by Charles Dickens

As you may be aware, the story of "Great Expectations" begins in a graveyard as a young orphan boy named Pip is visiting the graves of his mother, father and siblings. It is in this graveyard that he encounters an escaped convict named Abel Magwitch. While Magwitch is eventually recaptured and returned to his prison ship, it is not before Pip presents a gift of some food to the obviously hungry man.

Years later, Pip receives news that he is to receive a large sum of money from an anonymous benefactor, allowing him to become a gentleman in London. It is later revealed that this mysterious benefactor is none other than Magwitch, the convict to whom Pip once extended a small kindness.

This greatly simplified version of the story leaves out many other intrigues, betrayals and twists – after all, this is a Dickens novel, but the revelation of Magwitch as Pip's benefactor is the piece of "Great Expectations" that has always stuck with us. It provides an excellent lesson. In life, and in business, you never know who your benefactor will be or when a relationship or exchange from long ago will play a role in your present day.

Proceed to Activity 2. Tell the learners to look at the cover page of the book and describe the picture. If some learners know the story "Great Expectations", ask them to narrate the story to the class. Relate further discussions to the relevance/application of the story to our daily lives and the lesson learnt.

Describing facilities in the community

Learner's Book, page 15

Ask the learners to discuss in groups the facilities available in their community and describe the importance of each facility to community.

Instruct the learners to study the table in activity 1 (Learner's Book, page 15) and fill in the missing information about the facilities available in their community and the role of those facilities to people's lives. Ask them to compare their tables.

Instruct them to do Activities 2 and 3 (Learner's Book, page 16). Answers to the reading passages are of the opinion type, so exercise your judgement upon the learners' views.

Comparing facilities in the country/town

Activity 1:

Learner's Book, page 18
Divide the learners in groups of five.

They have already discussed the facilities, so ask them to compare the rural with the town facilities. If it is a rural school, ask the administration to organise a study trip to a nearby town so as to empower learners to describe the facilities and compare them.

The discussion will help them proceed to debate the motion "Town life is better than village life" Activity 2 (Learner's Book, page 21) . The rationale of the debate is that the learners will concentrate on comparing the facilities available in the villages with those of the town. Conduct the debate as a class activity.

Procedure for the debate

1. Ten people will take part in the debate. Five students will support the motion and the other five will be against it.
2. Elect a chairperson, timekeeper and secretary to moderate the debate. The timekeeper will help the speakers keep time; the secretary will record what is said and announce the results; the chairperson is the overall person in charge of moderating the debate session.
3. Each speaker should prepare their points for debating well in advance.
4. Each speaker should use three minutes. Points of information, order, clarification, etc. will be raised and the chairperson will decide which to allow or reject.
5. The rest of the class should listen attentively while taking notes.
6. The chairperson will choose a few students from the audience to debate (propose or oppose) the motion.

7. The secretary will read the summary points from the audience to agree or disagree with the motion. The secretary will declare the side with majority points the winner.
8. Finally, the chairperson will close the debate.

Comparing jobs in the country/town

Learner's Book, page 21

Divide learners to compare the jobs one can do in the village with those in the town.

Ask the learners to do activity 1 (Learner's Book, page 21). Expected answers are opinion in nature so exercise your judgement. Encourage them to compare their answers with those of other groups.

Comparing transport in the country/town

Learner's Book, page 22

Let them discuss the transport means available in their communities and compare them with those in other areas.

Ask them to do activity 1 (Learner's Book, page 22). Expected answers are of the opinion type so exercise your judgement.

Describing social services

Learner's Book, page 22

Social services are normally provided by the local government. These include community roads, schools, hospitals, water etc.

Ask the learners to do Activity 1 (Learner's Book, page 22) and then read the passage in Activity 2 (Learner's Book, page 23). Ask them to answer (a) and (b) based on the following expected answers.

(a) Note-making
- The government or non-governmental organisations provide social services to the community.
- The ministry of Health improves the health of Rwandans

- Launched the community-based insurance scheme for health services.
- Beneficiaries contribute to the scheme; the government pays for the poor.
- Girinka programme-reduces poverty; child malnutrition.
- Programme combines livestock rearing and farming.
- *Imidugudu* launched by the government – solves land problems.
- The government building homes with partner aid/ support.

(b) Expected answers will vary. Exercise own judgement.
Instruct learners to do research to carry out Activity 3 (Learner's Book, page 25). Accept correct answers quoted with sound sources that operate in Rwanda.

For Activity 4 (Learner's Book, page 26), invite a guest speaker, preferably a politician, to talk to the learners about government programmes and commitment to equitably provide social services to the various communities in Rwanda. Let the learners interact with the guest speaker or speakers and write a report or summary about the presentation. Instruct the learners to compare their reports with those of their classmates.

Describing local government processes

Learner's Book, page 26
Divide the learners into groups to discuss the questions in Activity 1 (Learner's Book, page 26). Opinion answers are expected so elicit your judgement.

Activity 2:

Learner's Book, page 27
Again, invite a guest speaker from a nearby local council to facilitate the lesson about the structure of local government and

the importance of local government processes such as voting and council meetings.

Let the learners interact with the guest speaker and write notes about the administrative structure of local government.

Instruct them to do the rest of the activities that follow based on the information they have heard from the guest speaker.

Assign the learners to act out the dialogue. The role takers should practise and rehearse their parts before acting out the dialogue for the class.

Invite a group that is ready to act out the dialogue for the class.

Talking about responsibilities

Activity 1:

Learner's Book, page 27
Divide the learners into groups of five. Ask them to study the structure of the district local government in Rwanda.

Instruct the learners to draw the diagram of the school administrative structure. Your guidance is of paramount importance. Encourage them to compare their answers.

Activity 2:

Learner's Book, page 28
Instruct the learners to study the diagram and answer the questions that follow.

Expected answers

(a) Planning and budgeting is necessary in order to achieve orderly and systematic service provision.
(b) They promote unity and help people to live in harmony. People also live healthy lives.

(c) Opinion question. Exercise your judgement to assess the learners' answers.

(d) It is a source of revenue for government to use in service provision. Accept any other logically valid answers from learners.

Activity 3:

Learner's Book, page 29-30

Ask the learners to practise the dialogue in pairs. Then let them answer the questions that follow.

Expected answers

1. Opinion question. Exercise your judgement in assessing the learners' answers.
2. Parents

(a) Feeding their children, paying school fees, instilling good character in children, living as roles models to the children. Accept any often logically valid answer from the learners.

(b) Children - Doing work at home, going to school, respecting their parents and other people, exhibiting good behaviour in society. Accept any other logically valid answers from the learners.

3. Wetlands are a water source.

(a) Destroying wetlands may result in desertification. Accept any other logically valid answers from learners.

(b) Replacing cut trees - Accept any other logically valid answers from learners.

4. By being security-conscious
   - Reporting wrongdoers
   - Cooperating with security personnel
   - Keeping law and order. Accept any other logical valid answer from learners.
5. When people are peaceful, they have all the encouragement and confidence to work for the development of their country. Even foreigners are encouraged to invest in the country because they are assured their investments are

safe. Accept any other logically valid answers from the learners.

Language structure

Learner's Book, page 31

Activity 1:

Learner's Book, page 31

Teacher's Notes

We use modal verbs to show if we believe something is certain, probable or possible (or not). We also use modals to do things like talking about ability, asking permission, making requests and offers and so on.

A modal is a type of auxiliary (helping) verb and is used to express ideas of ability, possibility, permission, obligation or offers.

English modal verbs include **must, shall, will, should, would, can, could, may** and **might.** Even their negative forms such as **mustn't, shall not,** etc are modals.

Guide and encourage learners to form their own sentences using modal verbs. Remind them that modals are used with main verbs in English sentences.

The modal verbs relate well with the unit. Ask the learners to complete the sentences using the modal verbs in the box. ***Can*** means ***ability***; ***may*** means ***possibility*** or ***likelihood***; ***have to*** is ***obligation.***

can	may	have to

1. I have to be at home before dark because there are many thieves on the way.
2. Driving a vehicle can be dangerous if you are not well trained.
3. You may go for the trip if you have the money to pay.
4. I may not go to town tomorrow if it rains.

5. My son can speak three languages: English, French and Swahili.
6. The head teacher says we can enter the office now.
7. Peter may have forgotten his phone at home.
8. We have to study hard if we want to pass examinations.
9. She may go back home early because her child is sick.
10. You may carry your umbrella. It is likely to rain today.

Activity 2: Guide and encourage

Learners to form their own sentences using modal verb. Remind them that modals are used with other main verbs in English sentences.

Learner's Book, page 32

Accept logical paragraphs

Activity 3: Expected answers

Learner's Book, page 32

1. She has more friends than me.
2. We saw many people in Kigali City.
3. Rudasingwa doesn't have many friends at school.
4. There are more schools here than in my village.
5. There are too many questions in this exercise!
6. I am sure I did not make any mistakes in the examination.
7. I have some money, so I will buy you lunch.
8. That is very kind of you because I don't have any money on me.
9. I went to the butchery but I did not buy any meat. It was very expensive.
10. Do you have any food left? No, I do not have any.
11. There are fewer people here than in the centre of the city.
12. Fewer children are studying French these days.
13. There are fewer jobs than the number of people applying for them.

14. We closed the business because there were fewer customers than we had expected.
15. We witness fewer accidents these days because of tougher laws.
16. None of the soldiers who went on patrol has come back.
17. None of his friends would help him.
18. Have you any newspapers? I am sorry, Sir, but there are none left.
19. She wanted some sugar but there was none in the house.
20. None of them has come back.

Practice Exercise: Learner's Book, page 35

Ask the learners to do the exercise in groups. Mark their exercise books and give feedback.

Unit 2: Climate Change and Wildlife Protection

Key unit competence: To use language in the context of climate change and wildlife protection.

Number of lessons: 15

Background information

Climate change is a change in the statistical distribution of weather patterns when that change lasts for an extended period of time (i.e. decades to millions of years). Climate change may refer to a change in average weather conditions, or in the time variation of weather around longer-term average conditions (i.e. more or fewer extreme weather events). Climate change is caused by factors such as biotic processes, variations in solar radiation received by the Earth, plate tectonics and volcanic eruptions. Certain human activities have also been identified as significant causes of recent climate change, often referred to as global warming.

Language use: Describing climate change

Describing climate change

Activity 1:

Learner's Book, page 36

Ask the learners to discuss the weather conditions and make a presentation in their groups.

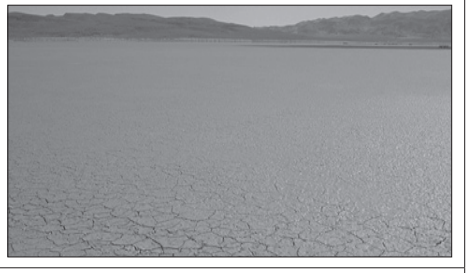
Activity 2:

Learner's Book, page 36
Ask the learners to read the passage and answer the questions in the exercise.

Climate change is already beginning to transform life on Earth. Around the globe, seasons are shifting, temperatures are climbing and sea levels are rising. And meanwhile, our planet must still supply us – and all living things – with air, water, food and safe places to live. If we don't act now, climate change will rapidly alter the lands and waters we all depend upon for survival, leaving our children and grandchildren with a very different world.

Some of the most dangerous consequences of climate change are listed here. Which one will have the most impact on your life, or on the places you care about?

Climate Change Impact: Higher Temperatures

Photo 1	***Photo 2***
	
A dried-up savannah grassland due to extremely hot temperatures	*Dry lake bed at Carson Lake in Nevada, United States*

Heat-trapping gases emitted by power plants, automobiles, deforestation and other sources are warming up the planet. In fact, the five hottest years on record have all occurred since 1997 and the 10 hottest since 1990, including the warmest years on record – 2005 and 2010.

High temperatures are to blame for an increase in heat-related deaths and illness, rising seas, increased storm intensity, and many of the other dangerous consequences of climate change.

During the 20th century, the Earth's average temperature rose one degree Fahrenheit to its highest level in the past four centuries – believed to be the fastest rise in a thousand years.

Scientists project that if emissions of heat-trapping carbon emissions aren't reduced, average surface temperatures could increase by 3 to 10 degrees Fahrenheit by the end of the century.

A one-degree increase may be found in one place, a 12-degree increase in another place, and yet other areas may become much colder.

The planet's oceans are also warming, which is causing dangerous consequences such as stronger storms, coral bleaching and rising seas.

Exercise: Expected answers to the passage

Learner's Book, page 38

1. Shifting of seasons; rising temperatures are some of the phrases related to climate change.
2. The soils will be hard to till, thus our planet will not be able to supply us – and all living things – with air, water, food and safe places.
3. Heat-trapping gases emitted by power plants, automobiles, deforestation and other sources are warming up the planet.
4. Carbon emissions are dangerous gases released into the air by factories and exhaust fumes of vehicles. If emissions of heat-trapping carbon emissions aren't reduced, average surface temperatures could increase by 3 to 10 degrees Fahrenheit by the end of the century.
5. Accept answers related to human activities such as industries which release dangerous gases into the air to be checked. These gases penetrate the ozone layer and enlarge it, thus enabling the sun's direct radiation onto the Earth.
6. Accept any logical answers and their explanations.

Activity 3: Vocabulary practice

Learner's Book, page 38
Let the learners do the activity.

Describing climate change

Activity 4: Group discussion

Learner's Book, page 39
Divide the learners into groups to do the activity. The group secretaries should present their answers to the class for further discussion and comparison of their answers.

Climate Change Impacts: Changing Landscapes

Activity 5

Learner's Book, page 39
Ask the learners to study and discuss the photograph . Study the photograph carefully and explain the effect of climate change on the land.

Activity 6:

Learner's Book, page 40
Ask them to assume the roles and rehearse the dialogue.

Invite a group that is ready to act out the dialogue for the class.

Instruct them to do the composition after the dialogue in Activity 7, page 41. Use your judgement in assessing the learners' essays. The information should be credible and factual.

Predicting the effects of climate change

Activity 1:

Learner's Book, page 41
Divide the learners into groups. Guess their prediction about what might or could occur in the future if global warming persists.

Encourage them to use the modal verbs "could" and "might", e.g.

- some animal species could become extinct;
- human life might become unbearable.

Activity 2:

Learner's Book, page 42
Ask them to read the passage in Activity 2 on pages 42-46.

Instruct them to write summaries under each sub-title about the predicted effects of climate change. Summaries will differ but should be closely related. Accept correct summaries.

Modal auxiliary verbs

Using: may, could, might

Activity 3:

Learner's Book, page 46
For this activity, ask the learners to use the passage to identify and write sentences from the passage predicting what the future will be like if climate change persists. They should compare their sentences with other classmates. Accept correct answers based on the example below, which also appears in the Learner's Book.

Example

It **could be** more difficult to grow crops.
There **might be** more droughts.

Describing change in wildlife populations

Activity 1:

Learner's Book, page 47
Ask the learners to discuss about wild life population using Activity 1, page 47.

Activity 2:

Learner's Book, page 47
Ask a learner to volunteer to read the text while the rest of the learners listen.

Exercise

Learner's Book, page 49
Ask the learners to answer the questions, about the passage based on the following answers.

1. Rising temperatures are forcing animal species to migrate to new, cooler areas in order to survive.
2. If the warming trends continue it is predicted that by the year 2050 most of the earth's species will be headed for extinction.
3. Opinion question. Accept answers with mitigation measures for climate change, such as afforestation, environmental conservation, using clean alternative energy sources such as the wind and sun instead of coal and charcoal (firewood) etc.
4. The mobility levels of animals today is much faster than they were decades ago. Climate change patterns, particular global warming which is induced by human

activities, account for the high rates of animal species mobility.

5. The research findings by scientists who grouped the studies together and analysed their results show that it is global warming that is causing species to move towards the poles and to higher elevations.
   – Scientists have also found in their research that the amount by which the distribution of species has changed is correlated with the amount by which the climate has changed in that region.
6. A change in the habitat of species exposes the species to a high risk of extinction.

Accept correct summaries.

Activity 3: Group discussion

Learner's Book, page 50

Divide the learners into groups of six learners to discuss the question in the activity.

Some of the suggested solutions include the following.

- We should stop deforestation.
- We should plant more trees.
- We should reduce greenhouse gas emissions. Greenhouse gases release carbon dioxide as the chief pollutant in the atmosphere a dangerous gas which scales up global warming.
- We should sufficiently use renewable energy (clean energy) power source such as wind power, solar energy and biomass. After all they, too, are effective and reliable energy resources. This would be preferable to using hydroelectric plants, which have undesirable ecological effects (they disturb the ecology, for example, they destroy fish habitats and are air and water contaminants.
- We should use energy saving bulbs (CFL lighting systems).

- Walk where possible or use a bus instead of many vehicles which release carbon dioxide that contaminates our environment.
- We should reduce the carbon dioxide equivalent load of the output (energy or other products) by using more efficient engines/heaters, less HC leaks, and finding an alternative to greenhouse gases such as methybromide (used for fumigation).
- We should promote behavioural change, by changing infrastructure in ways that encourage lower-energy behaviour, building of cycleways (for bicycles) rather than highways (for vehicles), making communities more walkable, making public transport a more attractive option.
- We should remove carbon from the atmosphere after emission by reforestation and by encouraging growth of plankton and thus fish, probably by adding nutrients to our natural water resources (lakes, rivers, seas, oceans).
- We should inject aerosols (sulfur oxides) into the upper atmosphere to nuetralise the carbon dioxide effect.
- Where possible, we can paint the roads white to reflect light rather than trap it as heat.

Vocabulary study

Learner's Book page 50

Activity 4:

Learner's Book, page 50

Expected answers

Species	Largest group of organisms in which two individuals are capable of reproducing fertile offspring.
Migrate	Of animals, birds, fish and other creatures to move from one region or habitat to another, depending on the season.
Habitat	The natural home or environment of an animal, plant, or other organism.

Extinct	Dying out, disappearing or vanishing of a species.
Organism	Refers to the living animals, plants, fung.
Peril	Expose to danger, threat, destruction.
Trend	A general direction in which something is developing or changing.
Elevation	Height above a given level, especially sea level.
Rapidly	Speedily.
Fleeing	Running away from a place or situation of danger.
Correlated	Have a mutual relationship, in which one thing affects or depends on another/an established mutual relationship.
Deteriorating	Becoming progressively worse.

Sentence examples

1. Most of the known rhino *species* are from West Africa.
2. Bats are social, nocturnal and they *migrate* to a warmer climate, or hibernate (remain inactive or dormant).
3. Trees, forests and bushes are the common *habitats* for wildlife.
4. A bird called, elephant bird that once lived in Madagascar and was as big as an elephant is now *extinct*.
5. Every *organism* takes its origin from a parent organism of the same kind.
6. Our gorillas are at *peril* of extinction if we do not institute strict regulations on poachers.
7. The rising *trend* of global warming can only be checked if we reduce the amount of carbon dioxide emitted into the atmosphere.
8. Along that river, these hills rise to an *elevation* of 800 to 1,000ft.
9. Her thoughts came *rapidly*, and she refused to think twice.
10. Many animal species *flee* from a hostile environment at a mere reflex.
11. The sporophylls (stamens and carpels) are generally associated with other leaves, known as the perianth, to form a flower; these subsidiary leaves are protective and

attractive in function and their development is *correlated* with the transport of pollen by insect agents.

12. The *deteriorating* health of the gorillas in our forests is going to severely affect our foreign exchange earnings.

Present perfect continuous

Learner's Book, page 51

Activity 1:

Learner's Book, page 51

Ask the learners to discuss the rules of the present perfect continuous tense in Activity 1 and afterwards discuss with the rest of the class.

Activity 2:

Learner's Book, page 51

Ask the learners to rewrite the sentences in Activity 2 in the present perfect continuous tense based on the following expected answers. Some of the answers are already in the present perfect continuous tense. This is done on purpose to test the learners' alertness.

1. One-fourth of the Earth's species could be heading for extinction owing to climate change.
2. Rising temperatures are changing weather and vegetation patterns across the globe, forcing animal species to migrate to new, cooler areas in order to survive.
3. Experts predict that one-fourth of the Earth's species will be heading for extinction by 2050 if the warming trend continues at its current rate.
4. Today, animals are fleeing global warming much faster than they were less than a decade ago.
5. Climate change appears to be forcing many of the world's creatures to migrate to more favourable locales up to three times faster than previously believed, a study said on Thursday.

6. Researchers are compiling past studies on species migration and combining them into a meta-analysis that shows a clear trend towards cooler climates, with the fastest moves in places where heating is most intense.
7. These changes are equivalent to animals and plants shifting away from the equator at around 20 centimetres per hour, for every hour of the day, for every day of the year.
8. Our analysis is showing that rates of response to climate change are two or three times faster than previously realised.
9. Previous studies are suggesting that some species are at risk of extinction due to their change in habitat, but this study has not delved into which species might be most at peril.
10. Species are moving to new areas where the climate has become suitable.

Describing causes

Activity 3: Composition

Learner's Book, page 52

Assess compositions which follow the rubric of composition writing, i.e. title; introduction; body; and conclusion. This is a factual descriptive composition; however, award merit where a learner quotes local examples from Rwanda.

Describing contrast

Using 'although', 'despite', 'in spite of'

Activity 1:

Learner's Book, page 53

(a) Despite the fact that the species are declining, the gorilla population is increasing. Or: Despite the species' decline, the gorilla population is increasing.

In spite of the fact that gorilla species are declining, the gorilla population is increasing. Or: In spite of the species' decline / decline of the species, the gorilla population is increasing.

(b) In spite of the global increase in temperature, the snow on Kilimanjaro has recently increased.

Activity 2: Expected answers

Learner's Book, page 53

1. Although the climate change is already beginning to transform life on Earth, if we carry out our activities cautiously, we can reverse the situation.
2. Despite the fact that seasons are shifting and temperatures increasing, if industries stop polluting the air, gradually normal temperature conditions can be realised.
3. In spite of the fact that we depend on forests for survival, we use them faster than we replace them.
4. Despite the fact that industrialists are always warned about the dangers of dumping refuse in our water sources, some do not listen.
5. Although scientists have warned that we shall all perish from the surface of the earth, some people do not listen to them.
6. Despite the continued disappearance of the vegetation cover, and a sizeable number of animal species dying, poachers continue to kill game or wildlife.
7. In spite of the fact that we try our best to plant some trees, temperatures continue rising!
8. Although rising temperatures are changing weather and vegetation patterns across the globe, some animals adapt to new climatic conditions.
9. Accept logical meaningful sentences.
10. Accept logical meaningful sentences.
11. Although there is lots of drought and floods, the people somehow manage to survive.

12. Despite the little rainfall, we plant drought-resistant crops.
13. In spite of the fact that we have witnessed minimal temperature changes, this does not guarantee that we could be affected by drought-related illnesses.
14. Despite scientific research indicating that climate change will cause hurricanes and tropical storms to become more intense, we should stay in our communities.
15. Although extreme heat waves caused more than 20,000 deaths in Europe and more than 1,500 deaths in India, surprisingly, people still pollute the environment.

Activity 3:

Learner's Book, page 54

Learners may practise forming other sentences using '**although**', **despite**' and '**in spite of**' about the climate change. Encourage them to compare their sentences with those of their classmates.

Describing wildlife protection

Activity 1: Research and report writing

Learner's Book, page 55

Learners can visit various NGOs or government bodies concerned with protecting our environment.

Making suggestions about preserving the environment

Using 'must', 'ought to'

Guide learners about using these modal auxiliary (helping) verbs. Model sentences using '**must**' show **obligation**.

For example:

(a) We *must* plant a lot of trees for any single one cut down.
(b) We *must not* use polythene bags.

Modal sentences using 'ought to', just like 'should' show a polite piece of advice.

For example:

(a) We *ought to* use clean energy to avoid contaminating the atmosphere with carbon dioxide.

Generally remind learners that *modal* verbs such as *should, can, may, might, could, couldn't, can't, ought to, must, mustn't* express ideas of ability, possibility or probability, obligation, permission, necessity and offers.

Inform them also that modal auxiliary verbs *must, must not, have to, and don't have to* express obligation while *ought to, ought not to, should* and *should not* express pieces of advice.

Activity 1: Group discussion

Learner's Book, page 55
Ask them to do the activity. Use your judgement to assess the sentences the learners will provide.

For example

We ***must*** use bicycles more instead of cars.
We ***ought to*** use fewer fossil fuels.

Unit 3: Traditional Family Life

Key unit competence: To use language in the context of traditional family life.

Number of lessons: 15

Background information

Extended/wider family comprises more people. *Mbiti (1969, p.106)* says that *"for African people the family has a much wider circle of members than the word suggests in Europe or North America*."

In traditional society, the family includes children, parents, grandparents, uncles, aunts, brothers and sisters who may have their own children and other immediate relatives. The relationships within the extended family would be based on kinship (biological or putative blood relationship) and affinity (relationship between blood relatives of one marriage partner and those of the other marriage partner). Such a family would include adopted and fostered children.

Language use: Describing one's extended family

Activity 1:

Learner's Book, page 56

Divide the learners into groups of five to discuss the questions in Activity 1. Ask them to compare their answers with those of other groups.

Activity 2:

Listening practice: *Learner's Book, page 57*
Read the passage while the learners listen to complete Activity 3. The rationale for putting in some listening passages is for research by the learners.

This, however, does not make the conduct and assessment of the listening practice difficult, since you simply instruct the learners to close the textbooks and either you read or ask a learner to volunteer to read the passage while the rest of the learners listen.

Read or invite a learner to volunteer to read the passage.

Kayitesi's family

Hello everyone. My name is Agnes Kayitesi. I'm pleased to share with you the people who live in my family. Our family is an extended one. I live with my relatives. I am happy because we love each other in our family. I stay with my grandparents, parents, cousins, aunts and an uncle. I stay with my grandfather who is the father of my mother. I am lucky that I am able to see my lineage. Sometimes, I listen to stories from my grandparents whenever I come back from school. They tell me very interesting stories about my ancestors and traditional Rwanda. I am able to get factual information from my grandparents, most of which I use at school. My grandparents are quite old, so they stay at home and do very light work. My parents advised them to stop working but they insist that since their childhoods, they are used to working.

My parents are very loving and caring. Both of them work in the town. My mother is a businesswoman. She operates a shop in Remera. My father is a truck driver. He is away most of the time, but when he gets a leave, every after two weeks, we really enjoy spending time with him. He always sends food and other life necessities to support our family.

I have two aunties and an uncle with whom we live. Though they come occasionally but spend all weekend with us. They

come to check on my cousins and bring us many gifts. I am so proud of living with all my family members and relatives.

Activity 3: Expected answers

Learner's Book, page 59

1. The word "**variegated**" as used in the passage means many dimensions or multi coloured or having different sheds.
2. Perversity of polygamy differentiates African traditional family from the European one. By perversity of polygyny, we refer to the act of an individual being married to more than one spouse at the same time. This is common in most African societies as opposed to European families which are typically one man, one wife.
3. Opinion question. Accept answers with logical arguments.
4. Polygyny is the type of marriage in which the husband has plural wives, while an extended family system is a type of family which consists of a group of married offspring living in one household under either a patriarch or matriarch.
5. The major reasons cited for the decline in the perversity of polygyny are the increasing modern influences and the economic burdens.
6. Beside the father, mother and their children, a typical Baganda household family also includes other relatives of the father such as younger unmarried or widowed sisters, aged parents, and children of the father's clan sent to be brought up by him. Also, included in this same bigger household will be servants, female slaves, and their children. However, the father remains the head of the nuclear family units.

Activity 4: Debate

Learner's Book, page 59

Advise the learners to use the internet facility if the school has one, or consult from their History and Citizenship teachers. They may also find the school library helpful.

Learners may carry out their research among the African communities which practise Matrilineal Traditional African Family such as the Bemba people of Northern Zambia, the Bisa, Lala, Lamba, Chewa, Kaonde all of Zambia.

Procedure for the debate

1. Ten people will take part in the debate. Five students will support the motion and the other five will be against it.
2. Elect a chairperson, timekeeper and secretary to moderate the debate. The timekeeper will help the speakers keep time; secretary will record what is said and announce the results; the chairperson is the overall person in charge of moderating the debate session.
3. Each speaker should prepare their points for debating well in advance.
4. Each speaker should use three minutes. Points of information; order; clarification; etc. will be raised and the chairperson will decide which to allow or reject.
5. The rest of the class should listen attentively while taking notes.
6. The chairperson will choose a few students from the audience to debate (propose or oppose) the motion.
7. The secretary will read the summary points from the audience to agree or disagree with the motion. The secretary will declare the side with majority points the winner.
8. Finally, the chairperson will adjourn the debate.

Describing a family tree

Activity 1:

Learner's Book, page 60
Begin by asking learners to describe their family members. Draw a simple family tree of a nuclear family on the classroom notice board for learners to discuss and describe.

Activity 2:

Learner's Book, page 61
Instruct learners to study the family tree in the Learner's Book, page 61. In groups of five, ask them to discuss and describe the family tree.

Instruct them to do Activity 2 based on the following expected answers on page 61.

Expected answers

Learner's Book, page 61

1. Cousin.
2. All the children share the same parents.
3. Aunt.
4. Accept varied answers; such as family ties and roots; avoid incest; etc. Why do you think it is important to know our relatives?
5. In Africa it is a taboo. You can inherit bad diseases.

Ask the learners to describe stories about their families using number 6 as an example.

Activity 3:

Learner's Book, page 61
For practice, ask them to describe their family members and draw their family trees. Ask them to compare their family trees. Let them pin their family trees on the classroom notice board.

Describing traditional birth customs

Activity 1: Group discussion

Learner's Book, page 61
Divide the learners to discuss the questions. Opinion answers are expected so exercise your judgement.

Activity 2:

Learner's Book, page 62
Ask the learners to read and enjoy the passage.

Exercise: Expected answers

Learner's Book, page 65

1. In the past, Rwandan parents looked forward to having a child, especially a boy to inherit the father's position and property. This is no longer the case today, because a girl child can now inherit property from her parents. To Rwandans, children, especially girls, are sources of wealth because their parents will be given bride-price when they get married.
2. In the past boys inherited wealth while girls were viewed as a source of wealth, through the bride price their in-laws would pay for them.
3. Accept answers about twin initiation ceremonies from learners.
4. The magical lotion was applied to protect the child from evil forces.
5. This is a period of seclusion, meant for rest and recovery for the mother. It is also a time for acclimatising the baby to the new environment. During this period, relatives and friends give presents to the parents and the baby.
6. From the passages their role is not clear but symbolically implied. They welcomed the young baby into the family and the community.

7. Relatives who had not visited for a long time.
8. Same as question 7.

Describing death customs

Activity 1: Research

Learner's Book, page 65
The learners should conduct their research about the customs related to death in their community and present their findings in their groups.

Afterwards, let them write a composition describing the death customs in their community.

Describing a traditional wedding

Activity 1: Group discussion

Learner's Book, page 66
Divide the learners into groups to discuss the questions in the activity. They may compare their answers with those of other groups.

Ask any learner who has attended a traditional Rwanda wedding to narrate the experience to the class; otherwise they should proceed to the next step.

Activity 2:

Learner's Book, page 67
Ask the learners to read the passage and answer the questions that follow.

Exercise: Expected answers

Learner's Book, page 69

1. Opinion question. Exercise your judgement regarding the learners' answers, but the learners are expected to support their views.
2. The representative acts as the go-between for their family and that of the bride-to-be.
3. Opinion question. Exercise your judgement regarding the learners' views.
4. To give her softer and smoother skin.
5. They are several. Accept those practices that are still considered in today's weddings.

Activity 3: Debate

Learner's Book, page 69

Follow the procedure of conducting a debate covered in the previous units.

Talking about modern weddings

Activity 1: Group discussion

Learner's Book, page 69

Divide the learners in groups of five to discuss the questions in Activity 1. Encourage them to share their answers with those of other groups.

Ask a learner who has ever attended a modern wedding to share his or her experience with the class.

Activity 2:

Learner's Book, page 70

Ask the learners to read the passage and answer the questions that follow.

Exercise: Expected answers

Learner's Book, page 76

1. Accept correct answers explaining their importance.
2. She is the host of the event.
3. Each family has a representative who speaks on their behalf, usually a wise old man. They begin by praying and then by welcoming each other, giving everyone a place to sit, drinks and making them comfortable. The groom's representative gives thanks and eventually gets to the matter of their son being in love with a girl, which is when a sort of comedic duel ensues. In fun, each representative tries to trick the other, a sort of test to see if the couple will be well matched. The representatives discuss bride price of cows, symbols both of something to replace the loss of a beloved daughter as well as the mixing of the families through their herds (cows are very special in Rwanda). Poets come and sing of how beautiful and special the cow(s) for the bride price is.
4. The bride wealth is in the form of cows showing the worth of their daughter.
5. They are several because a modern Rwandan wedding involves most of the traditional wedding customs. Accept correct similarities and differences that the learners identify.

Recounting a wedding

Learner's Book, page 77

You can conduct this lesson as a composition writing activity. Ask the learners to narrate a wedding they have ever attended, describing what exactly took place. Mark their books and give feedback.

Sentence connectors

Activity 1:

Learner's Book, page 77
Words which join winding sentences are called sentence connectors. Examples of these words are: *although*; *nonetheless*; and *also*; etc.

Ask the learners to identify and use the sentence connector in sentences of their own. They may work with a classmate to share ideas.

Activity 2:

Learner's Book, page 77
Conduct this as a listening practice exercise. Textbooks should be closed. Read the passage twice while the learners listen.

Read the second time; then tell the learners to rewrite the passage, filling in the missing words.

My friend and I were ushered in and we sat in the best position that enabled us to see all that was going on. At this time, heads of the different families, in particular men, went ahead to discuss why really their children would get married and thereafter families were introduced and, in appreciation, there was the exchange of presents that made them feel at home. At this juncture, the **groom** was introduced by the aunt to the congregation which was followed with the giving of **bride price** to the girl's parents. The bride wealth is in the form of cows that shows their daughter's worth.

Later on, we were surprised by the **bride's procession**. She was escorted by women, both young and old. They came with gourds of milk that were to be given to the groom's family Alongside were traditional dancers who made the whole occasion beautiful. The bride was dressed in beautiful silk gold traditional wear along with her bridal team that carried the gifts to the groom's family. Tradition has it that four spear men have to guard the bride. After that, the bride and groom were ushered into their special tent, which showed that the two were ready to get married in church. A lot of **dancing and eating** followed the event till people got tired and went home. It was such a great event and it is something I would love to have on my introduction day.

Source: Rwanda online/modern wedding

Activity 3:

Learner's Book, page 79

Exercise: Expected answers

1. The bride's traditional wear is made of silk and gold material.
2. A typical Rwandan wedding follows the Rwandan customs where bride price has to be paid, then it is a social affair with a lot of traditional activities involved such as dancing. It is highly organised and interesting to attend.

3. The families sat opposite each other to see all that was going on.
4. The groom is introduced to the parents of the bride to create a formal acquaintance relationship between the two parties.
5. The guards of milk are given to the groom's family as a refreshment, as milk is a highly regarded food in Rwanda. Symbolically, it also shows the groom that the bride's family is a very hospitable one and the bride will take care of her husband-to-be in their life long relationship.
6. The four spear men have to guard the bride to make sure no one interferes with the process and symbolically to show that the bride is off the shelf. She is taken by her husband.
7. Music, food and dance are an obvious accompaniment to serve the social bondage and making the function colourful.
8. It is either in the church or mosque that couple take their vows publically and before God to be blessed in their marriages.

Activity 4:

Learner's Book, page 80

Composition writing

Guide learners to write descriptive compositions about their family members and the work their family members do.

Award marks while paying attention to the usual composition writing format/structure based on: title; introduction; body; and conclusion. In addition, remind the learners to respect paragraph structures, spelling, tense patterning (present tense is the ideal tense), logical flow and coherence, organisation and simple sentences. Clarity of thoughts and ideas should also be paid attention to.

Talking about work distribution in the family (gender roles)

Learner's Book, page 80

Activity 1:

Learner's Book, page 80

Divide the learners into groups to discuss and share their opinions for Activity 1.

Activity 2:

Learner's Book, page 81

Ask them to read the passage in Activity 2.

Activity 3:

Learner's Book, page 85

Write notes using Activity 3 and Activity 4 on pages 85-86 and Activity 5 on page 87.

Activity 4:

Learner's Book, page 86

Ask the learners to organise a debate on gender roles today.

Used to

Learner's Book, page 86

Ask the learners to research about the roles men and women used to play in the past and write sentences about their roles using 'used to do'.

For example:

(a) Women used to look after families.

(b) Men used to go hunting.

Ask them to do Activity 6, on page 86, following the procedure of conducting a debate covered in the previous units.

Unit 4: Fractions and Percentages

Key unit competence: To use language in the context of fractions and percentages.

Number of lessons: 15

Background information

Fractions

A fraction is part of a whole. Fractions are mostly language-based rather than maths-based. For example, people usually refer to a quarter tank of fuel or a half cup of tea, each describing fractions of a whole. Whereas the fractions used in maths make use of numbers to represent approximate proportions, you may also use the term *one out of four* and can think of one as a numerator and four as a denominator. This represents one as a fraction and four as a whole number.

Regardless of fractions being hugely language-based functions, it is still vital to know the role of maths involved in it.

Calculating fractions

For example, if you have a mixing bowl that has the capacity to hold two cups, and you need to blend $\frac{2}{3}$ cup of honey, $\frac{1}{4}$ cup of milk, and $\frac{1}{2}$ cup of water, will it fit in the bowl?

Primarily, while adding fractions you need to decide the units that you will be using. Thus, the addition of $\frac{1}{2}$ to $\frac{1}{4}$ becomes a simple task and you can add another one making the fraction

$\frac{3}{4}$. However, adding $\frac{3}{4}$ to $\frac{2}{3}$ is not so easy. Hence, you will have to find a common unit for both 4 and 3, if you cannot then consider any other number.

However, in this example, it is 12, which is also common to both the fractions. Now, you just need to specify both the fractions. Next, you have to concentrate on twelfths, instead of thirds and quarters.

You can add eight twelfths to nine twelfths, just like $\frac{9}{12} + \frac{8}{12} = \frac{17}{12}$.

Now, the upper digit is greater than the lower, so it is not an appropriate fraction, hence divide $\frac{12}{17}$, which would be $\frac{5}{12}$, and that is your required fraction that would fit into the bowl.

Decimals

The finest way to calculate a number that is less than a whole number is through decimals. Decimals make use of a point, which describes any digit to the right of it as a fraction of a whole number. For example, the number 2.6 describes two complete units and six fractional parts.

Here, with the use of decimals, the parts may be either of ten (.6), one thousand (0.049), and one hundred (.05).

Calculating decimals

A decimal point provides you a point, which is common to all decimal numbers. All the four elementary functions-addition, division, multiplication and subtraction-work similarly in decimals.

Percentages

Percentage is a means to describe fractions of a whole. However, you may consider it as a rate rather than a number. For example, 20% will be always twenty parts in every hundred. Another common example is a 10% figure, 10 cents in every dollar, and 10 dollars in every 100 dollars and so on.

Calculating percentages

It is very easy to calculate percentages without a calculator. For example, if a man gets a 4% increment in his allowance of RWF 100,000, what is the increased salary amount of that person?

First, consider the 4% as the four fractions in a hundred, which turns into 0.04 if converted to decimals. Now, multiply 0.04 x RWF 100,000, that is RWF 4,000, and the increased percentage in that person's allowance would be RWF 104,000.

To conclude, the learners need to get familiar with the rule that a fraction is a percent, and a percent is a decimal.

Language use

Activity 1:

Learner's Book, page 88

Divide the learners into groups of five. Instruct them to look at the at photographs in Fig. 1 and Fig. 2 in the Activity, Learner's Book, page 88 and answer the questions using the concept of fractions and percentages correctly.

Accept correct answers based on the following expected answers.

Figure 1	*Figure 2*
	

Exercise: Expected answers

Learner's Book, page 88-89

1. There are eighteen slices that make up the whole bread. (Learners must count the slices.)
2. ($\frac{9}{18} \times 100 = 50\%$). Kaneza has eaten fifty percent of the bread.
3. For question 3, in this case, we divide the loaf of bread into three (3). Use the illustration below of a leaf divided into equal parts.

Since the family ate $\frac{2}{3}$ of the loaf of bread, the remaining part (fraction) of bread is $\frac{1}{3}$. ($\frac{3}{3} - \frac{2}{3} = \frac{1}{3}$) which is ($\times 100 = 33\frac{1}{3}\%$) or ($\frac{1}{3} = 0.33\ldots$) The amount of bread that will remain is a third; which is an equivalent of thirty three and a third percent or zero point three recurring.

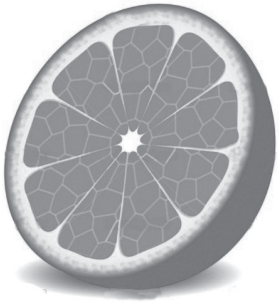
4. ($\frac{2}{3} \times 100 = 66\frac{2}{3}\%$). The bread the family has consumed as a percentage is sixty six and two thirds.
5. ($\frac{9}{18} = \frac{1}{2} = \frac{1}{2} \times 100 = 50$ slices). Since Kaneza ate 9 slices out of 18 slices and the question suggests that she ate the

same amount of bread out of 100 slices, this implies she ate half of the loaf of bread, which is fifty slices.

6. ($\frac{50}{100} \times 100 = 50\%$). Kaneza would have eaten fifty percent of a loaf of bread.

Activity 2

Learner's Book, page 89

Fig. A	Fig. B
	

1. ($\frac{1}{2} \times 100 = 50\%$). I would have eaten fifty percent of an orange.
2. ($\frac{1}{4} \times 100 = 25\%$). I would have eaten twenty five percent of an orange.
3. The fraction that remained = ($\frac{5}{5} - \frac{2}{5} = \frac{3}{5}$); therefore the percentage of the orange that remained = ($\frac{3}{5} \times 100 = 60\%$). The percentage of the orange that remained is sixty percent.
4. a) $\frac{10-3}{10} = \frac{7}{10}$). I would have eaten seven tenth of the orange.
   b) The fraction that remained = ($\frac{10}{10} - \frac{7}{10} = \frac{3}{10}$). The percentage that remained = ($\frac{3}{10} \times 100 = 30\%$). The percentage of the orange that remained is thirty percent.
5. a) ($\frac{3}{4} = 3 \div 4 = 0.75$). What he/she has eaten is seventy five hundredth of an orange.

b) ($\frac{3}{4} \times 100 = 75\%$) What he/she has eaten is seventy five percent of an orange.

6. a) Nkurunziza ate $\frac{1}{\cancel{18}} \times \cancel{18} = 12$ slices. So Mukantamage ate ($\frac{1}{3} \times 12 = 4$ slices). Mukantamage ate four slices of a loaf of bread.

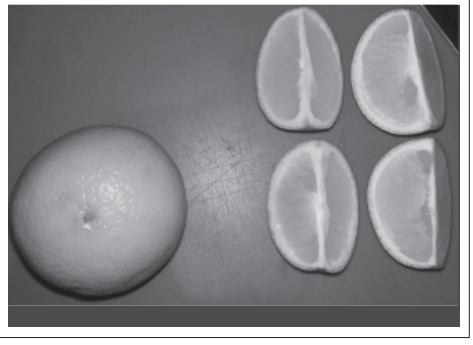
b) (12- 4 = 8 more slices). Nkurunziza ate eight more slices of a loaf of bread than Mukantamage.

7. (12 + 4 = 16). Both Nkurunziza and Mukantamage ate sixteen slices of a loaf of bread.
($18 - 16) \div 18 = \frac{2}{18}$. The fraction of the loaf of bread that was not eaten was two eightieth. ($\frac{2}{18} \times 100 = 11\frac{1}{9}\%$)The percentage of the loaf of bread that remained was eleven and a ninth.

8. (12-4 = 8 slices). The difference in their share was eight slices. ($\frac{8}{18} \times 100 = 44\frac{4}{9}\%$). Their difference as a percentage is forty four and four ninth.

Activity 3: Group discussion

Learner's Book, page 90



Get two oranges, tomatoes, pineapples or any other fruit. Cut the first one into two equal parts and the second one into four equal parts.

Exercise: Multi-ability learning

Expected answers

Learner's Book, page 91

1. We call each of the two equal parts **a half**.
2. Each of the four equal pieces is called a **quarter** or **quadrant**.
3. There are two **quarters** in a **half**.
4. There are three quarters.
5. There are four quarters in two halves.
6. Expressing the following as decimal fractions:
   (a) A quarter ($\frac{1}{4}$ = 1÷ 4 = 0.25)
   (b) A half ($\frac{1}{2}$ = 1÷ 2 = 0.5)
   (c) Three quarters ($\frac{3}{4}$ = 3÷4= 0.75)
   (d) An eighth ($\frac{1}{8}$ = 1÷8 = 0.125)
   (e) A third ($\frac{1}{3}$ = 1÷3 = 0.33…)

Application of fractions and percentages in our daily lives

Activity 1: Group discussion

Learner's Book, page 91

Divide the learners into groups of five.

Instruct the learners to carefully observe their marks scored in the end-of-month examination.

Guide them how to get the overall total marks of the group. This is done by adding the marks each one scored in the group.

Empower the learners with the mental skills of expressing each one's marks as a fraction and as a decimal fraction. This can be achieved by expressing one's marks as a numerator of the overall total marks of the group, i.e. assuming Butera scored 60 marks out of 100 marks and the overall total of the group is 480 marks. Butera's score as a fraction is $\frac{60}{480} = \frac{1}{8}$. And to

express Butera's score as a percentage, we get his marks of the overall total times a hundred ($\frac{60}{480} \times 100 = 12\ ½\%$ or 12.5%).

Activity 2: School community

Learner's Book, page 91

1. Put the learners in groups.
   Instruct the groups to find out the enrollment of the school.

   Get the number of girls in the school and express it as a numerator over the enrollment of the school, i.e. let the number of girls be x and the enrollment of the school be y.

   This implies $\frac{x}{y}$.

   To express the number of girls as a percentage, use the fraction for girls and multiply it by 100, i.e. $\frac{x}{y} \times 100$.

   For questions 2 and 3, follow the steps given above to calculate the percentages and the fractions of the boys and the newcomers in the school.

   4. Count the number of absentees in the school and write it as a numerator over the enrollment (denominator) of the school. Multiply the fraction of the absentees by a hundred, hence expressed as a percentage;

   i.e. Let the number of absentees be t; then the fraction of absentees is expressed as $\frac{t}{y}$.

   To express the number of absentees as a decimal fraction, we divide the numerator by the denominator, i.e. ($\frac{x}{y}$ = t ÷ y = a decimal fraction)

Activity 3: Clinic or hospital

Learner's Book, page 92

1. Instruct learners to get into groups of five and set them off to do fieldwork related to data collecting.

Ask them to visit a nearby clinic or hospital and make inquiries from the medical staff about the diseases that affect people in the community and their respective specific numbers.

Ask them to record the data in a table.

Let them use their own data in the table to calculate the percentages and the fractions representing each disease.

How to determine the percentages and fractions of the patients

Get the total number of all patients counted in the clinic or hospital.

Write the number of patients per sickness as a numerator.

To write this as a fraction, divide the number of patients per sickness by the total number of patients counted in the hospital.

To express the number of patients per sickness as a percentage, get the number of patients per sickness, divide it by the number of patients counted in the clinic or hospital and multiply it by a hundred.

2. Identify the sickness with the highest percentage basing on your calculations above; thus the common sickness will display the highest percentage.
3. Consider the data collected. If there are any two or more sicknesses with an equal number of patients, these will display the same percentage.
4. Let the learners brainstorm and discuss the possible control measures that they would apply to mitigate the health problems identified basing on their survey. Instruct them to present their views to the class for further discussion and comparison.

Activity 4: Market or shop

Learner's Book, page 93

Organise a field trip to a nearby trading centre. Instruct learners to form groups and let them inquire from the traders the foodstuffs which are on high demand and those which are on low demand.

Ask the learners to record their findings in a table. This should include different food items sold in the market and the number of traders dealing in each item.

Ask them to compare their findings and finally use it to answer the exercise in the Learner's Book, page 94

Exercise: Expected answers

Learner's Book, page 93

1. To express the number of traders per item as a percentage and a fraction; get the number of traders dealing in each item and divide it by the total number of traders in the market and multiply it by a hundred. You would have expressed the number of traders per item as a percentage. To express the number of traders per item as a fraction, get the number of traders dealing in each item and divide it by the total number of traders in the market. You would have expressed the number of traders per item as a fraction.

2. Analyse your data in the table. Check out the number of traders which are divisible by two (even numbers) and those which are not divisible by two (odd numbers). Instruct the learners to find out whether the traders of items with even numbers are more or less than those of even numbers.
3. Ask learners to consider the percentages or fractions calculated basing on their data, to determine the common foodstuffs consumed in the community. In this way, an item with a high percentage or the biggest fraction will be the common foodstuffs consumed in the community.

4. Basing on their survey, ask them to mention items found out to be on high demand. Let them brainstorm, giving reasons why they think those items are on high demand. Guide them as they scrutinise the main reasons why this renders high demand of such items in the community or area.
5. Working in groups, let the learners identify items that they wouldn't have bothered to trade in. Ask them in their report to give sound reasons to support why they wouldn't do so.

Activity 5: Transport

Learner's Book, page 94

Arrange a field trip to a busy road or highway. Instruct learners to count and record the number of vehicles using that particular road for a duration of one hour.

Ask them to represent the data collected in a table.

Let the learners consider the number of items recorded in the table and express it as a percentage, a fraction and a decimal.

Please caution the learners not to get very near the main road as a safety measure.

How to achieve percentages, fractions and decimals of each item

Percentages

Get the number of each item, divide it by the total number of items counted and multiply by a hundred.

Fraction

Get the number of each item; divide it by the total number of items counted.

Decimal

Express the fraction of each item as a decimal fraction, i.e. assuming the fraction representing bicycles is a quarter (¼), the decimal equivalence will be twenty five hundredth (¼ = 1 ÷ 4 = 0.25).

Tell the learners to observe the figures representing the means of transport in their table and choose the frequently used means of transport.

In groups, let the learners suggest reasons why they would invest in the means of transport identified above. Ask them to back up each point with a sounding reason.

Activity 6:

Learner's Book, page 95
Broaden the learner's scope of understanding and mindset on percentages, fractions and decimals to other learning areas such as Geography in relation to longitudes and latitudes on the globe as shown in Fig. 1 and Fig. 2 in the Learner's Book,.

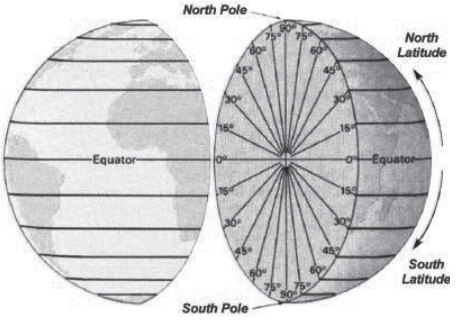
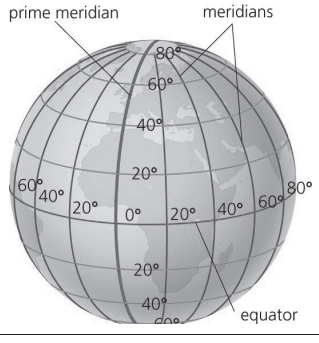
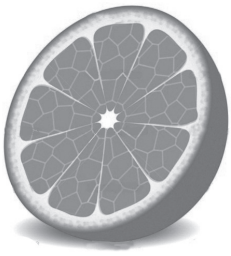
Fig. 1	Fig. 2
	

Fig. 3



(a) I think both an orange and the globe represent a half of a whole (½ of an orange or ½ of the globe). A half represents half of the hemisphere of the earth as well as of an orange.

(b) Geographers use the idea of slices of an orange to derive the concept of longitudes and latitudes. This basically applies to the equator (latitude) and the Greenwich meridian (longitude) that divide the earth into two equal hemispheres.

Further research

Activity 7:

Learner's Book, page 96

Instruct the learners to identify other real-life situations where the concept of fractions and percentages can be used to solve our problems. Ask them to present their findings to the class for comparison.

Listening practice

Activity 1:

Learner's Book, page 96

Read aloud the passage below about the summary of an imaginary Rwanda National Budget by the Minister of Finance to the learners. Let them listen carefully.

After listening the passage, instruct them to do a fill in Activity 2 in the Learner's Book, page 97.

NOTE TO THE TEACHER: The answers (missing words in the passage are bold print).

Good evening, ***citizens*** of Rwanda. I am ***mandated*** to present the summary of the national budget allocations. The salary of civil servants has been increased by ***10%***. The education sector has been allocated RWF 5 billion. The ***agriculture*** sector has been allocated 15% more than the education sector. The ICT sector has been allocated ***7%*** more than the education sector. The tourism sector has been allocated 5% less than the ***education*** sector. Security has been allocated 10% more than the education sector. The industrial sector has been allocated **8%** more than the education sector. Finally, the ***health*** sector has been allocated 12% less than the ***education*** sector. This is the final financial ***budget analysis*** from the Ministry of Finance.

With the recent ***empowerment*** in financial research and credit control systems, we anticipate the exports to increase by ***0.75%.*** The national ***Gross Domestic Product*** will grow by 3.4% and imports will drop by 0.2% in the next ***three*** months. This will account for a steady and ***sustainable*** economic growth, hence controlling inflationary gaps in the Rwandan economy.

I thank you for listening to me.

Activity 2: Expected answers

Learner's Book, page 96

Refer to the bold print words in the passage you read to the learners above to mark Activity 2.

Activity 3: Expected answers

Learner's Book, page 97

1. $(\frac{10}{100} \times 150{,}000\ \text{FRW} + 150{,}000\ \text{FRW} = 165{,}000\ \text{FRW})$.

The new salary for a teacher is one hundred sixty five Rwanda Francs.

2. Agriculture was allocated the highest percentage. I think this sector was allocated the biggest share of the national budget because it is the backbone of Rwanda's economy.

3. Calculate how much money was allocated to the following sectors:

(a) **Agriculture** ($\frac{15}{100} \times 5{,}000{,}000{,}000 + 5{,}000{,}000{,}000 = 5{,}750{,}000{,}000$) FRW.

The agriculture sector was allocated five billion seven hundred fifty million Rwanda Francs.

(b) **Security** ($\frac{10}{100} \times 5{,}000{,}000{,}000 + 5{,}000{,}000{,}000 = 5{,}500{,}000{,}000$) FRW.

The security sector was allocated five billion five hundred million Rwanda Francs.

(c) **Tourism** ($5{,}000{,}000{,}000 - \frac{5}{100}$ of $5{,}000{,}000{,}000$) FRW

($5{,}000{,}000{,}000 - \frac{5}{100} \times 5{,}000{,}000{,}000$) FRW

($5{,}000{,}000{,}000 - 250{,}000{,}000 = 4{,}750{,}000{,}000$) FRW

The tourism sector was allocated four billion seven hundred fifty million Rwanda Francs.

(d) **Health** ($5{,}000{,}000{,}000 - \frac{12}{100}$ of $5{,}000{,}000{,}000$) FRW

($5{,}000{,}000{,}000 - \frac{12}{100} \times 5{,}000{,}000{,}000$) FRW

($5{,}000{,}000{,}000 - 600{,}000{,}000 = 4{,}400{,}000{,}000$) FRW

The health sector was allocated four billion four hundred million Rwanda Francs.

(e) **Industry** ($\frac{8}{100} \times 5{,}000{,}000{,}000 + 5{,}000{,}000{,}000$) FRW

($400{,}000{,}000 + 5{,}000{,}000{,}000 = 5{,}400{,}000{,}000$) FRW.

The industrial sector was allocated five billion four hundred million Rwanda Francs.

4. **Agriculture** got 5,750,000,000) FRW and health got 4,400,000,000) FRW. The agriculture sector was allocated more by (5,750,000,000 - 4,400,000,000 = 1,350,000,000) FRW. ***The agriculture sector was allocated one billion three hundred fifty million Rwanda Francs more than the health sector***.
5. **To get the total national budget**, add all the funds allocated to each sector (5,750,000,000 + 5,500,000,000 + 4,750,000,000 + 4,400,000,000 + 5,400,000,000 + 5,000,000,000 (education) + 5,350,000,000 (ICT) = 36,150,000,000) FRW.
   The National Total Budget was thirty six billion one hundred fifty million Rwanda Francs.
6. The decimals in the passage are 0.75; 0.2 and 3.4.

Expressing decimals as fractions:

$0.75 = \frac{75}{100} = \frac{3}{4}$

$0.2 = \frac{2}{10} = \frac{1}{5}$

$3.4 = 3\frac{4}{10} = 3\frac{2}{5}$

Expressing decimals as percentages:

$0.75 = \frac{75}{100} \times 100 = 75\%$

$0.2 = \frac{2}{10} \times 100 = 20\%$

$3.4 = \frac{34}{10} \times 100 = 340\%$

7. As Rwanda's exports increase by ***0.75%*** the national ***Gross Domestic Product*** will grow by 3.4% and imports will drop by 0.2% in the next ***three*** months, thus accounting for a steady and ***sustainable*** economic growth. This will controll inflationary gaps in Rwanda's economy.
8. Expect various sentences using the words in the box and mark according to the correct grammar and punctuation.

Sentence examples

1. I was surprised Musoni arrived a **quarter** of an hour later for the meeting.
2. She picked up the receiver on the **fifth** ring.
3. The **denominator** of three quarters is four.
4. 1 ÷ 3 has recurring **decimals**.
5. There is an eighty **percent** chance that Butera will pass the exams, because he has been studying hard.
6. **Divide** that apple in two halves.
7. When you **multiply** 4 by 4, you get 16.
8. Look at that beautiful dress! It is **worth** buying.
9. Our teacher told us to **account for** Rwanda's steady economic growth.
10. We have to **import** machinery from Germany because we haven't the technology yet to manufacture our own vehicles.
11. The minister urged us to invest in the **mining** industry.
12. Abusing people is **equivalent to** creating disharmony in our communities.
13. "The **figures** are ridiculously exaggerated. I'm sorry I cannot endorse this budget," said the Finance Minister.

Activity 5: Puzzle

Learner's Book, page 98

1. Finding and describing the age of each child.
   First born's age = 0.5 = $\frac{5}{10}$ × 50 = **25 years**.

   The age of the first born is twenty five years.

   The last born's age = 0.4 = $\frac{4}{10}$ × 25 = **10 years.**

   The age of the last born is ten years.

   Second born's age = 2 × 10 = **20 years.**

   The age of the second born is twenty years.
2. Expressing the age of each child as a fraction
   Fraction for the first born's age = $\frac{25}{50} = \frac{1}{2}$

The fraction representing the first born's age is a half.

Fraction for the second born's age = $\frac{20}{50} = \frac{2}{5}$

The fraction representing the second born's age is two fifth.

Fraction for the last born's age = $\frac{10}{50} = \frac{1}{5}$

The fraction representing the last born's age is a fifth.

3. (a) Since the father is a hundred years, the first born will be ($\frac{1}{2} \times 100 = 50$) years.
If the father is a hundred (100) years now, the first born's age will be fifty years.

(b) The second born will be ($\frac{2}{5} \times 100 = 40$ years).
The second child's age will be forty years.

(c) The last born will be $\frac{1}{5} \times 100 = 20$ years)
The last born's age will be twenty years.

Activity 6: Research (quantitative data analysis)

Learner's Book, page 99

Put the learners in groups of five. Ask each group to visit a nearby health centre and let them collect data about the rate of HIV/AIDS infection in the current year as compared to the previous years. Instruct them to write a report about their findings and have each group present its findings before the class.

Possible answers

(a) Fractions and percentages are used in labelling containers for measuring capacity, length and mass.
(b) Mixing chemicals and drugs in pharmacies.
(c) Budget allocations.
(d) In construction, metalwork and fabrication.
(e) Sharing dividends in companies (share ratios).

Let the secretary of each group present his/her answers to the class.

Drama project

Learner's Book, page 99

Put the learners in groups of ten to fifteen and instruct them to organise a drama scene in which the spread, symptoms and prevention of HIV/AIDS are depicted.

Give them a period of one week to compose, rehearse and act the play before the class.

Calculating with percentages

Learner's Book, page 99

Activity 1:

Learner's Book, page 99

Put the learners in groups and instruct them to discuss at length other situations in which fractions, percentages and decimals are used to solve problems in their daily lives. After that, ask the learners to say the dialogue on pages 100-101.

Activity 2:

Learner's Book, page 100

Ask the learners to do research using the instructions in Activity 2.

Describing the Rwandan economy

Learner's Book, page 101

Activity 1-3:

Learner's Book, page 101-102

In groups, instruct the learners to carefully study the photograph, do Activity 2 and interpret the graph in Activity 3. Invite the group secretaries to discuss their findings with the class.

Instruct the learners to read the passage and answer the questions that follow. Some of the questions answer the interpretations of the graphs and activities before the reading passage.

Reading and comprehension

Learner's Book, page 102-104

Using Activity 1, ask the learners to read the passage and answer the questions that follow.

Expected answers for the exercise

Learner's Book, page 104-105

1. Vegetables have boosted the country's exports value by $20M, with an average of 7% growth every year.
2. In 2011, Rwanda earned $4M, increasing to $5M and $6M in 2012 and 2013 respectively, then dropping to $5M in 2014 owing to reduced productivity.
3. The majority of Rwandan farmers grow the vegetables at subsistence level.
4. Fertile volcanic soils under tropical weather conditions
5. Investors to increase volumes.
6. Cold chain storage facilities are better than farm gate to the market in vegetable and fruit growing in international trade because such produce is highly perishable.
7. Vegetables and fruits lose the required standards, especially on the international market.
8. Opinion answers; exercise your judgement regarding learners' answers.

Unit 5: Discoveries and Inventions

Key unit competence: To use language in the context of discoveries and inventions.

Number of lessons: 15

Language use: Recounting a famous discovery

Activity 1:

Learner's Book, page 107

Ask the learners to discuss in their groups what they know about great scientists.

Introduce the lesson by dividing the learners into groups of five to brainstorm and discuss the questions in the Activity. Opinion type answers are expected, but the groups may compare their answers with those of other groups.

Ask them to describe some of the world's famous scientific discoveries and inventions, such as:

1. Alexander Graham Bell who wished to communicate with his friend called Watson. In 1876, he invented the telephone.
2. In 1846, an American, Richard Hoe, invented the rotary printing press. Today, most newspapers are printed on rotary press.

Describing a famous invention

Learner's Book, page 107

Activity 1:

Instruct learners to form groups. Let them share the knowledge they have gathered about Gregor Mendel. Genetics helps to identify and understand diseases. It also helps us to understand the characteristics of people.

He was the one who founded the science of genetics.

Activity 2:

Learner's Book, page 108-110
Ask the learners to read the passage about Gregor Mendel.

Ask the learners to describe the scientists they regard as famous and choose a group secretary to make a presentation to the class.

Activity 3:

Learner's Book, page 111
Ask them to write notes on Mendel's discovery about genetics. Encourage them to compare their notes with those of other classmates.

Ask them to use the internet to find two scientists and their discoveries or inventions and compare their scientific works.

Activity 4:

Learner's Book, page 111
Ask the learners to explain what they learnt about genetic discovery.

Activity 5:

Learner's Book, page 111
Ask the learners to do research in the computer laboratory.

Describing a famous scientist

Learner's Book, page 112

Activity 1:

Learner's Book, page 112
Ask the learners to describe a scientist they consider very famous for making an invention that was amazing and a breakthrough. Let them compare their views with those of their classmates.

Activity 2:

Learner's Book, page 112
Ask them to read about the Wright brothers and their invention of the aeroplane, then answer the questions after the passage.

Expected answers on page 118

1. They were the first to make a successful human flight with a craft that was powered by an engine and was heavier than air.
2. The flying toy their father bought for them inspired them to make an aeroplane.
3. It acted as their workshop where they made many kites and gliders.
4. They flew on nothing but air current, and the person could get a ride of about 10 seconds before the glider came down to the ground.
5. A newspaper reporter witnessed a flight and wrote about it. The story was soon in newspapers all over the country. The Wrights were suddenly famous.

Activity 3:

Learner's Book, page 117
Ask the learners to role play an interview with the Wright brothers.

Activity 4:

Learner's Book, page 118
It is not only European or American scientists that have made a mark. As we are yet to find out, African scientists have also contributed tremendously.

It is important to explore scientists from other continents. Mr Chen-Ning Yang was particularly selected because of his immense curiosity in physics and he even taught in the same university with Professor Albert Einstein. He discovered a very important law in physics that had defeated most professors.

Ask the learners to think of other scientists elsewhere in the world and describe their works.

Activity 5:

Learner's Book, page 118-124
Instruct the learners to read the passage and answer the questions that follow.

Exercise: Expected answers on page 125

1. A penetrating investigation of the so-called parity laws which led to important discoveries regarding the elementary particles.
2. An opinion question but certainly he was influenced by his father's mathematical background.
3. He was brilliant and curious.

4. Professor Albert Einstein discovered the law of relativity which is widely used even to-date.
5. Two unstable particles, the *theta-meson* and the *tau-meson*, were causing a lot of heads to be scratched.
   In some senses, the *theta-meson* and the *tau-meson* looked as if they might be the same particle: their masses and the average time they took to decay into other particles seemed to be the same. The *theta-meson* and the *tau-meson* both decayed into *pi-mesons*, usually known as *pions*.
   BUT the *theta* decayed to produce two *pions*, while the *tau* decayed to produce three *pions*.
6. The *theta* and *tau-mesons* were actually the same particle and Mother Nature did not preserve parity. Symmetry had also been broken. At a deep level, this means that nature can tell the difference between left and right.

Describing African scientists

Learner's Book, page 125

Activity 1:

Learner's Book, page 125

The surest way to deliver the lesson is through research on the internet, but in case the school has no internet facility, then passively read the texts below about the African scientist. Since the learners will not have found out anything by themselves, ask them to either write notes or summaries about the African scientist or compare their work with the rest of the scientists we have so far learnt about. Use Activity 1 on page 126.

Activity 2:

Learner's Book, page 126

Notes for the teacher about the African scientists

Dr Philip Emeagwali, Developer of the World's Fastest Computer

He left school in Standard 8 and lived with his family in a refugee camp. But Nigerian Philip Emeagwali is now regarded as one of the world's best scientific brains --- a man who has won truckloads of awards and is worth a cool R200 million ... *Tim O'Hagan* reports from Cape Town, South Africa [Published in *DRUM* (Africa's leading magazine) on March 19, 1998].

The 8-year-old boy sat in his family's lounge and stared at the small alarm clock his dad had put in front of him.

He was furious because his friends were playing soccer outside, and he had to sit here for the next three hours.

"Are you ready?" asked his father. "You have 60 minutes to answer the next 100 questions."

Young Philip Emeagwali nodded. He knew he had just 36 seconds to answer each question. It was not enough time to write the answers down, so he'd have to calculate them in his head.

Philip's father started firing questions at him. "Mohammed averaged 88 percent in three mathematics tests. In the first test he got 92 percent. In the second he got 94 percent. What percent did he get in the third test?" The little boy thought hard and answered fast.

For three long hours the questions came, and at the end of each hour Philip had answered another 100 questions – and he got most of them right.

James Emeagwali smiled proudly. He knew his son was no ordinary boy, and that in spite of his poverty, he would grow up to become someone important.

Today Philip Emeagwali, a computer scientist at the University of Michigan in America, is spoken of as "the Bill Gates of Africa" --- and his personal worth has been estimated at R200 million.

From a poor youngster in rural Nigeria he grew up to become what the American magazine *Michigan Today* described as "one of the world's fastest humans".

Philip Emeagwali with some of the computers he works with.

He won this recognition and America's most influential prize for computing genius --- the Gordon Bell Prize --- for writing the formula that would enable a computer to make 3,1 billion calculations a second. The formula enabled the American oil industry to tap into huge reserves of underground oil, and contributed billions of dollars to the government's oil-exploration programmes.

In addition, he has amassed university degrees in five different fields and his wealth has enabled him to bring 18 relatives to America from Nigeria.

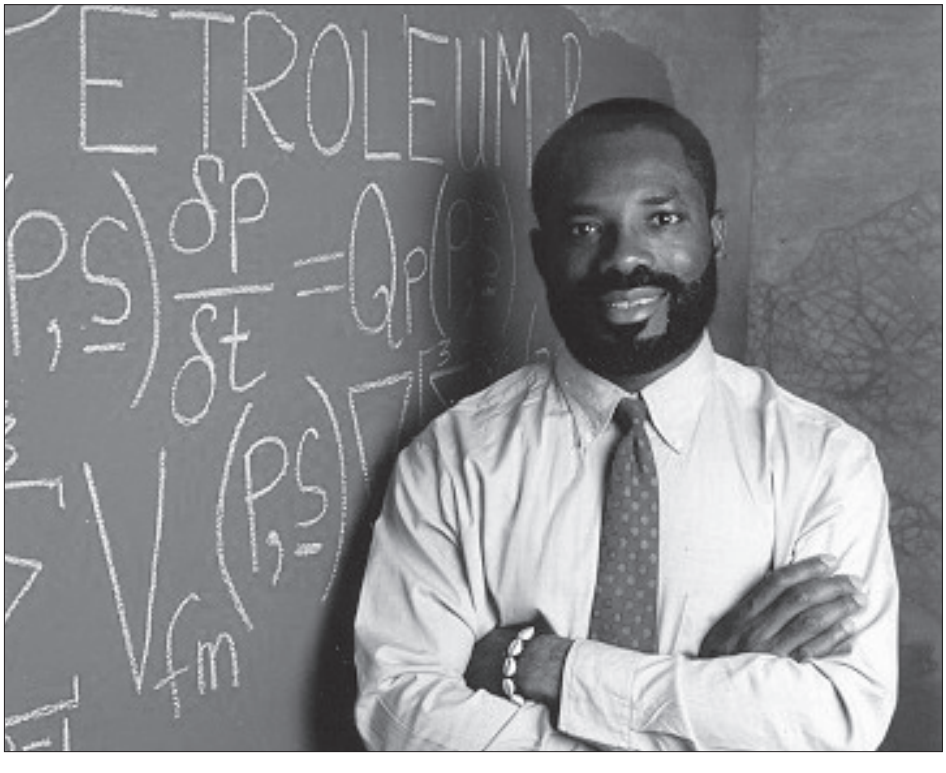
Philip grew up in the commercial city of Onitsha in south-eastern Nigeria where his father was a nurse. At school he was so bright he was able to answer questions before his school-friends had even written the questions down. Teachers and classmates, amazed at his extraordinary ability, called him 'Calculus', because he was so good at calculating -- or working out -- sums. But others were jealous and accused him of using magical powers in his mathematics examinations.

"Some of them didn't even know my real name," he laughs. "To this day, if I hear someone call me 'Calculus', I know without looking it's an old friend from home."

By the time Philip got to Standard 4, teachers and classmates considered him a maths wizard who could solve advanced problems in geometry, trigonometry and algebra.

"My classmates would introduce me to their friends as a maths genius and my teachers spoke of me as the young Chike Obi --- a mathematical genius who made a name for himself in Nigeria."

One day, Philip's maths teacher stood at the front of the class, staring at the blackboard, unsure how to solve a difficult problem. Philip walked forward, grabbed the piece of chalk from the teacher's hand and wrote the answer on the blackboard.



The mathematical formula Philip wrote which won him America's top award for computing genius.

"He could always challenge the instructor," says fellow classmate Peter Ozoh (43), a chemical engineer at Allied Colloids in Suffolk, Virginia, America.

When he was in Standard 4 his headmaster let him teach mathematics classes whenever his teacher couldn't be there.

But there were times when Philip's genius worked against him. In 1965 at the age of 10 he was accused of cheating in a mathematics entrance examination to Saint George's Grammar School in the Nigerian town of Obiaruku and denied admission.

The reason? He finished the one-hour examination in five minutes and scored 100 percent, while the next highest score was 57 percent. The school did not believe that a 10-year old was capable of such a feat. In spite of his genius for mathematics, Philip had to leave school in Standard 8, because his father could no longer afford the school fees.

But back home, his father continued teaching him. Eventually James Emeagwali had to stop teaching his son, because Philip knew more than he did. As a result, the pre-teenager studied on his own to finish high school and to earn a General Certificate of Education from the University of London.

What makes Philip's achievements even more extraordinary is that his family had to flee Nigeria during a civil war.

"We slept in refugee camps, abandoned school buildings and bombed houses. We stood in long lines to receive food from charity organisations," says Philip.

"But the hardship of living in a refugee camp made me psychologically strong. It made me street smart. It equipped me a greater sense of determination and vision."

At the age of 17 he won a scholarship to Oregon State University in America, where he studied maths. After that he went to George Washington University, where he was awarded two masters degrees: one in civil and environmental engineering and another in ocean, coastal and marine engineering.

He was also awarded a masters degree in mathematics from the University of Maryland.

He has worked as a civil engineer in constructing traffic highways in Maryland and operating hydroelectric dams in Wyoming and today is a consultant in supercomputing, internet and information technology.

Behind Philip's success is a radical new computer he programmed to solve important problems. It's called the Connection Machine, and the reason it's being applauded worldwide is that it can work faster and do more work than any computer on Earth.

Philip got his idea for programming the Connection Machine by watching bees build their honeycombs. No other creatures on earth work more efficiently than a community of bees building a honeycomb, he thought. So why not programme a computer that uses thousands of other computers (like bees) to work? So instead of using a single huge computer the size of a luxury car to do all his work, Philip used the internet to connect to 65,000 smaller computers.

This way he found his computer could do an amazing rate of 3,1 billion calculations a second -- three times the speed of the previous Gordon Bell prize winner --- and set a new world record.

The computer works on the principle that it's more powerful to have 65,000 chickens pull an ox wagon than eight oxen.

Having established the fastest computer on Earth, Philip started putting it to work. He wanted to solve one of the nation's 20 most difficult problems: understanding how oil flows underground so companies could extract the most oil in the cheapest and easiest way.

Typically, oil is trapped within rocks --- like water in a drenched sponge --- and oil companies can remove only five percent to 50 percent.

Philip and his computer found a way to get much more oil out of the ground -- a discovery regarded by oil companies and the United States government as a world breakthrough which would enrich the nation by billions of dollars.

Now his supercomputer is being used not just to find oil but for several other major international projects, such as improving the accuracy of weather predictions, explaining the unsolved mysteries of science, tracking the flow of blood in the human heart, calculating the movement of buried nuclear waste, tracking the spread of AIDS, and determining the long-term effects of gases in the air and how the heat of the sun is burning up the Earth.

Philip has received dozens of awards for his pioneering work, a tribute to his extraordinary contribution to science.

This year he was awarded Africa's largest scholarly prize, the Nigeria Prize, by the Federal Republic of Nigeria.

Last year the National Society of Black Engineers in the United States awarded him the title Pioneer of the Year. In 1991 the same society voted him Scientist of the Year.

He has also been voted Africa's Best Scientist, America's Best and Brightest Inventor in 1996, and the Computer Scientist of the Year by America's National Technical Association in 1993.

Other awards include Nigerian Achiever of the Year (1994); Distinguished Scientist Award, by the National Society of Black Engineers in America (1991); Distinguished Eagle Achievement (1996); Distinguished Visitor Award, presented by the Institute of Electrical and Electronics Engineers (1993-1996).

In 1995 the National Technical Association placed him among America's top six scientists. But the crowning glory of Philip's career was the Gordon Bell Prize presented to him by the Institute of Electrical and Electronics Engineers in 1989.

Regarded as the computer world's Nobel Prize, it set him among the ranks of the world's best brains, and gave him the recognition his father always knew he deserved.

Philip attributes his success to his Igbo background in south-east Nigeria and a spirit of adventure, qualities he wants to pass on to his young son.

"My son is going to encounter racism in the US which will deny him the opportunity to contribute as much as he can to society," he says.

"I want him to be inspired by the fact that I was a high school drop-out and ex-refugee who overcame racism and made scientific contributions that benefited mankind.

"I like to invent things that help many people," he says. "Research is hard work, therefore, I only work on important scientific problems."

Philip is a workhorse – working 13-hours a days and seven days a week. But his wife Dale, a professor at Morgan State University in Baltimore, Maryland, doesn't mind his long hours -- she also has a demanding working week and was voted the 1996 Scientist of the Year by America's National Technical Association.

Philip with his wife, Dr Dale Emeagwali

But sometimes Philip's so busy concentrating on his work that he forgets other things.

He even forgot to deposit the R5, 000 he won for the Gordon Bell Prize. "I get so involved in what I'm doing that I'm too busy to do things like that," he says.

But this absent-minded professor is never too busy for his family. During the past fourteen years he has brought 18 relatives, including his parents, from Nigeria.

They now live in the Washington DC area, where five brothers and sisters graduated from the University of Maryland and two are in school.

His sister Edith, who serves in the United States navy as a registered nurse, said: "Philip's the most intelligent person in the family, and we're all trying to follow in his footsteps."

For Philip, a positive attitude and lots of hard work has proved a winning recipe. "Life is a journey and we should spend the early years preparing for it. To become a scientist required many years of education. I never accepted defeat. I kept trying," he says.

Does he have any advice for South African parents who want their children to do well in life?

"We must ensure that our children are properly educated. When we invest in our children, we will find that our standard of living grows, too. We should invest in education and technology not because it is easy, but because our children will be the beneficiaries tomorrow of the decisions we adults make today.

"Investing in education and technology will be our legacy to our children; because it will bring the best out of them as well as all Africans and enable us to reach our potential as individuals, as communities, as a people."

Philip told *DRUM* it required a lot of hard work, perseverance and dedication for an African to become successful in Europe or North America.

"Successful Africans help break the negative prejudices against Africans and inspire the younger generations of Africans to accomplish more.

"Studying abroad makes it easier to become successful abroad. When I got to America I was amazed at the level of technological development there. In one day I saw an airport, used a telephone, used a library, talked with a scientist, and was shown a computer for the first time in my life. Not in my wildest dreams did I expect to be recognised as a contributor to American technology."

Source: *DRUM*, Africa's leading magazine, on 19 March 1998.

Professor Gebisa Ejeta

Background

The greatest biological impediment to food production in Africa – the deadly parasitic weed Striga, known commonly as witchweed – devastates yields of crops including maize, rice, pearl millet, sugarcane and sorghum, thus severely limiting food availability. A 2009 UN Environmental Programme report estimated that Striga plagues 40% of arable savannah land, affecting the food security of 100 million people in Africa.

Early years and education

Born in 1950, Gebisa Ejeta grew up in a one-room thatched hut with a mud floor, in the rural village of Wollonkomi in west-central Ethiopia. His mother's deep belief in education and her struggle to provide her son with access to local teachers and schools provided the young Ejeta with the means to rise out of poverty and hardship. She made arrangements for him to attend school in a neighbouring town. Walking 20 kilometres every Sunday night to attend school during the week and then

back home on Friday, Dr Ejeta rapidly ascended through eight grades and passed the national exam qualifying him to enter high school.

Dr Ejeta's high academic standing earned him financial assistance and entrance to the secondary-level Jimma Agricultural and Technical School, which had been established by Oklahoma State University under the U.S. government's Point Four Program. After graduating with distinction, Dr Ejeta entered Alemaya College (also established by OSU and supported by the U.S. Agency for International Development) in eastern Ethiopia. He received his bachelor's degree in plant science in 1973.

In 1973, his college mentor introduced Dr Ejeta to a renowned sorghum researcher, Dr John Axtell of Purdue University, who invited him to assist in collecting sorghum species from around the country. Dr Axtell was so impressed with Dr Ejeta that he invited him to become his graduate student at Purdue University. This invitation came at a time when Ethiopia was about to enter a long period of political instability which would keep Dr Ejeta from returning to his home country for nearly 25 years.

Dr Ejeta entered Purdue in 1974, earning his PhD in plant breeding and genetics. Upon completing his graduate degree, Dr Ejeta accepted a position as a sorghum researcher at the International Crop Research Institute for the Semi-Arid Tropics (ICRISAT) office in Sudan.

Dr Ejeta later became a faculty member at Purdue, where today he holds a distinguished professorship (Distinguished Professor of Plant Breeding and Genetics and International Agriculture) and serves as Executive Director of the Purdue Center for Global Food Security (www.agry.purdue.edu/staffbio/gebio_vita.pdf).

Sorghum breeding and conquering striga

Dr Ejeta, a sorghum researcher

During his time at ICRISAT, Dr Ejeta developed the first hybrid sorghum varieties for Africa, which were drought-tolerant and high-yielding. With the local importance of sorghum in the human diet (made into breads, porridges, and beverages) and the vast potential of dry-land agriculture in Sudan, Dr Ejeta's drought-tolerant hybrids brought dramatic gains in crop productivity and also catalysed the initiation of a commercial sorghum seed industry in Sudan.

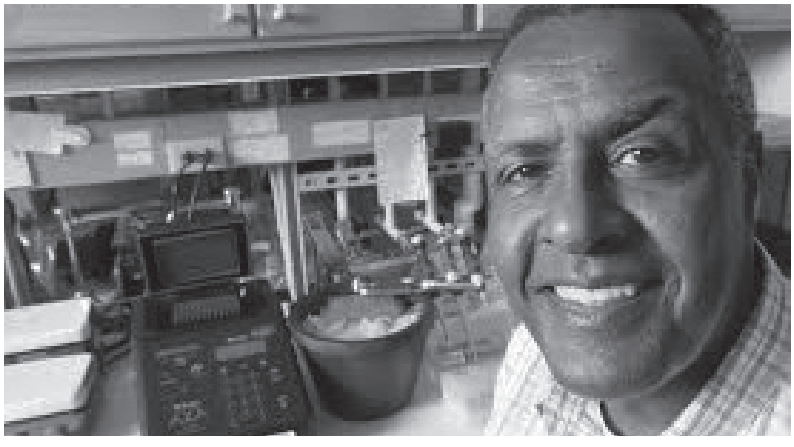
His Hageen Dura-1, as the hybrid was named, was released in 1983 following field trials in which the hybrids out-yielded traditional sorghum varieties by 50 to 100 percent. Its superior grain qualities contributed to its rapid spread and wide acceptance by farmers, who found that yields increased to more than 150 percent greater than local sorghum, far surpassing the percentage gain in the trials.

Dr Ejeta's dedication to helping poor farmers feed themselves and their families and rise out of poverty propelled his work in leveraging the gains of his hybrid breeding breakthrough. He urged the establishment of structures which could monitor production, processing, certification and marketing of hybrid seed — and farmer-education programmes in the use of fertilisers, soil and water conservation, and other supportive crop management practices.

By 1999, one million acres of Hageen Dura-1 had been harvested by hundreds of thousands of Sudanese farmers, and millions of Sudanese had been fed with grain produced by Hageen Dura-1.

Another drought-tolerant sorghum hybrid, NAD-1, was developed for conditions in Niger by Dr Ejeta and one of his graduate students at Purdue University in 1992. This cultivar has had yields four or five times the national sorghum average.

Using some of the drought-tolerant germplasm from the hybrids in Niger and Sudan, Dr Ejeta also developed elite sorghum inbred lines for the U.S. sorghum hybrid industry. He has released over 70 parental lines for the U.S. seed industry's use in commercial sorghum hybrids in both their domestic and international markets. Dr Ejeta's next breakthrough came in the 1990s, the culmination of his research to conquer the Striga weed. Previous attempts by African sorghum farmers to control the deadly weed, including crop management techniques and the application of herbicides, had failed until Dr Ejeta and his Purdue colleague Dr Larry Butler formulated a novel research paradigm for genetic control of this scourge. With financial support from the Rockefeller Foundation and USAID, they developed an approach integrating genetics, agronomy and biochemistry that focused on unravelling the intricate relationships between the parasitic Striga and the host sorghum plant. Eventually, they identified genes for Striga resistance and transferred them into locally adapted sorghum varieties and improved sorghum cultivars. The new sorghum also possessed broad adaptation to different African ecological conditions and farming systems.



Gebisa Ejeta, Distinguished Professor of Agronomy at Purdue University, on Thursday (June 11, 2009) was named the recipient of the World Food Prize for research leading to the increased production and availability of sorghum in his native Africa.

The dissemination of the new sorghum varieties in Striga-endemic African countries was initially facilitated in 1994 by Dr Ejeta, working closely with World Vision International and Sasakawa 2000. Those organisations coordinated a pilot programme with USAID funding that distributed eight tons of seed to Eritrea, Ethiopia, Kenya, Mali, Mozambique, Niger, Rwanda, Senegal, Somalia, Sudan, Tanzania and Zimbabwe. The yield increases from the improved Striga-resistant cultivars have been as much as four times the yield of local varieties, even in areas of severe drought.

In 2002-2003, Dr Ejeta introduced an integrated Striga management (ISM) package, again through a pilot programme funded by USAID, to deploy in Eritrea, Ethiopia and Tanzania along with the Striga-resistant sorghum varieties he and his colleagues had developed at Purdue. This ISM package achieved further increased crop productivity through a synergistic combination of weed resistance in the host plant, soil-fertility enhancement and water conservation.

Honours and awards

Dr Ejeta working with students at Purdue University

Less than a month after receiving the 2009 World Food Prize, Dr. Gebisa Ejeta received his home country's highest honour:

Ethiopia's President, H.E. Ato Girma Woldegiorgis awarded Dr Ejeta the National Hero Award, the first time the nation's highest honour had been given to an Ethiopian for work in science and technology.

Dr Ejeta has served on various science and programme review panels, technical committees, and advisory boards of major research and development organisations. These include the international agricultural research centres (IARCs), the Rockefeller Foundation, the Food and Agriculture Organisation (FAO) of the United Nations, and numerous national and regional organisations in Africa. He was a member of the team that launched the Alliance for Green Revolution in Africa and has served as a member of the CGIAR Science Council. He currently serves as a board member of the Consortium Board of CGIAR, the Sasakawa Africa Programme, and the Chicago Council's Global Agricultural Development Initiative. He was appointed Presidential Science Envoy in 2010, and served as special advisor to the USAID Administrator, Dr Rajiv Shah, before being appointed by President Obama as a member of the Board for International Food and Agricultural Development (BIFAD) in 2011.

He was a member of the team that launched the Alliance for Green Revolution in Africa and has served as a member of the Science Council and Consortium Board of CGIAR. He is a board member of the Sasakawa Africa Programme and currently serves as special advisor to USAID Administrator Dr Rajiv Shah.

Dr Ejeta is a Fellow of the American Association for the Advancement of Science, a Fellow of the Crop Science Society of America, and a Fellow of the American Society of Agronomy.

Legacy

By partnering with leaders and farmers across sub-Saharan Africa and educational institutions in the U.S. and abroad, Dr

Ejeta has personally trained and inspired a new generation of African agricultural scientists that is carrying forth his work.

Dr Ejeta's scientific breakthroughs in breeding drought-tolerant and Striga-resistant sorghum have been combined with his persistent efforts to foster economic development and the empowerment of subsistence farmers through the creation of agricultural enterprises in rural Africa. He has led his colleagues in working with national and local authorities and non-governmental agencies so that smallholder farmers and rural entrepreneurs can catalyse efforts to improve crop productivity, strengthen nutritional security, increase the value of agricultural products, and boost the profitability of agricultural enterprise – thus fostering profound impacts on lives and livelihoods on a broader scale across the African continent.

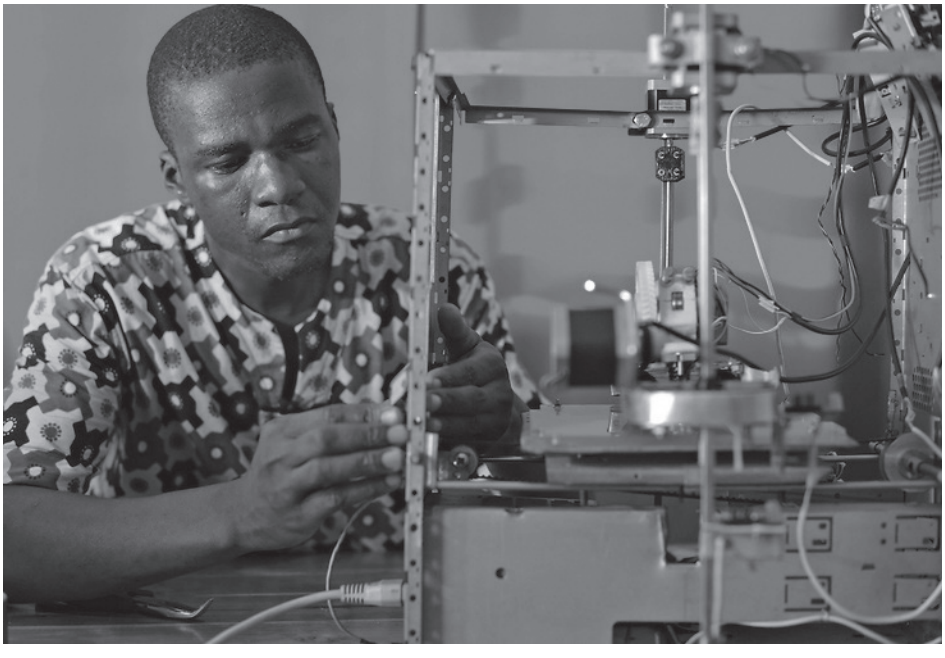
Since being awarded the World Food Prize, Dr Ejeta has elevated his advocacy and reach with invitations to speak at major international fora and consultations with key governmental and non-governmental organisations around the world.

He speaks passionately on the urgency and need of attaining global food security, conservation of natural resources, and accelerating science-based development for the poor with increased investment for human and institutional capacity-building in poor nations.

Dr Ejeta has authored and collaborated on over 200 research publications. He has given numerous invited talks and edited four books, with his most recent (*Integrating New Technologies for Striga Control: Towards Ending the Witch-hunt*, World Scientific Press Co. Ltd., 2007) reporting on the state of the art on trans-disciplinary research on Striga control.

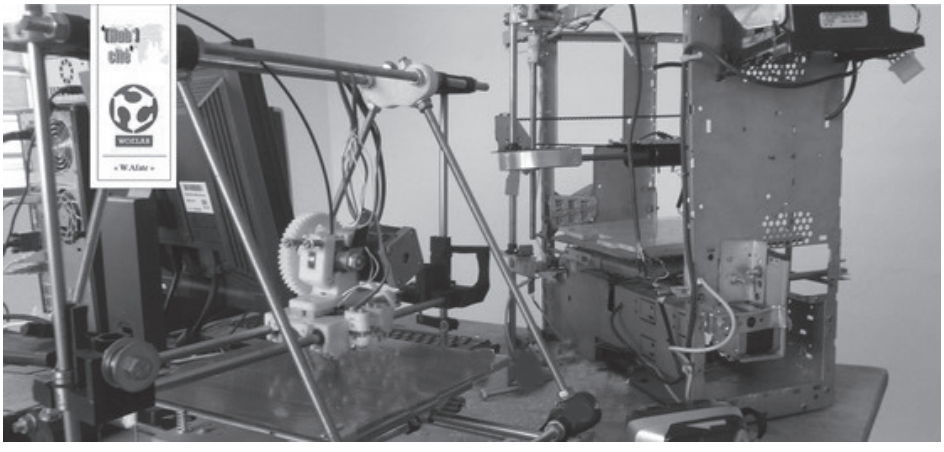
***Source**: Purdue Agriculture*

Afate Gnikou



Mr. Afate Gnikou in his laboratory

Afate Gnikou is a Togolese geographer and researcher whose ambition is to manufacture an Open Source 3D printer. This printer should be easy to manufacture given that it has the particularity of being 100% composed of recycled computer objects, among others.



Mr Afate Gnikou's 3D printer model.

Indeed, the most useful objects for materialising this project are: central processing units (CPUs), printers, scanners, etc. The central processing unit, from its architecture, serves as a general framework for the future 3D printer, while the rails and motors of the printers and scanners fit together to form a stable base.

The mechanical part of the project is almost complete. Afate Gnikou and his team are now to study the electronics and calibration of the future 3D printer called Wafate ("W" for WoeLab which is a technology incubator and "Afate" the inventor's name).

Afate Gnikou and his team are working on an ambitious and original project called "Wafate to Mars" whose goal is to relocate computer landfills on this planet through the development of a new generation of autonomous machines manufactured from recycled wastes.

Africa does not lack ambitions. It rather lacks ambitious politicians. Yet ambitions, innovative ideas, sometimes a priori grotesque, help great nations move forward.
Source: Kumatoo-Yaluing the African genius

Source: Inhabitant

Professor Tebello Nyokong

Tebello Nyokong (1951) in her laboratory

The Order of Mapungubwe in Bronze

Awarded to Tebello Nyokong (1951) for Outstanding contributions in the field of science.

Profile of Tebello Nyokong

Tebello Nyokong was born in Lesotho on 20 October 1951, but spent most of her first eight years outside her country of birth. In primary school she spent alternate days tending sheep. Far from discouraging her, this increased her self-confidence because she concluded that she could do anything a boy could do.

In high school, she chose arts subjects, but just two years before her matric year she changed to the sciences. She managed to overhaul the backlog of work, developing an enduring love for chemistry as she worked. She received her Cambridge Overseas School Certificate in 1972.

In 1977 she graduated from the National University of Lesotho, having spent her spare time doing research on the role of chemistry in everyday African life, and obtained a Canadian International Development Agency Scholarship to undertake post-graduate studies. Four years later she graduated with an MSc in chemistry, and after further study received a PhD from the University of Western Ontario in 1987. She then applied for and was given a Fulbright fellowship for post-doctoral study at the University of Notre Dame in the United States .

On her return from abroad, Nyokong taught briefly at the University of Lesotho before joining Rhodes University in 1992 as a lecturer. Impressed by the quality of her work, the Foundation for Research Development (now the National Research Foundation) soon provided her with a rating which allowed her to set up a research laboratory at the university. It was the start of a rapid climb to the positions of senior lecturer, associate professor and fully-fledged professor.

Nyokong is currently engaged in ground-breaking research on a new cancer diagnosis and treatment methodology called "photo-dynamic therapy" which is intended as an alternative to chemotherapy.

The new therapy is based on using the dye which is used to colour blue denim clothing, and which is inert and harmless by itself but can be activated by exposure to a red laser beam. The system, which has been approved in some countries, reportedly does not destroy hair or healthy cells or cause nausea.

Nyokong's early work on the system so impressed the National Laser Centre that in 2002 the centre made her a long-term loan of equipment worth R3 million which was essential for her next research phase.

In addition to working on photo-dynamic therapy, Tebello Nyokong, the personification of the New African woman, continues to do outstanding work in training chemists, particularly women, in the sophisticated skills needed to keep South Africa at the cutting edge of scientific development.

(*Source*: The Order of Mapungubwe/ Tebello Nyokong)

Speculating about the future

Third conditional

Ask the learners to predict what would have happened if the scientific innovations of the scientists so far discussed had not been made.

Activities 1-3:

Learner's Book, page 127

In groups ask the learners to do Activities 1-3 and compare their answers.

Activity 4:

Learner's Book, page 128

Instruct learners to proceed to Activity 4 based on the discoveries of the scientists. Answers will be varied. Exercise your judgement with regard to the answers the learners decide on.

Grammar highlight

Learner's Book, page 128-129

Supplement the third condition with the revision exercise based on the following expected answers:

1. If I had studied harder, I would have passed the test.
2. If he had not fallen asleep while driving, he wouldn't have crashed his car.
3. If we had had enough money, we would have gone to the concert.
4. If I had not been late for work, I wouldn't have lost my job.
5. If the wind had not been so strong, the bridge wouldn't have collapsed.
6. I would have called Mutesi if I had not lost her number.

Revision on third condition

Learner's Book, page 129

Activity 1: Expected Answers

Learner's Book, page 130

1. If he had not fallen asleep while driving, he would not have crashed his car.
2. If we had had enough money, we would have gone to the concert.
3. I would not have lost my job if I had not been late for work.
4. If the wind had not been so strong, the bridge would not have collapsed.
5. I could have called Mutesi if I had had her number.

Exercise: Expected Answers

Learner's Book, page 130

1. B	2. A	3. C	4. B
5. A	6. B	7. C	8. B

Predicting discoveries and inventions in the future

Learner's Book, page 131

Activity 1:

Learner's Book, page 131

Divide the learners to discuss the scientific inventions and discoveries they have heard people talk about.

Year	Invention

Invite some learners to share what they have heard with the class.

Activity 2:

Learner's Book, page 132

In groups, ask them to study the photographs in Activity 2 and answer the questions that follow. Some of the questions require internet research, otherwise the learners may try to inquire from their Science teachers as well. Expected answers will revolve around the photographs. Exercise your judgement about the learners' views.

Future perfect

Learner's Book, page 134

Activity 3:

Learner's Book, page 134

This is a rather direct lesson. Ask the learners to write sentences about the future predictions using the future tense 'will'. Exercise your judgement regarding the learners' sentences.

Unit 6: Natural and Industrial Processes

Key unit competence: To use language in the context of natural and industrial processes.

Number of lessons: 15

Background information

Natural processes refers to changes in nature that man has no control over; contrast to industrial processes that are managed by man

Language use: Describing a natural process

Learner's Book, page 136

Introduce the unit by asking the learners in groups to look at the various natural occurrences like thunderstorms, earthquakes, stars, clouds, rain water, and others and discuss how they form or occur or come about.

Choose one of the natural processes and play a film about it if your school has a television facility; otherwise proceed to the next step.

Ask the learners to look at the photographs before reading the text, and try to describe the process of cloud formation in their groups.

Instruct them to read the passage carefully while referring to the photographs for each heading of the reading section.

Ask them to make notes about the text they have read and then summarise it in 50 words. Exercise your judgement.

For Activity 4, instruct the learners to think about another natural process. Let them make research about it, consulting heavily form geography learners, textbooks or even the internet. Let them write an essay describing the natural process.

Exercise your judgement regarding the learners' essays. Mark their essays and give feedback.

Describing a biological process

Learner's Book, page 142

Activity 1: Group discussion

Invite a Biology teacher to facilitate this lesson. Let the guest teacher give a talk about different biological processes. The learners should ask some questions and write down notes about the talk.

Divide learners into groups of five. Let each group think of its distinct biological process. They should discuss how it takes places.

Ask the secretaries to make a presentation to the class.

Activity 2:

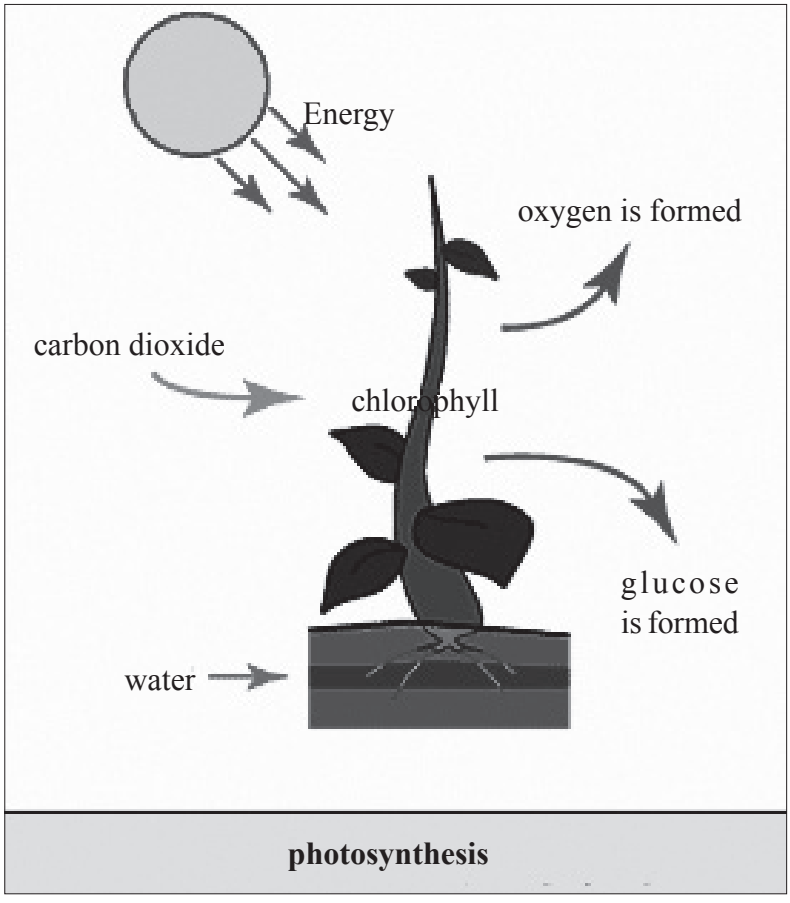
Learner's Book, page 143

Proceed to Activity 2 about "Describing a process: Photosynthesis". Ask the learners to discuss what they know about the process of photosynthesis. Invite any learner to tell the class what takes place during the process of photosynthesis.

Display the photograph or tell the learners in their groups to study the diagram and use it to describe the process of photosynthesis. Mark their books and give feedback.

Notes for the teacher

Photosynthesis



photosynthesis

Photosynthesis is a process in which green plants use energy from the sun to transform water, carbon dioxide and minerals into oxygen and organic compounds. It is one example of how people and plants are dependent on each other in sustaining life.

Photosynthesis happens when water is absorbed by the roots of green plants and is carried to the leaves by the xylem, and carbon dioxide is obtained from air that enters the leaves through the stomata and diffuses to the cells containing chlorophyll. The green pigment chlorophyll is uniquely capable of converting the active energy of light into a latent form that can be stored (in food) and used when needed.

Photosynthesis provides us with most of the oxygen we need in order to breathe. We, in turn, exhale the carbon dioxide needed by plants. Plants are also crucial to human life because we rely on them as a source of food for ourselves and for the animals that we eat.

Describing an environmental process

Learner's Book, page 143

Learners know much about the interactions between humankind, his activities and the environment.

Activity 1: Group discussion

Learner's Book, page 144

Group the learners to discuss the questions. They may compare their answers with those of their classmates.

Activity 2:

Learner's Book, page 144

In their groups still, ask them to study the photograph and discuss what they see.

Activity 3:

Learner's Book, page 149

Instruct them to read the passage carefully and afterwards write a summary of 100 words describing the causes and effects of acid rain. Encourage them to compare their summaries with those of their classmates.

Describing an industrial process

Using the passive voice and sentence connectors

Learner's Book, page 149

Activity 1:

Describing a process using the passive voice and sentence connectors

Make a list!

When you explain the step-by-step order of how things happen or how things get done, you are describing a process – how to get a visa, how to mend a puncture, how to make coffee, how glass is made.

1. Make a rough list of the steps in the right order.
2. Start with an introductory sentence or two about the process – how important it is, how simple it is, etc.
3. Use sequence words - first, next, after that, before, then, finally.
4. Use the correct voice – passive or active. Read the instructions carefully.
5. Use sentence connectors to join, illustrate or modify sentences (see notes in the Learner's Book about sentence connnecors).
6. Finish with a concluding sentence or two.

Example: Making Popcorn!

These steps use the active voice, or imperative.

Popcorn is something you often eat when you watch a movie at a cinema. It is very easy to make perfect popcorn if you follow the correct procedure.

First, put three tablespoons of oil in a large pot. Then, heat the oil on a high flame until one kernel of popcorn pops when you drop it into the hot oil. Now, pour a quarter cup of popcorn into the pot and cover the pot with a lid. Reduce the flame and gently shake the pot. Continue shaking until the corn has popped. Finally, empty the popcorn into a large bowl and add melted butter and salt.

As you can see, making popcorn is very simple if you follow the steps above. Enjoy your movie!

Want Coffee?

These steps use the passive voice.

Coffee is a very popular drink around the world. People drink it at all times of the day. There are several kinds of coffee, but I am now going to describe how instant coffee is produced.

First, the coffee beans are picked from the trees and dried in the sun. Then, the beans are roasted and then cooled rapidly before being ground. The beans are then mixed with hot water and the mixture is strained before it is frozen. Finally, the frozen mixture is ground and then dried in a vacuum before it is packed into jars. The coffee is now ready to be sold in shops.

Instant coffee is not quite as good as real coffee, but it is very popular and saves a lot of time. The manufacturers have done most of the steps for us!

Activity 2:

Learner's Book, page 150

Ask the learners to discuss the sentence connectors in Activity 2.

Activity 3:

Learner's Book, page 150

Form groups and ask the learners to use connectors in Activity 3

Activity 4:

Learner's Book, page 151
Ask the learners to write sentences using the passive voice forms in their compositions.

Activity 5:

Learner's Book, page 151
Take the learner's on a guided tour to any plant/firm/factory near school. It is advised you group them into manageable groups of 5 or 6.

Learners are supposed to observe, participate, interview and interact with the production staff; and there after prepare an expository essay or report about their research.

Follow the rubric of the essay and evaluate report writing which closely follows the composition or essay writing format.

Encourage members to share their findings in their groups before the group leader submits/presents their reports to the class for further discussion and comparison.

Activity 1: How sugar is made

Learner's Book, page 152
Ask the learners to read the passage about how sugar is made.

Guide the learners to visit a factory or maize mill, or any simple industry where products are made. Let the learners interact with the factory workers to know the process a product goes through before it is ready. Ask the learners to form groups and write a report describing the process. The secretary of each group should make a presentation to the class for further discussion and comparison of ideas.

Ask them to summarise the sugar-making process. Accept correct summaries.

The passive voice

Activity 1:

Learner's Book, page 156
Use Activities 1 and 2 on page 157 about the passive voice. Most of the sentences used to describe the sugar-making process are in the passive voice.

Activity 2:

Learner's Book, page 156
Ask the learners to identify them and write at least 10 sentences about the sugar-making process.

Mark their books and give feedback

Describing the mining process

Learner's Book, page 156

Activity 1:

Learner's Book, page 156
Ask the learners to describe the mining process of minerals.

Activity 2:

Learner's Book, page 157
The passage provided is to arouse the learners' curiosity. Otherwise the best way to deliver this unit is to make it a project. Ask the learners to visit a mining area and interact with the miners about Rwanda's minerals. Let them inquire from the miners the extraction process of some minerals. They should form groups, report their findings; then the group secretaries will present their findings to the class for comparison and further discussion.

Let them read the sample passage in their textbooks and write an essay about the mining process of the mineral of their choice.

Mark their essays and give feedback. Remind the learners to use the passive voice as much as they can.

Describing greenhouse effect

Learner's Book, page 160

Activity 1: Writing and evaluating the text

Learner's Book, page 160

Treat this purely as a research project. Give the learners about one week to make the research in groups. They should then compile their reports and make a presentation to the class.

Activity 2:

Learner's Book, page 160

The research should focus on the greenhouse effect and a description of its process.

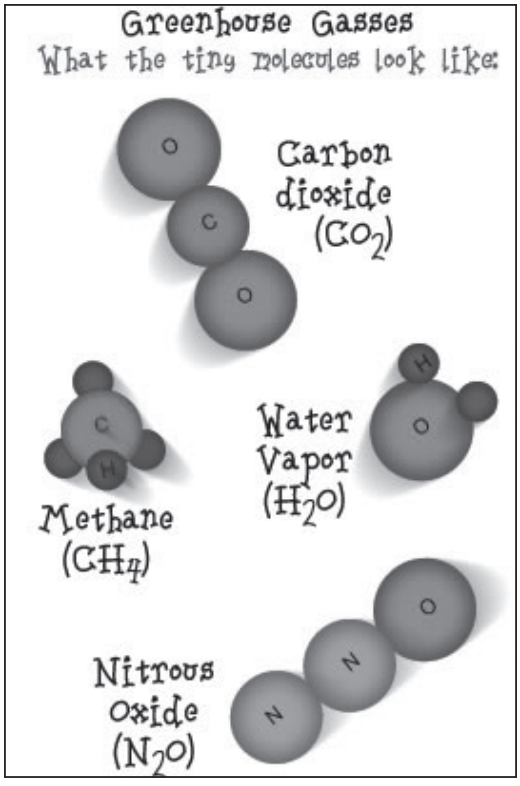
Some of the report highlights expected are:

The greenhouse effect and greenhouse gases

Have you ever been inside a greenhouse on a cold winter day? It might be cold outside, but inside the greenhouse lush green plants flourish in the warmth and sunshine. Greenhouses are made of glass and are designed to hold heat inside. Our planet's atmosphere traps energy just like a greenhouse. Energy from the sun can enter the Earth's atmosphere, but not all of it can easily find its way out again.

What blocks the sun's energy from escaping from the Earth? Unlike a greenhouse, the Earth does not have a layer of glass over it!

Instead, molecules in our atmosphere called greenhouse gases absorb the heat. Greenhouse gases include water vapour, methane, ozone, nitrous oxide and carbon dioxide. There may not be much of some of these gases in our atmosphere, but they can have a big impact. Each greenhouse gas molecule is made of three or more atoms that are bonded loosely together. These molecules are able to absorb heat, which makes them vibrate. They eventually release the heat energy and it is often absorbed by another greenhouse gas molecule.



The greenhouse effect is useful because trapping some energy keeps the temperatures on our planet mild and suitable for living things. Without its atmosphere and the greenhouse effect, the average temperature at the surface of the Earth would be zero degrees Fahrenheit. However, too many greenhouse gases can cause the temperature to increase out of control. Such is the case on Venus where greenhouse gases are abundant and the average temperature at the surface is more than 855 degrees Fahrenheit (457 degrees Celsius).

You might hear people talking about the greenhouse effect as if it is a bad thing. It is not a bad thing, but people are concerned because the Earth's greenhouse is warming up very rapidly. This is happening because we are currently adding more greenhouse gases to our atmosphere, causing an increased greenhouse effect. The increased greenhouse effect is causing changes in our planet that can affect our lives.

Unit 7: Globalisation and Global Citizenship

Key unit competence: To use language in the context of globalisation and global citizenship

Number of lessons: 15

Background information

Globalisation is the process by which the world is becoming increasingly interconnected as a result of massively increased trade and cultural exchange. Globalisation has increased the production of goods and services. The biggest companies are no longer national firms but multinational corporations with subsidiaries in many countries.

Globalisation has been taking place for hundreds of years, but has speeded up enormously over the last half-century.

Globalisation has resulted in increased international trade. A company operating in more than one country depends on the global economy and on freer movement of capital, goods and services. Examples of such companies are McDonalds and Starbucks.

Although globalisation is probably helping to create more wealth in developing countries, it is not helping to close the gap between the world's poorest countries and the world's richest.

Global citizenship means being a citizen of the world.

Language use - Talking about making global connections

Listening and speaking

Learner's Book, page 162

Activity 1:

Divide the learners into groups of five. Ask them to study the diagrams and use them to make a presentation to the class about what they understand by globalisation and global citizenship.

Accept all possible answers the learners may suggest.

Activity 2:

Proceed to Activity 2 by instructing the learners to read the passage to find out by themselves the meaning of the concepts of globalisation and global citizenship.

Ask one of the learners to share his/her view with the class.

Activity 3:

Learner's Book, page 165

Again divide the learners into groups to carry out the group discussion in Activity 3.

Accept correct answers related to:

Benefits

1. Globalisation has increased the production of goods and services. The biggest companies are no longer national firms but multinational corporations with subsidiaries in many countries.
2. Globalisation has resulted in increased international trade
3. Cooperation and unity among countries, etc.

Costs

Globalisation has widened the gap between the world's poorest countries and the world's richest.

Activity 4: Dialogue

Learner's Book, page 165-166

Instruct the learners to work with a classmate to practise the dialogue. The role takers should discuss the gist for the class.

Activity 5: Group discussion

Learner's Book, page 167

Instruct them to do Activity 5. Exercise your judgement regarding learners' answers.

Activity 6: Research/ Conducting a survey

Learner's Book, page 167

Instruct the learners to do Activity 6. Accept compositions which follow the composition rubric.

Activity 7: Essay writing

Learner's Book, page 168

Instruct the learners to write letters to their friends. Accept letters with friendly language.

Describing international trade

Learner's Book, page 168

Activity 1:

Guide the learners to compare products from a nearby trading centre and identify those which are imported from other countries.

Instruct them to discuss the questions in their groups and compare their answers with those of their classmates.

Activity 2:

Learner's Book, page 169
Instruct the learners to read the passage carefully.

Exercise: Expected answers

Learner's Book, page 170

1. Opinion question; expect varied answers.
2. Opinion question; exercise your judgement regarding the learner's answers.
3. Coffee, tea, coltan, casseterite, iron ore, tin, animal hides.
4. Coffee is one of the main exports from Rwanda.
5. Rwanda's imports are machinery and equipment, steel, cement and construction materials, petroleum products and foodstuffs while her exports comprise coffee, tea, coltan, casseterite, iron ore, tin, animal hides.

Activity 3: Data presentation and information transfer

Learner's Book, page 170
Divide the learners into groups of five. Ask them to present the information about Rwanda's imports and exports to other countries in pie charts.

Expect the biggest number of exports and imports per country to take a bigger share of the pie chart.

Ask the learners to choose a group secretary to present and describe their pie charts to the class.

Display the learners' pie charts on the class notice board for further discussion and comparison.

The present perfect tense

Activity 1:

Learner's Book, page 171
Ask the learners to do Activity 1. We have already discussed in English for Rwanda Senior Two that the **present perfect tense** shows actions that have taken place within a short time frame.

The auxiliary verb 'has' comes after a singular subject or subject phrase, while 'have' comes after a plural subject or subject phrase.

Instruct the learners to do the exercise that follows based on the following expected answers:

Exercise: Expected answers

Learner's Book, page 171

1. Who among the three workers has absconded from duty?
2. The girl has gone for a study tour at the National Statistics of Rwanda offices.
3. Tea and coffee have been Rwanda's main export commodities for quite a long time.
4. Despite the setback caused by the 1994 genocide, Rwanda has spared no efforts to put its economy back on track.
5. The signing of an Enhanced Structural Adjustment Facility with the International Monetary Fund (IMF) in 1998 has seen the beginning of privatisation, with support from the World Bank.
6. Rwanda's road to recovery and robustness has largely been dependent on the fluctuations in tea and coffee prices in the international market.
7. The total revenues generated by exports in Rwanda's economy have been around US$213 million.
8. Rwanda's trade imports have been far larger than its exports.

9. Machinery and equipment have been Rwanda's main import products.
10. Being a member of the Common Market for Eastern and Southern Africa (COMESA) and the East African Community has boosted Rwanda economy.

Describing international organisations

Learner's Book, page 172

Rwanda belongs to quite a number of international organisations.

Activity 1 and 2: Graphic data presentation and information transfer

Learner's Book, page 172-173

Activity 3: Research

Learner's Book, page 173

Advise the learners to do the activity by visiting the internet facility of the school if the school has one and report back to their groups. If the school has no internet facility, they should consult their community members. Give the activity as a project for two days.

The learners should write an essay. Exercise your judgement regarding the learners' essays.

You may invite an Economics or Entrepreneurship teacher to facilitate the discussion.

Divide the learners into groups to study the graph carefully and have the group secretaries make a presentation to the class about the graph. They should clearly explain the performance and contribution of each sector as a source of income to Rwanda's economy.

Describing sources of income

Exercise your judgement regarding the learners' graphic data interpretation.

Ask them to do Activity 2 by representing the graph as a pie chart. As observed previously, the biggest source of income, in this case services, will take a lion's share of the pie chart.

Ask the learners to do Activity 3 by doing research about the contribution of other sectors to Rwanda's economy. They can do the research by either visiting the government departments concerned with Rwanda's economy or asking their Economics and Entrepreneurship teachers. You may also consider this as a project and allocate a time frame of about 2 – 3 days for the learners to come up with carefully researched reports.

Multinational trade

Learner's Book, page 173

Activity 1: Group discussion

Learner's Book, page 173

Introduce the lesson by dividing the learners into groups of five to study the meaning of the three words 'multi', meaning many; 'national' relating to countries; and 'trade' referring to the exchange of commodities. When joined together the term 'multinational trade' means many countries trading amongst themselves. It is also called overseas trade. Then do Activity 1.

Activity 2:

Learner's Book, page 174

The group secretaries should make a presentation to the class. Exercise your judgement regarding the learners' answers.

Describing multinational companies

Learner's Book, page 175

Globalisation has several pros and cons. One of the major effects of globalisation is the establishment of multi national corporations through multi national trade in global economies.

The image below shows some countries around the world that have strongly established multi national corporations in all

global economies. The benefits and shortfalls together with the impact of these multi national corporations, especially on indigenous firms or private, small-scale and mid-sized enterprises in developing countries particularly in Africa, is going to be our focus of discussion in this unit.

Activity 1: Research

Learner's Book, page 175

This is a project but strictly give it one day. The learners will then get back into their groups to compile their notes which the group secretary will present to the class for further discussion and sharing of ideas.

Notes for the teacher: (Background about multi-national corporations)

Multinational corporations have existed since the beginning of overseas trade. They have remained a part of the business scene throughout history, entering their modern form in the 17th and 18th centuries with the creation of large, European-based monopolistic concerns such as the British East India Company during the age of colonisation. Multinational concerns were viewed at that time as agents of civilisation and played a pivotal role in the commercial and industrial development of Asia, South America and Africa. By the end of the 19th century, advances in communications had more closely linked world markets, and multinational corporations retained their favourable image as instruments of improved global relations through commercial ties. The existence of close international trading relations did not prevent the outbreak of two world wars in the first half of the twentieth century, but an even more closely bound world economy emerged in the aftermath of the periods of conflict.

In more recent times, multinational corporations have grown in power and visibility, but have come to be viewed more ambivalently by both governments and consumers worldwide. Indeed, multinationals today are viewed with increased suspicion, given their perceived lack of concern for the economic well-being of particular geographical regions and the public impression that multinationals are gaining power in relation to national government agencies, international trade federations and organisations, and local, national, and international labour organisations.

Despite such concerns, multinational corporations appear poised to expand their power and influence as barriers to international trade continue to be removed. Furthermore, the actual nature and methods of multinationals are in large measure misunderstood by the public, and their long-term influence is likely to be less sinister than imagined. Multinational corporations share many common traits, including the methods they use to penetrate new markets, the manner in which their

overseas subsidiaries are tied to their headquarters operations, and their interaction with national governmental agencies and national and international labour organisations.

Describing a multinational company in Rwanda

Learner's Book, page 176

Activity 1:

Learner's Book, page 176-179

Ask the learners to read the passage and answer the questions that follow.

Exercise on page 181 of the Learner's Book: Expected answers

1. Boosting export revenue and creating more than 100 new jobs to boost the employment of Rwandan citizen.
2. Every country is internationally expected to meet a certain market share in the international trade performance index. Trade deficit gap means the gap that a country does not meet on international trade.
3. The cement plant will reduce the trade deficit gap further. The actual performance percentage is not provided for in the passage, though.
4. Since Rwanda will be directly manufacturing its cement, the prices will reduce, compared to the past where it had to import cement from other countries whose price would include taxes, and other costs such as transport and labour.
5. The new cement plant offers sector players the green light in addressing the question of affordability and propelling the sector towards economic excellence.

Present perfect passive voice

Activity 2:

Learner's Book, page 180
Divide learners to do Activity 2. Let them share their views about the sentences with other groups.

Ask them to do the exercise that follows based on the following expected answers.

Exercise: Expected answers

Learner's Book, pages 180-181

1. Our economy has been boosted by the new cement plant.
2. A hundred types of cars have been manufactured by the factory workers.
3. New jobs have been announced by the CEO in his company.
4. Many industries have been barred from joining multinational trade by the new trade tariffs.
5. Workers were instructed to study the market trends and adjust their systems of operation and production by the new manager.

For sentences 6-8: Accept meaningful sentences that the learners will construct (sentence examples).

6. A strike has been planned by the construction workers.
7. The new directive has been issued by the Chief Executive.
8. Indigenous firms have been outcompeted by the multinational corporations.

Unit 8: Living in a Foreign Country

Key unit competence: To use language in the context of living in a foreign country.

Number of lessons: 15

Background information

Most people would love to travel abroad and probably live there, citing the high level of development, high paying jobs, good medical care facilities, among other reasons. But how is life in Europe compared to life in our native countries? This is what we are about to find out in this unit. A lot of pictures have been used because only a few people manage to travel to Europe. For most of us, we simply hear about Europe or watch some of what goes on there on television.

Language use: Describing recent activities

Learner's Book, page 183

Introduce the unit by asking the learners what they know or have heard about Europe. If there are some learners who have travelled there, ask them to narrate their experience to the class; otherwise proceed to step 2.

Activity 1:

Learner's Book, page 183

Divide the learners into groups to discuss the questions in Activity 1.

Activity 2:

Learner's Book, page 183
Instruct them to do Activity 2 and discuss the photographs.

Ask the learners to proceed and do Activity 3, then read the letter in Activity 4. on page 184-187.

The purpose of doing these activities in a series is to expose or open up the minds of the learners to the life outside their country. Since they are now equipped with some facts about Europe, proceed to the debate. Follow the procedure of conducting a debate.

Take the learners to a tour agent or invite one to give a talk to the learners.

Describing current activities

Present continuous tense

Learner's Book, page 188

Activity 1:

Learner's Book, page 188
Ask the learners to study the photographs and discuss what they think can possibly be taking place in them.

Ask them to assume they were living in London. Which places would they possibly visit and what activities would they possibility do in those?

Instruct the learners to read and enjoy the passage carefully and silently.

Ask them to summarise the London attractions in 100 words. Accept correct summarises.

Exercise on page 189:Expected answers

1. I am staying with an aunt who has been living in the United States since she was eighteen years old.
2. I am making new friends and I am really getting into the culture of a great and beautiful country.
3. I am becoming excited because it is my first time in a foreign country.
4. I am used to taking English classes just twice a week.
5. I am learning the language with the people from the city and the new friends I have been meeting.
6. I am used to spending every weekend with her.
7. He is taking me to many interesting places and showing me the authentic American way of life by introducing me to his family, friends and his culture.
8. Moreover, going out constantly and talking to him has helped me to improve the skills with the language and mainly to be familiar with the American people and their habits and customs.
9. I am working as a babysitter.
10. I am realising that living abroad does more for you than just being bilingual.

Describing possibilities

Activity 1:

Learner's Book, page 190

Ask the learners to read the passage in Activity 1 and go on to do Activity 2.

Learner's Book, page 194

After reading the summaries, ask the learners to form sentences using the modal verbs. Instruct them to follow the examples given in the Learner's Book.

Using 'may', 'might', 'could'

Describing plans

Activity 2:

Learner's Book, page 194-196

Ask the learners to do research in groups about the culture and lifestyles of people who live abroad. They can get this information on the internet or by reading magazines.

Ask the learners to share how they would spend their leisure activities in Europe, considering some of the attractions they have read about.

Instruct them to write compositions describing the activities they would do in those places. Accept correct compositions.

Describing future activities

Activity 1:

Ask the learners to read the statements in the Learner's Book on page 196 then rewrite the sentences in Activity 2.

Activity 2:

Learner's Book, page 197

Expected answers

1. I will be visiting St. Mungo's tomb on Friday.
2. We shall be going to Glasgow Cathedral next week.
3. Mary queen of the Scots will be granting the lands of Provand to William Baillie, a canon cathedral.
4. The visitor will be enjoying the experience of the Glenmorangie Distillery tour.
5. You will be retraining yourself.

6. The children will be arriving in the royal yacht Britannia which is perhaps the most famous ship in the world.
7. She will be serving the British royal family for over 40 years.
8. Guests will be piping aboard via the Royal Brow and taking on a tour. Then they will be welcomed into the State Apartments where they can enjoy cocktails and canapés.
9. We will visit the historic Melrose Abbey.
10. The wheel will be swinging in the Tamfourhill area of Falkirk.
11. We will be meeting each other at Kelvingrov Art Gallery.
12. The tourist will be visiting the Melrose Abbey on Thursday.
13. We shall be surfing the Glasgow Science Centre on the internet.
14. We will be watching Blair Drummond Adventure on television.

Comparing cultures

Learner's Book, page 197

Cultures differ in their ways of doing certain things.

Activity 1:

Divide the learners into groups of five to discuss the ways they have seen visitors and tourists in Rwanda behave and compare their behaviour to what happens in Rwandan culture.

Activity 2:

Learner's Book, page 198

Instruct the learners to read the passage and write a summary comparing the culture of the Britons with that of the Rwandans.

Exercise your judgement regarding the learner's summaries.

Describing cultures

Activity 3:

Learner's Book, page 203
Ask the learners to write a summary of the comparison between the lifestyles of the Britons and the Rwandans

Activity 4:

Learner's Book, page 205
Ask the learners to do Activity 4 and exercise your judgement regarding the learners' research.

Talking about emotions (Letter writing)

Learner's Book, page 205
The learners may first do a role play where one of them assumes he or she is living abroad and the other is a Rwandan living in Rwanda.

Ask the learners to write the dialogues they would present in the class.

Instruct them to use some of the information from the dialogue to write letters to each other.

Some of the words they could use are:

I miss you all. I sometimes feel lonely without my family. I'm happy while exploring new places. I get depressed when I don't know anymore. I'm curious to find out about the country.

References

Bishop, G. (1985). *Curriculum Development: A Textbook for Students,* London: Macmillan

Carter, R., McCarthy (2006). *Cambridge Grammar of English:* Cambridge University Press

Harmer, J. Edinburgh Gate (2001). *The Practice of English Language Teaching*: Longman (3rd Ed)

Hancock, M. (2003). *English Pronunciation in Use Intermediate* (Audio CDs). Cambridge: Cambridge University Press (book with CDs can be obtained from Ikirezi Bookshop, Kigali)

Kadeghe, M. (2009). *English for Tanzania Secondary Schools: Grammar and Functional English,* Dar es Salaam: Afroplus Industries Ltd.

Ladefoged, P. (2000). *Vowels and Consonants,* Oxford: Blackwell

Lucy, P. Mair. 'African Marriage and Social Change.' In: *Survey of African marriage and family life*. Edited by Arthur Phillips, (London, Oxford University Press, 1953) p.14

National Curriculum Development Centre (2010). *Curriculum of English Language for Primary Schools in Rwanda*

National Curriculum Development Centre, Kigali, Ministry of Education, (2010), *Ordinary Level English Program*

Roach, P. (2000). *English Phonetics and Phonology, 3rd ed.* Cambridge: Cambridge University Press

Roach P. et al (eds.). (2003). *Daniel Jones English Pronouncing Dictionary, 16th ed,* Cambridge: Cambridge University Press

Swan, M and Walter, C. (1998). *The New Cambridge English Course*. Cambridge: Cambridge

Swan, M. (2005). *Practical English Usage,* New York: Oxford University Press