THE REPUBLIC OF UGANDA
Ministry of Education and Sports

ADVANCED SECONDARY CURRICULUM

FOOD AND NUTRITION SYLLABUS

NCDC
NATIONAL CURRICULUM DEVELOPMENT CENTRE

2025

ADVANCED SECONDARY
CURRICULUM

FOOD AND NUTRITION
SYLLABUS

2025

A product of the National Curriculum Development Centre for the Ministry of Education and Sports with support from the Government of Uganda

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FOREWORD

The Ministry of Education and Sports, through the National Curriculum Development Centre (NCDC), aligned the Advanced Level Curriculum with the competency-based Lower Secondary Curriculum (LSC) to ensure a smooth learner transition from lower secondary to advanced level.

The two-year aligned Advanced Secondary Curriculum adopted learner-centered approaches, inquiry-based, and discovery methods. The learning outcomes give the learner hands-on experiences in real-life situations while being cognizant of different learner abilities and learning styles. The syllabus focuses on assessment for learning with emphasis on criterion-referenced assessment. It further provides learners with the opportunity to enhance the 21st-century skills and values that were acquired at the lower secondary level.

The Food and Nutrition syllabus equips learners with skills in meal management, nutrition health, and food value addition, emphasising the use of locally available materials to create products that support import substitution and everyday use. The syllabus fosters the development of Higher-Order Thinking Skills (HOTS) such as inquiry, creativity, innovation, decision-making, critical thinking, and problem-solving through learner-centred pedagogies and hands-on experiences in real-life situations. It recognises diverse learner abilities and styles, promoting inclusive participation of all groups, including learners with special needs, girls, and boys, while recognising diverse learning abilities and styles.

The competency-based curriculum aims to produce graduates with employable skills in nutritional health management, meal management and food value addition, addressing nutritional challenges and food security.

As the Minister responsible for Education, I endorse this syllabus as the official document for teaching and learning Food and Nutrition at the Advanced Level of secondary education in Uganda.

Hon. Janet Kataaha Museveni

First Lady and Minister of Education & Sports

ACKNOWLEDGEMENTS

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Our gratitude goes to the Ministry of Education and Sports for overseeing the adaptation of the curriculum, the Curriculum Task Force of the Ministry of Education and Sports for the oversight role and making timely decisions whenever necessary, and members of the public who made helpful contributions towards shaping this curriculum.

NCDC is also grateful to Members of Parliament, schools, universities, and other tertiary institutions, the writing panels, and professional bodies, for their input in the design and development of the Advanced Secondary Curriculum. To all those who worked behind the scenes to finalise the adaptation process of this teaching syllabus, your efforts are invaluable.

NCDC takes responsibility for any shortcomings that might be identified in this publication and welcomes suggestions for effectively addressing the inadequacies. Such comments and suggestions may be communicated to NCDC through P. O Box 7002, Kampala, or Email: admin@ncdc.go.ug or on the Website: www.ncdc.go.ug

Dr Grace K. Baguma
Director
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1.0 INTRODUCTION

The Advanced Secondary Curriculum has been aligned with the Lower Secondary competency-based model for ease of progression of learners from the Lower to Advanced Secondary Level. The alignment is a result of the analysis of the Advanced Level Curriculum published in 2013, to determine whether the content is:

i) appropriate.
ii) high-pitched or overloaded.
iii) covered at lower secondary.
iv) obsolete.
v) repeated in different topics and redundant.

The results from the curriculum analysis revealed that there were overlaps of concepts with what was covered at the Lower Secondary, as well as concepts within different topics of the same subject. In addition, a number of syllabuses had content that is no longer necessary for today's contemporary society and the 21st century.

1.1 Changes in the Curriculum

The alignment of the A-Level Curriculum to that of the Lower Secondary led to changes in the pedagogies of learning from a knowledge- and objective-based, to an integrated and learner-centred competency-based approach. The adapted syllabus, therefore, is a result of rationalising, integrating, and merging content with overlaps and similar skills, dropping topics that had been studied at Lower Secondary, or are no longer critical and relevant for the current learning needs, while upgrading those that were of low competencies to match with the advanced level. The programme planner details the learning progression derived from the learning outcomes. The detailed syllabus section unfolds the learning experiences with corresponding assessment strategies.

This Food and Nutrition syllabus is part of the Advanced Secondary Curriculum. The teacher is encouraged to read the whole syllabus before planning your teaching programme, since many topics have been merged, upgraded, or removed. While aligning this syllabus, efforts were made to ensure a smooth progression of concepts from the Lower Secondary Level, adapting topics and content with familiar features that are of value to the learner and society. In addition, the process of developing this syllabus document removed what was considered obsolete, high pitched as well as content overlaps and overloads.

1.2 Classroom-Based Assessment

This syllabus requires classroom learning to be experiential, through the suggested learning activities for the acquisition of the learning outcomes. This is the gist of a learner-centred and activity-based approach to learning, which emphasises the acquisition of required competencies. Formative assessment in Food and Nutrition will focus on the acquisition of knowledge and skills, through performance of the learning activities. The learning activities sprout from the learning outcomes, which are evidenced by acquiring and demonstrating the application of the desired skills, to show that learning has taken place. The sample assessment strategies have been provided to guide the teacher on classroom-based assessment. The teacher can develop more assessment strategies based on the same principles of observation, conversation, and product, for the acquisition of the desired knowledge, skills, values, and attitudes. (See detailed syllabus)

1.3 Learners with Special Educational Needs (SEN)

The Adapted A level Curriculum is designed to empower all learners, including those with special educational needs (SEN), to reach their full potential and contribute meaningfully to the nation. By incorporating inclusive strategies, the curriculum ensures equitable access to high-quality learning opportunities, while maintaining high academic standards. It emphasises creating an inclusive learning environment that supports the diverse needs of learners with SEN, enabling them to succeed alongside their peers.

Teachers are encouraged to design activities that support learners with special education needs through diverse and inclusive strategies. These include: using visual aids such as pictorial recipes, step-by-step diagrams, and video tutorials; breaking down complex tasks into smaller manageable steps; and introducing peer buddy systems for collaborative learning. Assistive tools, including magnifiers, text-to-speech software, talking scales, and ergonomic utensils (e.g., knives or peelers), should be provided to meet specific needs. Work spaces should be well-lit, adjustable, and free from distractions to enhance comfort and focus. Alternative assessments, such as practical demonstrations, should be used in place of written tests where appropriate. Accessible technology, such as cooking apps and interactive digital tools, can personalise the learning experience. Differentiated pedagogies should be applied to content, learning products, and peer activities to effectively address the diverse needs of all learners.

1.4 Generic Skills

Generic skills are embedded within all subjects and are essential for learning and workforce readiness. These skills enable learners to engage with the entire curriculum effectively and prepare them for lifelong learning. These skills equip learners with the ability to adapt to change and navigate life's challenges in the 21st century.

The key generic skills include:

1

Critical thinking and problem-solving

i) Planning and carrying out investigations
ii) Sorting and analysing information
iii) Identifying problems
iv) Predicting outcomes and making reasoned decisions
v) Evaluating different solutions

2

Co-operation and Self-Directed Learning

i) Working effectively in diverse teams
ii) Interacting effectively with others
iii) Taking responsibility for own learning
iv) Working independently with persistence
v) Managing goals and time

3

Creativity and Innovation

i) Using imaginations to explore possibilities
ii) Working with others to generate ideas
iii) Suggesting and developing new solutions
iv) Experimenting with innovative alternatives
v) Looking for patterns and making generalisation

4

Communication

i) Listening attentively and with comprehension
ii) Talking confidently and explaining ideas/opinions clearly
iii) Reading and writing fluently
iv) Writing and presenting coherently
v) Using a range of media to communicate ideas

5

Mathematical Computation

i) Using numbers and measurements accurately
ii) Interpreting and interrogating mathematical data
iii) Using mathematics to justify and support decisions

6

Information and Communication Technology (ICT) Proficiency

i) Using technology to create, manipulate and process information
ii) Using technology to collaborate, communicate and refine work

7

Diversity and Multicultural Skills

i) Appreciate cultural diversity
ii) Respectfully responding to people of all cultures
iii) Respecting positive cultural practices
iv) Appreciating ethnicity as a cradle for creativity and innovation

1.5 Cross-cutting Issues

These are issues that young people need to learn about, and are not confined to a particular subject but are studied across subjects. They help learners to develop an understanding of the connections between the subjects and the complexities of life as a whole. They are:

i) environmental awareness;
ii) health awareness;
iii) life skills;
iv) mixed abilities and involvement;
v) socio-economic challenges; and
vi) citizenship and patriotism.

These are a concern to all humankind irrespective of their areas of speciality. They are infused within the different learning outcomes of the different subjects.

1.6 Values

The curriculum is based on a clear set of values. These values underpin the whole curriculum and the work of schools. Learners need to base themselves on these values as citizens of Uganda. These values are derived from the Uganda National Ethics and Values Policy of 2013. They include:

i) respect for humanity and environment;
ii) honesty, uphold and defend the truth at all times;
iii) justice and fairness in dealing with others;
iv) hard work for self-reliance;
v) integrity; moral uprightness and sound character;
vi) creativity and innovation;
vii) social responsibility;
viii) social harmony;
ix) national unity; and
x) national consciousness and patriotism.

Values are not taught directly in lessons, nor are they assessed by pen and paper. However, they are incorporated in some learning outcomes and are developed as learners progress.

1.7 Information and Communications Technology (ICT) Integration

The integration of ICTs into teaching and learning is strongly encouraged in this A-level adapted curriculum. ICT enhances the implementation of competency-based learning by fostering learner engagement, creativity, and lifelong learning. Teachers are encouraged to use technology to create interactive content, such as digital simulations and videos, to illustrate abstract or complex concepts effectively. Integrating ICT not only enhances the learning experience but also equips learners with essential digital skills for the 21st century.

ICT teachers should endeavour to assist other subject teachers in making the ICT integration process a reality. The table below shows a sample of suggested ICT tools that may be applied to given tasks.

Sample Task in the Syllabus	Suggested ICT Tool
Fieldwork	Use of cameras to take photos and record videos
Locate places on a map	Use digital maps such as Google Maps or an equivalent application.
Presentation in class	Use presentation applications or online presentation tools like Canvas
Search for keywords and meanings	Use an online dictionary or search online
Make drawing/graphics	Use drawing tools like Draw.io or publishing software/Word processor
Roleplay, narrations	Use audio and video recordings
Demonstrations	Use audio/video recordings, models, simulations, or virtual labs
Analyse and present data	Use spreadsheet software or any other analytics tools
Group discussions	Mind mapping software
Search for extra reading materials	Download files from the Internet from academic Databases
Writing equations and formulae	Use equation editors like MathType
Carry out academic search/research	Use the Internet, AI models, and other academic applications like "Encarta", "Britannica", etc.
Collaborate with others across the world	Form learning networks with blogs, social media, emails, and videoconferencing tools like Zoom, MS Teams, Webex, Google Meet or any other networking application.

1.8 Projects

Projects and project-based learning are part and parcel of learning in the 21st century. Learners should be encouraged to draw projects from the different topics in the syllabus. You are encouraged to develop projects with your learners that can easily be linked to real- life situations in your local environment. While doing this, make effort to keep aligned to the learning outcomes and topical competencies.

1.9 The Aims of Secondary Education

The aims of secondary education in Uganda are to:

i) instil and promote national unity, and understanding of the social and civic responsibilities, strong love and care for others and respect for public property, as well as an appreciation of international relations and beneficial international co-operation;

ii) promote an appreciation and understanding of the cultural heritage of Uganda, including its languages;

iii) impart and promote a sense of self discipline, ethical and spiritual values, personal and collective responsibility and initiative;

iv) enable individuals to acquire and develop knowledge and an understanding of emerging needs of society and the economy;

v) provide up-date and comprehensive knowledge in theoretical and practical aspects of innovative production, modern management methods in the field of commerce and industry and their application in the context of socio-economic development of Uganda;

vi) enable individuals to develop basic scientific, technological, technical, agricultural and commercial skills required for self-employment;

vii) enable individuals to develop personal skills of problem solving, information gathering and interpretation, independent reading and writing, self-improvement through learning and development of social, physical and leadership skills such as are obtained through games, sports, societies and clubs;

viii) lay the foundation for further education;

ix) enable the individual to apply acquired skills in solving problems of community, and to develop a strong sense of constructive and beneficial belonging to that community;

x) instil positive attitudes towards productive work and strong respect for the dignity of labour and those who engage in productive labour activities; and

xi) develop a positive attitude towards learning as a lifelong process.

1.10 The Aims of the Advanced Secondary Curriculum

The aims of Secondary education in Uganda are to:

i) adopt a competency-based learning approach;
ii) develop holistic education for personal and national development based on clear shared values;
iii) develop key skills which are essential to work and life and promote life-long learning;

iv) adopt an integrated approach to learning that develops the ability of learners to apply learning;
v) improve on assessments by incorporating school-based assessment into end of cycle assessment;
vi) emphasise learner's participation through engagement with the community; and
vii) prepare for further education.

1.11 The Rationale for teaching Food and Nutrition at Advanced Level

The Advanced Level Curriculum for Food and Nutrition aims at teaching both the theory and practical work in a systematic and orderly way so as to:

i) train learners by giving them scientific knowledge of food, nutrition, health and other practices related to the well-being of a person;

ii) train learners in practical skills which aim at preparing learners to meet the demands of the competitive employment and job market;

iii) train learners in food production, food value addition and entrepreneurship skills which aim at making them job creators, self-reliant and productive in society; and

iv) provide foundation knowledge for further professional training at higher institutions of learning.

Examples of areas for further professional training include; human medicine and surgery, paramedics, agriculture, human nutrition and dietetics, food science and technology/ processing, home economics, catering & hotel management, hotel, institutional and leisure management and research.

1.12 Subject Overview

The areas of study in Food and Nutrition have been re-organised and designed to equip learners with essential skills in food preparation, nutritional health, food value addition, resource management and research. The subject emphasises hands-on learning, creativity, innovation and real-life application, enabling learners to gain competencies that can be applied both within and beyond the classroom setting. As teachers, you are encouraged to ensure that skills development is prioritised and learners motivated to practice these skills outside of teaching time to build confidence and proficiency.

1.13 Time Allocation

Learners shall be engaged for nine (9) periods of 40 minutes per week from Senior Five to Senior Six. The total number of periods to be spent on each topic is stated in the syllabus.

1.14 Suggested approaches to teaching and learning Food and Nutrition

The suggested approaches enhance learning and empower teachers to support learners so that they acquire the planned competencies. This necessitates that you work alongside learners to guide, support and supervise them as they progress through the learning process. These approaches include:

i) **Inquiry-based learning:** Learners are encouraged to investigate through research directed by their interest and solve problems through series of questions and scenarios enhancing critical thinking, communication and research skills.

ii) **Experiential learning:** Learners actively participate in hands-on experiences and reflect on them, emphasising learning through doing, applying concepts in real-world or simulated situations, during research and learning through reflecting upon what they are doing which leads to development of reflective skills.

iii) **Problem and project-based learning:** Learners find solutions to problems through their experience in research and projects. This leads to development of critical thinking, social and research skills.

iv) **Case-based learning:** Learners refer to real-world scenarios to discuss and analyse them which enable them to develop critical thinking, analytical and research skills.

1.15 Special Education Needs Guidelines to the Teacher

As a teacher, you are encouraged to develop more activities that cater for special educational needs. Assistive devices such as; magnifiers, text-to-speech software, adaptive utensils, easy to grip handles, adjustable work stations and sensory friendly appliances such as tactile marked ovens and visual timers can be used. Additionally, giving modified recipes, convenience foods and offering personalised guidelines and support to ensure inclusive and accessible learning experience. Differentiated pedagogies are highly recommended to be used in content, products as well as peer learning to cater for all categories of learners.

1.16 Sample Teaching and Learning Activities

i) Using audio visuals, sample cooking demonstration to teach learners the various cooking techniques and recipes, the learner examines the different techniques.

ii) The learner uses internet tutorials to watch online recipe video, virtual cooking demonstration, a pre-recorded video on food safety and nutrition and makes a sample of the dishes and critique on texture, temperature, colour, aroma and the flavour.

1.17 Food and Nutrition Programme Planner

Class/ Term	Topic	Sub-topic		Periods
Senior Five Term 1	1) The Kitchen: Food Production and Processing Unit	1.1	Designing and laying out of the kitchen (food production and processing unit)	4
		1.2	Ventilation: Illumination and colour (lighting equipment; sources, importance and methods of lighting rooms; colour, ventilation-types, importance).	6
		1.3	Detergents used in cleaning surfaces of the food processing unit: choice, classification and use of detergents; locally obtained detergents.	4
		1.4	Use of water: Types of water and water purification	8
		1.5	Refuse disposal: Methods of environmental impact	2
		1.6	Safety in the kitchen i) Managing risks and hazards in the kitchen (food processing unit) ii) Safety precautions in the kitchen: construction, working, use and care of fire extinguishers	6
		1.7	Fuels i) Classification of fuels: production, advantages and disadvantages of fuels, eco-friendly fuels ii) Equipment that use different fuels and fuel-efficient equipment iii) Sustainability and environmental impact	6
	2) Nutrients	2.1	Proteins i) Structure and classification of proteins ii) Protein anabolism and catabolism iii) Properties of proteins iv) Functions of proteins v) Protein quality and requirements/recommendations vi) Effect of protein deficiency/excessive intake Prepare a protein dish	16
		2.2	Carbohydrates i) Properties and functions ii) Carbohydrate imbalances (underweight, overweight and	20

			obesity, cardiovascular disease and dental carries) iii) Recommended dietary allowances of carbohydrates for different age groups and categories of people iv) Prepare a carbohydrate dish Fibre in the diet	
				72
Senior Five Term 2		2.3	Lipids i) Structure and classification of lipids ii) Properties and functions of lipids iii) Imbalances iv) Manufacture of lipids Use of fats and oils in cookery	14
		2.4	Vitamins i) General classification (water soluble and fat soluble) ii) Properties and functions iii) Imbalances Prepare a vitamin rich dish	22
		2.5	Mineral elements i) Classification (trace-elements, macro-elements) ii) Functions iii) Factors that affect the stability and bioavailability iv) Imbalances Prepare a mineral rich dish	18
		2.6	Water and electrolytes i) Chemical nature and distribution of water in the body ii) Properties and functions of water in the body Water and electrolyte balance	10
	3) Heat and Thermodynamics in Food Production	3.1	Heat and its measurement	2
		3.2	Applications of expansion in solids and fluids	2
		3.3	i) Application of heat capacity and latent heat ii) Latent heat of vapourisation and latent heat of fusion and their applications in a home	8
		3.4	Evaporation and cooling	2
		3.5	Condensation and distillation	4
		3.6	Humidity and damp	2

		3.7	Refrigeration	4
		3.8	Heat transfer in solids, liquids and gases	2
		3.9	Application of methods of heat transfer	**4**
	4) Absorption and Metabolism of Nutrients	4.1	Absorption of nutrients	2
		4.2	Nutrients and energy metabolism	6
		4.3	Control of energy in human metabolism	2
		4.4	Requirements and measurement of energy; energy value of food-calculation	2
		4.5	i) Recommended Dietary Allowances (RDA) of energy ii) Use of food composition tables in calculating nutrient composition of dishes/meals	2
				108
Senior Five Term 3	5) Scientific Principles and their Applications in Food Production	5.1	i) Application of the properties of matter in daily life ii) Measurement of matter	6
		5.2	Density Relative density	6
		5.3	Forces: Application of different forces in appliances	6
		5.4	Relationship between mechanical advantage, velocity ratio and efficiency	4
		5.5	Types and applications of simple machines	4
		5.6	Pressure i) Types of pressure ii) Applications of pressure in a home	6
		5.7	Current electricity i) Heating effect of electricity ii) Calculating power usage iii) Domestic wiring and electrical safety Heating effects of electricity	12
		5.8	Oxidation applications	2
		5.9	Reduction applications	2
		5.10	Neutralisation and PH applications; Other chemical processes of importance in food production (Maillard reaction, emulsification, adsorption, solubility	2
	6) Food Additives	6.1	Food additives -classification with their examples	2
		6.2	i) Functions (seasoning, flavouring, stabilisation, extenders, leaveners, preservatives, etc) ii) Practical applications of the additive in foods/dishes	4

		6.3	Food additives and health	2
	7) Planning and Preparation of Meals (Part I)	7.1	Nutritive and dietetic value of foods i) Culinary uses of milk, meat, offals, fish, poultry, milk, eggs, pulses and nuts, fruits and vegetables Textured vegetable protein	10
		7.2	Cooking and serving egg, milk, meat and cheese dishes	8
		7.3	i) Concepts of "the eat well guide" and "my plate" or the food pyramid ii) Planning meals and shopping for food-considerations for special groups (invalids and convalescents, vegetarians, allergies)	4
		7.4	i) Food_ Habits (Definitions of food— social definition, cultural definition, psychological definition, definition of food behaviour, determinants of food behaviour/habits, external environment and its relation to food and internal environment) ii) Physiological environment and its relation with food Cooking and serving traditional dishes and their accompaniments	10
	8) Beverages	8.1	Value of beverages in the diet	2
		8.2	Preparation of hot beverages	6
		8.3	Preparation of cold non- alcoholic beverages	6
		8.4	Preparation of fermented non- alcoholic beverages	4
				108
Senior Six Term 1	9) Management of Resources	9.1	Management of financial resources in food production	4
		9.2	Management of time in food production	4
		9.3	Management of energy in food production	4
	10) Bread, Cakes, Pastries and Confectioneries	10.1	Ingredients used in baking flours i) Different types of flour used in baking ii) Wheat flour-versatility in baking iii) Milling (extraction rates) nutritive value and enriching flours and other additives Storage of flours	8
		10.2	Sugar in baking and confectionery	1
		10.3	Fats used in baking	1
		10.4	Use of leavening agents and additives	2

		10.5	Use of eggs and other ingredients in baking	2
		10.6	Making and decorating cakes	6
		10.7	Making biscuits, cookies and scones	2
		10.8	Making fancy bread and other yeast products	4
		10.9	Making and using pastry —preparing, cooking and serving pastry dishes (using flaky, puff, choux pastries) with stuffings like: meat and fish (meat pies, cornish pasties, samosas, beef-roll, fish flan, open tart, sausage roll); vegetables; fruits; cream; jam; cheese	12
	11) Planning and Preparation of Meals (Part II)	11.1	Cooking and serving plant protein (beans, peas, nuts)	4
		11.2	Cooking and serving red meat (beef, pork, goat meat, mutton, minced meat and offal)	18
		11.3	Cooking and serving poultry and rabbit	8
		11.4	Cooking and serving fish	6
		11.5	Cooking and serving textured vegetable protein (TVP)	2
		11.6	Preparing, cooking and serving accompaniments for protein dishes — soups, sauces, gravies and other Hors D'oeuvres, carbohydrates (cereals, roots, tubers, plantain) vegetables, fruits and deserts (sweets and puddings)	20
				108
Senior Six Term 2	12) Réchauffé Dishes and Convenience Foods	12.1	Cooking and serving Réchauffé dishes	10
		12.2	Cooking and serving convenience foods	10
	13) Food Safety, Processing and Preservation	13.1	Food contamination, spoilage and poisoning	2
		13.2	Principles and methods of food processing and preservation	6
		13.3	Processing and preservation of fruits, vegetables, pulses and nuts, spices and herbs	14
		13.4	Processing and preservation of enriched meat, fish and poultry	10
		13.5	Food processing and preservation of eggs (egg powder, frozen eggs), milk products— cheese, ice cream, enriched yoghurt	12
		13.6	Packaging, labeling and marketing the processed products	4

	14) Nutrition in the Different Stages of Life	14.1	Nutritional requirements in the following stages in the life cycle —pre-pregnancy, pregnancy and lactation, infancy (complementary feeding), toddlers, pre-school, school going (emphasis on school feeding), adolescents and teenage, adulthood, elderly	4
		14.2	Designing meal plans and preparing meals for people in the different stages in the life cycle	10
	15) Food Systems and Environment	15.1	Urban and rural food systems	4
		15.2	Food blocks and interactions in the food systems	6
		15.3	i) Protecting the food supply-sustainability and environmental impact iii) Interactions of the food path stages to improve food and nutrition security	6
		15.4	The food environment and adjustments there in for food security	6
		15.5	Existence and dangers of food misinformation Vulnerable groups and strategies to counter food misinformation	4
				108
Senior Six Term 3	16) Nutrition in Rehabilitation	16.1	Ecology of malnutrition: i) host ii) agent iii) environment (General causes of malnutrition)	10
		16.2	Nutritional deficiency diseases and conditions that require management and rehabilitation	24
		16.3	Principles of nutritional care for metabolic disorders	12
		16.4	Causes and symptoms of metabolic and other disorders, stress and injury	14
		16.5	Care and management of metabolic and other disorders, stress and injury	12
				72

1.18 Note to Users

Each topic has a competency, which is a broad statement that brings out what the learner is expected to do at the end of the topic. The competency is broken down into learning outcomes, for which suggested learning activities and sample assessment strategies are developed as represented in the three columns below.

Learning Outcomes	Suggested Learning Activities	Sample Assessment Strategies
A statement of the knowledge, understanding, skills, generic skills, values, and attitudes expected to be learned by the end of the topic. Hence each learning outcome is coded with letters such as **k, u, s, gs and v/a** for emphasis to the teacher on what to consider during the lesson.	The sort of hands and minds on engagements, enable the learner to achieve the learning outcome including the generic skills and values. They are designed to enable learners to Discover, Explain, Analyse, and Apply (**DEAA**) as they participate in knowledge construction.	Opportunities for assessment within the learning process that is, during and after the lesson.

The learning activities and assessment strategies in the syllabus are "suggested" and "samples" respectively and not exhaustive. The teacher is encouraged to develop more learning activities and assessment strategies that are based on the learning outcomes. In addition, the teacher is free to customise the suggested learning activities to make them suitable for their respective learning environments and for learners with Special Educational Needs **(SEN)**.

2.0 DETAILED SYLLABUS

Senior Five Term: One

TOPIC 1: The Kitchen: Food Production and Processing Unit

Duration: 36 Periods

Competency: The learner designs and manages a kitchen that is safe, efficient and functional taking into account of the various elements.

Learning Outcomes The learner should be able to:	Suggested Learning Activities	Sample Assessment Strategies
a) design the kitchen considering ventilation, illumination, materials and colour to ensure efficiency in work. (u, s, gs)	a) In pairs, learners use textbooks, ICT resources and other materials to: i) design kitchen plans, such as L-shaped, U-shaped, island, and galley layouts, with a strong emphasis on the kitchen work triangle (sink, stove, and refrigerator); and ii) sketch and plan a kitchen layout—learners will design a kitchen considering ventilation, illumination, and colour coordination to enhance efficiency. b) Learners present their sketches and explain how their design optimises work efficiency as they take note of important points. c) Learners analyse the use of elements such as counters, ventilation, lighting equipment, colour and storage, considering their functionality and effectiveness for kitchen use as they take note of important points.	a) Engage with learners as they discuss and judge their understanding of the work triangle as they come up with the different efficient kitchen designs and layouts. b) Observe learners as they develop plans and look out for their ability to use imaginations to explore possibilities of developing different kitchen plans. c) Evaluate the different kitchen designs and write-ups for accuracy of information about the: i) types, properties and maintenance of materials used in counter tops and flooring, and ii) correct positioning of the key elements in the kitchen designs (ventilation, lighting, equipment, colour and storage.

	d) Learners investigate and document how materials used in counter tops and flooring contribute to durability and ease of maintenance of a kitchen as they take notes. e) Learners present in plenary.	
b) apply detergents appropriately for cleaning different surfaces in the kitchen. (u, s, v, gs)	a) In small groups, learners use textbooks, ICT resources and other materials to: i) discuss the classification, choice and use of detergents in cleaning surfaces of the kitchen/food processing unit as they take notes; and ii) demonstrate the use and cleaning action of modern and locally obtained detergents in the kitchen as they take notes.	a) Converse with learners as they demonstrate the cleaning action of both modern and local detergents to evaluate the correct use and effectiveness of each type of detergent. b) Observe learners as they present, look out for their ability to talk confidently and explain ideas when classifying and using detergents. c) Evaluate the demonstration to ensure that the steps and procedures used are appropriate, efficient, and aligned with best practices for using both modern and traditional detergents.
c) purify water for use in the kitchen/food processing unit. (s, v, gs)	a) In small groups, learners use textbooks, ICT resources and other materials to: i) brainstorm and record the need for purifying water in the kitchen/food processing unit; various ways in which water gets contaminated; ii) discuss the different ways in which water can be purified. Present to the whole class; iii) carry out processes of purifying water as they note the important points; and iv) present in plenary.	a) Dialogue with learners to evaluate their understanding of the different ways in which water can be purified and how they correctly apply different methods of water purification. b) Observe learners as they purify water using different methods, and look out for effective interaction with others. c) Evaluate the purified water for colour, taste and smell.

d) dispose of refuse appropriately to maintain hygiene in the kitchen/ food processing unit. (u, s, v, gs)	a) In pairs, learners use textbooks, ICT resources and other materials to: i) discuss the treatment of refuse (liquid and solid refuse); ii) analyse the different types of drainage systems, including surface, subsurface, slope, French drains, and gutter systems, and describe the specific maintenance practices required for each; and iii) sensitise the community about proper refuse disposal and safety measures in the kitchen, environmental impact and sustainability. b) Learners take note of the important points on refuse disposal and the management of risks and hazards in the kitchen. c) Learners present in plenary.	a) Converse with learners to establish their understanding of the correct refuse disposal and the risks associated with wrong disposal. b) Observe learners as they sensitise communities, and look out for their ability to communicate effectively. c) Evaluate their write-ups for accuracy of information on the treatment process and essential safety measures/ practices in the kitchen.
e) prevent and manage risks and hazards to ensure safety in the kitchen/food processing unit. (u, s, v, gs)	a) In groups, learners use textbooks, ICT resources and other materials to: i) discuss essential safety measures/practices in the kitchen to prevent accidents and manage risks effectively; ii) analyse the design, use and operating principles of tools and material used in managing hazards (e.g., fire extinguishers); and iii) apply essential safety measures/practices in the kitchen to prevent accidents and manage risks effectively as they take note of important points.	a) Engage with the learners during the discussion to gauge their understanding of the prevention and management of risks /hazards in the kitchen. b) Observe learners as they demonstrate application of safety measures /practices to prevent risks/hazards. c) Evaluate the demonstration to ensure that the steps and procedures used are appropriate, efficient, and aligned with best practices of risk and hazard management.

f) use and manage fuels safely and efficiently in the kitchen/food processing unit. (u, s, gs)	a) In small groups, learners use textbooks, ICT resources, and additional resources to: i) classify the different types of fuels (renewable and non-renewable); ii) analyse the advantages and disadvantages of the different fuels in the kitchen; iii) produce different types of fuels (solid and gas) to use in the kitchen; and iv) demonstrate the use of various equipment that use different fuels. b) Learners take note of the important points. c) Learners present in plenary.	a) Converse with learners to appraise their understanding of different fuels, and ways of transforming raw materials into usable fuels. b) Observe them as they follow correct procedures to produce and use different fuels. Look out for their ability to use imaginations to explore possibilities as they produce different fuels. c) Evaluate the fuels produced and look out for usability, functionality, and cost-effectiveness.

TOPIC 2: Nutrients

Duration: 100 Periods

Competency: The learner develops appropriate diet plans to prevent and manage nutritional imbalances for the health of an individual, family and the community.

Learning Outcomes The learner should be able to:	**Suggested Learning Activities**	**Sample Assessment Strategies**
a) analyse the chemistry of proteins in relation to their biological functions. (u, s, gs)	a) In small groups, learners use ICT resources and textbooks to: i) investigate the chemical composition—building blocks (amino acid, peptide bonds and polypeptide chains) and structure of proteins; ii) discuss the classification of amino acids and proteins; iii) explore the physical and chemical properties of proteins, relate them to their biological functions, as they take note of the key points. iv) Learners present in plenary.	a) Dialogue with learners as they discuss and evaluate how they relate the chemistry of proteins to their biological functions. b) Observe learners as they sort and analyse information on composition, structure and biological functions of proteins. c) Appraise their write-ups for accuracy of the composition, structure and biological functions of proteins.

b) evaluate the quality of protein in preventing and managing protein imbalances in individuals, family and community. (u, gs)	a) In pairs, learners use ICT resources and textbooks to: i) discuss the concept of protein quality, (biological value, supplementation value, net protein utilisation, protein efficiency ratio) , methods of assessing protein quality and classification of proteins; ii) explore the adequacy of protein intake in relation to the needs of individuals and take note of the important points; iii) brainstorm the health effects of protein imbalances in the body (moderate acute malnutrition (MAM) and severe acute malnutrition (SAM); iv) evaluate the management strategies for protein imbalances in the body; v) develop recipes for dishes to manage protein imbalances; and vi) present developed recipes in plenary. b) Learners prepare one of the dishes developed to manage protein imbalance as they take note of important points. c) Learners exhibit the dishes prepared.	a) Engage with learners during the discussion and appraise their ability to relate protein quality to management of protein imbalances in the body. b) Observe learners for the ability to evaluate different solutions as they develop dishes to manage protein imbalances. c) Judge the dish prepared to manage protein imbalances for suitability, appearance, taste and correct serving portions.
c) examine the chemistry of carbohydrates in relation to their biological functions. (u, s, gs)	a) In small learning clusters, learners use ICT resources and textbooks to: i) discuss the chemical composition —building blocks (glucose, fructose and galactose; glycosidic bonds and disaccharide, oligosaccharide and polysaccharides (types of polysaccharides e.g., starch, cellulose glycogen chitin), and classification of carbohydrates;	a) Dialogue with learners as they discuss and evaluate how they relate the chemistry of carbohydrates to their biological functions b) Observe learners as they sort and analyse information on composition, structure and biological functions of carbohydrates.

	ii) explore the physical and chemical properties of carbohydrates and relate them to their biological functions, as they take note of the key points iii) present in plenary	c) Critique their write-ups for accuracy of the composition, structure and biological functions of carbohydrates.
d) analyse the importance of fibre in maintaining a healthy diet and preventing chronic diseases for good nutrition, health and overall well-being.	a) In small learning clusters, learners use ICT and textbooks to: i) examine the classification and food sources of fibre; ii) discuss the role of fibre in relation to its health benefits in disease prevention as they take note of important points; and iii) present in plenary. b) In pairs, learners work on a project to: i) examine the various fibre imbalances (e.g., constipation, diverticulitis, haemorrhoids, rectal and anal cancer); ii) modify a recipe of any common dish to make it fibre rich; iii) prepare the dish rich in fibre; iv) formulate sensitisation messages; and v) visit a community (school, church or village) and sensitise them on prevention of fibre imbalance.	a) Engage learners as they examine the classification and food sources of fibre and look out for: i) clear distinction between the classes, food sources of each category; and ii) accurate responses on the role of fibre in the diet. b) Observe learners as they modify recipes to make fibre rich dishes and judge their ability to: i) sort and analyse information to predict outcomes and make reasoned decisions; and ii) take responsibility for their own learning. c) Appraise: i) the modified fibre dishes for suitability, acceptability, creativity, taste and appearance; and ii) sensitisation session for communication skills, correctness of the messages, social responsibility and harmony.
e) manage the effects of carbohydrate imbalances in the body. (u, s, gs)	a) Working together, learners use ICT resources and textbooks to: i) brainstorm the impact of carbohydrate imbalances in the body, (overweight and obesity, cardiovascular disease, diabetes mellitus, anorexia nervosa, and dental caries);	a) Converse with learners as they brainstorm and establish their understanding of how the carbohydrate imbalances come about and their impact on health.

	ii) evaluate the management strategies for carbohydrate imbalances in the body; iii) develop dishes to manage carbohydrate imbalances; prepare one of the dishes developed to manage carbohydrate imbalance as they take note of important points; and iv) plan dishes and present in plenary.	b) Observe learners and look out for their ability to work with others to generate ideas as they prepare one of the dishes to manage carbohydrate imbalance. c) Critique the dish prepared to manage carbohydrate imbalances for suitability, appearance, taste and correct serving portions.
Senior Five Term 2		
f) examine the chemistry of lipids in relation to their biological functions. (u, gs)	a) In small learning clusters, learners use ICT resources and textbooks to: i) discuss the chemical composition—building blocks (fatty acids and glycerol), formation of a lipid (triglyceride), ester bonds, condensation, hydrocarbon chains; and classification of lipids; ii) explore the physical and chemical properties of lipids and relate them to their biological functions and culinary uses, as they take note of the key points. b) Learners present in plenary.	a) Converse with learners as they present their findings and look out for their understanding of the structure of the different types of lipids. b) Observe learners during presentation and judge their ability to sort and analyse information on the structure of lipids. c) Evaluate their write-ups for accuracy of information on the structure and classification of lipids.
g) apply the properties of lipids to their use in food production. (u, s, gs)	a) In small groups, learners use ICT resources and textbooks to: i) create dishes to show healthy use of lipids in cookery and write the recipes; ii) use the recipes and prepare the dishes created; iii) take note of important points. b) In groups, learners present recipes in plenary.	a) Converse with learners as they demonstrate to judge their understanding of the uses of lipids in food production. b) Observe learners demonstrate the culinary uses of lipids and check their ability to plan and carryout investigations on the use of lipids in cookery. c) Evaluate the recipes and the dishes prepared and judge the accuracy of procedure, suitability, appearance, and taste.

h) manage lipid imbalances in the body. (s, v, gs)	a) Individually, using ICT resources, textbooks and other resources, the learner: i) examines the lipid imbalances (hyperlipidaemia, cholesterolemia, steatorrhoea); ii) performs basic nutritional status assessments (body mass index (BMI), mid upper arm circumference (MUAC), waist to hip ratio etc); iii) formulates a recipe for a dish to manage lipid imbalances; iv) prepares a dish using the formulated recipe for the management of lipid imbalances as they note down important points; and v) present in plenary.	a) Converse with learners as they perform the nutritional assessment and formulate the recipes and judge: i) their ability to take accurate measurements; and ii) appropriateness of the recipes in managing lipid imbalances. b) Observe learners as they prepare the dish and look out for their innovation and creativity. c) Evaluate the dish (product) for: texture, colour, taste, flavour and suitability in the management of lipid imbalances.
i) apply the knowledge of food processing to produce lipids for home use. (u, s, v, gs)	a) Collaboratively, learners use ICT resources and textbooks and other resources to: i) identify the suitable food sources (e.g., avocado, simsim, peanut, sunflower, shearnut) for lipid extraction and explain their key characteristics; ii) develop a procedure for extracting lipids from food sources; and iii) extract the oil, pack, label and market the product as they take note of key points. b) Learners present to the rest of the class.	a) Converse with learners as they identify the suitable sources and develop the procedures for extracting oils. b) Observe learners as they plan and extract oil form foods and look out for identification of problems and ways forward. c) Evaluate the extracted oil (product) for consistency, flavour, colour, choice of packaging materials, package, label and cost.
j) analyse vitamins and apply the knowledge to promote nutrition, health and disease	a) Using available materials, ICT resources and textbooks, learners work in groups to: i) categorise vitamins — (fat-soluble and water-soluble, giving examples) and identify sources of each of the vitamins;	a) Converse with learners to evaluate their understanding of: i) categories of vitamins; ii) function of vitamins in the body; and

prevention. (u, s, v, gs)	ii) analyse the properties (solubility, sensitivity to light, heat, and pH changes) and functions of each vitamin; iii) discuss the factors affecting the stability and bio-availability and how they interact with vitamins/ nutrients as they take note of the key points; and iv) present in plenary.	iii) factors affecting solubility, stability, bio-availability of vitamins. c) Observe learners as they present the findings and evaluate their ability to communicate effectively. c) Examine the write-ups for accurate classification, sources, functions and clear comparison of water and fat-soluble vitamins.
k) manage vitamin imbalances in the body. (u, s, v, gs)	a) Engaging with peers, learners leverage ICT resources and textbooks and other materials to: i) identify vitamin imbalances (deficiencies and toxicity) among individuals; ii) formulate recipes for dishes to manage vitamin imbalances; and iii) prepare a dish using the formulated recipe to manage vitamin imbalances as they take note of the key points.	a) Converse with learners to evaluate their ability to identify vitamin imbalances and formulate recipes to manage the imbalances. b) Observe learners as they prepare dishes to manage vitamin imbalances and look out for their ability to measure ingredients accurately. c) Evaluate the prepared dish (product) for texture, colour, taste, flavour and appropriateness.
l) explore mineral elements and apply the knowledge to promote nutrition, health and disease prevention. (u, s, v, gs)	a) In learning clusters, learners use ICT resources, textbooks and any other materials to: i) categorise mineral elements (e.g., macro-minerals like calcium, potassium, or trace elements like iron, zinc) and identify sources of each of the mineral elements; ii) analyse functions of each mineral elements, absorption process in the body, storage sites and factors affecting absorption (e.g., diet, inhibitors, enhancers); iii) discuss the factors how minerals interact with other minerals, vitamins/ nutrients as they take note of the key points; and	a) Converse with learners as they discuss and judge their ability to: i) categorise and analyse sources and functions of mineral elements; and ii) explain the absorption and interactions with other nutrients. b) Observe learners during the plenary and look out for their ability to present coherently on the classification and absorption of mineral elements.

	iv) present in plenary.	c) Examine the write-ups for correct categorisation and absorption of mineral elements.
m) manage mineral element imbalances in the body. (u, s, v, gs)	a) In pairs, learners use ICT resources, textbooks and any other materials to: i) identify mineral elements imbalances (deficiencies and toxicity) in the body and take note; ii) formulate recipes for dishes to manage mineral element imbalances in the body; iii) prepare a dish to manage mineral element imbalances; and iv) present the prepared dish.	a) Converse with learners and establish their ability to formulate recipes for the management of mineral imbalances in the body. b) Observe learners as they formulate recipes and prepare the dishes and judge their skills of problem solving, creativity and innovation. c) Evaluate the dish for texture, colour, taste, flavour and suitability in managing the condition.
n) appreciate the essential role of water in maintaining overall health and well-being. (u, v, gs)	a) In small groups, learners use ICT resources, textbooks and any other material to: i) examine water (sources, proportion) and its distribution within different compartments of the body and how it affects overall health (hydration, the functioning of organs and systems). ii) assess the properties of water and how they relate to its functions in the body; iii) explore and document the effects of dehydration on body functions; iv) explain the mechanisms of water and electrolyte balance in the human body (acid-base buffer system); v) take note of the key points, and present in plenary.	a) Converse with learners as they discuss and appraise their ability to relate how properties of water contribute to its vital roles in biological processes in the body. b) Observe learners in plenary and judge their ability to predict outcomes of the investigation on effects of dehydration and make reasoned decisions. c) Appraise the write-ups for correct information on: i) properties and functions of water; ii) effects of dehydration; and iii) mechanism of water and electrolyte balance.

Senior Five Term: Two

TOPIC 3: Heat and Thermodynamics in Food Production

Duration: 30 Periods

Competency: The learner applies heat and thermodynamics principles to manage cooking processes, optimises energy use, and controls temperatures for efficient kitchen operations.

Learning Outcomes The learner should be able to:	**Suggested Learning Activities**	**Sample Assessment Strategies**
a) apply the knowledge of expansion in states of matter to food production operations. (u, s, gs)	a) In pairs, learners use textbooks, ICT resources and other materials to: i) examine the principles and applications of expansion in solids, liquids and gases in food production— (Solids-thermostats-appliances in food production that use a thermostat); ii) demonstrate thermal expansion in metals (e.g., covers of jars, applying heat loosens tight metal; iii) place a hot pan in cold water and observe contraction of screws or rivets)' (liquids-expansion of liquids in food production—anomalous expansion of water); (gases-expansion of gases in food production, e.g., in leavening agents, distribution of heat in the oven). Such experiments bring out the application of these principles in everyday kitchen practices; and iv) take note of the key findings. b) In pairs, learners illustrate how a bimetallic strip is used in the operation of room heaters, cookers, fire alarms and timers as they take note of the key points.	a) Dialogue with learners as they demonstrate expansion in solids, liquids and gases and evaluate their understanding of the principles involved. b) Observe learners as they demonstrate and judge their ability to take responsibility for own learning in using the principle of expansion in solids, liquids and gases. c) Evaluate the demonstrations done for appropriate use of equipment, correct procedures and results.

	c) They present in plenary.	
b) apply the knowledge of phase changes in the various food production processes and technologies. (u, s, v, gs)	a) Individually, learners use textbooks, ICT resources and any other materials to differentiate between the following: i) melting and cooling; ii) evaporation and boiling; iii) condensation and distillation; and iv) humidity and damp. b) In small groups, learners discuss the application of the different phase changes, and application of humidity and damp. c) They then take note of important points and present to the whole class.	a) Ask targeted questions to learners to gauge their comprehension on concepts such as melting, boiling, evaporation, cooling, condensation and distillation in daily operations of the kitchen. b) Observe learners as they discuss and evaluate their ability to work effectively in diverse teams to discuss the applications of concepts. c) Appraise the write up for appropriate applications of the different concepts in the kitchen.
c) apply the knowledge of thermodynamics in operations of the food production unit. (u, s, v, gs)	a) In pairs, learners use textbooks, ICT resources and any other materials to: i) examine the modes of heat transfer in solids, liquids, gases and their applications in the kitchen; ii) relate modes of heat transfer in food preparation; and iii) analyse the concepts of heat capacity, latent heat and their applications in the food production and processing operations. b) In pairs, learners take note of the key points and present in plenary to the whole class.	a) Converse with learners as they examine the modes of heat transfer to evaluate their ability to apply these principles in cooking. b) Observe learners as they present their findings and judge their ability to sort and analyse information. c) Appraise the write-ups for the correct applications of thermodynamics in the food production unit.

TOPIC 4: Absorption and Metabolism of Nutrients

Duration: 14 Periods

Competency: The learner develops an understanding of nutrient absorption and metabolism and applies this knowledge to promote health, manage diet, and enhance overall well-being.

Learning Outcomes The learner should be able to:	**Suggested Learning Activities**	**Sample Assessment Strategies**
a) apply the knowledge of nutrient absorption and metabolism in management of meals. (u, gs)	a) In small groups, learners use textbooks, ICT resources and any other materials to analyse how nutrients from food are transported, and taken up into the bloodstream. b) They study the processes and factors that affect nutrient absorption (factors that hinder or enhance absorption) of each nutrient. c) Learners examine catabolism and anabolism of the following nutrients within cells: i) proteins (deamination, transamination, carnitine cycle); ii) carbohydrates (glycolysis and Kreb's cycle, glycogenesis, gluconeogenesis, glycogenolysis, electron transport chain and the hormones influencing them); and iii) lipids—(lipolysis and lipogenesis, cholesterol synthesis, ketosis hormones influencing them); d) In their small groups, they describe the roles different nutrients play in the energy production process. e) Learners take notes and present findings in a plenary.	a) Conduct a reflective conversation with learners as they present their findings about nutrient absorption, catabolism and anabolism in the body and focus on their ability to come up with factors that affect these processes. b) Observe learners as they present to evaluate their ability to chronologically describe the nutrient absorption and metabolic process and how they work effectively in diverse teams. c) Appraise the plenary presentation focusing on accuracy and coherence of information on nutrient absorption and metabolism in the body and the factors that affect the processes.

b) relate the energy and other nutrient requirements with recommended dietary allowances (RDA) to make informed dietary choices. (u, s, gs)	a) In groups, learners use textbooks, ICT resources and any other materials to: i) assess the energy and other nutrient requirements for various age groups and take note of important points; ii) use food tables to identify the nutrient composition of different foodstuffs, and calculate the nutrient requirements for different categories of people as they take note of key points; iii) evaluate the recommended dietary allowances (RDAs) for different categories of people to ensure that their diets are nutritionally adequate; and iv) present in plenary.	a) Converse with learners during the discussion to justify their understanding of energy requirements in the body and the factors that influence energy needs. b) Observe learners during plenary and judge their ability to use and comprehend the food tables effectively. c) Appraise the write-ups for accuracy of information on assessment of energy requirements, use of food tables and RDAs of different categories of people.

Senior Five Term: Three

TOPIC 5: Scientific Principles and their Applications in Food Production

Duration: 50 Periods

Competency: The learner optimises the use of scientific principles and applications for efficient operations to promote sustainability and safety in the food production unit.

Learning Outcomes The learner should be able to:	Suggested Learning Activities	Sample Assessment Strategies
a) apply the concepts of matter to improve the operation techniques in the food industry. (u, s, gs)	a) In pairs, learners use textbooks, ICT resources and other materials to discuss how density, absorption, capillarity, osmosis, surface tension, adsorption, solubility and elasticity affect the texture, consistency and quality of consumer products (bread, cakes and salad dressings).	a) Converse with learners as they discuss the concepts of density, absorption, capillarity, osmosis, surface tension, adsorption, solubility and elasticity and appraise their ability to identify how they affect quality of some common consumer products.

	b) In groups, learners use textbooks, ICT resources and other materials to: i) evaluate the environmental and health impacts of using certain materials (such as plastics and metals) based on their physical and chemical properties as they take note of key points and present in plenary.	b) Observe learners and look out for their ability to use imaginations and explore possibilities as they demonstrate the applications of density, absorption, capillarity, osmosis, surface tension, adsorption, solubility and elasticity. c) Evaluate the experiments carried out and appraise the correctness of procedures and results.
b) apply various types of forces in the operation of kitchen appliances to improve efficiency. (u, s, gs)	a) In small groups, learners use textbooks, ICT resources and any other resources to: i) analyse the effect of different forces in carrying out various kitchen tasks (Centrifugal & centripetal, friction, gravity, normal force, magnetic force) as they take note of the important findings; ii) apply the knowledge about the relationship between mechanical advantage, velocity ratio and efficiency in the selection of equipment in the food production unit as they note down the key points; iii) discover the types and applications of simple machines (lever, pulleys, wedges, screws, weighing equipment, wheel and axle, inclined planes as they take note of the key points. b) Learners in their small groups present for a gallery walk.	a) Converse with learners during the discussions to judge their ability to apply/use/categorise the different forces involved in kitchen tasks. b) Observe learners and look out for their ability to work effectively in diverse teams and how they interact effectively with others as they prepare items for the gallery walk. c) Evaluate the write-ups for clear analysis of: i) the effects of forces; ii) the explanation of the relations; and iii) the correct applications of simple machines.
c) analyse the application of pressure in specific kitchen tasks and appliances to	a) Learners think-pair and share on: i) the different types of pressure and show their applications; and	a) Converse with learners as they share on: the different types of pressure and their applications in kitchen tasks and as they design

ensure efficiency. (u, s, v, gs)	ii) how varying pressure can affect the outcome and efficiency of kitchen tasks as they take note of the key points. b) In small groups, learners use textbooks, ICT resources and other materials to: i) evaluate the design and functionality of kitchen appliances that use pressure (pressure cooker, coffee makers, knives or rolling pins) as they take note of the key points; ii) explain the relationship between pressure, force, and surface area of kitchen tools and note down the key points; and iii) present in plenary.	an operation mechanism of kitchen appliances which relies on the pressure principle. b) Observe learners as they present the findings and appraise their ability to sort and analyse information and to logically explain the relationship between pressure, force, and surface area of kitchen tools. c) Evaluate the write-ups for clarity of the different types of pressure and their applications in kitchen tasks and correct design and operation mechanism of kitchen appliances which relies on the pressure principle.
d) apply the knowledge of electric current in the operation of the food production unit. (u, s, v, gs)	a) In small groups, learners use textbooks, ICT resources and any other materials to: i) examine the relationship between current, voltage, resistance and power in electrical circuits and calculate power used by electric and gas appliances; ii) demonstrate the application of the heating effect of an electric current in the food processing unit; iii) analyse protective devices/ measures used to ensure safety while using electricity (insulators, fuses/ circuit breakers, earthing, colour coding sockets); iv) demonstrate simple electric repairs in the food production unit (replacing fuse, lamp holders, sockets, wiring three pin plugs) as they take note of important findings; and v) present in plenary.	a) Converse with learners as they discuss to justify the application of the heating effect of electric current. b) Observe learners as they apply the concept of heating effect and judge their ability of problem-solving and their consideration for safety. c) Evaluate the products of the simple repairs for correct wiring and placements of components.

e) analyse the process of oxidation and reduction in food production. (u, s, v, gs)	a) In pairs, learners use textbooks, ICT resources and any other materials to: i) investigate the oxidation and reduction reactions in food production processes/unit; ii) discuss the factors that influence the rates of these reactions and recommend practices to enhance or prevent the reactions in food storage and preparation (e.g., temperature, exposure to air, or acidity (pH)) as they take note of the key points; iii) explain the chemical changes involved in oxidative and reduction processes and how they affect the quality or safety of food as they take notes of important points in the work book; iv) evaluate the effectiveness of different methods to prevent or slow down oxidation and reduction in food production unit (browning of fruits or the rusting of kitchen utensils, cleaning surfaces); and v) present in plenary.	a) Converse with learners as they discuss and evaluate their ability to recommend good practices during food preparation and storage. b) Observe learners as they discuss and look out for their ability to critically think and communicate effectively the methods that prevent or slow down oxidation. c) Evaluate the product for effectiveness of different methods for preventing or controlling oxidation in food in the kitchen.
f) apply the concept of oxidation and reduction in daily life. (u, s, v, gs)	a) In pairs, learners use textbooks, ICT resources and any other materials to: i) demonstrate the use of oxidation and reduction reactions to either take advantage or prevent the negative effects (Maillard's reaction, food preservation, fermentation, colour development) in food production as they take note of the key points; ii) evaluate the effectiveness of reducing agents in preserving food quality (e.g., ascorbic acid, antioxidants) as they take note of important points; and iii) present work for the gallery walks.	a) Converse with learners to establish the role of reduction reactions, reducing agents and their influence on food properties b) Observe learners as they present their findings, focusing on their ability to evaluate solutions and apply these reduction reactions in food preparation.

		c) Evaluate the product of reduction reactions and appraise for colour changes, nutrient loss prevention and prevention of spoilage.
g) apply the concept of pH and pH modifications. (u, s, v, gs)	a) In pairs, learners use textbooks, ICT resources and any other materials to: i) analyse the significance of pH measurements in substances such as food, beverages and cleaning agents; ii) measure the pH of various kitchen or household items and show how changes in pH impact chemical reactions (baking or fermentation) as they take note of the important points; iii) analyse the role of PH modifications in practical applications and show how acids and bases react to form neutral products (water purification or antacid use); and iv) present in plenary.	a) Converse with learners to judge their ability to explain the role of pH measurements and pH modifications in food operations and household cleaning activities. b) Observe learners as they present and look out for their ability to plan and carry out investigations on pH measurements in substances. c) Evaluate the write-ups and end product of the modifications on pH measurements of substances for accuracy.

TOPIC 6: Food Additives

Duration: 8 Periods

Competency: The learner justifies the importance of various additives, evaluates their safety and applies them to produce variety in organoleptic properties, nutritional value and shelf life of foods.

Learning Outcomes The learner should be able to:	Suggested Learning Activities	Sample Assessment Strategies
a) appreciate food additives as used in food production to improve quality. (u, s, v, gs)	a) In small groups, learners use ICT resources, textbooks, recipe books and other resources to: i) search and document information on food additives to identify their classification, nutritive value and roles in food production; ii) create a brochure or poster for their findings and share in plenary; iii) examine information /labels and instructions for use of different food additives and takes note of their importance to health; and iv) collect different empty packages (with labels) of different food additives and stick them on charts to be displayed for a gallery walk. b) Learners in groups: i) prepare and compare two similar dishes; one cooked with different food additives while the other cooked without. (For example, bake cake with different flavours and spices versus a plain one or cake with preservatives versus one without); ii) observe and document the differences in taste, texture, appearance, and shelf life of the products above over a set period of time;	a) Converse with learners as they discuss, and appraise their understanding of the classes, roles and instructions for use of additives in food production. b) Observe learners as they prepare the brochure, organise packages and charts and demonstrate dishes with the different food additives. c) Appraise their ability to think critically (use imaginations to explore possibilities) with different effects. d) Evaluate the products from the modified recipes to establish the variations in taste, colour, texture and shelf life.

	iii) create and modify recipes by experimenting with different food additives to achieve various effects; and iv) take note of the modified recipes and present in plenary.	
b) evaluate the potential health effects of using various food additives. (u, s, v, gs)	a) In small groups, learners use ICT resources, textbooks, recipe books and other resources to: i) search and document information on seasonings, flavourings and food additives and identify their potential health effects (both positive or negative; and ii) discuss strategies to minimise or prevent the negative health effects of food additives.	a) Converse with learners as they discuss to measure their strategies to minimise or prevent the negative health effects of food additives. b) Observe learners as they discuss the strategies to appraise their ability to suggest and develop new solutions and try out other innovative alternatives of food additives. c) Evaluate the write-ups for appropriate suggestions of the strategies to minimise or prevent the negative health effects of seasonings, flavourings and food additives.

TOPIC 7: Planning and Preparation of Meals (Part I) **Duration:** 32 Periods

Competency: The learner plans and prepares balanced meals efficiently, while considering dietary needs to promote health and minimise wastage of resources.

Learning Outcomes The learner should be able to:	**Suggested Learning Activities**	**Sample Assessment Strategies**
a) explore the values of foods in order to make informed food choices for diets of different categories of people. (u, gs)	a) In groups, learners use textbooks, ICT resources and any other materials to analyse and document the nutritive, economic, dietetic and culinary value of: i) milk and milk products; ii) meat, fish and poultry iii) offals; iv) eggs; v) cereals, pulses and nuts; vi) fruits and vegetables; vii) textured vegetable protein; viii) roots, tubers and plantain; and ix) products of each of the named foods. b) Learners in groups present findings in plenary.	a) Probe learners during the discussions to judge their understanding of the concepts of nutritive, dietetic, culinary and economic values of foods and how they are used to make a balanced diet. b) Observe learners as they present the findings and judge their ability to sort and analyse information about nutritive and culinary value of foods. c) Appraise the write-ups and look out for clarity of information on the nutritive, dietetic, culinary and economic values of different foods.
b) prepare, cook and serve egg, milk and cheese dishes as part of a meal to suit the dietary needs of different categories of people. (u, s, v, gs)	a) Engaging with peers in small groups, learners leverage textbooks, ICT resources and any other materials to: i) formulate recipes using foods, eggs, milk and cheese; and ii) prepare, cook and serve eggs, milk and cheese dishes to suit needs of different people. b) With their peers, learners present and critique each other's products in a gallery walk.	a) Engage learners in a discussion while developing and testing recipes to evaluate if the formulated recipes meet the needs of the people being planned for. b) Observe learners as they prepare, cook and serve dishes and judge their ability to: i) come up with appropriate recipes; ii) suggest and develop new solutions; and iii) try out innovative alternatives of the dishes. c) Appraise the prepared dishes for taste, colour, texture, readiness, appropriateness and presentation of the dishes.

c) plan meals to suit different categories of people. (u, s, v, gs)	a) In small groups, learners use ICT resources, textbooks and recipe books to: i) Discuss the concept of "eat well guide" and design their own "my plate"; ii) examine the factors considered when planning meals for the different categories of people and take note of the key points; iii) plan meals for different categories of people taking into account their needs as they take note of the key points; and iv) present for a gallery.	a) Dialogue with learners as they plan meals to judge their understanding of the key considerations of meals for different categories of people. b) Observe learners as they present during the gallery walk to evaluate their ability to suggest and develop new ideas as they plan meals for different categories of people. c) Evaluate the meal plans for nutritional balance, variety in texture and colour.
d) appreciate traditional dishes and prepare them as part of meals for different categories of people. (u, s, v, gs)	a) In small teams, learners use textbooks, ICT resources and other materials to: i) examine factors and behaviours that influence the choice and use of traditional dishes in meals (dietary behaviours, eating habits, cultural and social influence, health and nutritional trends and accessibility, influence of globalisation, economic factors) as they take note of important findings; ii) plan, prepare, cook and serve traditional dishes from different regions; iii) plan, prepare and cook suitable accompaniments to be served with the traditional dishes as they take note of the key points; and iv) present in plenary.	a) Converse with learners to evaluate their understanding of the factors that influence the use of traditional dishes in meals. b) Observe learners during the discussion and judge their ability to grasp the factors that affect use of traditional dishes and the skill of identifying problems and solutions. c) Critique the dishes basing on these parameters: taste, colour, texture, readiness and presentation.

TOPIC 8: Beverages

Duration: 18 Periods

Competency: The learner explores various types of beverages, and incorporates them appropriately in the diet for health and wellbeing.

Learning Outcomes The learner should be able to:	Suggested Learning Activities	Sample Assessment Strategies
a) analyse beverages as used in the diet to promote wellbeing. (u, s, gs)	a) In pairs, learners use textbooks, ICT resources and other materials to: i) assess the classification of beverages and their value in the diet; ii) examine the benefits and drawbacks of the different beverages as they take note of the findings; and iii) present in a gallery	a) Converse with learners and critique their ability to distinguish the benefits and drawbacks of beverages. b) Observe learners during presentation to appraise their ability to write and present coherently about the classification and benefits of beverages. c) Evaluate the write-ups for appropriate information on the classification and benefits of beverages in the diet.
b) prepare beverages as part of a meal. (u, s, v, gs)	a) In small groups, learners use textbooks, ICT resources and other relevant materials to: i) formulate recipes for modified healthier beverages to be prepared as part of the meal and take note of the modifications; ii) prepare hot and cold fermented, non- alcoholic beverages; and iii) exhibit products for critique.	a) Converse with learners as they formulate recipes and look out for their ability to modify beverages to be prepared as part of a meal. b) Observe learners as they prepare beverages and evaluate their ability to follow procedure during the preparation of beverages and to work with others to generate ideas. c) Evaluate the prepared beverages for consistency, taste, colour and flavour.

Senior Six Term: One

TOPIC 9: Management of Resources

Duration: 12 Periods

Competency: The learner manages resources, evaluates their sustainability, and applies practices to improve food production efficiency.

Learning Outcomes The learner should be able to:	Suggested Learning Activities	Sample Assessment Strategies
a) manage financial resources in meal planning and preparation for efficient food production operations. (u, s, v, gs)	a) In small groups, learners use textbooks and ICT resources to brainstorm the key financial concepts that can be applied to enhance efficiency in meal planning and preparation as they take note of the key points. b) Learners in groups create a realistic budget that balances income and expenses for proper kitchen operations. c) Learners analyse the risks and benefits of different financial choices made in relation to meal management as they take note of the important points. d) Learners present in plenary	a) In a conversation, judge the learners' ability to use key financial concepts to come up with a budget in meal management. b) Observe learners during the presentation and look out for their ability to identify financial problems and way forward when budgeting for meals. c) Evaluate the prepared budget for appropriateness and accuracy of figures.
b) manage time and energy in food production operations to ensure efficiency. (u, s, v, gs)	a) In pairs, learners use textbooks, and ICT resources to examine different time management techniques (e.g., batch cooking, mise en place — 'everything in its place' and meal preparation) used in food production as they take notes. b) Learners create a time management plan for preparing elaborate meals. **Note:** They should justify the sequence of tasks and timing to ensure all dishes are ready for serving at a specified time. c) Learners discuss strategies to minimise energy waste while maintaining food quality as they take note of key points.	a) Converse with learners as they formulate time management plans and look out for their ability to prepare an elaborate meal and manage time. b) Observe learners as they create their time plans and look out for their ability to use imaginations to explore possibilities in meal preparation. c) Evaluate the timed meal plans for their effectiveness in saving time and energy during meal preparation.

	d) Learners investigate the role of energy-efficient appliances (such as mixers, blenders, grinders, pressure cookers) in food production as they take note of key points. e) Learners present findings in plenary.	

TOPIC 10: Bread, Cakes, Pastries and Confectioneries **Duration:** 38 Periods

Competency: The learner analyses the basic ingredients used in baking, modifies them, utilising their properties to achieve desired outcomes in the products.

Learning Outcomes The learner should be able to:	**Suggested Learning Activities**	**Sample Assessment Strategies**
a) explore the different ingredients used in baking and to manipulate them to produce quality products. (u, s, v, gs)	a) Collaboratively, learners use textbooks and ICT resources to examine the characteristics of various types of flour and their specific applications in recipes as they take note of the key points. b) Learners discuss the importance and versatility of wheat flour in baking- gluten content. c) They explore the milling processes of cereals— extraction rate of flours, identifying key steps and the significance of each stage as they take note of the key points. d) Learners in groups examine the nutritive value of different types of flour (with different extraction rates) as they take note of the key points. e) They investigate the best practices for storing flours to maintain their quality and freshness (factors such as temperature, humidity, and packaging), as they take note of the important findings. f) Learners explore the uses of sugar, eggs, fat and raising agents in baking as they take note of important findings, and finally present in plenary.	a) Converse with learners as they discuss, judge their understanding of the characteristics of the various ingredients used in baked products. b) Observe learners during their presentations to appraise their ability to plan, carry out investigations and evaluate different ingredients used in baked products. c) Appraise their write-ups for accurate information on characteristics, nutritive value etc., of the ingredient used in baking.

b) explore the use of doughs, mixtures, pastries and batters in cookery to produce interesting products. (u, s, v, gs)	In teams, learners use textbooks, recipe books, ICT resources (video clips) and any other materials to: a) analyse the differences between yeast doughs, pastries cake mixture and batters; b) examine the manipulation (e.g., guidelines, qualities and faults that are likely to occur) of yeast doughs, pastries, cake mixture and batters to ensure proper consistency and texture of the products, as they take note of key points; c) develop recipes that use yeast doughs, pastries, cake mixtures and batters as they take note of key points; and d) present in gallery.	a) Probe learners during the discussion as they develop recipes and appraise their ability to come up with interesting dishes. b) Observe learners as they develop the recipes and look out for their ability to suggest and develop new solutions, and try out innovative alternatives. c) Appraise the developed recipes for correct proportions of ingredients, accuracy of procedures and for creativity.
c) demonstrate advanced skills in making different yeast doughs, pastries cake mixture, batters and confectionery products. (u, s, v, gs)	Engaging with peers, learners leverage textbooks, recipe books and ICT (video) to: a) examine the different procedures of finishing (decorating), and presenting of yeast doughs, pastries cake mixture, batters and confectionery products; as they take note of the key points; b) prepare and cook dishes using yeast doughs, pastries (e.g., pastry dishes with stuffing like meat and fish (for example, meat pies, cornish pasties, samosas, beef-roll, flan dishes, open tart, sausage roll, vegetable rolls; fruits dishes; pastry with cream; cheese), cake mixture and batter mixtures as they take note of the key points; and c) exhibit, critique and take videos of products.	a) Engage with learners as they examine the methods of finishing baked products and appraise their ability to come up with suitable finishes. b) Observe learners as they prepare the dishes and look out for their ability to: i) measure ingredients accurately; ii) use imaginations to explore possibilities in confectioneries and pastry; iii) try out innovative alternatives in preparing confectioneries; and iv) maintain hygiene throughout the production of dishes. c) Appraise the dishes for texture, appearance, flavour, and taste.

TOPIC 11: Planning and Preparation of Meals (Part II) **Duration:** 58 Periods

Competency: The learner plans and prepares balanced meals efficiently while considering dietary needs to promote health and minimise wastage of resources.

Learning Outcomes The learner should be able to:	**Suggested Learning Activities**	**Sample Assessment Strategies**
a) plan, prepare, cook and serve protein dishes for different occasions. (u, s, v, gs) b) prepare, cook and serve suitable accompaniments for the different protein dishes to make balanced meals. (u, s, v, gs)	a) In groups, learners use recipe books, ICT resources and any other materials to write time plans for preparing, cooking and serving plant protein (beans, peas, nuts) dishes in different forms, with their suitable accompaniments (soups, sauces, carbohydrates (cereals, roots, tubers and plantain), vegetables, fruits and desserts) as they take note of the key points. b) Learners watch video clips and use the experience to cook (using different methods), and serve red meat (beef, pork, goat meat, mutton, minced meat and offals) dishes with their suitable accompaniments (sauces, gravies and other hors d'oeuvres, carbohydrates, vegetables, fruits and desserts); as they take note of the key points. c) Learners, in groups, use experiential learning to cook and serve poultry and rabbit dishes with their suitable accompaniments (sauces, gravies and other hors d'oeuvres, carbohydrates, vegetables, fruits and deserts); as they take note of the key points. d) Learners cook and serve fish and textured vegetable protein (TVP) dishes with their suitable accompaniments (sauces, carbohydrates, vegetables, fruits and deserts); as they take note of the key points. e) Learners exhibit the dishes.	a) Probe learners to ascertain: i) accuracy and orderliness of the time plans; ii) correct interpretation of recipes; iii) appropriate reasons for choice; iv) suitable combinations of dishes; and v) appropriate shopping lists/budget. b) Observe learners as they prepare, cook, and serve the various dishes and evaluate their ability to: i) use imagination to explore possibilities in the interpretation of recipes; ii) try out innovative alternatives when combining dishes; iii) suggest and develop new solutions during the preparation of protein dishes; and iv) manage time. c) Examine the dishes and look out for: i) appropriateness; ii) taste; iii) colour; iv) texture; v) readiness; and vi) presentation.

Senior Six Term: Two

TOPIC 12: Réchauffé Dishes and Convenience Foods

Duration: 20 Periods

Competency: The learner examines nutritional value of réchauffé dishes and convenience foods, uses them to prepare safe and nutritionally adequate dishes in order to reduce food waste and save time.

Learning Outcomes The learner should be able to:	**Suggested Learning Activities**	**Sample Assessment Strategies**
a) analyse the importance of using leftover foods to create réchauffé dishes. (u, s, v, gs)	In small groups, learners use recipe books, ICT resources and any other materials to: a) examine the importance of using leftover foods to create interesting, nutritionally adequate dishes as they take note of the key points; b) brainstorm the different left-over foods, guidelines and the suitable methods of cooking the réchauffé dishes as they take note of the key points; c) assess the nutritive value of réchauffé dishes as they take note of the key points; d) formulate a recipe for one réchauffé dish by creatively combining leftover foods as they take note of the key points; e) demonstrate their skills in preparing and cooking different dishes using left over foods as they take note of the key points; and f) exhibit their dishes.	a) Converse with learners as they manipulate the réchauffé dishes and look out for: i) nutritive value; ii) suitability of the preparation and cooking method; iii) adherence to guidelines of using leftover foods; and iv) conservation of nutrients. b) Observe learners as they prepare and cook the réchauffé dishes and appraise the skill of creativity as they suggest and develop new solutions and try out innovative alternatives. c) Evaluate the réchauffé dishes and look out for appropriateness, flavour, texture and presentation.
b) explore the use of convenience foods in food preparation. (u, s, v, gs)	In groups, learners use textbooks, ICT resources and other materials to: a) discuss the concept, types, advantages and disadvantages of convenience foods as they take note of the key points;	a) Converse with learners as they demonstrate skills in preparing convenience foods and look out for: i) the choice of the convenience foods;

	b) analyse the nutritive value and instructions of preparing convenience foods as they take note of key points; c) demonstrate skills in using convenience foods to prepare, cook and serve interesting nutritionally adequate meals as they take the advantage of saving time; d) take note of important points; and e) exhibit and critique the dishes/meals.	ii) the nutritive value of the dish/meal; iii) the suitability of the preparation and cooking method; and iv) time saving. b) Observe learners during the preparation of the convenience food to judge their ability to manage goals and time. c) Evaluate the convenience dishes for appropriateness, nutritive value, taste, colour, flavour, texture, accompaniments and presentation.

TOPIC 13: Food Safety, Processing and Preservation

Duration: 40 Periods

Competency: The learner analyses sources of food contamination, explores different food processing methods, and applies effective preservation techniques to ensure food safety, quality, and extended shelf life.

Learning Outcomes The learner should be able to:	Suggested Learning Activities	Sample Assessment Strategies
a) explore the principles and methods of food processing and preservation in relation to enhancing the shelf life of fresh foods. (u, s, v, gs)	In small groups, learners use textbooks, ICT resources and other materials to: a) review the types and causes of food contamination, spoilage, and food poisoning; b) examine safety practices for preventing food contamination, spoilage, and food poisoning as they take note of the key points.	a) Converse with learners as they discuss and look out for their ability to: i) identify safety practices for prevention of food contamination, spoilage and food poisoning; and ii) apply the methods and techniques used in food processing and preservation. b) Observe learners as they present on types and causes of food contamination, spoilage and food poisoning; methods of processing and preservation. Judge their ability to:

	c) analyse the methods (curing, smoking, freezing, canning and mincing) and principles (removal of air, application of heat, temperature control, moisture control, pH control, exclusion of micro-organisms and use of chemicals) of food processing and preservation of meat, cereals, vegetables, and fruits; as they take note of the key findings; and d) present in plenary.	i) identify and explain the key concepts accurately and clearly; ii) communicate effectively using appropriate terminology and logical reasoning; iii) demonstrate critical thinking by proposing solutions to minimise contamination and spoilage; and iv) present coherently. c) Evaluate the write-ups and look out for accuracy and coherence of information on types and causes of food contamination, spoilage and food poisoning and methods of processing and preservation.
b) process and preserve fruits, vegetables, pulses, nuts, spices and herbs to enhance shelf life. (u, s, v, gs)	a) In small groups, learners use textbooks, recipe books, ICT resources and any other materials to demonstrate methods and techniques applied in processing and preservation of fruits, vegetables, pulses, nuts, spices, and herbs to maintain quality and extend shelf life as they take note of the key points. b) Learners apply safe handling and storage techniques during food processing and preservation to prevent contamination as they take note of important points. c) Learners establish the requirements for certifying products at a national level (UNBS), package, label and market the products. d) In small groups, learners carry out a project by: i) conducting market research, to (define target	a) Engage learners as they demonstrate skills and appraise their ability to process and preserve fruits, vegetables, pulses, nuts, spices and herbs. b) Observe learners as they demonstrate and look out for their ability to: i) suggest and develop new solutions in improving shelf life of fruits, vegetables and pulses; ii) use imaginations to explore possibilities in processing and preserving of foods; and iii) safe handling and storage of food to prevent contamination. c) Critique the processed products for texture, colour, moisture content, flavour, packaging, practice and labeling.

	customer segments, determine competitive pricing, develop effective promotion strategies, and identify optimal distribution channels for the products, packaging, labeling); and ii) exhibit and market all the products processed.	
c) apply processing and preservation techniques to produce enriched meat, fish, and poultry products to enhance shelf life. (u, s, v, gs)	a) In small groups, learners use textbooks, recipe books, ICT resources and any other materials to apply various processing methods to enrich and preserve: i) meat; ii) fish; and iii) poultry. b) Learners demonstrate food safety practices during the processing and preservation and take note of the key points.	a) Probe learners as they process and preserve meat, fish, and poultry to judge their ability to enrich these products. b) Observe learners as they demonstrate processing and preservation skills to evaluate their ability to: i) plan and carry out investigations in processing meat, fish, and poultry; ii) work with others to generate new ideas on processing and preserving meat, fish, and poultry; iii) try out innovative alternatives when processing and preserving meat, fish, and poultry; and iv) safely handle and store food to prevent contamination. c) Appraise the enriched processed products for appropriateness, texture, flavour, colour packaging and labelling.
d) process and preserve eggs and milk products to enrich their nutritional value, improve quality and extend shelf life. (u, s, v, gs)	In pairs, learners use textbooks, recipe books, ICT resources and any other materials to: a) apply various processing methods, to enrich and preserve eggs and milk—(cheese, ice cream, and yogurt, including curdling, fermentation, freezing).	a) Dialogue with learners as they process and preserve eggs and milk to appraise their ability to enrich these products. b) Observe learners as they demonstrate processing and preservation skills to evaluate their ability to:

	b) demonstrate food safety practices during the processing and preservation (Good Manufacturing Practices (GMPs) and Hazard Analysis and Critical Control Points (HACCP); package, label and market the processed products for sale as they take note of important points; and c) exhibit in gallery.	i) identify problems and way forward in enriching eggs and milk products; ii) plan and carry out investigations in processing and preserving eggs and enriching milk; iii) work with others to generate new ideas in processing and preserving eggs and milk; iv) try out innovative alternatives when processing and preserving eggs and milk; and v) safe handling and storage of food to prevent contamination. c) Appraise the enriched processed products for appropriateness, texture, consistency, flavour, colour packaging and labelling.

TOPIC 14: Nutrition in the Different Stages of Life

Duration: 14 Periods

Competency: The learner evaluates the nutritional needs in different stages of the life cycle, designs strategies that promote optimal health and development throughout the life cycle.

Learning Outcomes The learner should be able to:	Suggested Learning Activities	Sample Assessment Strategies
a) analyse the nutritional needs of individuals at different stages of life to design suitable diet plans for them. (u, s, v, gs)	Individually, the learner uses textbooks and ICT resources to: a) assess the nutritional needs of people at different stages of life cycle (pre pregnancy, pregnancy and lactation, infancy, infancy (exclusive breastfeeding & complementary feeding), childhood (toddlers, pre-school and school age), adolescence, adulthood and old age) as they note key points; b) identify the nutritional challenges at each stage of life (listed above) as they take note of the key points;	a) Dialogue with the learner during the assessment and evaluate his/her understanding of the nutritional requirements at the different stages of life. b) Observe the learner as he/she presents nutritional needs and challenges at the different stages of life and look out for his/her ability to: i) reflect on his/her own experience and explain nutritional needs; and ii) comprehend the presentations.

	c) examine the need for school feeding and identify strategies for promoting school feeding; and d) present in plenary.	c) Evaluate his/her write-up for accuracy of information on the nutritional needs and challenges of people at different stages of life.
b) apply the knowledge of nutrition to support optimal health and development throughout the life cycle. (u, s, v, gs)	a) In pairs, learners use textbooks and ICT resources to: i) design meal plans for the different life stages, using nutritional guidelines, and justify how these plans support optimal health and development; and ii) use the meal plans to create educational materials (For example, posters, brochures, or social media posts) addressing the importance of nutrition at different life stages as they take note of the key findings. b) Learners present in plenary, during school events, local health fairs, or online platforms.	a) Probe learners as they discuss and appraise their skill of developing meal plans that meet the nutritional requirement at the different stages of the life cycle. b) Observe learners as they create meal plans and look out for their creativity as they work with others to generate new ideas for effective meal plans. c) Appraise the meal plans to determine the extent to which they support optimal health and development.

TOPIC 15: Food Systems and Environment

Duration: 26 Periods

Competency: The learner examines the food systems and environment, analyses the impact of food misinformation, and makes informed decisions about food choices to ensure healthier eating habits and food security.

Learning Outcomes The learner should be able to:	**Suggested Learning Activities**	**Sample Assessment Strategies**
a) analyse the different food systems to ensure food security. (u, s, v, gs)	In pairs, learners use textbooks, ICT resources and any other resources to: a) investigate how cultural and geographical factors shape food systems in both urban and rural areas as they take note of important points; b) evaluate the food blocks along the urban and rural food systems and present to the plenary;	a) Engage learners as they discuss and establish their understanding of how these differences influence local food traditions and b) consumption patterns.

	c) examine the interactions between the stages of the food supply chain to enhance food and nutrition security as they take note of the key points; d) Analyse the need to protect the environment for sustainability of the food supply; and e) present in plenary.	c) Observe learners during the presentation to judge their ability to identify problems and come up with solutions in relation to the food systems. b) Critique their write-ups for appropriate information about the factors that shape the food systems, food blocks and the supply chain.
b) apply the knowledge of the food environment and design strategies to make adjustment which will ensure food security. (u, s, v, gs)	In learning clusters, learners use textbooks, ICT resources and any other resources to: a) examine factors that influence the food environment (e.g., media, culture); b) analyse the common types and sources of food misinformation and the groups of people that are vulnerable; c) establish the reasons why such people are prone to food misinformation and come up with practical strategies to protect the vulnerable groups, as they take note of the key points; and d) present in plenary.	a) Probe learners during the discussion and look out for their ability to come up with practical ways of protecting the vulnerable groups. b) Observe learners as they present their findings and evaluate their ability to critically think, while developing the practical ways of helping the vulnerable groups. c) Judge the write-ups for the effectiveness and suitability of the proposed practical strategies to protect the vulnerable groups.

Senior Six Term: Three

TOPIC 16: Nutrition in Rehabilitation

Duration: 72 Periods

Competency: The learner examines the role of nutrition in promoting optimal health and quality of life for individuals with different conditions and applies this knowledge to support their rehabilitation and recovery.

Learning Outcomes The learner should be able to:	Suggested Learning Activities	Sample Assessment Strategies
a) analyse the different health conditions in order to design strategies that promote optimal health in rehabilitation and recovery. (u, s, v, gs)	a) In small groups, learners use textbooks, ICT resources and other materials to examine the interactions between three key elements of malnutrition, that is: the host (individual), agent (malnutrition causes), and environment (contextual factors) as they take note of key points. b) Learners discuss the different health conditions that require nutrition management and rehabilitation. c) Learners investigate the signs and symptoms of: metabolic disorders, malnutrition, injury and stress, and gastro-intestinal disorders, and others (e.g., Phenylketonuria (PKU), ulcers, burns, lactose intolerance, gluten intolerance/coeliac disease, colic diseases, diverticular diseases, hypertension, obesity, food allergies.) d) Learners visit a health centre/watch video clips and other resources on malnutrition to investigate the types and levels of malnutrition in children in the community, and explore factors that contribute to malnutrition in children in the community, and examine the management practices for malnutrition.	a) Engage with learners to evaluate their understanding of the concept of ecology of disease/injury. b) Observe learners during the discussion on different health conditions and look out for collaboration, creativity and confidence as they articulate issues. c) Critique learners' advocacy messages and sensitisation session for: i) accuracy of messages; ii) communication skills; iii) confidence during presentation; and iv) appropriate information in the report.

	e) Learners create a community action plan to raise awareness about prevention and management of malnutrition in the community by preparing brochures, leaflets and posters for sensitising the community. f) Learners go out to the community to implement the sensitisation. g) Learners write a report on the sensitisation.	
b. apply diet and lifestyle practices that help in the management of health conditions, rehabilitation and recovery. (u, s, v, gs)	a) In pairs, learners use textbooks and ICT resources to examine the importance of diet therapy in the management of metabolic disorders as they take note of important points. b) Learners create a detailed care plan for individuals with a specific metabolic disorder, focusing on: i) nutritional needs; ii) dietary guidelines; and iii) lifestyle recommendations (Include a one-day sample meal plan customised for the disorder) as they take note of important points. c) Learners present in plenary.	a) Engage learners to establish their understanding of the nutrition requirements and dietary management of metabolic disorders. b) Observe learners as they develop a care plan for an individual with a specific metabolic disorder, focusing on the clarity and effectiveness of their presentation. c) Evaluate the learners' care plan based on the: i) accuracy of the guidelines for managing metabolic disorders; and ii) lifestyle recommendations.

3.0 ASSESSMENT

3.1 Assessing Food and Nutrition

The adapted curriculum sets new expectations for learning, with a shift from "Objectives" to "Learning Outcomes" that focus mainly on the application of knowledge and deeper learning that leads to the acquisition of skills. These learning outcomes require a different approach to assessment. The "Learning Outcomes" in the syllabi are set out in terms of Knowledge, Understanding, Skills, Values and Attitudes. This is what is referred to by the letters **k, u, s v** & **a.**

It is not possible to assess attitudes in the same way as knowledge, understanding and skills because they are more personal and variable, and are long-term aspirations. This does not mean that values and attitudes are not important or cannot be assessed. They too can be assessed but not easily done through tests and examinations. Values and attitudes can be assessed over a period of time through observing and having interactions with the learner.

So, this section focuses on knowledge, understanding and skills. Each has its own implications for learning and assessment.

To assess knowledge and its application, understanding and skills, we need to look for different things. Knowledge can be assessed to some extent through written tests, but the assessment of skills, application of what is learnt and deeper understanding requires different approaches. Because of this, the role of the teacher in assessment becomes much more important.

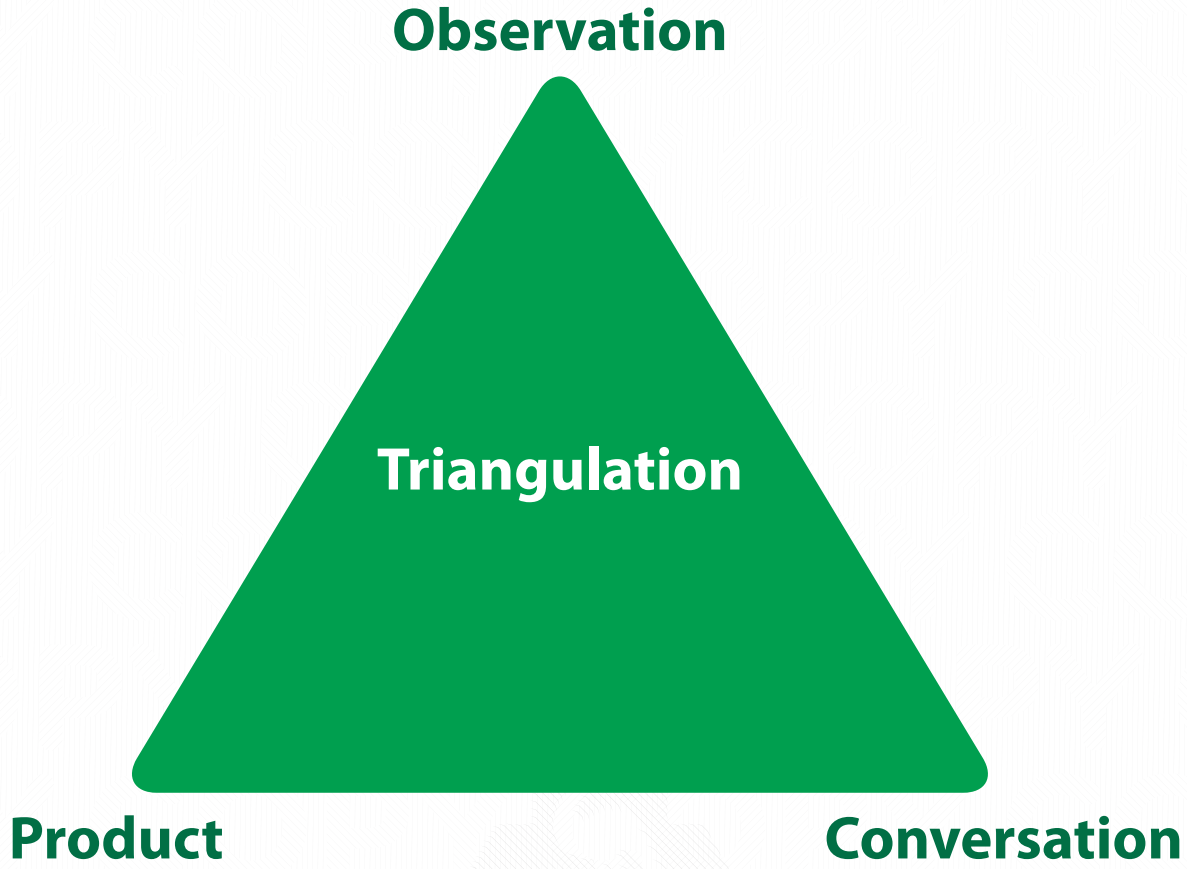
3.2 Formative Assessment

In this aligned curriculum, the teacher's assessment role is not only to write tests for learners, but to make professional judgement about learners' learning in the course of the normal teaching and learning process. The professional judgement is about how far the learner achieves the learning outcomes that are set out in this syllabus. To make these judgments the teacher needs to look at how well the learners are performing in terms of each learning outcome.

The formative assessment opportunities occur in three forms. They can be done through:

a) **Observation**—watching learners working (good for assessing skills, values and attitudes)
b) **Conversation**—asking questions and talking to learners (good for assessing knowledge and understanding)
c) **Product**—appraising the learner's work (writing, report, translation, calculation, presentation, map, diagram, model, drawing, painting etc). In this context, a "product" is seen as something physical and permanent that the teacher can keep and look at, not something that the learner says.

When all three are used, the information from any one can be checked against the other two forms of assessment opportunity (e.g., evidence from "observation" can be checked against evidence from "conversation" and "product"). This is often referred to as "triangulation".



3.3 Assessing Generic Skills

The Generic Skills have been built into the syllabuses and are part of the Learning Outcomes. It is therefore not necessary to assess them separately. It is the increasingly complex context of the subject content that provides progression in the Generic Skills, and so they are assessed as part of the subject Learning Outcomes. Assessing generic skills is done with the help of an observation checklist and scoring rubric.

3.4 Assessing Values/Attitudes

It is not possible to assess values and attitudes in the same way as knowledge, understanding and skills because they are more personal and variable and are long-term aspirations. This does not mean that attitudes are not important. It means that we must value things that we cannot easily assess through tests and examination. However, values and attitudes can be assessed over a long period of time through observing and interactions.

3.5 Assessment of Project-based Learning

Project-based learning is a teaching method in which learners or participants gain knowledge and skills by engaging for an extended period of time to investigate and respond to an authentic challenge. The task must have a driving question and it involves sustained inquiry.

Project-based learning is assessed using a rubric and an observation checklist.

3.6 Examinations

There will be only one school based summative assessment at the end of the year. There will no longer be examinations or tests set at the beginning and end of every term. Instead, there will be a summing up of on-going teacher assessments made in the context of learning through end of topic scenario-based tasks (Activities of Integration). The learners will also be subjected to the end of cycle assessment for certification.

3.7 Record Keeping

In competency-based learning, accurate and comprehensive record keeping is crucial to track learners' progress and achievements. Therefore, the teacher and school must keep accurate records about learners' achievement.

Various assessment tools and strategies are employed to capture learners' demonstration of abilities and achievements, including observation checklists, rubrics, and scoring grids. These tools provide a holistic picture of learners' strengths, weaknesses, and areas for improvement.

The collected data and evidence from these assessments are correctly recorded and maintained in learners' files, portfolios and anecdotal notes.

Glossary of Key Terms

Term	Definition
competency curriculum	one in which learners develop the ability to apply their learning with confidence in a range of situations
differentiation	the design or adaptation of learning experiences to suit an individual learner's needs, strengths, preferences, and abilities
formative assessment	the process of judging a learner's performance, by interpreting the responses to tasks, in order to gauge progress and inform subsequent learning steps.
generic skills	skills which are deployed in all subjects, and which enhance the learning of those subjects. These skills also equip young people for work and for life.
inclusion	an approach to planning learning experiences which allows each learner to feel confident, respected and safe and equipped to learn at his or her full potential
learning outcome	a statement which specifies what the learner should know, understand, or be able to do within a particular aspect of a subject
process skill	a capability acquired by following the programme of study in a particular learning area; enables a learner to apply the knowledge and understanding of the learning area
sample assessment activity	one in which learners develop the ability to apply their learning with confidence in a range of situations
suggested learning activity	the design or adaptation of learning experiences to suit an individual learner's needs, strengths, preferences, and abilities

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