REPUBLIQUE DU CAMEROUN
Paix – Travail – Patrie

REPUBLIC OF CAMEROON
Peace – Work - Fatherland

MINISTERE DES ENSEIGNEMENTS SECONDAIRES
MINISTRY OF SECONDARY EDUCATION

INSPECTION GENERALE DES ENSEIGNEMENTS
INSPECTORATE GENERAL OF EDUCATION

BIOLOGY SYLLABUS
Form1 and Form 2







Observer son environnement pour mieux orienter ses choix de formation et réussir sa vie

INSPECTION DE PEDAGOGIE CHARGEE DE L'ENSEIGNEMENT DESSCIENCES
INSPECTORATE OF PEDAGOGY IN CHARGE OF SCIENCES ***Août 2014***

REPUBLIQUE DU CAMEROUN
Paix - Travail – Patrie

MINISTERE DES ENSEIGNEMENTS SECONDAIRES

INSPECTION GENERALE DES ENSEIGNEMENTS

REPUBLIC OF CAMEROON
Peace -Work – Fatherland

MINISTRY OF SECONDARY EDUCATION

INSPECTORATE GENERAL OF EDUCATION

Order N° 264/14 /MINESEC/ IGE 13 AUG 2014 .....
To outline the syllabuses for Form I and Form II of Secondary General Education.

THE MINISTER OF SECONDARY EDUCATION,

Mindful of the Constitution;
Mindful of the Law N° 98/004 of 14 April 1998 to lay down Guidelines for Education in Cameroon;
Mindful of Decree N°2011/408 of 9 December 2011 to reorganise the Government;
Mindful of Decree N°2011/410 of 9 December 2011 to form the Government;
Mindful of Decree N°2012/267 of 11 June 2012 to organise the Ministry of Secondary Education;

HEREBY ORDERS AS FOLLOWS:

Article 1: The syllabuses for Form I and Form II of Secondary General Education shall be outlined as follows:

PREFACE

SYLLABUSES FOR 21ST CENTURY CAMEROON

At the beginning of this millennium, as Cameroon chooses to become an emerging nation by the year 2035, its secondary education sector faces many challenges. It should:

- Offer quality training and education to most young Cameroonians within a context marked by large classes in primary education;
- Prepare them for smooth insertion into a more demanding job market worldwide, through a pertinent teaching /learning process.

In addition, training tools have significantly evolved in their conception and implementation. A school that was mostly based on contextualised knowledge acquisition has given room, all over the world, for a school that aims at empowering learners to help them cope with complex and diversified real life situations. Instead of a school cut off from society, we now have a school deeply rooted in a society that takes into account sustainable development, local knowledge and cultures.

The implementation of this new school ,prescribed by the Law to lay down guidelines for education in Cameroon, and the necessity for socio-professional insertion require the adoption of a pedagogic paradigm for the development of syllabuses relating to **"The competence based approach with an entry through real life situations ".**

In this perspective, new syllabuses for Secondary General Education, those of Teacher Education and Training Referentials for Technical Education are part of this great change for the re-dynamisation of our education system. They are in line with the implementation of the provisions of Growth and Employment Strategy Paper (DSCE) which, by the year 2020, specifies the minimum amount of knowledge which each Cameroonian is supposed to possess by the time they leave the first cycle of secondary education.

These syllabuses define essential competencies that should be acquired by learners within the first cycle of secondary education, in terms of knowledge, know how and attitudes. They equally define the framework that will enable teachers to organise their pedagogic activities.

While congratulating all those who designed these syllabuses, I hereby exhort all the members of the education family, notably teachers, to acquaint themselves with the new paradigm, to effectively implement it and make the Cameroon education system successful.

The Minister of Secondary Education

Louis Bapes Bapes

FIRST CYCLE SYLLABUS REVIEW
A PARTICIPATORY AND INNOVATIVE APPROACH

The syllabuses that were drawn up by the Inspectorate General of Education in the Ministry of Secondary Education since 2012 are in accordance with the major guidelines for education in general and secondary education in particular as they are enshrined both in the 1998 law to lay down guidelines for education in Cameroon and in the 2009 Growth and Employment Strategy Paper(DSCE) .

These orientations could be summarised, amongst others, to train within the framework of an emerging Cameroon in the year 2035, citizens that will have a good mastery of the two official languages (English and French), deeply rooted in their cultures but open to a world in search for sustainable development and dominated by Information and Communication Technologies.

Conceived in the various Inspectorates of Pedagogy, and later introduced for trialling in secondary and high schools during the 2012/2013 school year, these syllabuses were developed with the contributions of classroom teachers and teacher trade unionists.

The new syllabuses had to undergo many changes:

- a shift from a skill based approach to a competence based approach through real life situations;
- a shift from a school cut off from society to one that prepares citizens for a smooth insertion into socio-cultural and economic activities ;
- a shift from an evaluation of knowledge to that of competences necessary to sustainable development.

When these new changes and orientations were taken into account, they naturally led to a shift of paradigm within the curriculum reform process. The option we have adopted is the competence based approach through real life situations.

The syllabuses of the first cycle of Secondary General Education are broken down into 5 areas of learning, each of them containing a given number of disciplines as shown in the table below.

Areas of learning	**Disciplines**
1- Languages and Literature	- French - English - Living Languages II

	- Ancient Languages - Literature(in English and in French)
2- Science and Technology	- Mathematics - The Sciences(Physics, Chemistry, Technology, Life and Earth Sciences) - Computer Science
3- Social Sciences/Humanities	- History - Geography - Citizenship Education
4- Personal Development	- Sports and Physical Education - Manual Labour
5- Arts and National Cultures	- National Languages - National Cultures - Arts

For 6e and 5e (Francophone sub -system of education), the weekly workload and the quota as compared to the total number of hours on the time table (32 h) are displayed in the table below.

Domaines d'apprentissage	Volume horaire	Quota
Langues et Littératures	10 h	30%
Sciences et Technologies	08 h	25%
Sciences Humaines	06 h	20%
Arts et Cultures Nationales	04 h	15%
Développement Personnel	03 h	10%

One hour is allotted for preps.

For the Anglophone sub-system of education (Form I and Form II) the same information is summarised in the table below.

Areas of Learning	Weekly workload	Quota
Languages and Literature	10 h	30%
Science and Technology	08 h	25%
Social Sciences	06 h	20%
Arts and National Cultures	04 h	15%
Personal Development	03 h	10%

The Inspector General of Education

Dr. Mrs Evelyne Mpoudi Ngolle

END - OF - FIRST CYCLE LEARNER'S EXIT PROFILE

The first cycle of Secondary General Education admits young graduates from primary schools aged between ten and fourteen. Its general objectives are not only to build intellectual, civic and moral skills in these children but also competences and fundamental knowledge which will either enable them to foster their education in the second cycle, or to prepare them for a smooth insertion into the job market after professional training.

Thus, within the framework of these new syllabuses, the learner is expected , after the first cycle of secondary education, to be able to use his/her competences to solve problems through family of situations relating to domains of life as indicated in the table below:

N°	Domains/Areas of life	Families of situations to be treated in the 1st cycle
1	Family and social life	• Participation in family life • Healthy professional relationships • Social integration
2	Economic life	• Discovery of income generating activities • Discovery of the job market, social roles, jobs and professions • Self confidence, aspirations, talents, self potential • Practising healthy eating habits
3	Environment , health and well being	• Preservation of the Environment • Quest for a healthy life style • Choosing and practising a healthy life style
4	Citizenship	• Mastery of rules and regulations governing the Cameroonian society • Discovery of cultural values and customs of the Cameroonian society
5	Media and Communications	• Discovery of the media world • Discovery of Information and Communication Technologies

In order to achieve these objectives, the learner should be able to mobilise , within the various disciplines and constructive areas of learning of the syllabuses, all the pertinent resources in terms of knowledge, know how and attitudes.

The next table gives you a general overview of the afore-mentioned objectives, while the syllabus for each subject unfolds, in details, all the expected competences per level and at the end of the 1st cycle.

Areas of Learning	**Disciplines**	**Expected outcomes at the end of the 1st cycles**
1-Languages and Literature	**Living languages:** English, French , German, Italian, Spanish, Chinese, Etc.	**French and English , L1** Receptive skills: reading and listening Read in an autonomous way, different types of texts related to areas of life as defined in the syllabus; Listen and understand various texts related to the above mentioned areas of life Productive skills: speaking and writing Produce various types of texts , of average length related to these areas of life; Language tools: appropriate use of various language tools in order to produce and read types of texts related to that level;
	English to Francophone learners French to Anglophone learners	Communicate accurately and fluently using all four basic skills in language learning; Be able to transfer knowledge learnt in class to real life situations out of the classroom; Be able to cope and survive in problem solving situations;
		Living languages II Receptive skills: reading and listening Read and understand simple texts on social life, citizenship, the environment, well being and health, media etc.. Listen and get oral information in order to simply interact during communication situations related the various domains of life. Productive skills: speaking and writing Sing, recite, dramatise , orally answer questions related to the various domains of life as defined in the syllabus; Write short passages on various familiar topics.

	Ancient languages: Latin, Greek **National languages** **Literature** Cameroon Literature; French Literature; Francophone Literature; Other literatures	Develop general knowledge through ancient languages and cultures; know the origins of the French language for linguistic mastery; Carry out elementary tasks in translation.
2-Science and Technology	Mathematics, The Sciences Computer Science	Use mathematic knowledge skills and values with confidence to solve real life problems within the different domains of life; Communicate concisely and unambiguously and develop power of mathematical reasoning (logical thinking, accuracy and spatial awareness).
		The Sciences: Acquire the fundamentals of sciences in order to understand the functioning of the human body, the living world, the earth and the environment; Acquire methods and knowledge to understand and master the functioning of technical objects made by man to satisfy his needs; Demonstrate attitudes to protect his/her health and environment.
		Computer Science : Master the basics of Information and Communication Technologies; Exploit and use ICTs to learn.
3- Social Sciences /Humanities	**History** **Geography** **Citizenship Education**	Possess cultural references to better locate events in time and space within a democratic system and become a responsible citizen. **History:** Acquire a common culture ; be aware of heritage from the past and current challenges; **Geography :**

		Develop one's curiosity and knowledge of the world; Get acquainted with landmarks to find your way and fit in the world. **Citizenship Education:** Possess essential knowledge in rights and duties in order to fulfil his/her citizenship.
4- Personal Development	**Moral Education;** **Home Economics;** **Sports and Physical Education** **Health Education**	Develop his / her physical abilities/skills ; Get ready for physical challenges , save and regain energy after physical efforts; Identify risk factors; possess basic knowledge and principles in hygiene and health education; Demonstrate a sense of self control and appreciate the effect of physical activities. Conceive and draw up sports and cultural animation projects; Acquire methods and develop a high sense of efforts; Conceive, draw up and implement projects that will enable one to project his/her image and feel the well being inspired by self-confidence.
5- Arts and National Cultures	**Arts/Artistic Education;** **National Cultures**	**Artistic Education:** Observe and appreciate works of art; Carry out an artistic activity; Gradually acquire the love for personal expression and creativity; Possess a mastery of creativity in music, plastic arts and the performing arts. Dramatise, recite texts (poems, tales, proverbs, etc.) relating to various areas of society; Practise the different dramatic genres: sketches, comedy, tragedy, drama, etc. **National languages and Cultures** Demonstrate a mastery of Cameroon cultures; Visit the various cultural areas of the country in order to discover their characteristics; Demonstrate a mastery of basic rules in writing Cameroonian languages as well as basic grammatical notions applied to these

		languages; Demonstrate a mastery of one of the national languages at 3 levels: morpho-syntax, reception and production of simple oral and written texts.
Even though the learners acquires skills in different disciplines, these competences are accompanied by other skills known as cross curricular competences related to intellectual, methodological, social and personal areas of learning.		
6- Cross curricular competences	Intellectual and Methodological domains	Solve Problem in a given situation; Use knowledge skills and values with confidence in order to solve real life problems within the different domains of life; With confidence, find useful information to solve problems he/she is faced with; Give his/her opinion ; Support his/her opinion with strong arguments ; Assess him/herself with a view to remediation; Demonstrate basic knowledge in note taking ; Conceive and realise individual projects; Analyse and summarise information, give feedback and report orally or in writing. Develop problem solving approaches; Exploit and use ICTs in his/her activities.
	Social and Personal Domains	Interact positively and assert his/her personality while respecting that of other people; Join team work, fit in a common initiative project /group; Demonstrate interest in cultural activities ; Develop a sense of effort, love for work, perseverance in tasks or activities carried out ; Understand and accept others in intercultural activities; Accept group assessment.

The resources to be mobilised by the learner are found in many disciplines and areas of learning. So it is important to implement these syllabuses not in isolation but as interrelated subjects. These remarks hold both for subject and cross curricular competences. They are so called to show that they should be developed through teaching/learning activities of the different subjects. The development of subject and cross curricular competences concern the entire education family as they are capable of inspiring an educative project and the putting in place of extra curricular activities. The ultimate training goal of these syllabuses, at the end of the first cycle, is to enable the learner to be self reliant, to be able to keep on learning through out his/her life, to contribute to sustainable development and become a responsible citizen.

REPUBLIC OF CAMEROON
Peace – Work – Fatherland

REPUBLIQUE DU CAMEROUN
Paix – Travail – Patrie

MINISTRY OF SECONDARY EDUCATION

MINISTERE DES ENSEIGNEMENTS SECONDAIRES

GENERAL INSPECTORATE OF EDUCATION

INSPECTION GENERALE DES ENSEIGNEMENTS

INSPECTORATE OF PEDAGOGY INCHARGE OF SCIENCE EDUCATION / BIOLOGY DEPARTMENT

BIOLOGY SYLLABUS

Form1 and Form 2

August 2014

REPUBLIC OF CAMEROON
Peace- Work- Fatherland

MINISTRY OF SECONDARY EDUCATION

GENERAL INSPECTATORATE OF EDUCATION

INSPECTORATE OF PEDAGOGY INCHARGE
OF SCIENCE EDUCATION

REPUBLIQUE DU CAMEROUN
Paix - Travail - Patrie

MINISTERE DES ENSEIGNEMENTS SECONDAIRES

INSPECTION GENERALE DES ENSEIGENEMENTS

INSPECTION DE PEDAGOGIE CHARGEE DES
ENSEIGNEMENTS DES SCIENCES

LEARNING AREA : SCIENCE AND TECHNOLOGY

SUBJECT : BIOLOGY

CLASSES : FORM 1 AND FORM 2

ANNUAL WORKLOAD: 50 HOURS (60PERIODS)

WEEKLY WORKLOAD: 02 PERIODS

Table of conte

I. GENERAL INTRODUCTION

Biology plays an important role in Cameroon, which is in the full process of development. This subject alongside the other sciences is intended to equip the Cameroonian child with the relevant knowledge needed to understand and manage in a competent manner the new challenges that affect him/her: making informed decisions, foreseeing and making provisions for the future.

In forms 1 and two, the study of biology is expected to be a continuation involving the deepening of the knowledge (scientific notions), know-how (improved methods and techniques) and further development of attitudes acquired in the primary school.

PROFILE OF THE LEARNER

It has as main aim to inculcate (promote) in the learner responsible behaviour, knowledge and competencies, which should enable him/her to be able to:

- explain life processes;
- meet with the challenges of life, through the use of scientific approach in problem solving;
- manage the environment in a sustainable manner;
- safeguard his/her health and that of all others in his/her surrounding;
- use process skills to acquire knowledge;
- read security notices;
- communicate his/her results.

The design and teaching of the present syllabuses are centred on the Competency-Based Approach (CBA) which should begin from the identification of a real life situation or problem and proceed through the definition of the competencies (skills) required to transform, modify or improve the situation to the mobilisation of the appropriate resources necessary for transforming, modifying or improving the situation. This approach ensures the appropriation of scientific knowledge and methods by involving the learner in the active construction of his/her own knowledge. It equally goes beyond the amassing of scientific knowledge to the application of such knowledge to seek solutions to real life problems in different contexts. The knowledge and skills that the learner acquires in school should therefore be seen as a means to an end and not as an end in itself.

It should be noted that developing competence in learners is creating a link between the school and the community or the living environment of the learner. Competence therefore is an objective to be attained which plays the role of linking school knowledge to life situations. It is hoped that approaching the teaching/learning action from this angle will demonstrate the immediate usefulness of school knowledge to the learners and get them motivated and more interested in their own learning. As an improvement of previous versions therefore, these syllabuses are subject to future modifications and improvement as living realities change with time. Teachers are therefore called upon to take up the challenge by making their humble contributions towards the development of the 21st Century Cameroonian and beyond.

In the fields of societal and family life: The syllabus seeks to inculcate in the learner competencies for the improvement of the standard of living as well as transforming him/her into a responsible citizen.

In the economic domain: It will enable the learner to acquire competencies in the production of consumer goods necessary for good health, wellbeing and comfort.

In the field of environmental education: It will enable the learner to reinvest the knowledge acquired about the consequences of overexploitation and natural resources depletion for the sustainable management of the environment and its resources.

2. PRESENTATION OF THE FAMILIES OF SITUATIONS COVERED BY THE SYLLABUS

N°	MODULES	FAMILIES OF SITUATIONS
I	The living world	Provision of Mans needs in terms of animal and plant resources
II	Health Education	Personal and environmental hygiene: Improvement in reproductive health, nutrition, sensitivity and movement.
III	Environmental Education	Management of water, air and soils (natural resources management)

3. READING AND UNDERSTANDING THE SYLLABUS

The syllabus is presented in a tabular matrix made up of three major columns:

- The first column is the **Contextual Framework** which is sub-divided into *families of situations* and *examples of real life situations* where the knowledge and skills (competencies) can be applied. The families of situations are only examples and in no way exhaustive. Teachers can draw from these examples to identify and define other situations with local specificities and relevance.
- The second column is the **Competencies,** made up of *categories of actions* and *examples of actions*: These are groups of some actions which are related to the mastery of the competencies expected for each module. Again these categories and groups of actions are not exhaustive.
- The third column is the **Resources** and consists of the *essential or core knowledge* which gives all the set of cognitive, psychomotor and affective resources which the learner needs to mobilise to successfully treat a family of situations. It is divided into four components: the *subject content,* the *aptitude* (skills or

know-how), *attitudes* to be disposed or displayed as well as *other resources* (material, human, financial, etc.) necessary for the acquisition of the competencies.

The matrix appears as in the table appears:

CONTEXTUAL FRAMEWORK		COMPETENCIES		RESOURCES			
Families of Situations	**Examples of Situations**	**Categories of Actions**	**Examples of Actions**	**Content (Core Knowledge)**	**Aptitude (Skills)**	**Attitudes**	**Other Resources**

4. ASSESSMENT OF THE BIOLOGY SYLLABUS

The overall goal of this syllabus is to assess the ability of the learner to reinvest scientific knowledge and methods to seek solutions to real life situations in his/her local environment and in different context.

Assessment will therefore aim to test the knowledge and competencies (skills, abilities) in different areas including the:

- ability to apply scientific knowledge and methods in problem-solving;
- ability to organise material and present ideas in a clear and logical manner;
- ability to handle patterns in scientific knowledge and show critical, imaginative and inferential thinking skills;

Practical skills will be assessed with respect to the:

- use of and care for equipment;
- design and use of experiments;
- quantitative and/or qualitative analyses.

Integrative skills will be assessed with respect to the ability to identify locally specific (real life) problems and design projects to solve such problems which should integrate knowledge, skills and methods acquired in studying the subject.

All forms of evaluation will place emphasis on the specified competencies/aptitudes outlined at the beginning of each module.

OVERVIEW OF THE MODULES

This syllabus will be taught in 100 hours distributed as follows:

- 50 hours in Form 1; and
- 50 hours in Form 2.

The 50 hours in each class will give a total of 60 periods of 50 minutes each per year. It is estimated that two lessons would be taught per week making a total of thirty (30) effective teaching weeks. It should be noted that while more emphasis is placed on the living world in form one, this emphasis is reversed to health education in form two. The three modules that make up the biology syllabus and the relative duration for teaching each are as presented in the table below:

PRESENTATION OF THE MODULES AND RELATIVE DURATION/PERIOD OF TEACHING OF EACH MODULE

CLASS	MODULE TITLE	RELATIVE DURATION PER MODULE (HOURS AND/OR PERIODS)
FORM 1	1. The living world	20 hours (24 periods)
	2. Health education	15 hours (18 periods)
	3. Environmental education	15 hours (18 periods)
FORM 2	1. The living world	15 hours (18 periods)
	2. Health education	20 hours (24 periods)
	3. Environmental education	15 hours (18 periods)

5. BRIEF PRESENTATION OF THE MODULES

MODULE ONE: THE LIVING WORLD

TIME ALLOCATION: 20H (24 PERIODS)

INTRODUCTION TO THE MODULE

Man is an integral part of the living world. Man therefore has to provide his needs (air, food and shelter, etc) which are obtained from plant and animal resources by exploiting the natural world through the practice of agriculture, animal husbandry, and the transformation of products in such a way as to maintain the delicate ecological equilibrium.

It is therefore, necessary for man to discover and identify the different ecosystems as well as the nutritional relationships between the living organisms and their conditions of adaptability to the different

milieu in order to better invest in the sustainable exploitation and proper utilisation of various resources. This is so because family, social and economic life, the environment, wellbeing and health all depend on man's behaviour in the living world.

From this point of view the learner ought to be guided to acquire a set of notions, methods, techniques, and attitudes linked to life and interrelationships.
This module therefore enables learner to:

- acquire general and basic notions of:
  - biology, life and its characteristics, the scientific way of constructing knowledge, solving problems and communicating information;
  - the ecosystem components, interrelationships in ecosystems (living, non-living, nutritional, parasitic, symbiotic and commensalistic relationships and climatic factors affecting organisms in their environment, etc.,);
  - environmental protection and conservation;
  - reproduction in plants and animals;
- develop and appropriate basic skills and acquire knowledge of the general methods, techniques and attitudes in the:
  - steps in cultivating common food crops;
  - steps in animal breeding;
  - poultry farming;
  - medicinal plant cultivation;
  - improvement of common food crop yields,
  - improvement of animal production; and
  - improvement of medicinal plant conservation;
  - transformation of plant and animal resources; and
  - transformation of medicinal resources to improve on their storage and conservation;
- develop abilities for improved and sustainable management of the environment.

CONTRIBUTION TO THE GOALS OF THE CURRICULUM

The competencies that the learner will develop from this module will enable him/her:

- acquire knowledge of the basic concepts of life and life forms, the scientific way of constructing knowledge and solving problems; the ecosystems; ecosystem interrelationships and factors influencing such relationships; plant and animal production; medicinal plant cultivation and conservation and skills in general agricultural and animal breeding methods, techniques, and practices;
- clarify, consolidate and organise the learning acquired at the primary school level in order to better exploit them in the latter years of study and to better manage his/her environment.

This module could provide future career in the fields of biomedicines, agronomy, environmental education, teaching, etc

CONTRIBUTION TO SOCIETAL LIFE

- This module enables learners to develop in them the scientific spirit of self-reliance and team work. These skills are indispensable in scientific disciplines as well as in those linked to life in a community.

TIME ALLOCATION: 15H (18 PERIODS)

INTRODUCTION TO THE MODULE

This module consists of two parts:

- reproductive health;
- nutritional health.

Reproduction and nutrition are necessary and indispensable functions for the continuity of the human species. It is therefore necessary to help the learner to construct knowledge and develop essential resources (concept, techniques, and methods) and attitudes linked to the proper functioning of these vital life functions. This would enable the learner to appreciate the importance and the fragility of life in order to adopt behaviours that would safeguard and protect their own life and that of members of their community. The module should reinforce the basic elements of experimentation in the learner; develop skills linked to the conservation of physical, physiological and mental health of the individual and his/her environment; and help him/her find solutions to daily life health problems and nutritional challenges.

CONTRIBUTION TO THE CURRICULUM

- The competences acquired would enable the learner to be well equipped for latter cycles of life and the improved management of his/her health and nutritional needs;
- This module could invoke vocations in the fields of agronomy and food sciences, biomedical sciences, teaching, etc.

CONTRIBUTION TO SOCIETAL LIFE

- This module will develop in the learner skills in interpersonal relationship, self esteem, communication, decision making, critical thinking and scientific spirit,
- At the same time it provides important resources for a more efficient and global solving of daily life problems.

MODULE THREE: ENVIRONMENTAL EDUCATION AND SUSTAINABLE DEVELOPMENT

TIME ALLOCATION: 15H (18 PERIODS)

INTRODUCTION TO THE MODULE

The importance of this module resides in the fact that the learner who lives permanently in a more or less hostile environment, ought to understand his/her milieu in order to exploit it in a sustainable way for his/her needs and survival without wasting and rupturing its delicate equilibrium. The module therefore takes into consideration the management of the following three components of the environment: water, air and land. These three components constitute the physical and natural resources of the environment of the learner.

Considering the importance of these resources in the maintenance of life, it is therefore necessary to create awareness in learners as to their values and interdependence, as well as to sensitise them on the challenges of their sustainable management.

CONTRIBUTION TO THE CURRICULUM

- The skills the learner will acquire in this module will better equip him/her for the sustainable management of his/her environment.

- This module would also invoke the love for careers in conservation, environmental engineering, agronomy, teaching and environmental education, etc.

CONTRIBUTION TO SOCIETAL LIFE

This module will develop in the learner skills linked to:

- the three "Rs" – **r**educe, **r**ecycle and **r**euse wastes;
- communication and interpersonal relationships;
- decision making, critical thinking, scientific mindedness and self esteem;
- identification of needs and definition of values.

These skills are indispensible in appropriating knowledge in the other sciences as well as other areas of learning.

This module also provides essential resources for the appropriation of the content of environmental education, sustainable development, and health education.

FORM 1: SYNOPSIS OF THE MODULES, CATEGORIES OF ACTION, EXAMPLES OF ACTIONS AND RELATIVE DURATION/PERIODS

TITLE OF MODULE	CATEGORIES OF ACTION/EXAMPLES OF ACTIONS	DURATION/PERIOD
THE LIVING WORLD	Appropriating knowledge of life and life forms – distinguishing between living and none living things; – describing and explaining the scientific way of acquiring knowledge and solving problems; – communicating scientific information (reporting, observation charts, nature calendars, vivaria, etc).	06 PERIODS
	Practicing agriculture and animal husbandry – explaining the influence of the environment on plant and animal production; – planting crops and breeding animals in function of the characteristics of the environment; – practising the steps in cultivating some common crops in Cameroon.	07 PERIODS
	Using the soil in the production of consumable resources – appropriating and using techniques and methods of improving/restoring soil quality such as: using manure, fertilizers, crop rotation and association, irrigation, drainage, contour faming, terracing, etc.	03 PERIODS
	Preventing soil degradation through the appropriation of techniques and methods of: – preventing bush fires; – planting trees; – preventing erosion by practising terrace farming, cover cropping, etc;	03 PERIODS
	Conserving natural resources (food and medicinal plants) – developing an inventory of locally available edible and endangered species; – classifying the species identified (summary); – identifying unsustainable practices in hunting, fishing and harvesting of natural resources; – appropriating techniques and methods of sustainable hunting, fishing and harvesting of natural resources including cultivating	05 PERIODS

	medicinal plants;	
HEALTH EDUCATION	Preventing/Avoiding early pregnancies – identifying signs of puberty; – practising abstinence and avoiding sexual promiscuity; – using contraceptives during sexual intercourse; – participating in health talks, awareness raising and peer education.	05 PERIODS

HEALTH EDUCATION	Preventing/avoiding STIs and HIV/AIDS – practising personal hygiene rules; – practising abstinence, using condoms during sexual intercourse and avoiding sexual promiscuity; – accepting voluntary screening with and/or without sex partner(s); – seeking medical attention with and/or without sex partner(s); – respecting medical prescriptions and getting complete treatment when sick.	05 PERIODS
	Preventing/eliminating deficiency and overfeeding diseases – identifying classes of food with their uses to the body – defining and planning balanced diets and meals involving the determination of the composition, nutritional and calorific value of different food types; – identifying common deficiency and underfeeding diseases through case study in a community or chosen locality and advising on prevention/treatment measures by use of carefully planned meals; – identifying symptoms of obesity and advising on prevention/treatment measures. – adopting rules for hygiene preparation and preservation of food; – adopting healthy feeding habits and practices; – Integrating the concept of balance dieting and hygiene in the preparation of at least a local meal commonly eaten in the community	05 PERIODS
	Preventing/avoiding food poisoning – practising food and environmental hygiene rules; – preserving food properly; – reading, interpreting, understanding and applying knowledge of information on labels of packaged foods to distinguish expired from unexpired foods;	03 PERIODS
ENVIRONMMENTAL EDUCATION AND SUSTAINABLE DEVELOPMENT	Preventing water pollution – identifying water sources and possible cause of pollution in the community; – tree planting as a way to ensure protection of a community watershed; – carrying out field work within the community to identify health consequences due to water pollution; – producing posters to demonstrate two different health consequences of water pollution and to sensitise the local community on how underground and surface water sources are polluted and how they can be protected;	06 PERIODS
	Preventing air pollution – identifying possible cause(s) of air pollution in the community; – carrying out field work within the community to identify health consequences due to air pollution;	06 PERIODS

	– tree planting as a way to ensure purification of the air; – producing posters to sensitise the students of one's school on two common health consequences of air pollution and how they can be prevented.	
	Preventing land pollution – identifying possible cause of land pollution in the community; – carrying out field work to identify health consequences of land pollution in the community; – developing and sharing with classmates a household and community refuse treatment plant as a way to prevent land pollution; – producing posters to sensitise the local community on two common health consequences of land pollution and how they can be prevented.	06 PERIODS

FORM TWO: SYNOPSIS OF THE MODULES, CATEGORIES OF ACTION, EXAMPLES OF ACTIONS AND RELATIVE DURATION/PERIODS

TITLE OF MODULE	CATEGORIES/EXAMPLES OF ACTIONS	DURATION/PERIOD
THE LIVING WORLD	Practicing agriculture and animal husbandry – planting crops & breeding animals in function of the characteristics of the environment; – cultivating plants for their fruits, seeds, leaves, roots; – breeding birds, fish, small ruminants; – selecting good varieties and disseminating the seeds.	08 PERIODS
	Preventing/treating animal and plant diseases – vaccinating animals to prevent diseases; – removing infected and affected plants and animals from the rest; – quarantining newly acquired stock of animals and those with contagious diseases for observation; – identifying cause(s) of plant and animal diseases; – providing appropriate treatment.	04 PERIODS
	Preserving consumable resources (food of plant and animal origin) – transforming products of animal and plant origin into flour, puff-puff, cake, bread, yogurt, cheese, butter, extraction of palm oil, shear nut oil etc..; – preserving food by drying, salting, smoking, icing, freezing canning, pasteurising, irradiating, curing, etc.	06 PERIODS
HEALTH EDUCATION	Preventing/eliminating deficiency and overfeeding diseases – estimating Body Mass Index (BMI) to control weight and prevent nutritional diseases; – reading, interpreting, understanding and applying knowledge of information on labels of packaged foods to determine nutritional values; composition and selecting the type of food to consume; – designing projects to solve a deficiency disease or nutritional disease in the local community; – designing a project to solve an identified deficiency disease or nutritional disease in the local community..	06 PERIODS
	Preventing/avoiding food poisoning – practising food and environmental hygiene rules; – preparing and preserving food properly; – reading, interpreting, understanding and applying knowledge of information on labels of packaged foods to distinguish expired from unexpired	02 PERIODS

	foods.	
	Ensuring physical and social health – exploring the role of exercise to health; – practising a sporting activity such as a team or individual sport; – raising awareness in the community about the importance of sport to health; – planning daily/weekly activities to include study time, rest, and exercise; – exploring the health consequences of consuming alcohol, cigarettes and drugs – designing posters, slogans and other means of communication to demonstrate the health consequences due to the consumption of alcohol, cigarettes and drugs on the body.	04 PERIODS

HEALTH EDUCATION	Caring for and maintaining reproductive organs in good health – practising personal hygiene regularly.	2 PERIODS
	Advocating against harmful cultural and emergent health related practices – identifying the problem; – preparing advocacy messages and slogans aimed at solving the problem; – identifying target policy makers; – developing strategy for communicating with policy makers; – giving advocacy messages widest publicity possible.	05 PERIODS
	Preventing/avoiding STIs and HIV/AIDS – practising personal hygiene rules; – accepting voluntary screening with and/or without sex partner(s); – seeking medical attention with and/or without sex partner(s); – respecting medical prescriptions and getting complete treatment when sick.	05 PERIODS
ENVIRONMENTAL EDUCATION AND SUSTAINABLE DEVELOPMENT	Reducing/mitigating effects of global warming – identifying sources, consequences of greenhouse gases and advocate against their emission; – participating in campaigns and educative talks on the effects of greenhouse gases and respecting rules for minimising their discharges into the atmosphere; – planting trees.	04 PERIODS
	Reducing/mitigating the effects of ozone layer destruction – identifying causes of ozone layer depletion and advocating against their emission; – identify consequences of ozone layer depletion and designing sensitisation and educational campaign talks on their consequences; – respecting rules for minimising the discharges of ozone depleting substances into the atmosphere; – planting trees.	04 PERIODS
	Conserving biodiversity – identifying the role of biodiversity in the ecosystem and to the economy; – educating, raising awareness and sensitising on the consequences of biodiversity loss;	04 PERIODS

	– developing civic responsibility and respecting legislation on poaching, over-fishing and over-exploitation of forest and forest resources; – designing and implementing projects on biodiversity conservation and protection.	
	Preventing the impart of natural disaster/restoring the environment to its natural state – identifying disaster occurrence cycle; – monitoring disaster cycle; – developing locally specific early warning systems to mitigate impact of disaster; – developing simple disaster management action plans for the local community.	06 PERIODS

CONTEXTUAL FRAMEWORK		**COMPETENCIES**		**RESOURCES**			
Family of situations	Examples of situations	Category of actions	Examples of Actions	Essential Knowledge	Abilities (Aptitudes)	Life Skills (Practice)	Other resources

SUPPLY OF MAN'S NEEDS IN ANIMAL AND PLANT RESOURCES	Understanding life and life forms	Appropriating knowledge of life and life forms	*distinguishing between living and non living things; *describing and explaining the scientific way of acquiring knowledge and solving problems; *Creating observation charts and nature's calendars; *constructing simple vivaria; *communicating scientific information; *describing the differences between plant and animal cells; *distinguishing different types of cells as the origin and building blocks of life.	**I. Introduction to biology** **1.1.** Definition and branches **1.2.** Relationship with other science subjects **1.3.** Relevance to daily life **1.4.** Characteristics of living things and differences between living and non-living things **1.5.** Differences between plants and animals **1.5.** Studying living things **1.5.1.** The scientific approach **1.5.2.** Observing living organisms (in their habitats and in the laboratory) **1.5.2.1.** Equipment/tools for observation (lens, microscope, the five senses, etc.) **1.5.2.2.** Describing and reporting observations in biology **1.5.3.** The cell as the basic structural and functional unit of life. This should be strictly limited to the cell as seen with the light microscope (cell membrane, cytoplasm and nucleus only). **1.5.3.1.** Examples of types of cells to include plant and animal cells; reproductive and growth cells; bacterial and protoctist cells.	-define biology and branches; -explain the relationship between biology and the other sciences; -describe and distinguish between biology related careers; -the role of biological knowledge in solving daily life problems; -differentiate between living and non-living things (animal/plant versus motor car/robots... etc.); -how scientists investigate nature and/or solve problems; -protect nature, life and life forms; -observe, describe and appreciate the beauty of organisms in their natural milieu; -communicate scientific information; -distinguish plant and animal cells; -appreciate the cell as the origin and building blocks of life.	Curiosity and sense of observation -Respect of others opinions -Interest in scientific advancement -Open-mindedness -Patience -Love for nature -Team spirit and cooperation -Decision making and critical spirit -Creative thinking -Logical reasoning -Methodological action -Problem solving -Management and respect for the environment -Effective communication	-Didactic materials – charts, models, microscope, etc.; biology related fields, institutions, companies, Professionals

FORM ONE OF GENERAL SECONDARY EDUCATION

MODULE I : THE LIVING WORLD
TIME ALLOCATIONN : 20 HRS (24 PERIODS)

CONTEXTUAL FRAMEWORK		COMPETENCIES		RESOURCES			
Family of situations	Examples of situations	Category of actions	Actions	Essential Knowledge	Abilities (Aptitudes)	Life Skills (Practice)	Other resources
SUPPLY OF MAN'S NEEDS IN ANIMAL AND PLANT RESOURCES	Insufficient consumable resources	Practicing agriculture and animal husbandry	*explaining the influence of the environment on plant and animal production; *planting crops and breeding animals in function of the characteristics of the environment; *identifying the steps in cultivating some common crops in Cameroon.	**2. Environment and habitat;** **2.1.** Definitions **2.2.** Environmental factors affecting plant and animal growth; **2.3.** Effects of day and night on organisms; **2.4.** Effects of changing seasons on organisms; **2.5.** Influence of climatic factors (sunlight, rainfall, wind, CO_2 and O_2); **2.6.** Influence of edaphic factors (soil water content, mineral salts, organic matter & soil microorganisms); **2.7.** Influence of other living organisms (biotic): competition for light, soil nutrients, CO_2, O_2 food & reproductive mates).	*Choice of crops and animals according to seasons or out of season and soil types	-Curiosity and sense of observation -Respect of others opinions -Interest in scientific advancement -Open-mindedness -Patience -Love for nature -Team spirit and cooperation -Decision making and critical spirit -Creative thinking -Logical reasoning -Methodological action -Problem solving -Management and respect for the environment -Effective communication	Didactic Materials Farm inputs

CONTEXTUAL FRAMEWORK		COMPETENCIES		RESOURCES			
Family of situations	Examples of situations	Category of actions	Actions	Essential Knowledge	Abilities (Aptitudes)	Life Skills (Practice)	Other resources
SUPPLY OF MAN'S NEEDS IN ANIMAL AND PLANT RESOURCES	Insufficient consumable resources	Using the soil in the production of consumable resources	*preventing bush fires; *planting trees; *preventing erosion by practising terrace farming, cover cropping, etc *improving/restoring soil quality by using manure, fertilizers, crop rotation and association, irrigation, drainage, contour faming, terracing, etc.	**3. Improving Soil Quality** **3.1**. Qualities of a good soil **3.2.** Responsible farming practices (crop rotation and association, irrigation, drainage, contour faming, terracing….) **3.3.** Planting techniques	-Careful choice of chemical fertilizers	-Curiosity and sense of observation -Respect of others opinions -Interest in scientific advancement -Open-mindedness -Patience -Love for nature -Team spirit and cooperation -Decision making and critical spirit -Creative thinking -Logical reasoning -Methodological action -Problem solving -Management and respect for the environment -Effective communication	Agricultural technicians
	Soil degradation	Preventing soil degradation	*preventing bush fires; *planting trees; *preventing erosion by practising terrace farming, cover cropping, tree planting etc; *improving/restoring soil quality by using manure, fertilizers, crop rotation and association, irrigation, drainage, contour faming, terracing, etc.	**4.Soil erosion** **4.1.** Different types of erosion and their causes (water & wind erosion, human activities...) **4.2.** Effects of erosion **4.3.** prevention of erosion	-Practice of soil conservation	-Awareness in the protection of the soil -Respect for the environment	

CONTEXTUAL FRAMEWORK		COMPETENCIES		RESOURCES			
Family of situations	Examples of situations	Category of actions	Examples of Actions	Essential Knowledge	Abilities (Aptitudes)	Life Skills (Practice)	Other resources
SUPPLY OF MAN'S NEEDS IN ANIMAL AND PLANT RESOURCES	Insufficient consumable resources	Conserving natural resources (food and medicinal plants)	*finding out about locally available: o edible species; o endangered species; *classifying the species identified (summary); *practising sustainable hunting, fishing and harvesting;	**5. Hunting, Fishing, Harvesting and Gardening** **5.1.** Identification of edible and endangered species of our environment **5.2.** Census of edible species of our environment **5.3.** Census of endangered species **5.4.** Classification of identified species **5.5.** Types/techniques of gardening	Practising sustainable exploitation of natural resources	-Curiosity and sense of observation -Respect of others opinions -Interest in scientific advancement -Open-mindedness -Patience -Love for nature -Team spirit and cooperation -Decision making and critical spirit -Creative thinking -Logical reasoning -Methodological action -Problem solving -Management and respect for the environment -Effective communication	Personnel from Forestry department, Ministry of Agriculture and Rural Developme nt, Fisheries and Animal Breeding, etc.
			*cultivating medicinal plants;	**6.Role of some local medicinal plants**	Growing and use of some local medicinal plants		Herbalists, traditional healers,

MODULE II : HEALTH EDUCATION
TIME ALLOCATION : 15 HRS (18 PERIODS)

CONTEXTUAL FRAMEWORK		COMPETENCIES		RESOURCES			
Family of situations	Examples of situations	Category of actions	Actions	Essential Knowledge	Abilities (Aptitudes)	Life Skills (Practice)	Other resources
IMPROVEMENT OF REPRODUCTIVE HEALTH	Early Pregnancies	Preventing/avoiding early pregnancies	*identifying signs of puberty;	**I. Reproductive health** **1.1. Puberty** **1.1.1.** Primary and secondary sexual characteristics **1.1.2.** Fertilization and pregnancy	-Recognition and description of signs of puberty; -Dissection of a small mammal to observe and describe the reproductive organs.	-Self respect and respect for others. -Respect of different opinions. -Interest in scientific progress	-Personnel from the medical corps. -Social workers -Dissecting kit
			*practising abstinence; *using contraceptives during sexual intercourse; *avoiding sexual promiscuity; *raising awareness through writing of slogans; *participating in talks on health education.	**2. Consequences of early pregnancies** **3. Prevention of early pregnancies**	Choice and correct use of contraceptives	- Practice abstinence -Self respect and respect for others. -Respect for the opinion of others -Develop interest in scientific and technological advancements	-Personnel from the medical corps. -Social workers
	Prevalence of STIs and HIV/AIDS	Preventing/avoiding STIs and HIV/AIDS	*practising personal hygiene rules; *accepting voluntary screening with and/or without a partner(s); *seeking medical attention with and/or without sex partner(s); *respecting medical prescriptions and getting complete treatment when sick.	**4. STI, HIV/AIDS** **4.1.** Gonorrhoea, syphilis, Chlamydia, hepatitis B **4.2.** HIV/AIDS **4.3.** Prevention of STI, HIV/AIDS **4.4.** Hygiene of the reproductive organs.	-Practice hygiene rules -Screen for serological status. -Seek medical treatment if sick. -Stick to one partner	Respect of hygiene rules -Respect medical prescriptions	-Social workers - medical personnel

CONTEXTUAL FRAMEWORK		COMPETENCIES		RESOURCES			
Family of situations	Examples of situations	Category of actions	Actions	Essential Knowledge	Abilities (Aptitudes)	Life Skills (Practice)	Other resources
IMPROVEMENT OF NUTRITIONAL HEALTH	Prevalence of nutritional diseases	Preventing/eliminating deficiency and overfeeding diseases	*planning balanced diets; *adopting good feeding habits and practices *eating sufficient and balanced meals (or appropriate quantities/types of food to prevent/treat deficiency diseases);	**6. Quality Nutrition** 6.1. Types and sources of foods; 6.2. Nutritional diseases due to deficiency; (kwashiorkor, rickets...) **6.3.** Balanced diet and choosing the right type of food; **6.4.** Dietary requirements and eating habits.	-Draw up appropriate menu to prevent deficiencies and excess/over feeding diseases.	-Adopt good feeding habits; -Observe hygiene rules for feeding	-Dieticians -Medical personnel -Social workers
	Food poisoning	Preventing/avoiding food poisoning	*practising food and environmental hygiene rules; *preparing and preserving food properly; *reading, interpreting, understanding and applying knowledge of information on labels of packaged foods to distinguish expired from unexpired foods.	**7.Food Hygiene** **7.1.** Food preparation and preservation; **7.2.** Social health (smoking, alcoholism, exercise and rest).	-Practice some methods of food preservation -Practice good eating water -Do regular sports or physical exercises	Observe hygiene of food and digestion	

MODULE III : ENVIRONMENTAL EDUCATION AND SUSTAINABLE DEVELLOPMENT
TIME ALLOCATION : 15 HRS (18 PERIODS)

CONTEXTUAL FRAMEWORK		COMPETENCIES		RESOURCES			
Family of situations	Situations	Category of actions	Actions	Essential Knowledge	Abilities (Aptitudes)	Life Skills (Practice)	Other resources
SUSTAINABLE MANAGEMENT OF NATURAL RESOURCES: WATER, AIR, SOIL	Water pollution	Preventing water pollution	*identifying and protecting water sources; *constructing and using latrines, septic tanks, etc.; *advocating, educating, raising awareness and sensitising people on the location of factories, waste and refuse management sites, etc; *purifying/recycling used or polluted water, wastes and refuse; *practising the three "Rs" – Reduce, Recycle, Reuse	**1.Water Management** **1.1** Natural water sources **1.2.**Water pollution **1.2.1**. Different type and sources of water pollutants **1.2.2.** Effects of polluted water on human health: water borne diseases **1.2.3.** Effects of water pollution on aquatic life **1.2.4.** Purification of used water **1.2.5.** Water filters/Maintenance	-Techniques of treatment of used or polluted water -Practice hygiene in relation with water -Contribution to aforestation -Contribution to the proper management of waste / toxic products	-Daily practices -Respect of hygiene rules	-Technicians in sustainable rural developme nt, hygiene and sanitary personnel
	Air pollution	Preventing air pollution	*advocating for stricter control of the emission of toxic substances into the atmosphere; *educating, raising awareness and sensitising on the harmful effects of the emission of toxic and radioactive substances into the atmosphere; *planting trees.	**2.Air** **2.1.** Composition of air **2.2.** Uses of natural and artificial air **2.3,** Air pollution **2.3.1.** Some air pollutants **2.3.2.** Effects of air pollution		-Respect for the environment (prohibition in burning tyres, plastic materials, throwing pollutants in nature, sensitize the population on dangers of bush fires...)	-Technicians in sustainable developme nt Personnel from the Ministry of Environme nt and Nature

							Protection

CONTEXTUAL FRAMEWORK		COMPETENCIES		RESOURCES			
Family of situations	Situations	Category of actions	Actions	Essential Knowledge	Abilities (Aptitudes)	Life Skills (Practice)	Other resources
SUSTAINABLE MANAGEMENT OF NATURAL RESOURCES: WATER, AIR, SOIL	Land pollution	Preventing land pollution	*educating, raising awareness and sensitising on the consequences of land pollution; *educating on the importance of using refuse cans for disposal of wastes and refuse; *using chemical products such as pesticides, fertilisers, etc, rationally; *sorting and recycling all wastes and refuse; *removing non-biodegradable objects from the soil	**3. Land pollution** **3.1.** Land pollutants and definition (agricultural and chemical waste: fertilizers, pesticides and sewage discharges...) **3.2.** Effects of land pollution **3.3.** Preventing land pollution	-Use of bins -Recycling of household waste -Selecting household waste -Rational use of chemicals	Awareness in protection of land	Resource persons on environmental conservation.
	Rupture of ecological equilibrium	Conserving biodiversity	*identifying the role of biodiversity in the ecosystem and to the economy; *educating, raising awareness and sensitising on the consequences of biodiversity loss;	**4. Conservation of Biodiversity** **4.1.** Definition **4.2.** Concept of interdependence of living organisms (producer, consumer, decomposer, parasites, commensals…)	-Responsible farming technique -Choice of adapted species - Conservation techniques -Communication techniques	-Respect of the law or legislation -Open-mindedness	-Technicians in agriculture -Resource persons in wildlife and forestry -Specialist on

			*developing civic responsibility and respecting legislation on poaching, over fishing and over exploitation of forest and forest resources; *designing and implementing projects on biodiversity conservation and protection.	**4.2.** Legislation on poaching, fishing and forest exploitation **4.3.** Sensitisation and education		-Life skills	management

FORM TWO OF GENERAL SECONDARY EDUCATION

MODULE I : THE LIVING WORLD
TIME ALLOCATION : 15 HRS (18 PERIODS)

CONTEXTUAL FRAMEWORK		COMPETENCIES		RESOURCES			
Family of situations	Examples of situations	Category of actions	Actions	Essential Knowledge	Abilities (Aptitudes)	Life Skills (Practice)	Other resources
SUPPLY OF MAN'S NEEDS IN ANIMAL AND PLANT RESOURCES	Insufficient consumable resources	Practicing agriculture and animal husbandry	*planting crops & breeding animals in function of the characteristics of the environment; *cultivating plants for their fruits, seeds, leaves, roots; *breeding birds, fish, small ruminants; *selecting good varieties and disseminate the seeds.	**1. Need for Reproduction** **1.1. Reproduction in plants** **1.2.** Sexual reproduction in plants; from the flower to the seed and fruit ; qualities of a good grain: germination **1.3.** Vegetative multiplication as the basis for cloning: * natural (plantains, sugar cane, onion, potato, cocoyam, etc * artificial (grafting, marcotting, cutting layering..); **1.4.** Other forms of asexual reproduction: budding in brewer's yeast, fission in bacteria. **2.1. Reproduction in animals**: **2.2.** Sexual reproduction: – fertilisation – development **2.3.** Rearing techniques/Animal husbandry (a few cycles of development - change of form/ morphology in animals, metamorphosis in insects & amphibians - Impact of larval forms on plant yield).	*Dissection of a flower or grain *Use of the hand lens *Choice of seeds *Grow selected plants using one or a combination of vegetative propagation techniques *Observation of food reserves (tubers, fruits, grain…) *Choice of animal varieties for breeding *Knowledge of breeding conditions *Incubation techniques	Mastery of improved reproductive techniques in plants and animals	Didactic materials Farm inputs Veterinary personnel Agricultural extension staff

CONTEXTUAL FRAMEWORK		COMPETENCIES		RESOURCES			
Family of situations	Examples of situations	Category of actions	Actions	Essential Knowledge	Abilities (Aptitudes)	Life Skills (Practice)	Other resources
SUPPLY OF MAN'S NEEDS IN ANIMAL AND PLANT RESOURCES	Insufficient consumable resources	Preventing/treating animal and plant diseases	*vaccinating animals to prevent diseases; *removing infected and affected plants and animals from the rest; *quarantining newly acquired stock of animals and those with contagious diseases for observation; *identifying cause(s) of plant and animal diseases; *providing appropriate treatment.	**3. Improving the Quality and Quantity of Production** **3.1.** Treatment of animals and plants **3.2.** Prevention/elimination of parasites: – animal parasites- (ecto - parasites- lice, ticks, jiggers); – endo-parasites- intestinal worms; plant parasites: (semi parasites-African mistletoe; – complete parasites-mildew, rust, corn smut) **3.3.** Biological and chemical control	-Identification and destruction of animal and plant parasites. -Identification and treatment of animal and plant diseases -Prevention of animal and plant diseases (vaccination of animals, use of pesticides on plants) -Choice of predator species/plant and animal products for biological control.	-Curiosity and sense of observation -Respect of others opinions -Interest in scientific advancement -Open-mindedness -Patience -Love for nature -Team spirit and cooperation -Decision making and critical spirit -Creative thinking -Logical reasoning -Methodological action -Problem solving -Management and respect for the environment -Effective communication	Agriculture technician Animal breeding technician Veterinarians

CONTEXTUAL FRAMEWORK		COMPETENCIES		RESOURCES			
Family of situations	Examples of situations	Category of actions	Actions	Essential Knowledge	Abilities (Aptitudes)	Life Skills (Practice)	Other resources
SUPPLY OF MAN'S NEEDS IN ANIMAL AND PLANT RESOURCES	Insufficient consumable resources	Preserving consumable resources (food of plant and animal origin)	*transforming products of animal and plant origin into flour, puff-puff, cake, bread, yogurt, cheese, butter, extraction of palm oil, shear nut oil etc..; *preserving food by drying, salting, smoking, icing, freezing canning, pasteurising, irradiating, curing, etc.	**4. Transformation of foodstuffs** **4.1.** Role of microorganism in the transformation of foods: fermentation (alcohol, lactic and butyric acid), **4.2.** Principle of animal and plant products preservation	- Techniques of transformation and conservation of plant and animal products - Conservation techniques of foodstuff	-Transformation and preservation of common perishable foodstuffs of plant and animal origin -Creative critical thinking skills -Process skills - Problem solving skills -Management and respect for the environment -Effective communication	Food processing technicians, Dieticians

MODULE II : HEALTH EDUCATION
TIME ALLOCATION : 20 Hrs (24 PERIODS)

IMPROVEMENT OF NUTRITION	Prevalence of nutritional diseases	Preventing/eliminating deficiency and overfeeding diseases	estimating Body Mass Index (BMI) to control weight and prevent nutritional diseases; *reading, interpreting, understanding and applying knowledge of information on labels of packaged foods to select the type of food to consume; *determining the calorific value of different food types and meals. *designing a project to solve an identified deficiency disease or nutritional disease in the local community.	**Quality Nutrition** **5.1. Nutritional diseases:** **5.1.1** due to poor feed (obesity, kwashiorkor, beriberi, marasmus, etc **5.1.2** body mass index as an indication of over feeding or under feeding **5.1.3** others (diabetes, hypertension, etc) **5.2. Calorific values of foods** **5.3. Project design to combat an identified nutritional disease within the community**	-Identify the recipes for at least two local meals pointing out defects where applicable, -Draw up appropriate menus to prevent deficiencies and excess/over feeding. -practice weekly meal planning to ensure balance dieting.	Adopt good feeding habits; - relating feeding habits to some nutritional diseases, -Observe hygiene rules for feeding	-Dieticians -Medical personnel -Social workers

IMPROVEMENT OF REPRODUCTIVE HEALTH	Food poisoning	Preventing/avoiding food poisoning	*practising food and environmental hygiene rules; *preserving food properly; *reading, interpreting, understanding and applying knowledge of information on labels of packaged foods to distinguish expired from unexpired foods.	**6. Food Hygiene**	-Practice some methods of food preservation -Practice good eating water	Observe hygiene of food and digestion	
	Physical and social health	Maintaining physical and social health	*Exploring the role of exercise to health; *Practicing sports to keep fit; *Raising awareness on the importance of sports to health; *Planning daily/weekly activity schedules/timetable to include study time, rest and exercise *Exploring reasons why alcohols, cigarettes and drug consumption should be avoided; *Designing posters, slogans and other means of communication to demonstrate the health consequences of consuming alcohol, cigarettes and drugs	**7. Physical and social health** **7.1. Definition and importance of exercise to the body (muscles, brain, bones, body mass, blood circulation, etc)** **7.2. Practising workout and recreational sports** **7.3. Definition and importance of rest to the body** **7.4. Health and Social effects of alcohol consumption, cigarette smoking and drug consumption on the body** **7.5. Raising awareness on the health consequences of alcohol, cigarettes and drugs**	-practice at least a team and an individual sporting activity - practice planning of weekly activities -writing awareness messages and slogans -Identifying symptoms and diseases caused by alcohol consumption, cigarette smoking and drug consumption	Respecting roles of different sports and games Respecting one's own schedules Time management and respecting appointment times with other persons (REMEMBER TIME IS PRECIOUS) Avoiding the consumption of alcohol, cigarettes and drugs	-Personnel from the medical corps and NGOs -Social workers and politicians -Peer educators
	Cultural practices harmful to reproductive health (taboos, sex mutilation, ironing of breasts, rape...)	-Caring for and maintaining the reproductive organs in good health -Advocating to stop harmful emergent behaviour	*practising personal hygiene rules; *identifying the problem; *preparing advocacy messages and slogans in the form of solutions to the problem; *identifying target policy makers;	**7. Practices Harmful to adolescent reproductive health**	-Writing out advocacy messages and slogans and posters -Preparation of session of educative talks -Healthy courtship -Avoiding deviant sexual practices which are against nature.	Communication, sensitization and influencing policy change Distinguishing values	
	Emergent	-Caring for and			-Writing out advocacy		

	harmful behaviour to reproductive health	maintaining the reproductive organs in good health -Advocating to stop harmful emergent behaviour	*developing strategy for communication with policy makers; *giving advocacy messages the widest publicity possible.	**8. Emergent behaviour harmful to reproductive health** (homosexuality, zoophily, pornography...)	messages and slogans and posters -Preparation of session of educative talks -Healthy courtship -Avoiding deviant sexual practices which are against nature.	Communication, sensitization and influencing policy change Identifying needs and distinguishing values	
IMPROVEMENT OF REPRODUCTIVE HEALTH	Prevalence of STIs and HIV/AIDS	Preventing/avoiding STIs and HIV/AIDS	*practising of personal hygiene rules; *accepting voluntary screening with and/or without sex partner(s); *seeking medical attention with or without sex partner(s); *respecting medical prescriptions and getting complete treatment if sick.	**9. STI, HIV/AIDS (as consequences of emergent harmful sexual behaviour)** **9.1.** Gonorrhoea, syphilis, Chlamydia, hepatitis B **9.2.** HIV/AIDS **9.3.** Prevention of STI, HIV/AIDS **9.4.** Hygiene of the reproductive organs.	-Practice hygiene rules -Seek the serological status. -Seek medical treatment if sick. -Stick to one partner	Respect of hygiene rules -Respect medical prescriptions	-Social workers - medical personnel

MODULE III : ENVIRONMENTAL EDUCATION AND SUSTAINABLE DEVELOPMENT
TIME ALLOCATION : 15 Hrs (18 PERIODS)

SUSTAINABLE MANAGEMENT OF NATURAL RESOURCES: WATER, AIR, SOIL	Global warming and climate change	Reduci the effects of global warming	consequences of greenhouse gases and advocate against their emission; *participating in campaigns and educative talks on the effects of greenhouse gases and respect rules for minimising their discharges into the atmosphere; *planting trees.	**effect and climate change** **10.1.** Definition **10.2.** Causes **10.3.** Effects **10.4.** Indicators of climate change and global warming	techniques of adaptation to global warming and climate change	-Respect for the environment -aforestation -Recycling and reduction in greenhouse gas emission	Personnel from the Ministry of Environment and Nature Protection Agricultural technicians Environmentalists; Conservationists
	Destruction of the ozone layer	Reducing/mitigating the effects of ozone layer destruction	*identifying causes of ozone layer depletion and advocating against their emission; *identify consequences of ozone layer depletion and designing sensitisation and educational campaign talks on these consequences *respecting rules for minimising the discharges of ozone depleting substances into the atmosphere; *planting trees	**11.The ozone layer** **11.1.** Definition **11.2.** Role of the ozone layer **11.3.**Causes of destruction **11.4.** Prevention of destruction	-Choice of appropriate household apparatus, aerosols with no CFCs	-Respect for the environment -Recycling and reduction in ozone depleting substances	

CONTEXTUAL FRAMEWORK		COMPETENCIES		RESOURCES			
Family of situations	Examples of situations	Category of actions	Actions	Essential Knowledge	Abilities (Aptitudes)	Life Skills (Practice)	Other resources
SUSTAINABLE MANAGEMENT OF NATURAL RESOURCES: WATER, AIR, SOIL	Rupture of ecological equilibrium	Conserving biodiversity	*identifying the role of biodiversity in the ecosystem and to the economy; *educating, raising awareness and sensitising on the consequences of biodiversity loss; *developing civic responsibility and respecting legislation on poaching, over-fishing and over-exploitation of forest and forest resources; *designing and implementing projects on biodiversity conservation and protection.	**12.Conservation of Biodiversity** **12.1.** Effects of civil engineering works, forest exploitation and intensive agriculture on biodiversity **12.2.** Gardening (lawns, horticulture, Green Spaces…) **12.3.** Sensitization and education	-Responsible farming technique -Choice of adapted species - Conservation techniques -Communication techniques	-Respect of the law or legislation -Open-mindedness -Life skills	-Technicians in agriculture -Resources persons in wildlife and forestry -Specialist on management
	Natural disasters	Preventing/ mitigating the impart of natural disaster/restoring the environment to its natural state	*identifying disaster occurrence cycle; *monitoring disaster cycle; *developing locally specific early warning systems to mitigate impact of disaster; *developing simple disaster management systems.	**13. Common natural disaster in Cameroon** **13.1.** Causes **13.2.** Effects/impact **13.3.** Prevention	-disaster monitoring and early warning systems techniques; -Evacuation techniques; -rescue techniques; -Aid provision; -care for the old, young, disabled and weak…	Humanitarian response practices	-Red Cross & Red Crescent Society; -National fire brigade Corps; -Civil Protection Department of the Ministry of Territorial Administration and decentralisation; -International Aid Agencies

Article 2: The syllabus presented in article one here above shall be implemented as from the beginning of the 2014-2015 school year;

Article 3: All previous provisions repugnant hereto are hereby repealed;

Article 4: Inspectors Coordinator General, the Director of General Secondary Education, the Director of Examinations and Certification, Regional Delegates of Secondary Education, Divisional Delegates of Secondary Education, Education Secretaries of various Private Educations Agencies, Principals of public and private schools, each in their own sphere shall be charged with the strict implementation of this order which shall be inserted and published in the Official Gazette in English and French.

Yaoundé, 13 AUG 2014

THE MINISTER OF SECONDARY EDUCATION

Copies :
- PRC
- PM
- MINESEC/SEESEC
- MINESEC/SG
- IGE
- DSGE
- RDSE/DDSE
- Education Secretaries
- School Heads
- Files/Archives