REPUBLIQUE DU CAMEROUN
Paix-Travail-Patrie
****
MINISTERES DES ENSEIGNEMENTS SECONDAIRES
****
INSPECTION GENERALE DES ENSEIGNEMENTS
****
INSPECTION DE PEDAGOGIE CHARGEE DE L'ENSEIGNEMENT DES SCIENCES
****
SECTION: SVTEEHB

REPUBLIC OF CAMEROOON
Peace-Work-Fatherland
****
MINISTRY OF SECONDARY EDUCATION
****
INSPECTORATE GENERAL OF EDUCATION
****
INSPECTORATE OF PEDAGOGY IN CHARGE OF THE TEACHING OF SCIENCES
****
DEPARTMENT : LESEEHB

HARMONISED ANNUAL PROGRESSION FOR O/L BIOLOGY.

General Objectives :

1) This course, will help learners to acquire basic skills that will enable him/her to solve daily life challenges as well as being self-reliant.
2) It aims at inculcating in the learner, the attitude of environmental awareness; maintaining, improving or exploiting it in a sustainable manner.

Specific Objectives for Form 1: **-Identification of Biological Systems and their importance.**

School: ……; Class: F1; Number of Didactic Sequences: 15; Weekly workload: 2H Subject: Biology

Teacher's Name : …… ; Qualification : ……Longevity……

Term	Week	Categories of Actions	Module/Title/Topic.	Sub Topic/Didactic Sequence	Pedagogic Sequence/Lesson	Digitalization		Duration	Observations
						Res on-line	Res. used		
1st Term	Wk.1-3 09 -27 Sept.	Appropriating Knowledge of Life and Life forms.	1 The Living World	1.Understanding Biology	Lesson 1: Notion of Biology.	Yes		6h	08/09/24. World Literacy Day.
					Lesson 2: Characteristics of Living things.	Yes			
					Lesson 3: Studying living things (Part 1). Lesson 4: Experiment 1(Introduction to laboratory and laboratory safety rules). Lesson 5: Experiment 2 (Identification of laboratory equipments, hands on activities, use and care). Lesson 6: Studying living things part 2.	Yes			
	Wk.4 30 Sept - 04 Oct.				Lesson 7: Experiment 3 (use of hand lens and compound light microscope. Lesson 8: The cell theory The cell	Yes		2h	
	Wk.5 07-11 Oct.				Lesson 9: Observing cells. Lesson 10: Experiment 4 (Hands on activities Observing plant cells).			2h	
	Wk 6 14-18 Oct.				Lesson 11 and 12: Revision/ Assimilation/ Evaluation of objectives and remedial work.			2h	
	Wk 7 21-25 Oct.				Lesson 13: Correction of evaluation. Lesson 14: Experiment 5 (Observing animal cells).			2h	

	Wk 8 28 Oct-01 Nov.	**Influence of the environment on plants and animals**		**2.Environment and habitats**	Lesson 15: Environmental factors (part 1). Lesson 16: Experiment 6 (Identification of habitats/Field Work).	**Yes**		**2h**	
	Wk 9 04-08 Nov.				Lesson 17: Experiment 7: Collection of Biological specimens Hands on activity/Field Work. Lesson 18: Environmental factors (part 2).			**2h**	
	Wk 10 11-15 Nov.				Lesson 19:Climate Change Adaptations to Climate Change Effects of day and night and season. Lesson 20: The natural environment Biotic /Abiotic or Living and nonliving Factors			**2h**	
	Wk.11 18 -22 Nov.	**Practising agriculture and animal husbandry**		**3.Improving soil quality**	Lesson 21: Soil quality.	**Yes**		**2h**	
					Lesson 22: Agriculture/Farming practices.	**Yes**			
	Wk 12 25 -29 Nov.				Lesson 23 and 24: Revision/ Assimilation/ Evaluation of objectives and remedial work. **SECOND TERM BEGINS**			**2h**	
	Wk 13 02 -o6 Dec.				Lesson 25: Correction of evaluation. Lesson 26: The notion of Seed time and Harvest Time Planting techniques.			**2h**	
	Wk.14 09 -13 Dec.	**- Using the soil in the production of consumable resources. - Preventing soil degradation**		**4.Soil erosion**	Lesson 27: Enriching and Maintaining Good Soil Types of soil erosion.	**Yes**		**2h**	
					Lesson 28: Causes effects and prevention.	**Ye**			
	Wk.15 16-20 Dec.			**5.Hunting/ fishing and gardening**	Lesson 29 and 30: Hunting fishing and Horticulture Ways of Practicing Green Agriculture	**Yes**		**2h**	
	20 Dec-06 Jan.				**CHRISTMAS BREAK**				
2nd Term	**Wk 16 06 -10 Jan.**				Lesson 31: Gardening. Lesson 32: Revision/Integration (Assimilation) / Remedial work.			**2h**	
	Wk 17 13 -17 Jan.				Lesson 33: Evaluation. Lesson 34: Correction of evaluation.			**2h**	
	Wk.18 20 -24 Jan.	**Conserving Biodiversity/ natural resources (food and**		**6.Roles of medicinal plants**	Lesson 35: Identification and Use.	**Yes**		**2h**	

		medicinal plants). **Natural Disasters**		**Natural Disasters and Human Catastrophy**	Lesson 36: Preparation and Conservation. Conservation of Biodiversity Effects of Civil Engineering Works, Forest exploitation and extensive Agriculture on Biodiversity Common Natural Disasters in Cameroon Causes, effects, Impacts of Natural Disasters Prevention of Disasters				
	Wk 19 27 -31 Jan.	**Preventing/ Avoiding early pregnancies.**	**2 Health Education**	**7.Reproductive health**	Lesson 37: Puberty/primary and secondary sexual characteristics.			**2h**	**15-02/01/2024---First break.**
					Lesson 38: Menstruation, Fertilization and pregnancy.				
				8.Early pregnancy	Lesson 39: Early Pregnancy. Consequences, Prevention, Signs and Tests of Early Pregnancy			**1h**	
	Wk 20 03 -07 Feb.	**Preventing/ Avoiding STIs and AIDS.**		**9.STIs, HIV/AIDS**	Lesson 40: Gonorrhoea, Syphilis/ Chlamydia and Hepatitis B.			**2h**	
					Lesson 41: Trichomoniasis and HIV/AIDS.				
	Wk 21 10 -14 Feb.	**Preventing/ Avoiding food poisoning.**		**10.Quality nutrition**	Lesson 42: Classes and sources of food. Quality Nutrition Food Preparation/ Hygiene/Preparation Preventing and avoiding Food Poisoning			**1h**	**26-02/02/2024 Bilingualism week.**
	Wk 22 17 -21 Feb.				Lesson 44: Nutritional diseases.			**1h**	**05-11/02/24 Youth Week.**
	wk23 24 -28 Feb.				Lesson 45, 46 and 47: Revision/ Integration (Assimilation)/ Evaluation and Remedial work.			**3h**	
	Wk 24		**3**		Lesson 48: Water sources and water management.			**3h**	

3rd Term	**03-07 Mar.**	**Preventing water pollution**	**Environmental Education and Sustainable Development**	**12.Water management**	Lesson 49: Water-borne diseases and water purification. **THIRD TERM BEGINS**				
	Wk 25 10 -14 Mar				Lesson 50: Experiment 9- Production and use of water filters (Small scale purification of water for household use and uses of water at home).				
		Preventing air pollution		**13.Air**	Lesson 51: Air pollution.			**1h**	
	Wk 26 17 -21 Mar.	**Preventing land pollution**		**14.Land pollution**	Lesson 52: Land pollution.			**1h**	
					Lesson 53: Catch up lesson.			**1h**	**28-15/04/24 Second break**
	Wk 27 24 -28 Mar.				Lesson 54: catch up lesson. Lesson 55 Revision			**2h**	
	Wk 28 31 Mar - 04 April				**lesson 56 and 57:** Revision/Integration (Assimilation)/ Evaluation and Remedial work.			**2h**	
	04 -18 April				**EASTER BREAK**				
	Wk 29 22 -25 April	**Conserving Biodiversity**		**15. Biodiversity and its conservation**	Lesson 58: Skill development workshop on any topic.			**1h**	
					Lesson 59: Biodiversity and its conservation.			**1h**	
	Wk 30-33 28 Apr-23 May				**Lesson 60 -63 Revision/Integration (Assimilation)/Evaluation.**			**8h**	
TOTAL			**03**	**15**				**66h /Year.**	

***60 hours of theory** *** 06 hours of practicals.**

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2) The learning of resources should be coupled with punctual formative evaluations proposed in a descriptive logic in order to fill any gaps or to complete learning.

3) The learning period for integration is an indicative proposal; this lesson has to be placed after a group of lessons. That is at the end of each didactic sequence

4) The elaborated progression sheet has to be clipped to the cover page or first page of the subject in the record of work booklet (RWKBK).

5)Digitalized lessons could be exploited from the DE platform (https://minesec-distancelearning.cm/), virtual laboratory or self-made.

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DEPARTMENT : LESEEHB

Specific Objectives for Form 2 :- **Exploring the living world to ameliorate human life and environment.**

School: ……: Class: F2; Number of chapters: 14; Weekly workload: 2H Subject: Biology

Teacher's Name : …… ; Qualification : ……Longevity……

Term	Week	Category of Actions	Module/Topic	Sub Topic/Didactic Sequence	Pedagogic sequence/Lessons	Digitalization		Duration	Observations
						Res. online	Res. used		
1st Term	**Week 1 09-13 Sept.**	**Practicing agriculture**	**1 The Living World.**	**1.Need for Reproduction in plants**	Lesson 1: Notion of reproduction. Lesson 2: Asexual reproduction in plants 1: Natural vegetative propagation. as the basis for cloning Natural Plantains, sugar cane, potatoes and yams)	**Yes**		**4h**	*Practicals on V.P (cuttings)
	Wk 2 16 - 20 Sept.				Lesson 3: Asexual reproduction in plants Artificial vegetative propagation Grafting , marcotting, layering, Lesson 4: Experiment 1- Practicing vegetative propagation 1.	**Yes**			
					Lesson 5: Experiment 2- Practicing vegetative propagation 2. Lesson 6: Advantages and disadvantages of vegetative propagation. Other forms of Asexual Reproduction Budding in Yeast, binary fission)	**Yes**			
	Wk 3 23 -27 Sept.							**2h**	
	Wk 4 30 Sept-04 Oct.				Lesson 7: Sexual reproduction in plants 1: The flower. Lesson 8: Sexual reproduction in plants 2: Pollination.			**2h**	
	Wk 5 07 -11 Oct.				Lesson 9: Experiment 3- Flower dissection. Lesson 10: Sexual reproduction in plants 3- Fertilization.			**2h**	
	Wk 6 14 -18 Oct.				Lesson 11 and 12: **Revision/ Assimilation/ Evaluation and Remedial work.**			**2h**	
	Wk 7 21 -25 Oct.				Lesson 13: Correction of evaluation Lesson 14: Sexual reproduction in plants 4: The seed.			**2h**	
	Wk 8 28 Oct-01 Nov.				Lesson 15: Seed and Fruit Dispersal. Lesson 16: Adaptation of seed and fruits to their methods of dispersal.			**2h**	
	Wk 9 04 -08 Nov.				Lesson 17: seed germination. Lesson 18:Experiment 5- Hypogeal and Epigeal germination.			**2h**	

	Wk 10 **11 -15 Nov.**				Lesson 19: Experiment 6- conditions necessary for seed germination			**1h**	
				2. Improvement of quality and quantity of plant yield	Lesson 20: Prevention and elimination of Plant pest and diseases.	**Yes**		**2h**	
	Wk 11 **18 -22 Nov**				Lesson 21: Biological/Chemical control of plant pests.	**Yes** **Yes**			
		Preserving consumable resources.		**3. Transformation of foodstuff**	Lesson 22:Basic notion of food transformation.	**Yes**		**3h**	
	Wk 12 **25 -29 Nov.**				Lesson 23 and 24: **Integration(Assimilation)/ Evaluation** **SECOND TERM BEGINS**	**Yes**			
	Wk 13 **02 -06 Dec.**				Lesson 25: Correction of evaluation. Lesson 26: Transformation of common foodstuff.			**2h**	
	Wk 14 **09 -13 Dec.**				Lesson 27: Experiment 7- Production of yoghurt. Lesson 28: Notion and methods of food preservation.			**2h**	
	Wk 15 **16 -20 Dec.**			**4. Food Preparation and Preservation**	Lesson 29: Methods of food preparation 1. Lesson 30: Methods of food preparation 2.			**2h**	
	20 DEC-06 JAN.			**CHRISTMAS BREAK**					
	Wk 16 **06 -10 Jan.**				Lesson 31 and 32: Integration (Assimilation) and Evaluation.			**2h**	
2nd Term	**Wk 17** **13 -17 Jan.**				Lesson 33: Correction of evaluation/ Remedial work. Lesson 34: Basic notion of nutrition/Malnutrition.			**2h**	
	Wk 18 **20 -24 jan.**	**Preventing-eliminating deficiency and over feeding diseases.**	**2 Health Education**	**5. Nutrition related diseases.**	Lesson 35: Basic notion of nutrition-related disease. Lesson 36: Obesity .	**Yes**		**10h**	
	Wk 19 **27 -31 Jan.**				Lesson 37: Body Mass Index. Lesson 38: Calorific value of food (part 1).	**Yes**			
	Wk 20 **03 -07 feb.**				Lesson 39: Calorific value of food part 2. Lesson 40: Food Hygiene.				
	Wk 21 **10 -14 Feb.**				Lesson 41: Healthy eating habits. Lesson 42: Project to combat an identified nutrition- related disease.				
	Wk 22 **17 -21 Feb.**				Lesson 43 and 44 : Youth week.				
	Wk 23 **24 -28 Feb.**				Lesson 45 and 46: Revision/ Integration activities (assimilation)/ Evaluation			**2h**	
	Wk 24 **03 -07 Mar.**	**Maintaining physical and social health.**		**6. Physical and social health**	Lesson 47: Correction of evaluation Lesson 48: Workouts Recreational Sports Definition and Importance of Exercise, Rest and Sleep to the body **THIRD TERM BEGINS**	**Yes**		**2h**	
	Wk 25 **10-14 Mar.**				Lesson 49: Social Effects of Alcoholism and Smoking to the body Lesson 50: Drugs and Drug abuse/addiction.	**Yes**		**2h**	
	Wk 26 **17 -21 Mar.**	**Caring for and maintaining the reproductive**		**7. Practices harmful to reproductive health**	Lesson 51 and 52: Emergent Behavior/Practices harmful to reproductive health. STI, HIV, AIDSas consequences of Emergent Sexual Behavior			**2h**	

		organs in good health.			Homosexuality, Lesbianism, Zoohily Pornography etc. Prevention of STI,HIV/AIDS Hygiene of Reproductive Health Organ				
	Wk 27 **24 -28Mar.**	**Reducing/mitigating the effects of global warming and the depletion of the ozone layer.**	**3 Environmental Education and Sustainable Development**	**8. Green house effect and global warming/climate change**	Lesson 53: Notion, causes, and effects of climate change. Adaptations to Climate Change			**1h**	**26-02/02/2024 Bilingualism week.**
					Lesson 54: Basic Notion and Ozone Depletion. Introduction to Global Warming, Climate Change, Green House Gases/Green House Effect. Acid Rain/Hard Water			**2h**	
	Wk 28 **31 Mar-04 April.**			**9. Ozone layer**	Lesson 55: Basic Notion and Ozone Depletion.				**05-11/02/24 Youth Week.**
				10. Management of water	Lesson 56: Management of solid wastes. Waste Disposal/Transformation Lesson 57: Revision/ Integration activities(Assimilation)			**2h**	
	04 -18 APRIL.				**EASTER BREAK**				
	WK 29 **21-25 April.**				Lesson 58 and 59: Evaluation and Remedial work			**2h**	
	Wk30 **28 April-02 may.**				Lesson 60: Management of liquid waste.			**2h**	
	Wk 31 **05 -09 May.**				**Lesson 61: Skill development workshop on any of the topics.**			**2h**	
	WK32-33 **12-23May.**				**lesson 62 and 63: Revision/ Integration (Assimilation) and Evaluation.**			**2h**	
TOTAL	**33**	**03**		**10**				**66h/Year**	

***60 hours of theory.** ***06 hours of practicals.**

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2) The learning of resources should be coupled with punctual formative evaluations proposed in a descriptive logic in order to fill any gaps or to complete learning.
3) The learning period for integration is an indicative proposal; this lesson has to be placed after a group of lessons. That is at the end of each didactic sequence
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DEPARTMENT : LESEEHB

Specific Objectives for Form 3: - **Exploring the living world to ameliorate human life and environment.**

School: ……; Class: F3; Number of chapter:12, Weekly workload: 2H Subject: Biology

Teacher's Name: ……; Qualification: ……Longevity……

Term	Week	Category of Actions	Module/Topic	Sub Topic/Didactic Sequence.	Pedagogic Sequence/Lesson.	Digitalization		Duration	Observations
						Res. online	Res. used		
1st Term	Wk;1 09 - 13Sept.	Understanding cellular exchanges to better conserve life.	1 THE LIVING WORLD	1-CELLS AND WATER RELATIONS	Lesson1: Introduction (Review of the Concept/Notion of cells and cell theory - ultra structure of plant and animal cells. Lesson 2: Importance of water to living organisms.	Yes		4h	
	Wk;2 16 -20 Sept.			2-CELLULAR EXCHANGE IN DIFFERENT CONDITIONS	Lesson 3: The water cycle Lesson 4: Diffusion, Osmosis and Active transport.	Yes			
	Wk;3 23 -27 Sept.				Lesson 5: Experiment 1- Observing plant and animal cells. Lesson 6: Experiments 2- Demonstrate cellular exchanges(**practical on diffusion and osmosis)**	Yes		4h	
	Wk;4 30 Sept-04 Oct.				Lesson 7: Experiment 3- Osmosis and plant tissues (Effects of hypotonic, hypertonic and isotonic solutions on plant tissues). Lesson 8: Use of osmosis to keep vegetables fresh and preserve foods.	Yes			
	Wk;5 07-11Oct.				**Lesson 9 and 10:Revision/ Integration (Assimilation)/Evaluation/Remedial work**.			2h	
	Wk;6 14-18 Oct.	Understanding the nature and variety of life forms to better live with them.		3-CLASSIFICATION (Nature and Variety of life forms)	Lesson 11: Reasons for classification and five kingdom classification (characteristics, structure, life cycle and Biological importance of each kingdom). Lesson 12: Viruses.			2h	
	Wk;7 21-25 Oct.				Lesson 13: Prokaryotae (Virus and Bacterium). Lesson 14: Kingdom Protoctista (Amoeba, Spirogyra and Plasmodium).			4h	
	Wk;8 28 Oct-01Nov.				Lesson 15: Kingdom; Fungi (Mould Fungus Lesson 16: Kingdom Fungi (Mushroom and Yeast).				

	Wk;9 04-08 Nov.				Lesson 17: Kingdom: Plantae (Monocot and Dicot). / Lesson 18: Kingdom:Animalia- Bony fish (Tilapia).			**4h**	
	Wk;10 11-15 NOV.				**Lesson 19 and 20: Revision/Integration(Assimilation)/Evaluation /Remedial work.**				
	Wk;11 18-22 Nov.				Lesson 21:Amphibians. Lesson 22: Reptiles- Agama Lizard.			**2h**	
	Wk;12 25-29 Nov.				Lesson 23: Insecta – Housefly. Social insects Lesson 24: Insect-metamorphosis.			**2h**	
2nd term	**WK;13 02-06 Dec.**				SECOND TERM Lesson 25: Aves - Characteristics and structure. Lesson 26: Aves- adaptation to flight and feeding.			**2h**	
	Wk;14 09-13 Dec				Lesson 27: Mammals. Herbivores e.g goat, sheep. Or cow Omnivores Carnivores Lesson 28: Revision.			**2h**	
	Wk;15 16-20 Dec.				Lesson 29 and 30: Integration (Assimilation) **/Evaluation/Remedial work.**.			**2h**	
	20 Dec-06 Jan				CHRISTMAS BREAK				
	Wk;16 06-10 Jan.	**Improving the quantity and quality of plant and animal food resources**.		**4-CULTIVATION AND REARING OF ORGANISMS**	Lesson 31: Cultivation of any local Monocot plant. Lesson 32: Cultivation of any local Dicot plant.			**4h**	
	Wk;17 13-17Jan.				Lesson 33: Rearing of Snails. Lesson 34: Rearing of Fish.				
.	**Wk;18 20-24Jan.**				Lesson 35: Rearing of Birds. Lesson 36: Rearing of Mammals (Guinea pig/Wistar rats).			**2h**	
	Wk;19 27-31 Jan.			**5-PLANT NUTRIENTS**	Lesson 37: Major and minor plant nutrients and importance of NPK. Lesson 38: Sources of plant nutrients and deficiency effects.			**2h**	
	Wk;20 03-07 Feb.				Lesson 39 and 40: **Revision/Integration(Assimilation)/ Evaluative/Remedial work.**.			**2h**	
	Wk;21 10 -14 Feb.				Lesson 41: Types of fertilizers and differences.			**2h**	

					Lesson 42:Fertilizer application and effects on soil and environment.				
	Wk;22 17-21Feb.			**6-DIETING IN FARM ANIMALS**	Lesson 43: Dietary needs of farm animals (snail, fish, birds, mammals). Lesson 44: Composition of animal feed for each category.			**2h**	
	Wk;23 24-28 Feb.				Lesson 45: Experiment 4- Making of compost manure. Lesson 46: Experiment 5: Producing animal feed.			**4h**	
	Wk;24 03-07 Mar.	**Preventing deficiency in nutritional and calorific requirements of humans**.		**7-CLASSES OF FOOD**	Lesson 47: Classes of food- source, chemical composition, importance and deficiency (carbohydrates, proteins, lipids). Fattening farm animals Reproducing farm animals Lesson 48: : Revision of Concept of Balanced Diet Classes of food- source, chemical composition, importance and deficiency (vitamins, Mineral salts, Roughage and Water). **THIRD TERM**				
3rd Term	**WK;25 10-14m Mar.**		**2 HEALTH EDUCATION**		Lesson 49: Experiment 6- Food test. Lesson 50: E**valuation**.			**2h**	
	Wk;26 17-21 Mar.				Lesson 51: Experiment 7- Notion of balanced diet/ Composing a local balanced meal. Lesson 52: Nutritional and calorific requirements/ Reference Intake(RI) and Guidelines Daily Amounts (GDA).			**2h**	
	Wk;27 24-28 Mar.	**- Preventing/eliminating the transmission of diseases of food crops, farm animals and humans including HIV/AIDS and STIs and Ebola** **-Rejecting risky behaviours that facilitate the transmission**			Lesson 53: -Calorific value of RI or GDA of a commonly eaten meal.			**1h**	
				8-Personal Hygiene	Lesson 54: Rules of personal hygiene.			**1h**	
	Wk;28 31Mar-04 Apr.			**9-AUTO-MEDICATION**	Lesson 55: Notion, advantages and disadvantages of auto-medication. Lesson 56: Notion, advantages, disadvantages and precautions of traditional medicine.			**2h**	

		and propagation of these killers.							
	04-18April				EASTER BREAK				
	WK;29 22-25April.			**10- Emergent Disease**	Lesson 57: Ebola Lesson 58;Viral Diseases. Covid 19			**2h**	
	Wk;30 28-02May.	**Preventing/eliminating intestinal worms.**		**11- Intestinal worms**	Lesson 59; Tapeworm (*T. Solium, T. Saginata)* -Ascaris./ Lesson 60: Integration (Assimilation)/Evaluation/ Remediation.			**2h**	
	Wk;31 05-09May.	**Enhancing food production while conserving the Environment.**	**3- ENVIRONMENTAL EDUCATION AND SUSTAINABLE DEVELOPMENT**	**12- Interdependence between living organisms**	Lesson 61: Interdependence of organisms/Ecological Balance. Lesson 62: Social organization: Bee colony.			**2h**	
	Wk;32 12-16May.				Lesson 63: -Social Organization as an example of interspecific independence Termite colony. Lesson 64: Experiment 8 ; Collection of the different castes of the Termite colony.			**2h**	
	Wk;33 19-23May.				Lesson 65: Fresh water ecosystem. Lesson 66: Project- visiting and studying a water ecosystem.			**2h**	
					Integration (Assimilation)/ EVALUATION				
TOTAL	**33.**		**03**	**12**				**66h/Year.**	

***58 hours of theory** ***08 hours of practicals.**

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Specific Objectives for Form 4:

1) **Understanding the functioning of the systems of the human body to better care for them.**
2) **Maintaining a clean Environment.**

School: ……; Class: F4; Number of chapters:10; Weekly workload: 3H Subject: Biology

Teacher's Name : …… ; Qualification : ……Longevity……

Term	Week	Category of Actions	Module/Topic	Sub Topic/Didactic Sequence	Pedagogic Sequence/Lesson			Duration	Observations
1st Term	Wk:1 09-13 Sept.	Improving food production by constructing and appropriating knowledge of the mechanisms of functioning of living things.	1 THE LIVING WORLD	1. Transport in plants	Lesson1: Notion/Need for a transport system in multicellular organisms Role of xylem and phloem in transport of water and mineral salts Mechanism of uptake and ascend of water and minerals salts . Lesson 2: Translocation of organic food in the phloem. Lesson 3: Transpiration and wilting.			3h	
	Wk:2 16-20 Sept.				Lesson 4: Internal structure of stem and roots. Lesson 5: Experiment 1-To demonstrate transpiration and wilting Lesson 6: Experiment 2- observing the cross section of stem and roots.			3h	
	Wk:3 23-27 Sept.			2-. Nutrition In Plants	Lesson 7: Experiment 3- to demonstrate that xylem transport water and mineral salts, and the phloem translocates organic food. Lesson 8: Nutritional Requirements in Plants How Plants obtain and transform raw nutrients Notion of photosynthesis. Lesson 9: How photosynthesis occurs and fate.			3h	
	Wk:4 30-04 Oct.				Lesson 10: Importance of photosynthesis and adaptation of leaves. Lesson 11: Factors affecting the rate of photosynthesis. Lesson 12: Experiment 4- To demonstrate that starch is produced during photosynthesis.			3h	
	Wk:5 07-11 Oct.				Lesson 13: Experiment 5- To demonstrate that Chlorophyll and Light are necessary for photosynthesis.			3h	

					Lesson 14: Experiment 6: To demonstrate that CO2 is necessary and O2 is produced during photosynthesis. Lesson 15: Review of plant mineral nutrition.				
	Wk:614-18 Oct.				**Lesson 16-18: Fate of Translocated Food (usage, storage and excretion) Integration (Assimilation)/ Evaluation/ Remedial work.**			**3h**	
	Wk:7 21-25 Oct.	**Improving food production by appropriating knowledge of the mechanisms of functioning of living organisms**		**3.Enzymes**	Lesson 19: Notion and characteristics of enzymes. Lesson 20: Types and importance. Lesson 21: Experiment 7- To demonstrate enzyme activity.			**3h**	
	Wk:8 28-01 Nov.			**4.Digestion**	Lesson 22:Holozoic Nutrition Dentition, function of each tooth and dental formula of humans, herbivores (e.g. sheep and rabbit) and carnivores (e.g dog). Lesson 23: Structure of incisor and molar teeth Lesson 24: Structure of the alimentary canal of human and its associated glands.			**3h**	
	Wk:9 04-08 Nov.								
	Wk:10 11-15 Nov.				Lesson 28: : Structure of the villus and adaptation of villus and ileum to its function. Lesson 29: Cellulose digestion in ruminant herbivores. Lesson 30: Adaptation of herbivores and carnivores to their diet etc.			**3h**	
	Wk:11 18-22 Nov.				Lesson 31: Other forms of animal nutrition- saprotrophism, parasitism. Lesson 32: Experiment 8- Dissection of mammal to display the alimentary canal and its arrangement. Lesson 33: Experiment 9- Mammal dissection to identify the parts of the alimentary canal and their functions.			**3h**	
	Wk:12 25-29 Nov.				**Lesson 34-36 : Integration (Assimilation)/ Evaluation/ Remedial work.**			**3h**	
2nd Term	**13-14 02-13 Dec.**	**Prevention of cardio-vascular accidents and diseases.**	**2 HEALTH EDUCATION**	**5. The Circulatory System and Hygiene of the Circulatory System**	Lesson 37: Transport in Mammals Review how substances move in and out of the cell (Diffusion ,osmosis and Active Transport) Importance of circulatory system and composition. Lesson 38: Composition of blood/ structure and functions of blood cells. Lesson 39:Blood vessels. Lesson 40: Structure and function of the heart. Lesson 41: Pulmonary and systemic circulation. ABO Blood Group and inheritance pattern Antigen/Antibody reactions Lesson 42: Cardiac cycle and heart beat. Heart beat and Blood Pressure			**6h**	

					Maintenance of Blood Flow				
	Wk:1516 -20 Dec. **20-06 JAN.**				Lesson 43: Other Body Fluids e.g Tissue fluid formation/ differences between blood/Plasma/Tissue Fluid and lymph. Lymphatic system Lesson 44: Diseases and disorders of the circulatory system. Lesson 45: Diseases and disorders of the circulatory system. High Blood, Arterosclerosis, Anaemia and Coronary Thrombosis **CHRISTMAS BREAK**			**3h**	
	Wk:16 06-10 Jan.	**Preventing respiratory infections and diseases.**		**6. Respiratory System and Hygiene of the Respiratory System**	Lesson 46 Need and adaptation of respiratory system. Review of Gaseous Exchange in the Fish Lesson 47 : Mechanism of breathing- inspiration and expiration. Lesson 48 : Composition of inspired and Expired air Exchange of gases between tissue and lung Control of breathing rate.			**3h**	
	Wk:17 13-17 Jan.				Lesson 49: Internal respiration- Aerobic and Anaerobic.(Alcoholic Fermentation and Lactic Acid Formation in animals) Simple Equations Lesson 50: Hygiene of the respiratory system. Lesson 51: Diseases and disorders of the respiratory system.			**3h**	
	Wk:18 20-24 j Jan				Lesson 52-54: **Integration (Assimilation)/Evaluation/Remedial work.**			**3h**	
	Wk:19 **27-31 Jan.**				Lesson 55: Diseases and disorders of the respiratory system. Lesson 56: Experiment 10- To demonstrate that heat is given off during respiration (e.g plant, animal, seed). Lesson 57: Experiment 11-To demonstrate that CO2 is given off during respiration (e.g plant, animal, yeast).			**3h**	
	Wk:20 03-07 Feb.				Lesson 58: Experiment 12- To demonstrate that oxygen is absorbed by plants and animals. Lesson 59-60: **Integration (Assimilation)/Evaluation/Remedial work.**			**3h**	
	Wk:21 10-14 Feb.	**Preventing infections and disorders of the excretory system.**		**7. The Excretory system**	Lesson 61: Notion, Need for excretion and differences between excretion, secretion and defaecation.			**3h**	

					Lesson 62: Excretory organs/ Excretory products, origin and elimination. Lesson 63: Structure of the kidney and nephron.				
	Wk:22 17-21 Feb.				Lesson 64: Function of the kidney in excretion and osmoregulation. Osmoregulatory effect of the kidney (ADH) Role of Pituitary gland in osmoregulation Role of lungs, liver ,stomata, lenticels, skin in excretion osmoregulation. Review of osmoregulation in marine/ fresh water organisms (Amoeba) Lesson 65: Structure and function of the mammalian skin. Lesson 66: Structure and functions of the human liver.			**3h**	
	Wk:23 24-28 Feb.				Lesson 67: Disorders and diseases of the excretory system. Lesson 68: Disorder and diseases of the kidney. Lesson 69: Mammal dissection to show the respiratory, circulatory, excretory systems.			**3h**	
	Wk:24 03-07 Mar.				Lesson 70-72: **Integration (Assimilation)/Evaluation/ Remedial work.**			**3h**	
3rd TERM	**Wk:25 10-14 Mar.**	**Preventing skeletal system deformities, diseases and accidents.**		**8. The skeletal and Muscular Systems.**	Lesson 73: Definition, function and types of skeletal system. Lesson 74: Structure of the human skeleton. Lesson 75: Joints- Notion, Functions, Structure and Types.			**3h**	
	Wk:26 17-21 Mar.				Lesson 76: Movement of the elbow joint. Lesson 77: Movement of the knee joint. Lesson 78: Posture and deformities.			**3h**	
	Wk:27 24-28 Mar.	**Maintaining a clean environment and the natural equilibrium through controlled human activities.**	**3 ENVIRONMENTAL EDUCATION AND SUSTAINABLE DEVELOPMENT**	**9. Human impacts on the Ecosystem**	Lesson 79: Harmful effects- deforestation. Lesson 80: Harmful effects- over-hunting, grazing, fishing and chemical fishing. Lesson 81: Harmful effects- use of inorganic fertilizers and bush burning.			**3h**	
	Wk:28 31-04 April.				Lesson 82: Harmful effects- Ozone layer depletion and global warming, Nuclear accidents. Lesson 83: Pollution- land and air. Lesson 84: Pollution- water.			**3h**	
	04-18Apri				**EASTER BREAK**				

	Wk:29 22-25 April.				Lesson 85: Beneficial effects-conservation of natural resources. Lesson 86: Beneficial effects-waste management. Lesson 87: Beneficial effects-good farming methods.			**3h**	
	Wk:30 28-02 May.				**Lesson 88-90 : Integration (Assimilation)/Evaluation/ Remedial work.**			**3h**	
	Wk:31 05-09 May.			**10. Pest control**	Lesson 91: Notion and types of pest control Lesson 92: Chemical pest control. Lesson 93: Biological pest control.			**3h**	
	Wk:32 12-16 May.				Lesson 94: Catch-up lesson. Lesson 95: catch-up lesson. Lesson 96: catch-up lesson.			**3h**	
	Wk:33 19-23 May.				**Lesson 97-99 : Integration(Assimilation)/Evaluation.**			**3h**	
TOTAL	**33**		**3**	**10**				**99h/Year.**	

87 hours of theory. ***12 hours of practicals.**

N.B:

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3) The learning period for integration is an indicative proposal; this lesson has to be placed after a group of lessons. That is at the end of each didactic sequence

4) The elaborated progression sheet has to be clipped to the cover page or first page of the subject in the record of work booklet (RWKBK).

5)Digitalized lessons could be exploited from the DE platform (https://minesec-distancelearning.cm/), virtual laboratory or self-made.

NB;Suggestions for the rearrangement of the form four progression sheet:

Starts with:

-Nutrition-Transport-Respiration-Excretion

-Skeletal system and movement.

Treat classes of food before enzymes.

REPUBLIQUE DU CAMEROUN
Paix-Travail-Patrie
****
MINISTERES DES ENSEIGNEMENTS SECONDAIRES
****
INSPECTION GENERALE DES ENSEIGNEMENTS
****
INSPECTION DE PEDAGOGIE CHARGEE DE L'ENSEIGNEMENT DES SCIENCES
****

REPUBLIC OF CAMEROOON
Peace-Work-Fatherland
****
MINISTRY OF SECONDARY EDUCATION
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INSPECTORATE GENERAL OF EDUCATION
****
INSPECTORATE OF PEDAGOGY IN CHARGE OF THE TEACHING OF SCIENCES
****
DEPARTMENT : LESEEHB

Specific Objective for Form 5: - **Implementation of resources to ameliorate human life while maintaining a healthy Environment.**

School: ……; Class: F5; Number of chapters:09; Weekly workload: 3H Subject: Biology

Teacher's Name : …… ; Qualification : ……Longevity……

Term	Week	Category of Actions	Module/Topic	Sub /Topic	Lesson			Duration	Observations
1st Term.	**Wk. 1from 09-13 Sept**	**Improving food production by constructing and appropriating knowledge of the mechanisms of functioning of living things**	**1 THE LIVING WORLD**	**1. Nuclear and cell division**	Lesson 1: Notion of chromosomes, genes, DNA, haploid and diploid cells. Transmission of Genetic Information Lesson 2: Mitosis Lesson 3: Meiosis			**3h**	
	Wk. 2from 16-20 Sept				Lesson 4: Comparing mitosis and meiosis Lesson 5: Notion, types and examples of reproduction. Lesson 6: Comparing, advantages and disadvantages of sexual and asexual reproduction.			**3h**	
	Wk. 3from 23-27 Sept			**2. Reproduction in plants**	Lesson 7: Structure of a flower and function of parts. Lesson 8: Pollination-definition, types, agents and importance. Lesson 9: Insect and wind pollinated flowers-characteristics, adaptation and differences.			**3h**	
	Wk. 4from 30-04 Oct				Lesson 10: Fertilization, seed and fruit formation. Lesson 11: Seed and fruit dispersal/ structure of seed. Lesson 12: Seed germination-definition, types and factors necessary.			**3h**	
	Wk. 5 from 07=11Oct				Lesson 13: Experiment 1- To show stages and types of germination. Lesson 14: Experiment 2-Conditions necessary for germination. Lesson 15: Experiment 3-Adaptation of seeds to different methods of dispersal.			**3h**	
	Wk. 6from. 14-18 Oct				**Lesson 16-18: Integration(Assimilation)/Evaluation.**			**3h**	

	Wk 7. 21-25 Oct.			**3. Coordination In Plants.**	Lesson 19: Notion and types of plant movements Lesson 20: Phototropism and geotropism. Notion ,Types and importance Lesson 21: Effects of auxins and other plant growth hormones on plant growth.			**3h**	
	Wk. 8from 28-01Nov				Lesson 22: Horticulture and its importance. Lesson 23: Experiment 4- Demonstrate phototropism and geotropism. Lesson 24: Experiment 5- Practice floriculture.			**3h**	
	Wk .9 from 04-08 Oct.	Preventing "Silent Killer"diseases.	**2 HEALTH EDUCATION**	**4. Irritability in humans**	Lesson 25: Notion of irritability, types of neurons and structure of a motor neurone. Lesson 26: Impulse transmission along a neurone. Lesson 27: Impulse transmission across a synapse.			**3h**	
	Wk.10 from.11-15 Nov.				Lesson 28: Structure and function of the human Brain. Lesson 29: Spinal cord and membranes of the brain and spinal cord Lesson 30: Cranial and spinal nerves.			**3h**	
	Wk.11from 18-22 Nov.				Lesson 31: Division of the nervous system Lesson 32: Voluntary and involuntary actions- reflex action and reflex arc. Lesson 33: Conditioned reflex action.			**3h**	
	Wk.12.from 25-29 Nov.				Lesson 34-36: Integration(Assimilation)/Evaluation.			**6h**	
2nd Term	**Wk.13.from 02-06 Dec.**				Lesson 37: Sense organs and their functions/ structure of the eye. Lesson 38: Functions of the human eye- image formation. Lesson 39: Function of the human eye: accommodation.				
	Wk.14 from 09-13 Dec.				Lesson 40: Structure/ Function of the human eye- colour vision. Lesson 41: Eye defects- long and short sightedness. Lesson 42: Eye defects- presbyopia, conjunctivitis, glaucoma, cataract, astigmatism.			**3h**	

	Wk.15 from 16-20 Dec.			**5. Endocrine system**	Lesson 43: Notion and characteristics of endocrine glands and hormones. Lesson 44: Position of main endocrine glands/ differences between endocrine and exocrine glands. Lesson 45: Endocrine glands, their secretions (hormones), Functions (effects) and feedback			**3h**	
	20 Dec-06 Jan.				CHRISTMAS BREAK				
	Wk. 16 from 06-10Jan.				Lesson 46: Hormonal control of blood glucose level. Lesson 47: Hormonal imbalance and some common disorders. Lesson 48: Hormonal imbalance/consequencies and some common disorders.			**3h**	
	Wk. 17 from 13-17 Jan.			**6. Reproduction in Humans and family planning**	Lesson 49: Need for reproduction and structure of male and female reproductive systems. Gametogenesis (sperm and egg formation). Lesson 50: Puberty. Lesson 51: Menstrual, cycle.			**3h**	
	Wk. 18 from 20-24 Jan				lesson 52-54: Integration (Assimilation)and evaluation.			**3h**	
	Wk. 19 27-31 Jan.				Lesson 55: Sexual intercourse(copulation) and fertilization. Lesson 56: Implantation, Birth and parental care. Lesson 57: Growth and development of the child.			**3h**	
	Wk. 20 from 03-07 Feb.				Lesson 58: Functions of the placenta/ signs and symptoms of pregnancy. Early pregnancy definition and causes/effects/consequences Lesson 59: Family planning and birth control methods. Lesson 60: Experiment 4- Studying the menstrual cycle of some volunteers.			**3h**	
	Wk.21 and 22 from 10-21 feb.			**7. Genetics, Mutation and variation**	Lesson 61: Notion of genetics and definition of basic terms. Lesson 62: Relationship between chromosomes and genes. Lesson 63: DNA and storage of genetic information/ the human karyotype.			**3h**	

					Lesson 64: Simple monohybrid cross- complete dominance. Lesson 65: Test and back cross. Lesson 66: Incomplete dominance			**3h**	
	Wk. 23 from 24-28 Feb.				Lesson 67: Sex determination and sex linkage. Lesson 68: Mutation. Lesson 69: Variation and genetic counselling , paternity determination.			**3h**	
	Wk. 24 from 03-07Mar				**Lesson 70-72: Assimilation/ Evaluation/Remediation**			**3h**	
3rd TERM	**Wk. 25 from 10-14Mar**			**8. Modern Biotechnology**	Lesson 73: Definition of basic terminologies used in biotechnology. Lesson 74: Applications of biotechnology: -in 1)production of human insulin. 2)Use of yeast in: beer, and wine production, 3 ;baking, 4)yoghurt production.			**3h**	
	Wk. 26 from 17-21Mar				Lesson 76: DNA fingerprinting.			**3h**	
	Wk. 27 from 24-28Mar			**9. Ecology.**	Lesson 79: Ecological concepts. (Ecosystem, environment. habitat,community,population,ecological niche etc.) Lesson 80: Notion of environment. Lesson 81: Ecological factors Effects of abiotic factors- light and temperature.			**3h**	
	Wk. 28from 31-04 April				Lesson 82: Effects of abiotic factors- water, edaphic and topographic Lesson 83: Adaptation of plants to dry habitats. Lesson 84: Adaptation of plants to aquatic habitats.			**3h**	
	04-18 April				EASTER BREAK				
	Wk. 29 from 22-25 April				Lesson 85: Energy flow and recycling of matter in the ecosystem (Biogeochemical cyles-Nitrogen,Carbon and Water) Biotic interactions,			**3h**	

					Human impact on the ecosystem and conservation of the ecosystem. Lesson 86:Feeding Relationships Food chains and food webs Lesson 87: Trophic levels				
	Wk. 30 from 28-02 May	**Conserving the natural environment and the recycling of matter in nature.**	**3-ENVIRONMENTAL EDUCATION AND SUSTAINABLE DEVELOPMENT**		Lesson 88-90: Integration(Assimilation) Evaluation/Remedial work.			**3h**	
	Wk. 31from 05-09May				Lesson 91: Bioaccumulation and biomagnification. Lesson 92: Ecological pyramids. Lesson 93: Definition, examples and components of ecosystem.			**3h**	
	Wk. 32 from 12-16 May				Lesson 94: Role of biotic component in an ecosystem. Lesson 95: Energy flow in an ecosystem. Lesson 96: The water cycle.			**3h**	
	Wk. 33 from 19-23May				Lesson 97: The carbon cycle. Lesson 98: The nitrogen cycle. Lesson 99: **Revision/Integration(Assimilation) /Evaluation/Remedial work.**			**3h**	
				END OF COURSE EXAMS					
Total	**33**		**03**	**09**				**99h/Year.**	

***93hours of theory.** ***06 hours of practicals.**

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Suggestions: Reproduction should come before Genetics.