



# Uganda Advanced Certificate of Education

**TEACHING SYLLABI**

***VOLUME 7***

# Clothing & Textiles Foods & Nutrition

**2013**



**THE REPUBLIC OF UGANDA**  
Ministry of Education and Sports





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**VOLUME 7**

**Clothing & Textiles**  
**Foods & Nutrition**

**2013**



**THE REPUBLIC OF UGANDA**  
Ministry of Education and Sports

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NCDC takes full responsibility for any errors and omissions in the documents and welcomes suggestions to address them.

# FOREWORD

For a long time teachers have been using Uganda National Examinations Board (UNEB) syllabi to plan their teaching schemes. This approach has rendered the curriculum to be largely driven by examination.

Working with relevant subject panels, NCDC has produced the Teaching Syllabi for all the Advanced Level subjects. The subject content in the syllabi has been clarified using appropriate specific objectives. It should be noted that the content in the syllabi has remained largely the same except in a few subjects where it has been updated by removing obsolete and/or irrelevant material. Suitable teaching / learning strategies have been suggested to the teacher and other users.

Teachers will find the syllabi useful in planning the teaching / learning processes. The content therein will go a long way in enhancing the learners' educational experiences and guide the teachers towards successful delivery of meaningful learning experiences.

The teaching / learning strategies suggested in the Syllabi are just a guide to the teacher but are not meant to substitute the rich professional approaches that the teacher may opt to use to deliver knowledge, and to develop understandings, skills, values and attitudes.



Connie Kateeba

**DIRECTOR**

**National Curriculum Development Centre**





# GENERAL INTRODUCTION

The development of the Foods and Nutrition and Clothing and Textile curricula answers the more serious long-term concerns of stakeholders to vocationalise the Uganda education system.

The Food and Nutrition skills will go a long way in addressing the problems of malnutrition which are currently rampant in Uganda, besides laying the foundation for higher courses like Nutrition and Dietetics, Applied Human Nutrition and Food Processing. This subject will also empower learners with skills for self-reliance, improved productivity and increased levels of employment.

The Clothing and Textiles curriculum on the other hand is intended to produce all round citizens who can design, construct and repair garments in order to solve daily problems by being creative and prepare for employment.

The development of the demand-driven and market oriented curricula provides learners with relevant knowledge, skills, and values as well as positive attitudes towards the world of work. It emphasises the physical production skills rather than the mere acquisition of knowledge thus, producing more job makers than job seekers in the world of work.

These practical skills therefore, become a timely intervention to prepare learners for self-reliance, enabling them to be productive so that they benefit society dynamics in the ever expanding competitive market.

It is hoped that this approach will reduce the high levels of unemployment and under-employment.



Uganda Advanced  
Certificate of Education

# Clothing & Textiles

TEACHING SYLLABUS



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## Introduction

Clothing and Textiles has been on the school curriculum for a long time. It was formalised in schools after the findings and the recommendations of the Phelps Stroke Commission 1924/25 and has evolved over time. Clothing and Textiles was first taught under Crafts and later under Domestic Science. After the establishment of the East African Community, it became one of the subjects on the school timetable examined at both O and A level.

After the collapse of the East African Community, Clothing and Textiles remained on the school curriculum and is still examined at both O and A level as Uganda Certificate of Education (UCE) and Uganda Advanced Certificate of Education (UACE).

The A level Clothing and Textiles teaching syllabus focuses on the study of Textile Science and the development of the clothing industry, and it is geared towards the development of skills for self reliance. It covers a period of two years. The teacher is expected to demonstrate and develop the learners' skills in order to develop the production skills.

## Purpose

Currently, the education system is being vocationalised with the aim of equipping a learner with practical skills for self-sufficiency and sustainable development. Clothing and Textiles is one of those subjects that implement vocationalisation.

This teaching syllabus has been developed to equip the learner with production skills in order to be self-reliant. It lays emphasis on creativity and resource management.

The teaching of Clothing and Textiles is in line with the Government White Paper on Education Policy Review Commission Report (1992), which calls for instilling positive attitudes towards productive work as one of the aims and objectives of secondary education.

## The Aim of Teaching Clothing and Textiles at Advanced Level

The aim of teaching Clothing and Textiles at advanced level is to enable learners to:

- develop appreciation of the sociological and psychological impact of Clothing and Textiles as a means of self-identification and expression.
- give logical and sequential details of the fundamental processes involved in garment construction.

- develop the necessary decision-making skills related to consumer and construction problems in clothing.
- promote an appreciation and understanding of the cultural heritage of Uganda.
- instil positive attitudes towards productive work and strong respect for the dignity of labour and those who engage in productive labour activities.
- enable individuals develop basic scientific, technological, agricultural and commercial skills required for self-employment.
- promote an appreciation and understanding of the cultural heritage of Uganda including its languages.
- portray the importance of personal image and demonstrate creativity in dress, clothing management and care.

### **Target Group**

This syllabus is supposed to be used by a graduate teacher of Clothing and Textiles or Home Economics. It targets learners who have had exposure to Clothing and Textiles study at O level or its equivalent.

### **Scope and Depth**

The syllabus covers both theory and practical work in a systematic and orderly way. The scope of the subject is outlined in the teaching sequence indicated below and the depth of the topics is indicated by the content as seen in the content column in the detailed syllabus matrix.

### **Assessment and Evaluation**

Assessment should be part and parcel of the teaching and learning process to avoid loss of teaching time, thus, it should not be an activity that takes place at the beginning/end of term/year. The learner's achievements will be assessed using two modes of assessment, that is;

### **Continuous Assessment**

This is done through classroom exercises, tests, practical activities, displays, project reports and coursework basing on what the learner is able to do. The learners are observed continuously to have their achievements recorded from the beginning to the end of the period of two years. The teacher is expected to supervise and assess the learner's work throughout the course and the final coursework will be assessed by an external examiner.

Continuous assessment marks should be recorded except in Term Three of Senior Six. The project work should be completed by the end of Term Two of

S6 ready for submission.

## Summative Assessment

This constitutes three (3) papers; Paper 1, Paper 2 and Paper 3 that will be done at the end of Senior Six. Each of them is marked out 100 marks.

- Paper 1 is a theory paper composed of two sections; A and B. Section A consists of Textile Science and Section B Clothing Technology. The paper consists of ten questions, five from each section. The candidate should attempt only five questions choosing at least two from each section. Each question carries 20 marks totalling up to 100 marks. Paper 1 is done in three (3) hours.
- Paper 2 is a timed practical paper done in a total of six (6) hours, that is, one (1) hour for planning done a day before the examination; two (2) hours for preparation and three (3) hours for actual construction. A learner carries out the practical test under supervision and completed pieces are labelled, sealed and delivered to UNEB for marking.
- Paper 3 is done during the course of study as continuous assessment and submitted to UNEB. A learner carries out practical work under supervision after making a selection of articles as guided by the syllabus. The learner is expected to fit and display cat-walk skills at the end of the examination to explore one's creativity for purposes of marking. This paper consists of the following:
  - i) A two or three piece outfit made to fit oneself, for example, a dress and a jacket, a dress and a coat, a blouse and a skirt, a shirt and a pair of trousers and a coat. The candidate will be asked to fit and display catwalk skills at the end of the practical examination for purposes of marking.
  - ii) An article made at the discretion of the learner to explore his or her creativity.
  - iii) An undergarment **Or** a child's garment **Or** a household article to show hand or machine decoration.

The completed pieces are labelled, displayed and marked at the school by UNEB examiners.

## Scope and Sequence of the Syllabus

### Part One

#### Section A: Textile Science

1. History and Development of Textiles in Uganda
2. Fibres:

- General definitions of textile terms:
  - fibre
  - yarn
  - textile
  - polymerisation
  - polymer orientation
- Detailed study of each fibre:
  - history
  - classification
  - characteristics
  - properties (physical, chemical, thermal and biological)
  - identification tests
- Fibre to yarn production:
  - natural fibres
    - plant fibres - cotton, linen, sisal, jute, coir, palm leaves
    - animal fibres - wool, silk, goat hair
    - mineral fibres – glass, asbestos
  - regenerated/man-made cellulosic fibres (viscose rayon, cuprammonium rayon, acetate rayon, triacetates)
  - synthetic fibres (nylon, polyester, acrylic, modacrylic), and other fibres (elastomers, metal fibres, minerals -glass).

### 3. Yarns

- Yarn production
- Yarn types:
  - mono-filament yarns
  - multi-filament yarns
- Classification:
  - staple and filament yarns
  - simple and complex yarns
- Characteristics/properties of yarns
- Yarn count
- Yarn twist
- Thread

### 4. Blends and mixtures:

- Definitions

- Similarities and differences
  - Uses
  - Characteristics
  - Advantages of blending and mixing different fibres and yarns
5. Fabric construction:
- Methods of construction:
    - Weaving; definition, classification, characteristics of different weaves, methods of weave construction, basic weaving principles and suitability of weaves for various purposes
    - Other methods of construction: knitting, crocheting, bonding, felting, braiding and lacing
6. Fabric finishes
- Definitions, classification, description of basic and fundamental finishes; advantages of finishes on specific fabrics
  - Basic finishes:
    - general brushing
    - pressing
    - scouring
    - inspection
    - shearing
    - singeing
    - sizing
    - tentering
  - Functional/special finishes:
    - calendaring
    - embossing
    - glazing
    - mercerisation
    - sanforisation
    - trubenisation
    - absorbency properties
    - fire and flame proof
    - heat resistant
    - anti-static
    - moth-proofing
    - bacteria finish

- water repellent/water proof
  - soil resistant
  - permanent press
7. Colour applications
- Local decoration of fabrics:
    - dyes
    - classification of dyes
  - Natural and artificial dyes
  - Principles of dyeing and stages of dyeing
  - Methods of colour application:
    - dyeing (tie and dye, batik)
    - printing (block printing, screen printing, roller printing)
8. Care of fabrics
- Laundry agents
  - Stain removal
  - Laundry
  - Dry cleaning
  - Care labels
  - Care of garments made from specific fabrics, for example, cotton, wool, linen, silk and synthetics

### **Section B: Clothing Technology**

9. Introduction to Clothing Technology
- Definitions of clothing terms, for example:
    - fashion
    - style
    - fibres
    - yarns
    - polymerisation
    - polymer orientation
    - weaving
    - tailoring
    - cellulosic
    - elasticity
    - spinning

- tapestry
  - costume
  - tensile strength
  - texturising
  - thread count
  - twist
  - Historical background of clothing
  - Development of clothing in Uganda
  - General objectives of wearing clothes
  - Fashion:
    - definition of fashion terms
    - fashion cycle
  - Culture and clothing in Uganda
  - Factors that influence fashion
  - Body figures
10. Principles and elements of design
11. Selection of fabrics suitable for different purposes:
- Consumer advice and information – wise buying
  - Factors affecting choice of clothing for different factions
  - Dress sense
  - Suitability of colours, fabrics and styles for the wearer consisting of various figure types, garments and occasions
12. The aesthetic value of design in construction – enhancing garments and other household articles
13. Equipment used in garment construction:
- Classification of equipment according to functions:
    - tracing equipment
    - cutting equipment
    - sewing equipment
    - enhancement equipment
  - Choice, use and care of equipment
  - Sewing machines:
    - types of sewing machines
    - functions of various parts and attachments
    - care (special and general cleaning)

- faults and remedies

14. Basic sewing processes:

- Stitches
- Seams
- Fastenings
- Openings
- Edge finishes
- Control of Fullness
- Collars
- Sleeves
- Pockets

15. Dress patterns:

- Commercial paper patterns
- Drafting of basic blocks, their adaptations and alterations
- Measurements and taking measurements
- Selection of fabric and pattern
- Making up and finishing of garments for children and adults
- Household articles
- Undergarments
- Outer wear
- Accessories

## Part Two

This part of the syllabus is intended to equip learners with practical skills in constructing garments. Emphasis in this part of the syllabus is given to the following topics:

1. Style Interpretation
2. Body Measurements
3. Pattern Making
4. Choice of Material Used in Garment Construction
5. Layout and Cutting
6. Construction of Garments and Household Articles
7. Garment Finishing
8. Garment Fitting



### **Part Three - Project Work**

Emphasis in this part is given to the following topics:

1. Outfit and Household Articles
2. Making a Furnishing Article
3. Learner's Initiative

## PART ONE

### SENIOR FIVE TERM ONE

#### SECTION A: TEXTILE SCIENCE

### Topic 1: History and Development of Textiles in Uganda

Duration: 4 Periods

#### General Overview

The textile industry is one of the largest industries in the world. The production processes which range from fibre to garment construction as well as research and training offer a lot of career opportunities. This topic introduces the learner to the history and development of textiles in Uganda. It focuses on the production and uses of local textiles such as bark cloth, hides and skins, sisal, palm leaves, banana fibres and cotton. The topic has been broken down into four sub-topics intended to give the learner background information on textiles in Uganda. It explores the importance of studying textiles and the development of the textile industry in Uganda over time.

Bark cloth is one of the oldest local textile products in Uganda. Its process of production is covered under this topic. Besides bark cloth, other textiles which have been considered in this topic include hides, skins, banana fibres, sisal, jute and palm leaves. The textile industry in Uganda began during the colonial era when cash crops like cotton, were introduced and industries were established. This led to the development of the textile industry, as influenced by a number of factors.

#### General Objective

By the end of the topic, the learner should be able to explain the history and development of textiles in Uganda.

#### Sub-Topic 1: Reasons for Studying Textiles

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>define the terms used in textiles.</li></ul>	<ul style="list-style-type: none"><li>Definition of terms used in textiles:<ul style="list-style-type: none"><li>fibres</li><li>yarns</li></ul></li></ul>

Specific Objectives	Content
<ul style="list-style-type: none"> <li>explain the importance of studying textiles.</li> </ul>	<ul style="list-style-type: none"> <li>- textiles</li> <li>- polymerisation</li> <li>- polymer orientation</li> <li>- fashion</li> <li>- style</li> <li>- weaving</li> <li>- elasticity</li> <li>- spinning</li> <li>- tapestry</li> <li>- costume</li> <li>- tensile strength</li> <li>- texturising</li> <li>- thread count</li> <li>- twist</li> <li>• Reasons for studying textiles</li> </ul>

### Methodology

- Guide learners to brainstorm the definition of textiles and reasons for studying textiles as you write them on the chalkboard.
- Through guided discussion, let learners critically analyse the reasons for studying textiles.

### Teaching/Learning Aids

- Samples of textile materials
- The environment

### Assessment Strategies

- Learners define textiles
- Learners explain the reasons for studying textiles

### Sub-Topic 2: History of Textiles in Uganda

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>describe the history of textiles in Uganda.</li> <li>describe the types of clothing worn by the early man.</li> </ul>	<ul style="list-style-type: none"> <li>• History of textiles in Uganda</li> <li>• Types of clothing worn by early man</li> </ul>

**Methodology**

- Using guided discussions, let learners trace the history of textiles in Uganda.
- Through guided discovery and group work, let learners brainstorm the origin of textile fibres in Uganda.
- Through field trips and oral literature, guide learners to discover more on the history of textiles in Uganda.

**Teaching/Learning Aids**

- Pictures from textbook, magazines

**Assessment Strategies**

- Learners discuss the history of textiles in Uganda.

**Hint**

- Organise field trips to solicit information from old people.
- A visit to the textile mills, museums and Cotton Development Authority may be organised where possible.

**Sub-Topic 3: Production of bark Cloth and Other Textiles**

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• describe the production of bark cloth and other local textile products.</li><li>• explain the uses of bark cloth and other local textile materials.</li></ul>	<ul style="list-style-type: none"><li>• Production of bark cloth and other local materials such as hides and skins, banana stalks, reeds and palm leaves</li><li>• Uses of bark cloth and other local materials</li></ul>

**Methodology**

- Through brainstorming, guide learners to identify the different local textile materials used by the early man.
- Through guided group discussion, guide learners to explain the production of bark cloth and other local textile materials.
- Through field trips and oral literature, let learners demonstrate the production of bark cloth and other local textiles.

## Teaching/Learning Aids

- Samples of:
  - bark cloth
  - palm leaves
  - sisal
  - banana fibres
  - other local textile fibres

## Assessment Strategy

- Learners describe the production of bark cloth and other local textile materials.

## Hint

- Where possible, learners can visit places where bark-cloth and other textile materials are made.

## Sub-Topic 4: Development of the Textile Industry in Uganda

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• explain the development of textiles in Uganda.</li> <li>• describe the factors that influence textile development in Uganda.</li> <li>• list the textile industries in Uganda.</li> </ul> <ul style="list-style-type: none"> <li>• discuss the challenges faced by textile industries in Uganda.</li> </ul>	<ul style="list-style-type: none"> <li>• Development of the textile industry in Uganda</li> <li>• Factors influencing textile development in Uganda</li> <li>• Textile industries in Uganda, for example: Nytil (Southern Range), ATM (Mbale), MULCO, Uganda Spinning Mill, Kawempe Rayon Textiles, Phoenix Logistics, Silk Production in western Uganda, Mukono and Kawanda; LAP Textiles</li> <li>• Challenges faced by textile industries in Uganda</li> </ul>

## Methodology

- Using guided discussion, let learners explain the stages in the development of the textile industry in Uganda.

- Through brainstorming, guide learners to describe the factors that influenced the development of the textile industry in Uganda.
- Through guided discussion, let learners analyse the challenges faced by the textile industry in Uganda.
- Organise a field trip to any textile industry nearby.

**Teaching/Learning Aids**

- Brochures
- Photographs
- Film strips
- Slides

**Assessment Strategies**

- Let the learners make notes on the development of the textile industry in Uganda.
- Explain the factors that influenced its development.

## Topic 2: Fibres

Duration: 13 Periods

### General Overview

This topic introduces learners to the classification and characteristics of fibres. It enables them to explain the physical, chemical, thermal and biological properties that guide in the identification of different fibres. Fibres are generally classified into two categories: the natural and those that are developed in laboratories by experimental procedures.

The topic exposes the learners to the different methods of producing fibres and gives examples of fabrics made from them. Each fibre undergoes various stages of production. The stages of production for cellulosic, proteinic, regenerated, mineral and synthetic fibres from raw materials form the content of this topic. The topic also introduces the learners to the physical, chemical, thermal and biological characteristics of specific fibres. Appropriate care of fabrics made from these fibres is also handled.

### General Objective

By the end of the topic, the learner should be able to classify fibres and explain their production process.

### Sub-Topic 1: Terminologies and General Characteristics of Fibres

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>explain the terms used in fibre production.</li> <li>describe the general characteristics of fibres.</li> </ul>	<ul style="list-style-type: none"> <li>Terminologies used in fibre production:               <ul style="list-style-type: none"> <li>fibre</li> <li>yarn</li> <li>fabric</li> <li>polymerisation</li> <li>polymer orientation</li> </ul> </li> <li>Characteristics of fibres:               <ul style="list-style-type: none"> <li>tensile strength</li> <li>elasticity</li> <li>wicking</li> <li>crimp, etc</li> </ul> </li> </ul>

## Methodology

- Guide learners to explain the meaning of the terms used in the study of fibres and to identify the characteristics of specific fibres through text reading, observation and demonstration.
- Using brainstorming and think-pair share, guide learners to outline proper care procedures for each fibre considering the properties learnt.
- Guide learners to carry out practical tests on fibres using demonstration, observation and group work.
- Through text reading and guided discussion, guide learners to describe the different methods of processing fibres.
- Through text reading and group discussion, guide learners to classify fibres using illustrations and fabric swatches.
- Through guided discussion and observation, guide learners to identify the characteristics of fibres.
- Through text reading and think-pair share, let the learners explain the textile concepts.

## Teaching/Learning Aids

- Samples of fibres
- Fabric swatches

## Assessment Strategies

- Learners write down the meaning of the terms used in the study of textile fibres and the characteristics of fibres.

## Sub-Topic 2: Classification of Fibres

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• classify natural fibres.</li></ul>	<ul style="list-style-type: none"><li>• Classification of fibres:<ul style="list-style-type: none"><li>- natural fibres:<ul style="list-style-type: none"><li>○ cellulosic (cotton, flax (linen), sisal, jute, coir, hemp, manila, palm leaves)</li><li>○ protein (silk, wool, goat hair)</li><li>○ minerals like glass, asbestos, etc.</li></ul></li></ul></li></ul>



Specific Objectives	Content
<ul style="list-style-type: none"> <li>• classify man-made fibres.</li> </ul>	<ul style="list-style-type: none"> <li>- man made or artificial fibres:               <ul style="list-style-type: none"> <li>○ regenerated (viscose rayon, cuprammonium rayon, acetate and tri-acetate)</li> <li>○ synthetic fibres (nylon, polyester, acrylics)</li> </ul> </li> </ul>

### Methodology

- Through observation, guide learners to identify fibres.
- Through text reading and the use of fabric swatches, guide the learners to classify the different types of fibres.
- In groups, let learners make their own files and make presentations to the whole class.

### Teaching/Learning Aids

- Charts
- Fabric swatches
- Samples of fibres

### Assessment Strategies

- Learners draw flow charts in their books
- Learners file fibre swatches

## Sub-Topic 3: Production of Fibres

Specific Objective	Content
The learner should be able to describe the production processes of each of the fibres.	<ul style="list-style-type: none"> <li>• Processing of raw materials from fibres to yarn and to fabric (cloth):               <ul style="list-style-type: none"> <li>- from fibres to yarn</li> <li>- from yarns to fabric</li> </ul> </li> </ul>

### Methodology

- Through text reading, group work and observation of fibre swatches, guide learners to discuss the different types of fibres.

- Using text reading, guide learners to describe the production process of the fibres they were allocated.
- Using guided discussion, ask learners to present their group findings.
- Use field trips and video shows to help learners master the production of fibres.

### Teaching/Learning Aids

- Audio-visual aids (film strips, audio tapes)
- Textbooks
- Charts
- Pictures

### Activities of Assessment

- Learners write down the production stages of all the fibres
- Learners list the sources of the fibres

### Sub-Topic 4: Characteristics of Specific Fibres

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• describe the characteristics and properties of each of the fibres mentioned above.</li><li>• select and use fabrics for different occasions correctly.</li><li>• care for fabrics appropriately.</li></ul>	<ul style="list-style-type: none"><li>• A detailed study of physical, chemical, thermal and biological properties of each fibre</li><li>• Selection and use of fabrics made from different fibres for different occasions</li><li>• Brief procedures of caring for different fibres</li></ul>

### Methodology

- Through observation, guide learners to observe the fabric swatches on display and feel the texture of the different fibres and fabrics.
- Through text reading and group work, guide learners to identify and list the properties and care of the different fibres.
- Through whole class discussion, let learners state the use and care of different fabrics.

## Teaching and Learning Aids

- Textbooks
- Pieces of fibres and fabric swatches
- Magnifying glasses

## Assessment Strategies

- Learners compare the physical, chemical, thermal and biological properties of fibres
- Learners make notes on care of fabrics

## Sub-Topic 5: Fibre Identification Tests

Specific Objective	Content
The learner should be able to identify different fibres using appropriate tests.	<ul style="list-style-type: none"> <li>• Identification of properties of fibres using burning, visual, chemical and microscopic tests (physical and chemical)</li> </ul>

## Methodology

- Through observation, let learners examine the fabric swatches on display intended to be used for demonstration.
- Through demonstration, carry out various tests as learners observe.
- Guide learners to carry out identification tests in groups.

## Teaching/Learning Aids

- Microscope
- Chemical reagents
- Heat source
- Samples of pure fibres and fabrics

## Activities of Assessment

- Learners list the fabrics that they used for identification
- Learners write the summary of the findings of the identification test they carried out

**Hint**

- Take precaution during the experiments to avoid accidents such as causing fires.

**Additional Notes**

- Physical properties:
  - tenacity/ specific length ( Gram/ Denier)
  - length of the fibre (cm/ inch)
  - fineness of the textile fibre ( Mic-Value)
  - moisture regain (%) and moisture content (%)
  - elongation of the fibre
  - extension (%) - elasticity
  - fibre breaking length
  - elastic recovery
  - fibre maturity
  - swelling and water retention
  - static electrification
  - glass transition temperature
  - crystalline melting point
  - specific heat
  - burning behaviour
  - discolouration
  - thermal conductivity
  - pilling behaviour
  - durability
  - degradation
- Chemical properties:
  - chemical composition
  - effect of acid
  - effect of alkali
  - effect of organic solvents
  - effect of insects
  - effect of micro-organisms

## SENIOR FIVE TERM TWO

### Topic 3: Yarns

Duration: 6 Periods

#### General Overview

This topic classifies yarns and describes their general and specific characteristics. It introduces the learners to methods of producing various yarns i.e. staple yarn, filament yarn, fancy/ novelty yarn, textured yarn, spun yarn and ply yarns. There are different types of yarns used in fabric construction. Yarns can be staple or filaments, simple or textured, mono- or multi- filament component yarns.

Different yarns have specific properties and characteristics which determine the way they behave and therefore, the way fabrics should be treated. In this topic, the properties of yarns which determine their performance will be studied.

#### General Objective

By the end of the topic, the learner should be able to classify yarns, describe their specific characteristics and the methods of production.

#### Sub-Topic 1: Classification of Yarns

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• classify the different types of yarns.</li> <li>• distinguish between the two basic types of yarn.</li> <li>• describe the characteristics of different yarns.</li> </ul>	<ul style="list-style-type: none"> <li>• Classification of yarn:               <ul style="list-style-type: none"> <li>– staple or filament; simple or textured; mono-filament or multi filament yarns</li> </ul> </li> <li>• Characteristics of yarns</li> </ul>

#### Methodology

- Through observation, guide learners to identify the various samples of yarn displayed and distinguish between the two basic types of yarns.
- Through demonstrations, guide learners to identify the general characteristics of different variations of yarns using a magnifying glass.
- Through whole class discussion, guide learners to classify yarns and describe their characteristics.

**Teaching/Learning Aids**

- Samples of yarns
- Magnifying glasses

**Assessment Strategies**

Learners:

- draw a table showing the classification of yarns.
- identify four basic types of yarn and explain how each is formed.
- write down the characteristics of the different yarns.
- explain the importance of texturing yarns.
- explain the relationship between courses and wales and the characteristics of yarns.

**Sub-Topic 2: Yarn Production**

Specific Objective	Content
The learner should be able to describe the different methods of producing yarns.	<ul style="list-style-type: none"><li>• Systems of yarn production:<ul style="list-style-type: none"><li>- production of staple yarns</li><li>- production of filament yarns</li><li>- production of fancy yarns</li></ul></li></ul>

**Methodology**

- Through text reading, guide learners to identify the different methods of yarn production.
- Using group discussions, let learners discuss and prepare illustrations on charts showing the steps involved in yarn production.
- Let groups present their findings, through a gallery walk.

**Teaching/Learning Aids**

- Charts
- Textbook illustrations
- Fibre swatches

**Assessment Strategies**

- Learners note down the information presented on charts.

## Topic 4: Blends and Mixtures

Duration: 3 Periods

### General Overview

Different fibres may be used in the production of yarns and fabrics. A blend is a mixture of two or more fibres of different generic type, length, diameter or colour combined to form a yarn. On the other hand, a mixture is produced using one fibre content on the weft and a different one on the warp, for example, yarns of cotton fibres used with yarns of nylon fibres, thus, two or more yarns from different fibres are used in combination to produce a fabric. For example, a fabric may be made of cotton yarns in the warp and polyester yarns in the weft. This is called a mixture.

Blending and mixing improves the performance of a fabric and also affects the way a fabric is used.

### General Objectives

By the end of the topic, the learner should be able to:

- explain the importance of blends and mixtures.
- use and care for blended and mixed fabrics.

### Sub-Topic 1: Importance of Blends and Mixtures

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• define the terms blends and mixtures.</li> <li>• differentiate between blends and mixtures.</li> <li>• List examples of blends and mixtures.</li> <li>• describe the characteristics of blends and mixtures.</li> </ul>	<ul style="list-style-type: none"> <li>• Definition of terms - blends and mixtures</li> <li>• Identification of differences between blended and mixed fabrics</li> <li>• Examples of blends and mixtures</li> <li>• Characteristics of blends and mixtures, for example:               <ul style="list-style-type: none"> <li>- easy to care</li> <li>- more durable</li> <li>- becomes more soft and luxurious</li> <li>- becomes more resistant to wrinkles</li> </ul> </li> </ul>

Specific Objectives	Content
<ul style="list-style-type: none"><li>• explain the importance of blends and mixtures.</li><li>• explain the uses of blends and mixtures.</li><li>• care for blends and mixtures.</li></ul>	<ul style="list-style-type: none"><li>- becomes more comfortable to wear</li><li>- does not shrink</li><li>- becomes stronger to withstand lots of wear and multiple washing</li><li>• Importance of blending and mixing fibres</li><li>• Uses of blends and mixtures</li><li>• Care of blends and mixtures</li></ul>

### Methodology

- Through text reading, guide learners to explain the concepts of blends and mixtures.
- Through demonstration and observation, guide learners to discuss the characteristics of blends and mixtures making use of the micro-scope.
- Guide learners to discuss the characteristics and uses of blends and mixtures using fabric swatches.
- Through brainstorming, guide learners to describe the care of blends and mixtures.
- Using whole class discussion, guide learners to discuss the importance of blends and mixtures.
- Guide learners to brainstorm the uses and care of mixed and blended fabrics.

### Teaching/Learning Aids

- Samples of blends and mixtures
- Microscope
- Chemicals
- Heat source



## **Additional Notes**

### ***Definition of terms***

A mixture is a fabric which is comprised of two or more different fibres, each one spun into a separate yarn e.g. a fabric with a cotton warp and woollen weft producing wool/cotton fibre mixture.

A blend is a fabric that is composed of two or more different fibres which have been mixed before or during spinning into yarn e.g. cotton and polyester fibres are mixed and spun into yarn. For example, a fabric can be 30% polyester and 70% cotton.

### ***Importance of blending and mixing fibres***

- Reduces costs by mixing a cheap fibre with a more expensive one.
- Combines properties of fibres in order to cover up less desirable characteristics in one fibre and give improved fabric performance.
- Gives different texture and colour effects.
- Improves wearing qualities.

### ***Characteristics of blended fabrics***

- It is easy to care.
- It becomes more durable.
- It becomes more soft and luxurious.
- It becomes more resistant to wrinkles.
- It becomes more comfortable to wear.
- It does not shrink.
- It becomes stronger to withstand lots of wear and multiple washing.

### ***Uses of fabric blends***

- Polyester/Cotton - The tough crease-resistance of polyester combines with the cool comfort of cotton. It is easily laundered, dries quickly and is ironed with lower temperature than pure cotton.
- Nylon/Wool - The blending of nylon with wool makes the fabric more absorbent and softer. It becomes more strong and durable.
- Nylon/Acetate - This combination makes the fabric more absorbent than nylon alone.
- Ramie/Polyester or Ramie/Acrylic - These two blends help the fabric to be easily taken care of and it is less stiff than pure ramie fabrics.

- Wool/Cotton - These two fabrics benefit from the inherent qualities of each other after blending. It gives better comfort, better aesthetics and better performance.
- Linen/Silk or Linen/Rayon - This blend helps the fabric to retain the characteristics of linen and makes the fabric drape better and wrinkleless.
- Silk/Wool - The blending of silk with wool provides subtle texture to the fabric. It is generally used for ties.
- Rayon/Cotton - This fabric of rayon and cotton blend wears well and is washable. It is soft and has fuzzy surface. Dresses, suits, sportswear, men's shirts, etc. are made out of this fabric.
- Wool/Synthetics or Rayon/Synthetics - This blend has a very clear finish and it drapes better and tailors easily. It has exceptional wearing qualities. The fabric is used for men's and women's suits and coats. Ski slacks are also made out of these blends.
- Cotton/Polyester - The quality of polyester helps cotton to give a permanent press property. It is extremely soft, resists wrinkling and is easy to care for. This fabric is widely used as men's dress shirts and christening apparel.

### **Assessment Strategies**

- Learners make swatches of blends and mixtures.

## **SENIOR FIVE TERM THREE**

### **Topic 5: Fabric Construction**

Duration: 28 Periods

#### **General Overview**

Fabrics are constructed using various methods. The methods produce different qualities in the fabrics which determine their performance. These methods include weaving, knitting, crocheting, bonding, felting, lacing and braiding. The different methods used in construction produce fabrics with different characteristics.

The main and most common methods of fabric construction are weaving, knitting and crocheting. Weaving is a method of fabric construction which involves interlacing of threads. It can be done using various methods to create different characteristics in the fabric. Knitting on the other hand is a method of fabric construction that involves the inter-looping of yarns horizontally or vertically.

Crocheting is a technique which is closely related to knitting. It is worked by joining together a series of inter-looped yarns using a single hook and it produces fabrics with an appearance similar to lace fabrics.

Besides weaving, knitting and crocheting, some fabrics are constructed by bonding, felting, lacing and braiding. Bonding is whereby layers of material are joined together using heat, moisture and adhesives. Felting is another method of making non-woven fabrics by matting fibres in the presence of heat, moisture and agitation.

Lace is one of the most treasured fabrics because of its beauty. Its construction is related to knitting, netting and embroidery.

This topic explores the methods of constructing lace fabrics, their characteristics and uses. Fabrics may be created by plaiting together yarns or strips of fabric.

#### **General Objective**

By the end of the topic, the learner should be able to describe the different methods of constructing fabrics.

## Sub-Topic 1: Introduction to Methods of Fabric Construction

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>describe the methods of fabric construction.</li></ul>	<ul style="list-style-type: none"><li>Methods of fabric construction:<ul style="list-style-type: none"><li>- weaving</li><li>- knitting</li><li>- crocheting</li><li>- bonding</li><li>- felting</li><li>- lacing</li><li>- braiding</li></ul></li></ul>

### Methodology

- Through text reading and group discussion, guide learners to identify the different methods of fabric construction.
- Using group discussions, guide learners to discuss their findings.

### Teaching and Learning Aids

- Fabric swatches

### Assessment Strategies

- Learners identify the different methods of fabric construction

## Sub-Topic 2: Weaving

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>explain the term weaving.</li><li>classify weaves.</li><li>outline the parts of a hand loom and their functions.</li><li>describe the different methods of weaving procedures.</li></ul>	<ul style="list-style-type: none"><li>Definition of weaving</li><li>Classification of weaves</li><li>Hand loom and its parts</li><li>Methods of weaving:<ul style="list-style-type: none"><li>- plain weave</li><li>- twill weave</li><li>- satin weave</li><li>- fancy weaves</li></ul></li></ul>

Specific Objectives	Content
<ul style="list-style-type: none"> <li>• practice the basic steps of weaving.</li> <li>• construct fabric samples using different weaves.</li> <li>• describe the characteristics of different weaves.</li> <li>• select fabric according to weave for different purposes.</li> <li>• care for articles made from different weaves appropriately.</li> </ul>	<ul style="list-style-type: none"> <li>• Basic steps in weaving</li> <li>• Construction of basic weaves and their variations</li> <li>• Characteristics of different weaves</li> <li>• Suitability of weaves for various purposes: in making up, cleaning, washing, practicability, hygienic qualities</li> <li>• Caring for woven articles</li> </ul>

### Methodology

- Through observation and task-based learning, guide learners to describe the characteristics of different weaves using fabric swatches and sample illustrations.
- Using charts and text reading, demonstrate the steps taken in weaving.
- Using guided discussion and diagrams of different weaves, lead learners to classify weaves.
- Using demonstration, let learners name the various parts of a hand loom and explain their functions.
- Through demonstration and group work, guide learners to construct weave samples using different methods.
- Through buzz groups, guide learners to discuss the purpose and care of fabrics made using different weaves.

### Teaching/Learning Aids

- Hand looms
- Yarns
- Fabric swatches in different weaves
- Charts
- Manila cards in different colours
- Pair of scissors
- Banana leaves
- Palm leaves

- Visualisation in individual participation and presentation (VIPP) cards
- Hand lens

### Assessment Strategies

- Learners note down the following:
  - definition of weaves
  - classification of weaves
  - basic steps of weaving (Draw the diagrams)
  - characteristics of different weaves
- Learners collect fabrics swatches for the different weaves
- Learners make samples illustrating various weaves

### Additional Notes

- Definition of weaving: weaving is the interlacing of two sets of yarns (warp and the weft) crossing each other at right angles on a loom.
- Classification of weaves is based on the mode of interlacing.  
Types of weaves:
  - plain weave and its variations (basket, ribbed)
  - twill weave (left hand and right hand)
  - satin weave and sateen
  - fancy weaves – leno (gauze), pile lacing
- Basic steps of weaving operations, shedding, picking, beating up and letting off
- Suitability of weaves for various purposes: in making up, cleaning, washing, practicability, hygienic qualities

### Sub-Topic 3: Knitting

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• define the term knitting.</li><li>• identify knitting equipment.</li><li>• outline rules and symbols used in knitting.</li><li>• use basic knitting stitches to create various designs and make articles.</li></ul>	<ul style="list-style-type: none"><li>• Definition of knitting</li><li>• Equipment used in knitting</li><li>• Rules and symbols used in knitting.</li><li>• Basic knitting stitches:<ul style="list-style-type: none"><li>- knit</li><li>- purl</li></ul></li></ul>

Specific Objectives	Content
<ul style="list-style-type: none"> <li>• examine the variations of basic knitting stitches.</li> <li>• describe the methods used in knitting.</li> <li>• describe the characteristics of knitted fabrics.</li> <li>• care for knitted articles appropriately.</li> </ul>	<ul style="list-style-type: none"> <li>• Variations of basic knitting stitches</li> <li>• Methods of knitting (hand and machine)</li> <li>• Characteristics of knitted articles, for example sweaters, cardigans, booties, shawls, Jersey double knits</li> <li>• Care for knitted articles mentioned above</li> </ul>

### Methodology

- Through brainstorming, guide learners to define knitting, identify equipment and outline rules used in knitting.
- Using text reading, let learners identify knitting symbols/abbreviations.
- Using demonstration and group work, guide learners to knit articles of different designs.
- Through observation and group discussions, guide learners to identify the characteristics of knitted fabrics.
- Through demonstration and task-based learning, guide learners to care for different knitted articles.

### Teaching/Learning Aids

- Knitting machines
- Knitting needles
- Yarns
- Instruction sheets
- Punched cards
- Tape measures

### Assessment Strategies

- Learners define knitting
- Learners outline the characteristics of knitted fabrics
- Learners are given individual tasks to construct knitted articles using the various knitting stitches

### Additional Notes

- Knitting is a method of fabric construction which involves the inter-looping of loops of thread.
- Tools and equipment used in knitting: knitting needles, safety pins, knitting machines (warp and weft)
- Variations of basic stitches – rib, basket, accordion stitch, machine knitting stitches (weft and warp knitting)
- Characteristics of knitted fabrics i.e. they stretch, they are porous, do not wrinkle

### Sub-Topic 4: Crocheting

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• explain crocheting.</li><li>• identify equipment used in crocheting.</li><li>• use the equipment related to crocheting.</li><li>• choose and care for crocheting equipment.</li><li>• interpret the symbols used in crocheting.</li><li>• apply rules of crocheting in making articles.</li><li>• construct crochet articles appropriately.</li></ul> <ul style="list-style-type: none"><li>• describe the characteristics of crocheted articles.</li><li>• demonstrate the appropriate use and care of crocheted articles.</li></ul>	<ul style="list-style-type: none"><li>• Definition of crocheting</li><li>• Equipment used for crocheting:<ul style="list-style-type: none"><li>- identification</li><li>- use</li></ul></li><li>• Choice and care of crocheting equipment</li><li>• Symbols used in crocheting</li><li>• Rules related to crocheting</li><li>• Basic crocheting stitches (slip stitch, double crochet, triple crochet, treble crochet, etc): Crochet articles include bags, blouses, chair covers, table clothes</li><li>• Characteristics of crochet articles</li><li>• Use and care of crocheted articles</li></ul>

### Methodology

- Through text reading, lead learners to define crocheting, identify the equipment and outline symbols and rules used in crocheting.
- Using demonstration, guide learners to work out the different stitches.



- Through demonstration and task-based learning, guide learners to construct a crocheted article.
- Through brainstorming, guide learners to explain the characteristics, use and care of crocheted articles.

### Teaching/Learning Aids

- Crochet needles
- Yarn
- Hooks

### Assessment Strategies

- Learners should practice the working of different crochet stitches
- Assign learners articles to make using different crochet stitches

### Additional Notes

- Equipment and materials: yarns and hooks, tape measures, instruction sheets
- Crochet terms are: tension - describes how tight or loose the stitches are; gauge – the number of stitches per inch and the number of rows per inch
- Basic crocheting stitches (slip stitch, double crochet, triple crochet, treble crochet, etc): Crochet articles include bags, blouses, chair covers, table clothes

### Sub-Topic 5: Bonding

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• explain the meaning of bonding as a method of fabric construction.</li> <li>• describe the different methods of bonding.</li> <li>• describe the characteristics of bonded fabrics.</li> <li>• explain the different uses of bonded fabrics.</li> </ul>	<ul style="list-style-type: none"> <li>• Definition of bonding</li> <li>• Methods of bonding:               <ul style="list-style-type: none"> <li>- resin bonding</li> <li>- thermo plastic bonding</li> <li>- stitch through bonding</li> </ul> </li> <li>• Characteristics of bonded fabrics</li> <li>• Uses of bonded fabrics:               <ul style="list-style-type: none"> <li>- medical application</li> </ul> </li> </ul>

Specific Objectives	Content
<ul style="list-style-type: none"><li>• explain the finishes applied to bonded fabrics.</li></ul>	<p>(mackintosh)</p> <ul style="list-style-type: none"><li>- apparel</li><li>- home furnishings</li><li>- industrial purposes</li><li>• Finishing bonded fabrics:<ul style="list-style-type: none"><li>- dyeing</li><li>- embossing</li><li>- printing</li></ul></li></ul>

### Methodology

- Using text reading, lead learners to define bonding and describe the different methods of bonding.
- Using whole class discussions, lead learners to describe the general characteristics of bonded fabrics, their uses and the suitable finishes applied to them.
- By means of illustrations, guide learners to describe the procedure of constructing a fabric using the bonding method.

### Teaching/Learning Aids

- Samples and pictures of bonded fabrics

### Assessment Strategies

- Learners write down definition and characteristics of bonded fabrics
- Learners state uses of bonded fabrics
- Learners make fabric swatches of bonded fabrics

### Additional Notes

- Basic processing stages of bonded fibre fabrics
  - web formation
  - application of bonding agent
  - the finishing process
- Methods of bonding:
  - spun-bonded fabrics: spun bonding is a process by which fabrics are produced directly from the polymers, one or several polymers e.g. polyester, nylon, polypropylene or polyethylene are fed into an extruder.
  - solvent bonded fabrics involve web formation as for adhesive bonding. The coating material is activated by heat.

- adhesive bonded fabric: adhesive is applied to the surface of the fibre web and it is heat set. Thermoplastic fibres may be bonded by heat.
- stitch bonding: fibres are joined by entangling them, by stitching using additional yarn.
- Characteristics of bonded fabrics:
  - they have good resistance to creasing
  - can be pleated
  - spun-bonded fabrics have good durability
  - do not have grain direction
- Uses of bonded fabrics: spun-bonded fabrics can be used for making disposable dresses, hand towels, table cloths and napkins. Adhesive bonded fabrics can be used for rain coats, shower curtains, PVC and carpets.

### Sub-Topic 6: Felting

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• explain the meaning of felting.</li> <li>• explain the different methods of felting.</li> <li>• describe the characteristics and care of felted fabrics.</li> <li>• state the various uses of felted fabrics.</li> <li>• explain the advantages and disadvantages of felting.</li> </ul>	<ul style="list-style-type: none"> <li>• Meaning of felting</li> <li>• Methods of felting (wool felt, fur felt)</li> <li>• Characteristics and care of felted fabrics</li> <li>• Uses of felted fabrics:               <ul style="list-style-type: none"> <li>- clothing</li> <li>- accessories</li> <li>- table padding</li> <li>- in soles</li> <li>- carpets</li> <li>- bath mats</li> </ul> </li> <li>• Advantages and disadvantages of felting</li> </ul>

### Methodology

- Use text reading to guide learners define felt fabrics and describe their characteristics.

- Through whole class discussion, guide learners to explain the different methods of felting.
- Guide learners to discuss the care and uses of felt fabrics.

### Assessment Strategies

- Learners make individual notes on definition and characteristics of felt fabrics
- Learners collect swatches of felt fabrics

### Additional Notes

- Definition of felting - A method of making a non-woven fabric by matting wool or other fibres using moisture, heat, and pressure.
- Methods of felting: wool felt – wool fibres are cleaned, blended and carded. Layers of fibres are arranged at right angles to one another. The layers are passed through machines where they are trimmed and rolled. Moisture and heat are applied. They are placed between heavy plates which produce agitation, friction and pressure causing the fibres to matt.
- Characteristics of felt fabrics:
  - have good resilience
  - easy to shape
  - do not unravel easily so edges do not requires a finish
  - they are absorbent
  - have good insulating properties
  - are warm
  - do not tear easily
  - can be finished to be moth proof, water repellent, fire proof and fungi resistant
- Advantages:
  - felt can easily be cut and will not fray
  - can be moulded into shape therefore has wide use in the making of hats
- Disadvantages:
  - rather weak, may tear under pressure
  - subject to pilling
  - it is stiff therefore does not fall into graceful folds
- Uses of felt fabrics: accessories e.g. hats, belts, table mats and paddings in soles

## Sub-Topic 7: Lacing

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>define lacing.</li> <li>describe the characteristics of laced fabrics.</li> <li>describe the procedure of constructing laced fabrics.</li> <li>explain the types and uses of laced fabrics.</li> </ul>	<ul style="list-style-type: none"> <li>Definition of lacing</li> <li>Characteristics of laced fabrics</li> <li>Methods of constructing laced fabrics:               <ul style="list-style-type: none"> <li>- crocheting</li> <li>- knitting</li> <li>- embroidery</li> <li>- weaving</li> </ul> </li> <li>Types and uses of laced fabrics</li> </ul>

### Methodology

- Through individual text reading and whole class discussion, lead learners to define the term lacing.
- Using group work, guide learners to discuss the characteristics and uses of laced fabrics.
- Using samples and finished articles, guide learners to identify the methods of lace construction.

### Assessment Strategy

- Learners collect samples to different laced fabrics

### Additional Notes

- Definition of lace - lace is an open work fabric consisting of a network of threads or yarns formed into intricate designs. It is produced by twisting, knotting or looping of yarns
- Characteristics of lace fabrics:
  - usually have beautiful intricate designs.
  - are durable as they are made of strong yarn.
  - have an open network and so they are porous and cool to wear.
  - methods of constructing lace fabrics: crocheting, embroidery, knitting and weaving.
- Types and use of lace fabrics:
  - used as trimming on items such as dresses, curtains and table cloth.

- used for making curtain blind materials, dress fabrics and food covers

### Sub-Topic 8: Braiding

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• define the term braiding.</li><li>• describe the procedure of braiding.</li><li>• describe the characteristics of braided fabric.</li><li>• illustrate the construction of braided fabrics.</li><li>• state the uses of braided fabrics.</li></ul>	<ul style="list-style-type: none"><li>• Definition of braiding</li><li>• Procedure of braiding</li><li>• Characteristics of braided fabrics</li><li>• Construction of braided fabrics</li><li>• Uses of braided fabrics</li></ul>

### Methodology

- Using text reading and brainstorming, lead learners to define the term braiding and describe the procedure of braiding.
- Using demonstrations, guide learners to practice braiding.
- Guide learners to individually braid an article.
- Guide learners to display their work and give comments on each others' work.
- Through whole class discussion, guide learners to describe the characteristics and uses of braided fabrics through observation.

### Assessment Strategies

- Learners construct sample items of braided articles individually

### Additional Notes

- Braided fabric is constructed by plaiting three or more yarns originating from a single location and lying parallel before the interlacing occurs.
- Characteristics of braided fabrics:
  - They have a diagonal surface effect
  - They have a considerable amount of stretch
- Uses of braided fabrics: rugs, mats, hand fans

## SENIOR SIX TERM ONE

### Topic 6: Fabric Finishes

Duration: 3 Periods

#### General Overview

Fabrics are given specific treatments to improve care, use and performance. A number of finishes are used for general purposes while others are used to bring out specific functions. This topic introduces the learners to the classification of fabric finishes, their advantages and the role of different finishes in fabrics.

#### General Objective

By the end of the topic, the learner should be able to care for and maintain fabrics with different finishes appropriately.

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• explain the meaning of fabric finishes.</li> <li>• classify fabric finishes.</li> <li>• identify the basic finishes</li> <li>• describe characteristics of fabrics with basic finishes.</li> <li>• identify the functional finishes.</li> </ul>	<ul style="list-style-type: none"> <li>• Meaning of fabric finishes</li> <li>• Classification of fabric finishes:               <ul style="list-style-type: none"> <li>- basic finishes/preparatory</li> <li>- functional finishes</li> <li>- difference between basic and functional finishes</li> </ul> </li> <li>• Fabric finishes</li> <li>• Basic finishes:               <ul style="list-style-type: none"> <li>- bleaching</li> <li>- de-gumming</li> <li>- carbonising</li> <li>- tentering</li> <li>- dyeing</li> <li>- delusturing</li> <li>- beetling, etc</li> </ul> </li> <li>• Functional finishes:               <ul style="list-style-type: none"> <li>- abrasion resistance</li> <li>- mercerisation</li> <li>- anti-static</li> <li>- flame resistance</li> <li>- water resistant</li> </ul> </li> </ul>

Specific Objectives	Content
<ul style="list-style-type: none"><li>• describe the characteristics of fabrics with functional finishes.</li><li>• distinguish between basic and functional finishes.</li><li>• explain the advantages of fabric finishes.</li><li>• explain the importance of different finishes in fabrics.</li><li>• describe the different methods of applying finishes.</li></ul>	<ul style="list-style-type: none"><li>- water repellent, etc</li><li>• Characteristics of functional finishes</li><li>• Advantages of fabric finishes</li><li>• The importance of functional fabric finishes:<ul style="list-style-type: none"><li>- calendaring</li><li>- embossing</li><li>- glazing</li><li>- mercerisation</li><li>- sanforisation</li><li>- trubenisation</li><li>- flame proof</li><li>- waterproof, etc</li></ul></li><li>• Methods of applying fabric finishes:<ul style="list-style-type: none"><li>- general brushing</li><li>- pressing</li><li>- scouring</li><li>- inspection</li><li>- shearing</li><li>- singeing</li><li>- sizing</li><li>- tentering</li><li>- mercerisation</li><li>- flameproof, etc</li></ul></li></ul>

### Methodology

- Using text reading, guide learners to explain the meaning of finishes as well as classify and distinguish between basic and functional fabric finishes.
- Through brainstorming and discussion, guide learners to describe the characteristics of fabrics with basic finishes and fabrics with functional finishes.
- Guide learners to brainstorm and discuss the differences between basic and functional finishes as learners record the differences.
- Using the recorded differences between functional and basic finishes, let learners discuss the importance of fabric finishes.



- Using whole class discussion, guide learners to describe the methods of applying fabric finishes.
- Through task-based learning, let learners collect fabric pieces to make swatches of both basic and functional finishes.

### **Teaching/Learning Aids**

- Textbooks
- Scraps of fabric from tailors
- Pair of scissors
- Manila card
- Glue
- Markers
- Fibre samples

### **Assessment Strategies**

- Learners:
  - define fabric finishes.
  - distinguish between basic and functional finishes.
  - explain the advantages of fabric finishes.
- Learners explain how the following finishes are applied:
  - sizing
  - scouring
  - shearing
  - pressing
  - stentering
- Let learners name three performance finishes that are important for consumers. Let them give reasons for their answers.

### **Additional Notes**

#### ***Fabric Finishes***

- Fabric finishes are any special treatment applied to improve a fabric's appearance, texture or performance.
- Classification of fabric finishes: fabric finishes are classified as basic and functional finish
- Basic finishes are finishes used to prepare the fabric for further processing

- Functional finishes are treatments that are applied to improve the performance of the fabric
- Advantages of fabric finishes:
  - Fabric finishes improve the properties of fabrics.
  - Some finishes are used to prepare the fabric for further processing.
  - They improve the performance of the fabrics as well.
- Types of functional finishes:
  - Calendaring: it is a smoothening of fabric between heated rollers which produces a highly polished or glazed fabric e.g. Chintz
  - Embossing: an embossed finish is relatively permanent, stands out and is less expensive than a woven-in design.
  - Glazing gives a smooth surface to fabrics which enables them keep clean longer.
  - Mercerisation finish is applied to cotton before or after bleaching and occasionally after dyeing. It involves use of a strong solution of sodium hydroxide at a uniform temperature of 70 – 80° F. The purposes are: to improve its strength; give it greater affinity to dye and improve its lustre.
  - Sanforisation: Sanforised cloth is pre-shrunk before appearing on the market and therefore no allowance for shrinkage need be made.
  - Flame resistant / flame retardant: This finish reduces flaming and burning in fabrics that have been exposed to flame or high heat. They are used on children's sleep wear and other clothing.
  - Water repellent: This finish makes fabrics resist stains or water marking, for example, on silk and velvet.
  - Water-proofing renders fabrics impervious to water and is used for rain wear.
  - Sizing: This is a stiffening finish which may be temporary or permanent that is added to fabric to improve its smoothness, weight, strength and resistance to soiling.
- Methods of applying fabric finishes

There are various methods of applying fabric finishes including the following:

- Brushing is required for smooth surfaced fabrics such as cotton and dress percale. Brushing is done with rollers covered with bristles which remove short ends of fibres. It may be applied to any fabric.
- Pressing as applied to wool is the same as calendaring for other fibres. To press wool, the fabric is placed between heavy, electrically

heated metal plates that steam and press the fabric. Sometimes the cloth is wound around a cylindrical unit that dampens the fabric and then presses it. This method can be used on woollen, worsteds, rayons and silk.

- Scouring removes any sizing, dirt, oils, or other substances that may have adhered to the fibres during processing of yarn or fabric. Soft water is used to avoid the formation of an insoluble soap film on the fabric.
- Singeing: In this method, smooth-surfaced cloths are passed over either heated plates or gas flames to remove projecting fibres. The fabric must be passed rapidly over the gas flame so only these fibres are burned.
- Shearing: After a nap has been raised on a cloth, it is sheared to make the surface smooth and uniform. Shearing removes all surface fibres. The process also serves to cut off knots, ends or other defects. The shearing device has revolving blades similar to a lawn mower. Shearing can be applied to any of the textile fibres or blends.
- Stentering: During the processes of scouring, bleaching, dyeing and printing, the material is sometimes pulled out of shape. It is passed through a stentering machine which has chips on both sides to grip the selvedge and pull the material out to the correct shape.

Finishes are applied to many fabrics to enhance their appearance, texture or performance. Although finishes may be applied during different stages of the development of the fabric, they are often applied after the fabric has been produced. They are mechanically, thermally or chemically applied to the surface of a fibre, yarn or fabric to enhance the aesthetic, tactile or performance characteristics of the fabric. Finishes may permanently alter the fabric or may provide a temporary effect.

Finishes affect the inherent characteristics or properties of a base fabric to a greater or lesser degree. Some finishes allow fabrics to become rigid while others result in soft, supple fabrics. Some finishes allow fabrics to appear shiny and smooth while others produce a dull, textured surface. Other finishes enable fabrics to retain their shape, repel water or resist fire. For some end uses, a certain set of properties is highly desirable; yet, for others, the same set of properties may be a disadvantage. For example, it is desirable for most athletic wear to absorb moisture, while it would not be advantageous for an awning, umbrella or rain gear to absorb water.

Textile products can be enhanced and made more serviceable by applying finishes that combine a certain set of desirable properties. Take the example of a fireman's uniform, where fire retardation is critical. Or, the example of a

chef's uniform where fire retardation, water repellence and soil resistance are also important factors.

Many properties are easily achieved through the use of relatively basic finishes and finishing techniques. However, in specialised applications, a certain set of finish properties may be achieved only after extensive research and development of specialised finishes and finishing techniques.

This topic focuses on the evaluation of both aesthetic and performance finishes that can be observed in the student laboratory. Variations of each of these general types of finishes will be observed. The examples shown in this topic are fairly simple versions of fabric finishes. Professional textile scientists and designers often use complex versions of these finishes to produce a specific set of desired aesthetic, tactile or performance characteristics on a particular base fabric.

### Terminology

Take note of the following terms used in this topic:

- Aesthetic finishes are applied to change the appearance of the base fabric.
- Performance finishes are applied to alter the functional or performance qualities of the base fabric.
- Quality-oriented:
  - calendaring
  - decatizing
  - de-sizing for woven fabrics
  - pressing
  - shrinking
  - sanforisation
- Scouring with detergents, alkaline solutions, or enzymes removes foreign matter
- Shearing or singeing smoothens the fabric by removing the fine protruding fibres on the surface of the fabric. Flame singeing is the standard process: the wet fabric is passed through an array of gas burners at a suitable distance to burn the pills off its surface.
- Design-oriented:
  - Bleaching of woven fabrics removes any prior colour in order to obtain a uniform colour during the dyeing process
  - Dyeing adds colour
  - Printing adds colour and pattern
  - Watering adds patterns

- **Handle-oriented:**
  - Fulling or waulking adds weight and density.
  - Hydrophobic finishing produces a fabric that repels stains or water.
  - Weighting silk with metallic salts or polymer adds weight and improves handle.
- **Special finishes for natural fibres:**

Bio-polishing removes the protruding fibres of a fabric through the action of an enzyme. Enzymes, such as cellulase for cotton, selectively remove protruding fibres. These enzymes may be deactivated by an increase in temperature. Mercerisation makes woven cotton fabric stronger, more lustrous, to have better dye affinity, and to be less abrasive.

Raising lifts the surface fibres to improve the softness and warmth, as in flannelette. Peach finish subjects the fabric (either cotton or its synthetic blends) to emery wheels, making the surface velvet-like. This is a special finish used mostly in garments. Fulling or waulking adds weight and density and decatizing to bring dimension stability to woollen fabrics. Calendaring makes one or both surfaces of the fabric smooth and shiny. The fabric is passed through hot, fast-moving stainless steel cylinders.

Sanforisation or pre-shrinking prevents a fabric and the produced garment from shrinking after production. This is also a mechanical finish, acquired by feeding the fabric between a roller and rubber blanket, in such a way that the rubber blanket compresses the weft threads and imparts compressive shrinkage. Crease-resist finish or "wash-and-wear" or "wrinkle-free" finishes are achieved by the addition of a chemical resin finish that makes the fibre take on a quality similar to that of synthetic fibres.

Anti-microbial finish causes a fabric to inhibit the growth of microbes. The humid and warm environment found in textile fibres encourages the growth of the microbes. Infestation by microbes can cause cross-infection by pathogens and the development of odour where the fabric is worn next to skin. In addition, stains and loss of fibre quality of textile substrates can also take place. With an aim to protect the skin of the wearer and the textile substrate itself, an anti-microbial finish is applied to textile materials.

### **Special finishes for synthetic fibres**

Heat-setting of synthetic fabrics eliminates the internal tensions within the fibre generated during manufacturing, and the new state can be fixed by rapid cooling. This heat setting fixes the fabrics in the relaxed state, and thus avoids subsequent shrinkage or creasing of the fabric.

Presetting of goods makes it possible to use higher temperature for setting without considering the sublimation properties of dyes and also has a favourable effect on dyeing behaviour and the running properties of the fabric. On the other hand, post-setting can be combined with some other operations such as Thermasol dyeing or optical brightening of polyester. Post-setting as a final finish is useful to achieve high dimensional stability, along with desired handle.

### **Stiffening and filling process**

A stiffening effect is desirable in certain polyamides and polyester materials (e.g. petticoats, collar inner linings), which can be done by reducing the mutual independence of structural elements of fabric by polymer deposition on coating as a fine film.

Hydrophilic finishes compensate for lower moisture and water absorption capacity in synthetic fibre materials, which become uncomfortable in contact with skin. Certain products, based on modified (oxy-ethylated) polyamides, make the fabric more pleasant by reducing the cohesion of water so that it spreads over a larger area and thus evaporates more readily.

### **Anti-pilling finish**

This alleviates pilling, an unpleasant phenomenon associated with spun yarn fabrics, especially when they contain synthetics. Synthetic fibres are more readily brought to the surface of a fabric due to their smooth surface and circular cross-section, and due to their higher tensile strength and abrasion resistance. With knit, "picking" also occurs by abrasion. Individual fibres work themselves out of yarn loops onto the surface, and the garment catches on a pointed or rough object. Knitting is susceptible to these effects due to the open weave and bulky yarn.

### **Anti-static finish**

This prevents dust from clinging to the fabric. Anti-static effective chemicals are largely chemically inert and require Thermasol or heat treatment for fixing on polyester fabrics. Polyether agents have been found to be useful but should not affect the dye-equilibrium on fibre, lest they impair the rubbing fastness. In general, Thermasol anti-static agents also have a good soil release action, which is as permanent as the anti-static effect. Anti-static finishes may also be of polyamide type, being curable at moderate temperatures.

### **Non-slip finishes**

These give the filaments a rougher surface. Synthetic warp and weft threads in loosely-woven fabrics are particularly prone to slip because of their surface smoothness when the structure of fabric is disturbed and appearance is no longer attractive. Silica-gel dispersions or silicic acid colloidal solutions are used in combination with latex polymer or acrylates dispersions to get more permanent effect, along with simultaneous improvement in resistance to pilling or snagging. These polymer finishes are also capable of imparting a soft and smooth handle to synthetic fabric without making it water repellent.

### **Anti-microbial finish**

With the increasing use of synthetic fibres for carpets and other materials in public places, anti-microbial finishes have gained importance. Products which are commonly applied are brominated phenols, ammonium compounds, organo-silver and tin compounds, which can be applied as solutions or dispersions. They can also be incorporated in a polymeric film deposited on the surface to achieve controlled release.

### **Functional finishes**

The properties of synthetic fibres, most important among them being polyamide, polyester and polyacrylonitrile, are essentially different from those of natural cellulosic and wool fibres. Hence the sequence of finishing operations is likely to be different. While cellulose require a resin finishing treatment to impart easy-care properties, synthetic fibres already have these easy-care criteria and require only a heat setting operation. The use of 100% synthetic textiles has increased considerably since the arrival of texturised yarns consisting of filaments and the growing production of knit goods. The use of open weave has enabled production of lighter, air permeable fabrics to ensure better wearing comfort.

### **Heat setting**

Heat setting of synthetic fabrics eliminates the internal tensions within the fibre generated during manufacture and the new state can be fixed by rapid cooling. This heat setting fixes the fabrics in the relaxed state and thus avoids subsequent shrinkage or creasing of fabric. Presetting of goods makes it possible to use higher temperature for setting without considering the sublimation properties of dyes and also has a favourable effect on dyeing behaviour and running properties of goods. On the

other hand, post setting can be combined with some other operations such as thermosol dyeing or optical brightening of polyester and post setting as a final finish is useful to get a high dimensional stability along with desired handle.

The application of heat in heat setting can be done by hot air, on a pin stenter at 220°C for 20-30 seconds for polyester goods and at a lower temperature range of 190-225°C for 15 -20 seconds for polyamides. Acrylics may be heat set partially at 170-190°C for 15-60 seconds to reduce formation of running creases, but higher temperatures should be avoided to prevent yellowing.

### **Hydro setting**

This is so rarely used particularly to get fuller and softer handle on polyamides at 125-135°C in autoclaves for 20-30 minutes. It can be combined with dyeing or optical brightening.

### **Steam setting**

This can be done by saturated or super heated steam. During steaming, uniform treatment can be ensured by initial sequence of alternate short steaming and vacuum application for 20-30 minutes at 130°C under pressure. Super heated steam can be used in stenters and setting time is 25% shorter than for hot air on account of quicker heating up rate. Acrylic fibres have to be pretested as some may undergo excessive shrinkage or loss of handle. Before the material is heat set, it should be thoroughly washed to remove spin preparations, lubricants, sizing agents and impurities as these are likely to be burned in drying heat setting making their removal difficult.

### **Filling and stiffening finishes**

A stiffening effect is desirable in certain polyamides and polyester materials for petticoats, collar interlinings, etc., which can be done by reducing the mutual independence of structural element of fabric by polymer deposition on coating as a fine film. Some special urea-formaldehyde pre-condensates have been found to be useful. Application of film-forming acrylates dispersions as well as latex rubber emulsions gives a fuller effect with sufficient stiffness.

When softening is desired, it can be achieved by reducing the frictional coefficient between structural elements of fabrics, cationic long chain fatty derivatives and silicones may be used in conjunction with polymer forming agents. Recently some cationic softeners having reactive functional groups have been developed to get better fastness of finish.



### **Hydrophilic finishes**

On account of lower moisture and water absorption capacity, synthetic fibre materials become uncomfortable in contact with skin. Certain products based on modified (oxy-ethylated) polyamides make the wearing more pleasant by reducing the cohesion of water so that it spreads over a larger area and thus evaporates more rapidly.

### **Anti-pilling finishes**

Pilling is an unpleasant phenomenon associated with spun yarn fabrics especially when they contain synthetics. Synthetic fibres are more readily brought to the surface of fabric due to their smooth surface and circular cross section. Due to their higher tensile strength and abrasion-resistance, the pills formed take a long time to be abraded by wear. With knit fabric, two more problems occur, viz., "picking" where the abrasion individual fibres work themselves out of yarn loops onto the surface when garment catches a pointed or rough object. These two effects are more predominant if the weave is more open and yarn is bulkier.

The finish has to cement the fibres within the yarn so that their dragging becomes more difficult, without affecting the handle adversely. Special polymer formers of acrylate type or latex type are useful but should form a film of good cohesion, should be hydrophilic and should not form a tacky surface. Padding in polymer dispersion or emulsion followed by drying at moderate temperature gives the desired effect.

### **Permanent anti-static effects**

Anti-static effective chemicals are largely chemically inert and require thermosol or heat treatment for fixing on polyester goods. Agents of polyether type are found to be useful but should not affect the dye-equilibrium on fibre otherwise the rubbing fastness is impaired. In general, thermosolable anti-static agents also have a good soil release action which is as permanent as the anti-static effect. Anti-static finishes may also be of polyamide type being curable at moderate temperatures.

### **Fire resistant or flame retardant finish**

This helps to reduce flammability. With synthetic fibre, which, melt on igniting by a flame, the molten mass is itself quite dangerous and a fire resistant treatment is desirable for certain end uses. Polyester fabrics can be made flame-resistant by treatment with an aqueous emulsion of xylene soluble 2, 3-dibromopropyl phosphate in a pad-cure sequence. A

semi-permanent effect can be produced by treating with a mixture of ammonium bromide and brominated phosphoric acid esters.

Polyamides can be made flame-resistant by applying phosphorous tri-chloride ammonia reaction products or ammonium bromide with amino-triazine condensation products. For acrylics, tris-dibromopropyl-phosphate as well as 2-cyanoethyl-tetramethyl-di-amino-phosphate is quite effective.

## SENIOR SIX TERM TWO

### Topic 7: Colour Application

Duration: 10 Periods

#### General Overview

There are various methods of introducing colour into fabrics. Some of the methods include dyeing, printing and batik. This topic focuses on different ways of introducing colour to fabrics. It highlights different dyes and their principles of application. It also gives the advantages and disadvantages of each type of dye. The procedures of these methods of colour application have been dealt with.

#### General Objective

By the end of the topic, the learner should be able to introduce colour into fabric using various techniques.

#### Sub-Topic 1: Introducing Dye into Fabric

Specific Objective	Content
The learner should be able to describe the different methods of introducing colour to fabric.	<ul style="list-style-type: none"> <li>• Different methods of introducing colour into fabrics:               <ul style="list-style-type: none"> <li>- Dyeing:                   <ul style="list-style-type: none"> <li>○ tie and dye</li> <li>○ batik</li> </ul> </li> <li>- Printing:                   <ul style="list-style-type: none"> <li>○ block printing</li> <li>○ roller printing</li> <li>○ screen printing</li> </ul> </li> </ul> </li> </ul>

#### Methodology

- Through brainstorming and guided discussion, learners state different methods of introducing colour into fabrics.
- Through text reading, think-pair share and brainstorming, guide learners to explain the meaning of the terms dye and colour and classify dyes into their specific categories.
- Through guided discussion, learners state the principles and outline the stages of dyeing.

- Through demonstration, let learners introduce colour into fabrics using different methods.
- Through text reading, let learners explain the meaning of colourfastness.
- Through demonstration and whole class discussion, let learners determine the colour fastness in different fabrics.

### Teaching and Learning Aids

- Samples of fabric
- Screens
- Dyes
- Textbooks

### Assessment Strategy

- Learners list the various methods of introducing colour into fabric by using a sample of fabric.

### Sub-Topic 2: Classification of Dyes

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• explain the meaning of the terms used in dyeing.</li><li>• classify dyes generally.</li><li>• classify dyes into specific categories.</li></ul>	<ul style="list-style-type: none"><li>• Meaning of:<ul style="list-style-type: none"><li>- dye</li><li>- colour</li></ul></li><li>• General classification of dyes:<ul style="list-style-type: none"><li>- natural</li><li>- artificial</li></ul></li><li>• Specific classification of dyes:<ul style="list-style-type: none"><li>- hue</li><li>- chemical</li><li>- method of application and fibre affinity (acid dyes, basic dyes, direct dyes, mordant dyes, sulphur dyes, azoic dyes, vat dyes, disperse dyes, reactive dyes)</li></ul></li></ul>

## Methodology

- Through text reading, guide learners to explain the meaning of dyes and colour.
- Using think-pair share, let learners discuss their explanations in pairs.
- Ask learners to collect colour objects from the environment and display them.
- Using brainstorming, let learners distinguish between natural and artificial dyes.

## Teaching/Learning Aids

- Natural colours
- Artificial colours

## Assessment Strategy

- Learners write down the different types of dyes used in colour application

## Additional Notes

- A dye is a substance used to colour fabric. It can be natural or artificial.
- Colour is that aspect of things that is caused by differing qualities of the light reflected or emitted by them, definable in terms of the observer or of the light, as the characteristics of light by which the individual is made aware of objects or light sources through the receptors of the eye, described in terms of dominant wavelength, luminance, and purity.

## Sub-Topic 3: Introducing Colour into Fabric

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• state the principles of dyeing.</li> <li>• outline the different stages of dyeing.</li> <li>• decorate fabrics by dyeing.</li> </ul>	<ul style="list-style-type: none"> <li>• Principles/steps of dyeing</li> <li>• Stages of dyeing:               <ul style="list-style-type: none"> <li>- fibre dyeing</li> <li>- solution dyeing</li> <li>- yarn dyeing</li> <li>- piece dyeing</li> </ul> </li> <li>• Dyeing:               <ul style="list-style-type: none"> <li>- tie and dye</li> </ul> </li> </ul>

Specific Objectives	Content
<ul style="list-style-type: none"><li>• explain the meaning of printing.</li><li>• explain the different methods of printing.</li><li>• decorate fabrics by printing.</li></ul>	<ul style="list-style-type: none"><li>- batik</li><li>• Definition of printing</li><li>• Methods of printing:<ul style="list-style-type: none"><li>- screen printing</li><li>- block printing</li><li>- roller printing</li></ul></li></ul>

### Methodology

- Through guided discussion, guide learners to analyse the principles of dyeing and stages of dye application.
- Through demonstration, visualisation in individual participation and presentation (VIPP), and task-based learning, guide learners to introduce dye in fabrics using tie and dye and batik methods.
- Learners display their dyed work.
- Through discussion, guide learners to explain the meaning of printing and the different methods of printing.
- Through demonstration, VIPP and task-based learning, learners decorate fabrics by block printing, roller printing and screen printing.

### Teaching/Learning Aids

- Fabric
- Dyes
- Textbooks
- Saucepan
- Salt
- Printing screen
- Heat source
- Blocks
- Rollers
- Iron and ironing boards
- Gloves
- Wooden mixer
- Hot water and wax

## Assessment Strategies

- Learners write down the principles used in colour application
- Learners write the procedure of the following methods of colour application:
  - dyeing
  - printing
  - batik

## Sub- Topic 4: Colour Fastness

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• explain the meaning of colour fastness.</li> <li>• test for colour fastness in fabrics.</li> <li>• explain the factors that determine colour fastness.</li> </ul>	<ul style="list-style-type: none"> <li>• Meaning of colour fastness</li> <li>• Tests to determine colour fastness</li> <li>• Factors that determine colour fastness in a fabric</li> </ul>

## Methodology

- Use text reading and whole class discussion to guide the learners explain the meaning of colour fastness and the factors that determine colour fastness.
- Demonstrate various tests to determine colour fastness in a fabric.
- Through group work, guide learners to imitate the tests demonstrated and display the samples from the group work for comments.

## Teaching/Learning Aids

- Heat source
- Water
- Flat iron
- Lemon
- Black pepper
- Fabrics with colour
- Ammonia

## Assessment Strategies

- Learners write the meaning of colour fastness
- Learners write the factors that determine colour fastness
- Learners write the materials and tools used in testing for colour fastness
- Learners demonstrate the procedure followed when testing and caring for colour fastness

## Additional Notes

### Printing process

Applying coloured patterns and designs to decorate a finished fabric is called printing. In a proper printed fabric, the colour is affixed to the fibre, so that it may not be affected by washing and friction. Whether a fabric is dyed or printed can be known by examining the outline of the design. On a printed fabric, the outline of a design is sharply defined on the outer side. The designs generally do not penetrate to the back of the cloth. However, the design may show up on the reverse side of transparently thin fabrics. These fabrics may be confused with the woven designs where yarn dyed warp and filling are used. If the design is printed on such a fabric, the yarns will show some areas on which colour is not equally distributed.

The dyes used for printing mostly include vat, reactive and disperse colours which have good fastness properties. The pigments, which are not truly dyes, are also used extensively for printing. These colours are fixed to the fibre through resins that are very resistant to laundering or dry cleaning. Pigments are among the fastest known colours and are effective for light to medium shades. If used for applying dark colours, they may crock or rub off. Improved resins, better pigments or more effective anti-crock agents must be used to solve this problem. Cheap prints are made from basic colours mixed with tartar emetic and tannic acid but they are not acceptable in today's market.

For cotton printing, vat and reactive dyes are generally used. Silk is usually printed with acid colours. Wool is printed with acid or chrome dyes but before printing, it is treated with chlorine to make it more receptive to colours. Man-made fibres are generally printed with disperse and cationic dyes.

### Methods of printing

Three different approaches or techniques are prevalent for printing colour on a fabric: direct, discharge and resist.



### ***Direct printing***

It is the most common approach to apply a colour pattern on fabric. It can be done on white or a coloured fabric. If done on coloured fabric, it is known as overprinting. The desired pattern is produced by imprinting dye on the fabric in a paste form. To prepare the print paste, a thickening agent is added to a limited amount of water and dye is dissolved in it. Earlier corn starch was preferred as a thickening agent for cotton printing. Nowadays gums or alginates derived from seaweed are preferred because they are easier to wash out, do not themselves absorb any colour and allow better penetration of colour. Most pigment printing is done without thickeners as the mixing up of resins, solvents and water itself produces thickening.

### ***Discharge printing***

In this approach, the fabric is dyed in piece and then it is printed with a chemical that destroys the colour in the designed areas. Sometimes, the base colour is removed and another colour is printed in its place. The printed fabric is steamed and then thoroughly washed. This approach is on decline these days.

### ***Resist printing***

In this technique, a resist paste is imprinted on the fabric and then it is dyed. The dye affects only those parts that are not covered by the resist paste. After dyeing, the resist paste is removed leaving a pattern on a dark background.

There are various methods of printing in which one of the above three techniques is used - block printing, roller printing, duplex printing, stencil printing, screen printing, transfer printing, blotch printing, jet spray printing, electrostatic printing, photo printing, differential printing, warp printing, batik dyeing, tie dyeing, airbrush (spray) painting and digital printing.

### ***Block printing***

The designs are carved on a wooden or metal block and the paste dyestuff is applied to the design on the face of the block. The block is pressed down firmly by hand on the surface of the fabric.

### ***Roller printing***

In this machine counterpart of block printing, engraved copper cylinders or rollers are used in place of hand-carved blocks. With each revolution

of the roller, a repeat of the design is printed. The printed cloth is passed into a drying and then a steam chamber where the moisture and heat sets the dye.

### ***Duplex printing***

Printing is done on both sides of the fabric either through roller printing machine in two operations or a duplex printing machine in a single operation.

### ***Screen printing***

It is done either with flat or cylindrical screens made of silk threads, nylon, polyester, vinyon or metal. The printing paste or dye is poured on the screen and forced through its unblocked areas onto the fabric. Based on the type of the screen used, it is known as 'Flat Screen Printing' or 'Rotary Screen Printing'.

### ***Stencil printing***

The design is first cut in cardboard, wood or metal. The stencils may have fine delicate designs or large spaces through which colour is applied on the fabric. Its use is limited due to high costs involved.

### ***Transfer printing***

The design on a paper is transferred to a fabric by vaporisation. There are two main processes for this - dry heat transfer printing and wet heat transfer printing. In conventional heat transfer printing, an electrically heated cylinder is used that presses a fabric against a printed paper placed on a heat resistant blanket. In infrared heat vacuum transfer printing, the transfer paper and fabric are passed between infrared heaters and a perforated cylinder which are protected from excessive heat by a shield. The wet heat transfer printing uses heat in a wet atmosphere for vaporising the dye pattern from paper to fabric.

### ***Blotch printing***

It is a direct printing technique where the background colour and the design are both printed onto a white fabric usually in a one operation. Any of the methods like block, roller or screen may be used.

***Airbrush (spray) painting***

Designs may be hand painted on fabric or the dye may be applied with a mechanised airbrush which blows or sprays colour on the fabric.

***Electrostatic printing***

A dye-resin mixture is spread on a screen bearing the design and the fabric is passed into an electrostatic field under the screen. The dye-resin mixture is pulled by the electrostatic field through the pattern area onto the fabric.

***Photo printing***

The fabric is coated with a chemical that is sensitive to light and then any photograph may be printed on it.

***Differential printing***

It is a technique of printing tufted material made of yarns having different dyeing properties such as carpets. Up to a ten colour effect is possible by careful selection of yarns, dyestuffs and pattern.

***Warp printing***

It is roller printing applied to warp yarns before they are woven into fabric.

***Tie dyeing***

Firm knots are tied in the cloth before it is immersed in a dye. The outside of the immersed portion is dyed but the inside is not penetrated. There are various forms of tie dyeing like *ikat* dyeing where bundles of warp and/ or weft yarns are tie dyed prior to their weaving. In *plangi* dyeing, the gathered, folded or rolled fabric is usually held with stitching to form specific patterns.

***Batik dyeing***

It is a resist dyeing process. Designs are made with wax on a fabric which is then immersed in a dye. The unwaxed portion absorbs the colour.

***Jet spray printing***

Designs are imparted to fabrics by spraying colours in a controlled manner through nozzles.

***Digital printing***

In this form of printing, micro-sized droplets of dye are placed onto the fabric through an ink-jet print-head. The digital image file has the data to control the droplet output so that the image quality and colour control may be achieved. This is the latest development in textile printing and is expanding very fast.

## SENIOR SIX TERM THREE

### Topic 8: Care of Fabrics

Duration: 19 Periods

#### General Overview

Fabrics are attained from different fibres and each fibre has different characteristics which cause it to respond uniquely to laundry agents and methods. Proper care of fabrics is a way of maintaining and prolonging the life of garments.

Specific laundry and dry cleaning processes are employed when caring for different fabrics and garments, and this calls for an understanding of the chemical compositions of different soaps, detergents, stain removers and dry cleaning reagents.

This topic equips the learners with knowledge about the composition of laundry agents and their effect on different fabrics, the different methods employed in laundering fabrics; and the laundry agents and methods best suited for a given fabric so as to prolong the life of articles made from various fabrics. This topic also introduces learners to the understanding and interpretation of care labels on garments. Already made garments come with care labels that specify the laundry handling of garments during laundry processes. It is important for the learners to also understand and interpret care labels on garments appropriately.

Dry cleaning is the cleaning of fabrics and textiles using a chemical solvent. The advantages of these solvents over water is that they do not react with the fibres of the fabric or with dye stuffs in the same way as water does, and many commonly applied fabric finishes are not soluble in them.

#### General Objective

By the end of this topic, the learner should use appropriate methods to care for different types of fabrics.

#### Sub-Topic 1: Laundry Agents

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>state the different types of laundry agents.</li> </ul>	<ul style="list-style-type: none"> <li>Types of laundry agents:               <ul style="list-style-type: none"> <li>water</li> <li>soap</li> <li>detergents</li> <li>fabrics softeners</li> </ul> </li> </ul>

Specific Objectives	Content
<ul style="list-style-type: none"> <li>differentiate laundry agents.</li> <li>define soap.</li> <li>describe the different types of soap used in laundry.</li> <li>describe the qualities and characteristics of a good soap.</li> <li>explain the advantages and disadvantages of laundry soap.</li> <li>describe the cleansing action of soap.</li> <li>store soap properly.</li> <li>define soap-less detergents.</li> <li>classify soap-less detergents.</li> <li>explain the properties of soap-less detergents.</li> <li>explain the cleansing action of soap-less detergents.</li> <li>describe the advantages of soap-less detergents.</li> <li>describe the disadvantages of soap-less detergents.</li> <li>explain the uses of additives in soap-less detergents.</li> <li>differentiate between soaps and soap-less detergents.</li> </ul>	<ul style="list-style-type: none"> <li>stiffeners</li> <li>bleaches</li> <li>stain removers</li> <li>Water: <ul style="list-style-type: none"> <li>types of water (soft and hard)</li> <li>sources; types of hardness in water</li> </ul> </li> <li>Methods of softening hard water</li> <li>Characteristics of water as a laundry agent</li> <li>Advantages of soft water</li> <li>Definition of soap</li> <li>Types of soaps (soap flakes, soap powder, soap jelly and bar soap)</li> <li>Qualities/characteristics of a good laundry soap</li> <li>Advantages and disadvantages of laundry soap</li> <li>Cleansing action of soap</li> <li>Proper storage of soap</li> <li>Definition of soap-less detergents</li> <li>Classification of soap-less detergents</li> <li>Properties of good soap-less detergents</li> <li>Cleansing action</li> <li>Advantages of soap-less detergents</li> <li>Disadvantages of soap-less detergents.</li> <li>Additives in soap-less</li> </ul>

Specific Objectives	Content
<ul style="list-style-type: none"> <li>select the right detergents for cleansing fabrics.</li> </ul>	<p>detergents (builders, softeners, stabilizer, perfumes, dyes, whiteners)</p> <ul style="list-style-type: none"> <li>Difference between soap and soap-less detergents.</li> <li>Suitability of detergents for cleaning different fabrics.</li> </ul>
<ul style="list-style-type: none"> <li>explain the meaning of the term fabric conditioners.</li> <li>state the functions of fabric softeners.</li> <li>state importance of other cleaning agents.</li> </ul>	<ul style="list-style-type: none"> <li>Functions of stiffeners</li> <li>Types of stiffeners:             <ul style="list-style-type: none"> <li>starches: (powder, spray on)</li> <li>plastic stiffeners</li> <li>gum water (gum Arabic)</li> </ul> </li> <li>Bleaches:             <ul style="list-style-type: none"> <li>definition of bleaches</li> </ul> </li> <li>Classification of bleaches:             <ul style="list-style-type: none"> <li>oxidising bleaches: hypochlorite bleach, hydrogen peroxide</li> <li>reducing bleaches: sulphur dioxide.</li> </ul> </li> <li>Functions of bleaches</li> <li>Selection and use of bleaches in laundry -action of bleaches on fabrics</li> <li>Fabric conditioners/softeners:             <ul style="list-style-type: none"> <li>meaning of the term fabric softeners</li> </ul> </li> <li>Functions of softeners</li> <li>Other cleaning agents:             <ul style="list-style-type: none"> <li>importance of other cleaning agents, for example, enzyme detergents, blue, borax optical brighteners, ammonia, etc</li> </ul> </li> </ul>

## Methodology

- Through text reading and brainstorming, guide learners to state the different types of laundry agents.
- Through text reading and group discussion learners:
  - differentiate between soft and hard water.
  - outline the methods of softening hard water.
  - list the advantages of soft water.
- Describe the characteristics of water as a laundry agent.
- Through think-pair share and group discussion, learners define soap and describe the different types of soap.
- Through brainstorming and demonstration, learners describe qualities of good laundry soap and the cleansing action of soap.
- Through think-pair share and group discussion, learners define and classify soap-less detergents.
- Through text reading, brainstorming, group discussion, and demonstration, learners explain cleansing action and describe properties, advantages and disadvantages of soap-less detergent and the use of additives.
- Using buzz groups and guided discussion, learners differentiate between soaps and soap-less detergents and select appropriate detergents for fabrics.
- Using text reading and demonstration, learners state the functions and list the types of stiffeners.
- Using text reading, learners define, classify and explain the functions of bleaches.
- Through demonstration, learners select and use bleaches appropriately.
- Using text reading and teacher guided discussions, learners explain and state the functions of fabric softeners.
- Through teacher guided discussions and demonstration, the learners state the importance of other cleaning agents.

## Activities of Assessment

- Learners :
  - state the different types of laundry agents.
  - differentiate between hard water and soft water.
  - outline methods of softening hard water.



- explain the characteristics of water and advantages of water as a laundry agent.
- define soap and state the different types of soap used in laundry.
- describe the qualities of a good soap.
- explain the cleansing action of soap and proper storage of soap.
- define and classify soap-less detergents.
- explain the properties of soap-less detergents and their cleansing action.
- describe the advantages and disadvantages of soap-less detergents.
- explain the uses of additives in soap-less detergents.
- differentiate between soaps and soap-less detergents.
- select the right detergents for cleansing fabrics.
- state the functions of stiffening agents and list the types of stiffeners.
- define and classify bleaches.
- state the functions of bleaches.
- select and use bleaches appropriately.
- explain the meaning of fabric conditioners / softeners and state their functions.

## Sub-Topic 2: Stain Removal

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• explain the term stain removal.</li> <li>• list the stain removing agents.</li> <li>• apply the rules for and principles of removing stains.</li> <li>• classify stains.</li> </ul> <ul style="list-style-type: none"> <li>• remove stains from fabrics appropriately.</li> </ul>	<ul style="list-style-type: none"> <li>• Meaning of the term stain removal</li> <li>• Stain removing agents</li> <li>• Rules for and principles of stain removal</li> <li>• Classification of stains:               <ul style="list-style-type: none"> <li>- animal/protein: egg, milk, blood perspiration</li> <li>- vegetable: coffee, tea, cocoa grass</li> <li>- mineral: rust, ink, dyes</li> <li>- miscellaneous: soot, grease, tar, wax</li> </ul> </li> <li>• Methods of stain removal</li> </ul>

## Methodology

- Using text reading and guided discussion, learners explain the term stain removal and list stain removal agents.
- Using guided discussion, learners list the rule followed when removing stains and classify stains.
- Using demonstration and task based learning, learners remove stains from garment articles.

## Teaching/Learning Aids

- Textbooks
- Stain removing agents
- Fabrics with different types of stains
- Basins
- Water

## Assessment Strategies

- Learners:
  - explain the term stain removal and state stain removal agents.
  - outline rules to follow when removing stains and classify stains.
  - list the different types of stains and their methods of removal.
  - remove different types of stains from fabrics using appropriate methods.

## Additional Notes

- A stain is a dirt or discoloration which may be present on a fabric but does not yield readily to normal washing methods.
- A stain remover is a laundry agent used to remove a stain. The agent is usually specific to the type of stain.
- Stain removing agents include solvents like benzene, petrol, alcohol, carbon tetrachloride, turpentine and others.

## Note

- Grease solvents must not be used on rubber garments, they tend to dissolve them).
- Stains can also be classified based on solubility of the stain, for example, water soluble stains; stains soluble in solvents other than water, and insoluble stains

### Sub-Topic 3: Laundry

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• define laundry.</li> <li>• describe laundry processes.</li> <li>• launder various articles.</li> </ul>	<ul style="list-style-type: none"> <li>• Definition of laundry</li> <li>• Laundry processes:               <ul style="list-style-type: none"> <li>- preparation</li> <li>- washing</li> <li>- drying</li> <li>- finishing</li> </ul> </li> <li>• Laundering different articles</li> </ul>

### Methodology

- Through text reading, learners define laundry and describe the processes.
- Through demonstration and group work, learners launder various articles.

### Teaching and Learning Aids

- Textbooks
- Laundry agents
- Fabrics of different types
- Basins
- Water

### Assessment Strategies

- Learners carry out the different laundry processes in steps.
- Learners finish their laundry.

### Additional Notes

- Laundering is applying a solvent and pressure to remove dirt from an article. The basic solvent used in laundering is water.
- Laundry processes include preparation (sorting, shaking, checking pockets, mending, soaking / steeping, stain removal), washing (by suction, friction, kneading, squeezing, rubbing, brushing), drying, finishing (pressing, ironing, starching)

**Note**

- Coloureds should not be soaked.
- Launder whites separately.
- Boil white cottons and linens that have been used by the sick, or are badly discoloured.
- Do not mix bleaching clothes with other articles.

**Sub-Topic 4: Dry Cleaning**

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• explain the term dry cleaning.</li><li>• outline dry cleaning agents commonly used in Uganda.</li><li>• describe the procedure followed when dry cleaning.</li><li>• explain the advantages and disadvantages of dry cleaning.</li></ul>	<ul style="list-style-type: none"><li>• Meaning of dry cleaning</li><li>• Dry cleaning agents:<ul style="list-style-type: none"><li>- acetic acid</li><li>- French chalk</li><li>- methylated spirit</li><li>- ethyl alcohol</li><li>- white spirit, salts of lemon</li><li>- perchloroethene</li></ul></li><li>• Procedure followed when dry cleaning</li><li>• Advantages and disadvantages of dry cleaning</li></ul>

**Methodology**

- Through text reading and brainstorming, learners explain the meaning of the term dry cleaning and outline the dry cleaning agents.
- Guide learners to discuss the procedure and explain the advantages and disadvantages of dry cleaning.

**Teaching/Learning Aids**

- Drying cleaning agents

**Activities of Assessment**

- Learners:
  - explain the meaning of the term dry cleaning.
  - list guidelines for dry cleaning.
  - state advantages and disadvantages of dry cleaning.

## Additional Notes

- Procedure of dry cleaning:
  - Shake the garment.
  - Put solvent in a container large enough to hold the garment.
  - Immerse garment in solvent and clean by squeezing gently.
  - Squeeze out and hang out to dry in open air.
  - The garment dries quickly, so it may be pressed immediately.
  - Leave the solvent to settle and drain off and then store in a container with a lid. After draining, there will be sediment at the bottom representing the amount of dirt particles removed.

## Sub-Topic 5: Care Labels

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• explain the meaning of care labels.</li> <li>• explain the importance of care labels.</li> <li>• interpret the meaning of the symbols on care labels.</li> <li>• classify symbols used in care labels.</li> <li>• create care labels for different garments.</li> </ul>	<ul style="list-style-type: none"> <li>• Meaning of care labels</li> <li>• Importance of care labels</li> <li>• Meaning of symbols</li> <li>• Classification of symbols:               <ul style="list-style-type: none"> <li>- ironing</li> <li>- dry cleaning</li> <li>- bleaching</li> <li>- washing</li> <li>- drying</li> </ul> </li> <li>• Making care labels</li> </ul>

## Methodology

- Using textbooks, learners explain the term care labels and illustrate care labels.
- Using guided discussion, help the learners to explain the importance, interpret and classify care labels.
- Through group work, guide learners to create care labels.

## Teaching/Learning Aids

- Care label swatches

### **Assessment Strategies**

- Learners explain the meaning and importance of the term care labels.
- Learners make care labels.

## SECTION B: CLOTHING TECHNOLOGY

### SENIOR FIVE: TERM TWO

#### **Topic 9: Introduction to Clothing Technology**

Duration: 8 Periods

##### **General Overview**

This topic focuses on the historical background and the development of clothing in Uganda. It gives an overview of fashion in Uganda, clearly pointing out different fashions related to different cultures. It also looks at the influence of modernisation on traditional costumes.

The study of history of clothing makes us appreciate its importance and gives us a better understanding of clothing. This topic also handles the reasons for clothing, terminologies used in the study and the development of the fashion industry. The history of dress is more than a story of changing fashions. It reveals other aspects of history like civilization, politics and the changing status of men and women in different societies. Clothing of different societies in different eras is also discussed in this topic.

##### **General Objectives**

By the end of the topic, the learner should be able to:

- explain the importance of clothing.
- describe fashion trends.

**Sub-Topic 1: Historical Background of Clothing**

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• define terms used in clothing technology.</li><li>• explain the importance of clothing technology.</li><li>• explain the reasons for wearing clothes.</li><li>• describe the historical background of clothing.</li><li>• draw/collect pictures of national costumes according to regions.</li></ul>	<ul style="list-style-type: none"><li>• Definition of terms used in clothing technology:<ul style="list-style-type: none"><li>- draped garments</li><li>- tailored garments</li><li>- bodice, yoke, placket, lapel, peplum, godet, cowl, peters ham, trimmings, accessories</li></ul></li><li>• Importance of studying clothing technology</li><li>• Reasons for wearing clothes</li><li>• Clothing of early man in Uganda</li></ul>

**Methodology**

- Using whole class discussion, guide learners to define the terms used in clothing and explain the importance of clothing.
- Using guided discussions, let learners explain the factors that influenced development of clothing in Uganda and the relationship between clothing and culture.
- Using text reading and guided discussion, guide learners to explain the development of fashion.
- Using group discussions, guide learners to explain the factors that influence fashion.

**Teaching/Learning Aids**

- Illustrations of the early man fashion, textbooks

**Assessment Strategies**

- Give a written exercise on the following:
  - definition of clothing
  - reasons for studying clothing
  - reasons for wearing clothes



- type of clothes that the early man used

### Additional Notes

- The following are some of the terms that should be well defined:
  - draped garments
  - tailored garments
  - a bodice, skirt, yoke, placket, lapel, peplum, godet, cowl, peters ham, trimmings, accessories
- Importance of studying clothing:
  - helps one to know the history of other aspects of clothing
  - to learn how to care for our clothes
  - to develop a career
  - for purposes of discovery
  - to acquire and perfect skills in construction of clothes
- Reasons why we wear clothes:
  - for protection (from harsh weather, occupational hazards)
  - for identify (profession, culture)
  - for status
  - modesty / decency
  - adamant / beauty

### Sub-Topic 2: Development of Clothing in Uganda

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• explain the factors that influenced the development of clothing in Uganda.</li> <li>• explain the relationship between clothing and culture.</li> </ul>	<ul style="list-style-type: none"> <li>• Evolution of clothing in Uganda.</li> <li>• Clothing and culture: evolution of bark cloth</li> </ul>

### Methodology

- Let learners read text individually about clothes for different cultures.
- Guide learners to form groups and discuss clothing in different cultures and present their findings to the class.
- Wrap up with particular reference to the Ugandan culture.

### Teaching/Learning Aids

- Pictures of fashions, illustrations

### Assessment Strategies

- Give a written test on the types of clothing used by different cultures in Uganda.
- Ask learners to make cut outs of contemporary clothing in Uganda worn by different ethnic groups.

### Additional Notes

- Factors that influenced the development of clothing in Uganda include:
  - the coming of Arab traders and other foreigners
  - the coming of missionaries
  - introduction of cotton growing
  - the economic boom after the 2<sup>nd</sup> World War
  - the introduction of the hydro electric power (opened in 1954 by Queen Elizabeth II)
- Clothing and culture: The way we decorate our bodies, what we wear and how we wear is part of our culture. Over time, many cultures have developed their own distinctive clothing style or national costume. For example, the Indian Sari, Japanese Kimono, the Hawaiian muumuu and the Arabian kibir. In Uganda, the Baganda have the “gomesi”; the Banyankole have the “mushanana”; the Batooro have the “suuka”, the Acholis have the “kikoyi”.

### Sub-Topic 3: Fashion Industry

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• define key terms used in fashion.</li><li>• explain the development of fashion.</li><li>• explain the mass production of clothes.</li></ul>	<ul style="list-style-type: none"><li>• Introduction to fashion</li><li>• Definition of terms used in fashion, for example, fads, style, couture, classics</li><li>• Development of fashion in Uganda - fashion cycle</li><li>• Mass production of clothes</li></ul>

## Methodology

- Guide learners to individually define the key terms.
- Using text reading and group work, guide learners to discuss the following:
  - different stages of fashion cycle
  - contemporary fashions in Uganda
  - mass production of clothes

## Teaching/Learning Aids

- Pictures of fashions, illustrations

## Assessment Strategies

- Learners make notes on the definition of terms and development of fashion.
- Learners make cut outs of different fashions, stick them on manila papers and hang them in class.

## Additional Notes

- Fashion is described as the particular style that is current and popular at a given period of time.
- Style refers to the characteristic features in a garment that distinguishes it from others. For example, straight A line and circular are all skirt styles.
- Fad is a style that becomes popular for a short period of time and then disappears. It is usually accepted by a small group of people.
- Classic styles are styles that stay in fashion for a long time. They are ageless and timeless.
- Couture is the art of sewing.
- Couturier is a dress designer often attached to a fashion house.
- Haute couture refers to high fashion.
- Fashion cycle explains the stages through which fashion goes from time of introduction to the time it disappears from the market. Stages of the fashion cycle include: introduction, growth, maturity and decline.

**Sub-Topic 4: Factors that Influence Fashion**

Specific Objective	Content
The learner should be able to explain the factors that influence fashion.	<ul style="list-style-type: none"><li>Factors that influence fashion i.e. culture, technology, communication, political, social and religious</li></ul>

**Methodology**

- Through text reading, let learners individually outline the factors that influence fashion.
- Using think-pair-share, guide learners to discuss in pairs their findings.
- In pairs, learners share their findings with the class.

**Teaching/Learning Aids**

- Pictures of fashions, illustrations

**Assessment Strategies**

- Give an exercise on the factors that influence clothing and fashion.

**Additional Notes**

- Factors that influence fashion include:
  - Trade: As societies traded goods with each other, they also exchanged ideas that influenced their clothing.
  - Politics and power: For many centuries, kings, queens and other royals were the style setters. They could afford the luxurious fashions made by tailors and dressmakers.
  - Religion: Clothing can be an expression of religious beliefs e.g. the Hijab - attire for Muslim women.
  - Technology: From the time of the industrial revolution, invention of sewing machines and other accessories and also the discovery of synthetic fibres has had a great impact on fashion. It has led to the mass production of good quality garments.
  - Improvement on communication and transport has eased travel and access to new information.
  - Improvement in the economy has led to an increase in the number of designers.

## Topic 10: Principles and Elements of Design

Duration: 3 Periods

### General Overview

Good design in garment construction involves careful planning and use of elements and design and their principles. This topic focuses on the application of the elements and principles of design in garment construction. Consumer advice in the buying of garments is also discussed. The topic also equips the learner with knowledge on elements and principles of design which enables them to create and choose suitable styles for different body figures.

### General Objective

By the end of the topic, the learner should be able to apply elements and principles of design in selection and construction of garments for different purposes.

### Sub-Topic 1: Elements of Design

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>distinguish between elements and principles of design.</li> <li>apply the elements of design in garment construction.</li> </ul>	Definition of elements and principles of design <ul style="list-style-type: none"> <li>Elements of design:               <ul style="list-style-type: none"> <li>colour</li> <li>texture</li> <li>line</li> <li>shape</li> </ul> </li> </ul>

### Methodology

- Through brainstorming, guide learners to distinguish between elements and principles of design.
- Through guided discussion, guide learners to apply the principles of design in garment construction.

### Assessment Strategies

- Give an assignment to draw the colour wheel and illustrate the different colour schemes.

## Sub-Topic 2: Principles of Design

Specific Objective	Content
The learner should be able to apply the principles of design in garment construction.	<ul style="list-style-type: none"><li>• Principles of design:<ul style="list-style-type: none"><li>- emphasis</li><li>- proportion</li><li>- balance</li><li>- harmony/unity</li><li>- rhythm</li></ul></li></ul>

### Methodology

- Through individual tasks, learners illustrate the application of the different principles of design (draw figures).
- Learners present their drawing for class discussion.
- Wrap up by encouraging learners to outline the principles of design.

### Assessment Strategies

- Learners make notes on the principles of design.
- Give a written exercise on the use of different lines, shapes, colour and textures in garment construction.

## Topic 11: Selection of Fabrics Suitable for Different Services

Duration: 10 Periods

### General Overview

This topic provides a guide to consumers regarding the selection of fabrics for different purposes. It provides learners with consumer advice and information and gives the factors affecting choice of clothing for different functions. It equips the learners with guidelines for wise buying of garments and household linen.

### General Objective

By the end of the topic, the learner should be able to select suitable fabrics for garments and household linen.

### Sub-Topic 1: Choice of Fabrics Suitable for Garments

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>state the factors to consider when choosing fabrics for garment construction.</li> <li>identify qualities of a well made garment.</li> <li>analyse the factors to consider when choosing garments.</li> </ul>	<ul style="list-style-type: none"> <li>Factors to consider in the selection of fabrics for garment construction:               <ul style="list-style-type: none"> <li>colour</li> <li>texture</li> <li>design</li> <li>age of user</li> <li>weather</li> <li>occasion</li> <li>weight</li> <li>weave</li> <li>washability</li> <li>ease of handling</li> <li>figure types</li> </ul> </li> <li>Garments:               <ul style="list-style-type: none"> <li>qualities of a well made garment</li> <li>factors to consider when choosing a well made garment</li> </ul> </li> </ul>

**Methodology**

- Through brainstorming, guide learners to state the factors to consider when choosing garments.
- Through guided discussions, let learners identify the qualities of a well made garment.
- Through brainstorming, guide learners to analyse the factors to consider when choosing garments.
- Through whole class discussion, guide learners to identify different types of linen and the factors to consider when choosing household linen.
- Through brainstorming, guide learners to describe the criteria used in wise buying and explain sources of consumer information.
- Through group discussions, guide learners to define wardrobe and explain the points to consider when planning a wardrobe.
- Through text reading and demonstration, learners describe and carry out the care and maintenance of clothes.

**Teaching/Learning Aids**

- Pictures showing different figures

**Assessment Strategies**

- Give an exercise on illustration of figure types
- Give a test on the factors that determine the choice of fabrics for garments

**Additional Notes**

- Qualities of a well made garment:
  - Seams should be even in width and well neatened
  - Elements of design should be well balanced
  - It should be properly / adequately enhanced
  - It should be fitting the size
  - It should drape well
- Factors to consider when choosing garments:
  - occasion
  - age of the wearer
  - style
  - colour and texture
  - figure type



- Figure types:
  - tall and slender
  - tall and too thin
  - tall and heavy
  - short and slender
  - short and plump
  - hip – heavy
  - small bust
  - low – full bust
  - thick rib cage
  - short -waist
  - long-waist
  - round shoulders
  - narrow shoulders
  - short neck
  - long neck
  - prominent abdomen

## Sub-Topic 2: Household Linen

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• identify different types of household linen.</li> <li>• explain factors that influence choice of fabrics for household linen.</li> </ul>	<ul style="list-style-type: none"> <li>• Types of household linen:               <ul style="list-style-type: none"> <li>- draperies</li> <li>- beddings</li> <li>- towels</li> <li>- kitchen linen</li> <li>- table linen</li> <li>- loose covers</li> </ul> </li> <li>• Factors to consider when selecting fabrics for household linen</li> </ul>

## Methodology

- Display various household linen for learners to observe.

- Guide learners to discuss the factors that influence the choice of household linen.
- Wrap up the discussion by supplementing on the factors that influence the choice of household articles.

### Teaching/Learning Aids

- Samples of household linen
- Pictures
- Magazines

### Assessment Strategies

- Learners outline different household linen in their books and compare with what they have at home.
- Give an exercise on factors that influence choice of fabrics for household linen.

### Sub-Topic 3: Consumer Information

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• describe the criteria that determines wise buying.</li><li>• explain the sources of consumer information.</li></ul>	<ul style="list-style-type: none"><li>• Points to consider in wise buying</li><li>• Sources of consumer information</li></ul>

### Methodology

- Learners individually write down the definition of the term consumer.
- Through think-pair share, learners discuss and share their findings with the rest of the class.
- Through group work and text reading, learners discuss the importance of consumer education, sources of consumer education and principles of wise buying.

### Teaching/Learning Aids

- Cut outs from newspapers and magazines

## Assessment Strategies

- Give written exercises on the importance of wise buying, sources of consumer information and principles of wise buying.

## Additional Notes

- Points to consider in wise buying:
  - income level
  - prices
  - substitute goods
  - complementary products e.g. shoe and shoe polish
  - available time and energy
  - availability of product within a given locality
  - the rural and urban set up
  - the age of the family
  - education
  - change in customs and traditions
  - social status
  - advertisement
  - newspapers
  - magazines
  - knowledge of the principles of wise buying
- Sources of information for the consumer:
  - mass media e.g. radios, TV, etc.
  - other consumers
  - government bodies e.g. Uganda National Bureau of Standards
  - journals
  - fashion shows
  - trade shows
- Importance of consumer education:
  - enables one to interpret and use advertisement wisely.
  - informs one on the importance of planning the family finances.
  - informs one on their rights as consumers so that they are not exploited by the manufacturer.

### Sub-Topic 4: Wardrobe Planning

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• define the term wardrobe.</li><li>• explain points one should consider when planning a wardrobe.</li></ul>	<ul style="list-style-type: none"><li>• Definition of wardrobe</li><li>• Points to consider when planning a wardrobe:<ul style="list-style-type: none"><li>- need</li><li>- activities of user</li><li>- versatility</li><li>- accessories one has</li><li>- care</li><li>- finance (economic status)</li></ul></li></ul>

### Methodology

- Through group discussion, guide learners to define the term wardrobe and give examples of items found in the wardrobe.
- Using group work, guide learners to discuss the factors to consider when planning a wardrobe.
- Wrap up the discussion by highlighting the importance of planning a wardrobe.

### Assessment Strategies

- Give learners an exercise to:
  - write the definition of wardrobe in their books.
  - outline the factors that determine wardrobe planning.
  - explain the importance of planning a wardrobe.

### Sub-Topic 5: Care and Maintenance of Clothes

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• outline the general rules to consider in care of clothes.</li><li>• use different methods of repair in maintaining clothes.</li></ul>	<ul style="list-style-type: none"><li>• General rules to observe in care of clothes</li><li>• Methods of repairing clothes:<ul style="list-style-type: none"><li>- darning</li><li>- patching</li><li>- remodelling and renovations</li></ul></li></ul>

## **Methodology**

- Through brainstorming, let learners outline the rules to observe when caring for fabrics.
- Demonstrate the working of the different ways of repairing clothes.
- Wrap up by supplementing on the different methods of repair.

## **Teaching/Learning Aids**

- Torn socks and sweaters for repair
- Fabric pieces for working appliqué and calico patches

## **Assessment Strategies**

- Learners outline the rules to observe in care of garments
- Give a test on the different methods of repairing household linen.

## **Additional Notes**

- General rules to observe in the care of clothes:
  - hang clothes up when not in use.
  - protect them from the effects of perspiration.
  - launder them frequently.
  - clothes that cannot be laundered should be dry cleaned.
  - mend your clothes as soon as the damage is done.
  - press your clothes frequently.
  - protect from moths in the cupboards.
- Methods of repairing clothes: darning, patching, appliqué, use of gussets, remodelling and renovations

## SENIOR FIVE TERM THREE

**Topic 12: Aesthetic Value of Design**

Duration: 6 Periods

**General Overview**

Garments become more attractive when decorated and therefore more valuable. This topic deals with the aesthetic value of design in garment construction. It helps to equip the learner with knowledge on the importance of decoration as applied on garments and household articles. The topic introduces the learners to the various skills of adding value to articles through decoration. The equipment and materials used in the process of enhancement are also covered in this topic.

**General Objective**

By the end of this topic, the learner should be able to improve the value of garments by using designing skills.

**Sub-Topic 1: Equipment Used in Enhancement**

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• define the term enhancement.</li><li>• explain the importance of enhancement.</li><li>• describe different methods of enhancing garments.</li><li>• use the right equipment and materials in enhancement of garments.</li></ul>	<ul style="list-style-type: none"><li>• Definition of enhancement</li><li>• Importance of enhancement</li><li>• Methods of enhancement:<ul style="list-style-type: none"><li>- printing</li><li>- embroidery</li><li>- appliqué</li><li>- batik</li></ul></li><li>• Equipment and materials used in enhancement:<ul style="list-style-type: none"><li>- hoops</li><li>- motifs</li><li>- tapestry needles</li><li>- crewel needles</li><li>- templates</li><li>- screens</li><li>- rollers</li></ul></li></ul>

## **Methodology**

- Through brainstorming, task-based learning and buzz groups, guide learners to explain the importance of enhancement in garments.
- Through observation, learners identify equipment and materials used in enhancement.
- Demonstrate the use of different tools as learners observe.
- Guide learners to use the equipment in groups.
- Wrap up by giving precautions on the use of some equipment.

## **Teaching/Learning Aids**

- Hoop
- Fabric
- Embroidery
- Crewel needles
- Tapestry needles
- A4 pencil
- Carbon paper
- Motifs
- Dyes
- Wax
- Sewing thread
- Sewing ring
- Thimble
- Pictures
- Illustrations
- Fabric
- Real objects (realia)

## **Assessment Strategies**

- Learners write down the meaning of enhancement
- Learners list down the methods of enhancing garments
- Give a written exercise to learners to explain the importance of enhancing garments.
- Give a test on the functions and care of each equipment.

**Sub-Topic 2: Enhancing Household Articles**

Specific Objective	Content
The learner should be able to enhance household articles using different methods.	<ul style="list-style-type: none"><li>• Methods of enhancing household articles:<ul style="list-style-type: none"><li>- appliqué</li><li>- bead work</li><li>- quilting</li><li>- embroidery</li><li>- patchwork</li></ul></li></ul>

**Methodology**

- Through whole class discussion, guide learners to identify the different methods of enhancing household articles.
- Demonstrate the working of the methods mentioned.
- Guide learners to use the different methods of enhancement on household articles.
- Conclude by encouraging learners to continue practicing and assigning them a task to make a household article to portray a specific method of enhancement.

**Teaching/Learning Aids**

- Hoops
- Fabric
- Embroidery thread
- Crewel needle
- Tapestry needles
- Carbon paper
- Motifs
- Wax
- Sewing thread

**Assessment Strategies**

- Give written exercises where learners list the different methods of enhancement of household articles



## Topic 13: Equipment Used in Garment Construction

Duration: 12 Periods

### General Overview

Garment construction, like any other practical subject, involves the use of equipment. This topic deals with various types of equipment used in garment construction. Focus is placed on the classification, choice, use and care of different equipment. Special attention is drawn to the functions and management of different parts of sewing machines and its accessories. Knowledge on the type of equipment used in garment construction, their use, care and maintenance is important in garment construction. Included here also are the faults that occur during use and their remedies.

### General Objective

By the end of the topic, the learner should be able to use garment construction equipment appropriately.

### Sub-Topic 1: Garment Construction Equipment

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• categorise equipment according to function.</li> <li>• make the right choice of equipment.</li> <li>• use equipment according to</li> </ul>	<ul style="list-style-type: none"> <li>• Categories of garment construction equipment:               <ul style="list-style-type: none"> <li>- storage</li> <li>- cleaning</li> <li>- measuring</li> <li>- cutting out</li> <li>- sewing</li> <li>- fitting</li> <li>- pressing</li> <li>- enhancement</li> <li>- marking</li> </ul> </li> <li>• Choice of equipment - factors to consider when choosing the equipment</li> <li>• Function of different equipment used in garment construction</li> </ul>

Specific Objectives	Content
its. functions. <ul style="list-style-type: none"><li>• care for various types of equipment appropriately.</li></ul>	<ul style="list-style-type: none"><li>• Care of garment construction equipment in use and after use</li></ul>

### Methodology

- Through brainstorming and observation, guide learners to categorise garment construction equipment.
- Using textbook reading, whole class discussion and task-based learning, guide learners to make the right choice of equipment.
- Through demonstration and task-based learning, guide learners to use the various equipment according to their functions.
- Through text reading, discussion and demonstration, guide learners to care for garment construction equipment.
- Through observation, guide learners to identify the different types of machines.
- Get shopping catalogues from shops and ICT to display available equipment, pictures and manuals for learners to observe.
- Through task-based learning, group work and text reading, let learners study manuals, observe available equipment and discuss their suitability.
- Wrap up by supplementing on the right choice of equipment.
- Through text reading and whole class discussion, guide learners to explain the care of different types of equipment.
- Demonstrate the care of different types of equipment as learners observe.
- Learners practice the care of the sewing equipment.

### Teaching/Learning Aids

- Pictures of sewing equipment
- Samples of sewing equipment
- Relevant textbooks
- Manuals to some equipment
- Oils
- Brush
- Cleaning rug
- Charts

## Assessment Strategies

- Learners outline the equipment used in garment construction according to function.
- Learners make notes on the care for various sewing equipment

## Hint

- Encourage learners to observe safety and health precautions when caring for the equipment.

## Sub-Topic 2: Sewing Machine

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• identify different types of sewing machines.</li> <li>• describe the functions of various parts of a sewing machine.</li> <li>• describe the functions of sewing machine accessories.</li> <li>• clean sewing machines appropriately.</li> <li>• service sewing machines.</li> <li>• examine the rules followed when using sewing machines.</li> <li>• use the various sewing machines correctly.</li> <li>• identify the faults that occur during stitching.</li> <li>• explain their causes and remedies.</li> </ul>	<ul style="list-style-type: none"> <li>• Types of sewing machines</li> <li>• Functions of various parts of a sewing machine</li> <li>• Accessories/attachments of a sewing machine:               <ul style="list-style-type: none"> <li>- ruffler</li> <li>- binder</li> <li>- darning</li> <li>- piper, etc</li> </ul> </li> <li>• General cleaning</li> <li>• Machine servicing</li> <li>• General rules of using sewing machines</li> <li>• Working stitches using different sewing machines: straight, turning, corners, zigzag</li> <li>• Faults that occur when using a sewing machine, their causes and remedies</li> </ul>

## Methodology

- Display pictures of sewing machines and their accessories for learners to observe.

- Guide learners to discuss the functions of the various parts of a sewing machine and the accessories.
- Demonstrate the use of a sewing machine and the accessories.
- Guide learners to practice the use of a sewing machine and the accessories.
- Using demonstration and group work, guide learners to clean and service sewing machines.
- Through demonstration, guide the learners to work different stitches using various sewing machines.
- Guide learners to discover the faults that occur when using a sewing machine.
- Wrap up by reviewing the faults that occurred during stitching, their causes and remedies.

**Teaching/Learning Aids**

- Sewing machine
- Pieces of cloth
- Sewing machine attachments
- Sewing papers

**Assessment Strategies**

- Learners make notes on the types of sewing machines, accessories and the functions of the various parts.

## SENIOR SIX TERM ONE

### Topic 14: Basic Sewing Processes

Duration: 18 Periods

#### General Overview

A dress maker employs different processes to make a garment. These include stitches, seams, fastenings, openings and edge finishes. In this topic, the learner will be equipped with knowledge and skills needed to make and apply these processes during garment construction.

There are many stitches that can be used in sewing processes during garment construction. These stitches are broadly classified into temporary or permanent stitches. They have different uses but general rules for working them apply.

A seam is used for joining two or more pieces of materials together. There are various types of seams that can be used. These can be grouped into two classes: conspicuous seams and inconspicuous seams. Their choice is determined by the material being used; position of the seam; garment being made; shape of the seam.

#### General Objective

By the end of the topic, the learner should be able to apply the basic sewing processes in garment construction.

#### Sub-Topic 1: Stitches

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>define a stitch.</li> <li>classify stitches.</li> </ul>	<ul style="list-style-type: none"> <li>Definition of a stitch</li> <li>Classification:               <ul style="list-style-type: none"> <li>temporary:                   <ul style="list-style-type: none"> <li>even tacking</li> <li>long and short tacking</li> <li>tailor's tacking</li> <li>diagonal tacking</li> <li>tailor's marking</li> </ul> </li> <li>permanent:                   <ul style="list-style-type: none"> <li>joining</li> <li>neatening</li> <li>decorative</li> <li>embroidery</li> </ul> </li> </ul> </li> </ul>

Specific Objectives	Content
<ul style="list-style-type: none"><li>analyse the rules to be followed when working stitches.</li><li>demonstrate the uses of each stitch applying the rules.</li><li>work different stitches.</li></ul>	<ul style="list-style-type: none"><li>General rules for working stitches</li><li>Uses of different stitches</li><li>Working different stitches</li></ul>

### Methodology

- Through observation, guide learners to define a stitch and classify stitches.
- Through brainstorming, analyse the rules followed when working stitches.
- Through demonstration and task-based learning, guide learners to work out different stitches and identify where they are commonly used.

### Teaching/Learning Aids

- Pieces of cloth
- Assorted sewing thread, embroidery thread
- Assorted hand needles
- Manila cards
- Markers
- Pairs of scissors

### Assessment Strategies

- Learners make an album of temporary and permanent stitches
- Learners discuss in groups where the different stitches can be applied
- Learners make a tray cloth and apply embroidery stitches
- With the use of diagrams, learners describe the working of:
  - temporary stitches
  - joining stitches
  - neatening stitches
  - embroidery stitches

### Sub-Topic 2: Seams

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>define a seam.</li></ul>	<ul style="list-style-type: none"><li>Definition of a seam</li></ul>

Specific Objectives	Content
<ul style="list-style-type: none"> <li>identify different types of seams and the methods of neatening each type.</li> <li>choose and use seams appropriately.</li> <li>apply the rules to be followed when working seams.</li> <li>work different seams correctly.</li> </ul>	<ul style="list-style-type: none"> <li>Types of seams:               <ul style="list-style-type: none"> <li>plain seam and methods of neatening</li> <li>fell seams (run and fell, machine)</li> <li>French seam</li> <li>overlaid seam</li> </ul> </li> <li>Points to consider when choosing and using seams</li> <li>General rules for working seams</li> <li>Methods of working seams; common faults and their remedies</li> </ul>

### Methodology

- Through think-pair share and group discussion, guide learners to define and identify seams into conspicuous and inconspicuous seams.
- Using task-based learning, guide learners to outline the general rules for working seams.
- Using demonstration and cooperative learning, guide learners to construct the different seams, taking care of common faults, remedies and neatening them appropriately.
- Using text reading and guided discussions, lead learners to choose seams and outline the general rules of working seams.
- Through demonstration and cooperative learning, guide learners to work and use seams appropriately.

### Teaching/Learning Aids

- Sewing machine
- Readymade outfits
- Hand needles
- Sewing threads (matching)
- Pieces of cloth
- Pair of scissors
- Tape measure

- Manila card
- Markers

### Assessment Strategies

- Learners:
  - work samples of French, open, overlaid and double-stitched seams on various suitable fabrics
  - mount the worked seams on folders and write brief notes on suitable uses and advantages of using them
  - name two conspicuous seams used to highlight style feature (use diagrams to illustrate where necessary)
- Give a test on the important factors to observe when choosing and making seams

### Sub-Topic 3: Fastenings

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• define the term fastenings.</li><li>• identify types of fastenings.</li></ul> <ul style="list-style-type: none"><li>• choose fastenings correctly.</li><li>• apply rules for working fastenings.</li><li>• work fastenings correctly.</li></ul>	<ul style="list-style-type: none"><li>• Definition of fastenings</li><li>• Types of fastenings:<ul style="list-style-type: none"><li>- buttons and button holes</li><li>- zips</li><li>- loops</li><li>- hooks and bars</li><li>- Velcro</li><li>- press studs</li><li>- ribbons</li><li>- draw strings</li></ul></li><li>• Choice and use of fastenings</li><li>• Rules for working fastenings</li><li>• Methods for working fastenings</li></ul>

### Methodology

- Through brainstorming and guided discussion, help learners to define the term fastening and identify the different types of fastenings and their use.



- Through group discussion and demonstration, let learners discuss the factors that determine choice of fastenings, rules for working fastenings and practically work fastenings appropriately.
- Wrap up by supplementing on the working of fasteners.

### Teaching/Learning Aids

- Textbooks
- Fastenings i.e. buttons, zips, hooks and eyes, velco, ribbons and draw strings
- Pieces of fabric
- Threads
- Needles
- Finished articles with fastenings

### Assessment Strategies

- Name four methods of fastening garments and state where each could be used.
- How would you insert a concealed zip fastener in the side opening of a skirt?
- What are the qualities of a well attached hook and eye?
- Why do hooks and eyes have both straight and round eyes?

### Sub-Topic 4: Openings

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• define an opening.</li> <li>• identify types of openings.</li> </ul>	<ul style="list-style-type: none"> <li>• Definition of an opening</li> <li>• Types of openings:               <ul style="list-style-type: none"> <li>- faced wrap</li> <li>- continuous strip opening</li> <li>- bound</li> <li>- equal overlapped hem opening</li> <li>- box pleat opening</li> </ul> </li> <li>• Choice and use of openings</li> </ul>
<ul style="list-style-type: none"> <li>• choose and use openings correctly.</li> </ul>	

Specific Objectives	Content
<ul style="list-style-type: none"> <li>outline the rules to be observed when working openings.</li> <li>work different types of openings.</li> </ul>	<ul style="list-style-type: none"> <li>Rules for working openings</li> <li>Methods of working openings</li> </ul>

### Methodology

- Through guided discussion and group work, let learners define the term openings and identify different types of openings and their use.
- Through group discussion and demonstration, let learners discuss the factors that determine choice of openings, rules for working openings and work openings appropriately.
- Wrap up by supplementing on the working of different openings.

### Assessment Strategies

- Learners:
  - describe three types of openings.
  - outline the factors that determine the type of opening one might choose for a garment.
  - list the parts of a zip.
  - collect pictures of garments that indicate different types of openings.
  - work samples of openings and mount them in workbooks.

### Sub-Topic 5: Edge Finishes

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>explain the meaning of edge finishing.</li> <li>identify the different types of edge finishes.</li> </ul>	<ul style="list-style-type: none"> <li>Meaning of edge finishing</li> <li>Types of edge finishes:               <ul style="list-style-type: none"> <li>hems</li> <li>facings</li> <li>pipings</li> <li>bindings</li> <li>lacing</li> <li>faggoting</li> <li>scalloping</li> <li>shell edging, etc</li> </ul> </li> <li>Importance of edge finishes</li> </ul>
<ul style="list-style-type: none"> <li>explain the importance of edge</li> </ul>	

Specific Objectives	Content
finishes. <ul style="list-style-type: none"> <li>• make appropriate choice of edge finishes.</li> <li>• explain the factors that determine the choice of edge finishes.</li> <li>• work edge finishes correctly.</li> </ul>	<ul style="list-style-type: none"> <li>• Choice and use of edge finishes</li> <li>• Factors that determine choice of edge finishes</li> <li>• Methods of working edge finishes</li> </ul>

### Methodology

- Using whole class discussion, lead learners to explain the meaning of edge finishes, identify the different types of edge finishes and their use.
- Through group discussion and demonstration, guide learners to make proper choice of edge finishes and work them appropriately.
- Demonstrate the working of hemming, binding, lacing, scalloping, piping and shell edging to the learners.
- Let the learners observe the demonstration and work out their edge finishes.
- Through brainstorming, guide learners to suggest suitable edge finishes on articles like a child's dress, girl's petticoat and table cover.
- Supervise learners' garments.

### Teaching/Learning Aids

- Cutting scissors
- Tape measure
- Fabric
- Illustrations
- Templates
- Tailor's chalk
- Hand needles
- Sewing threads
- Sewing machine
- Lace
- Cord

## Assessment Strategies

- Learners:
  - list and group edge finishes.
  - suggest suitable methods of finishing the waists of:
    - pleated skirt
    - circular skirt
    - flared skirt
  - give details for finishing the hem of a child's dress with faced scallops.

## Sub-Topic 6: Controlling Fullness

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• explain the meaning of controlling fullness.</li> <li>• explain the reasons for controlling fullness.</li> <li>• identify the different methods of controlling fullness</li> <li>• make a samples of each.</li> <li>• apply methods of disposal of fullness appropriately in garment construction.</li> </ul>	<ul style="list-style-type: none"> <li>• Importance of controlling fullness:               <ul style="list-style-type: none"> <li>- meaning of the term controlling fullness</li> <li>- reasons for controlling fullness.</li> </ul> </li> <li>• Methods of controlling fullness:               <ul style="list-style-type: none"> <li>- gathers</li> <li>- darts</li> <li>- tucks</li> <li>- pleats</li> <li>- easing</li> <li>- smocking</li> </ul> </li> <li>• Using the methods of controlling fullness in garment construction</li> </ul>

## Methodology

- Through brainstorming and guided discussion, help learners to define the term control of fullness and analyse the importance of controlling fullness in garments.

- Display garments portraying the various methods of controlling fullness.
- Demonstrate the various methods of controlling fullness.
- Let learners make samples using different methods of controlling fullness.
- Wrap up by highlighting the areas where the methods of controlling fullness are applied.

### Assessment Strategies

- Learners write down the procedure of working different methods of controlling fullness.
- Learners under the supervision of the teacher continue making the article that they have started.

### Additional Notes

- Controlling fullness refers to the arrangement of excess material in garment construction to fit the desired figure and give a good outline. Controlling fullness involves both introducing fullness and disposing it off.
- The reasons for controlling fullness include:
  - giving a good outline by accommodating the curves of the figure
  - ease movement
  - provide decoration
  - providing style to the garment
- The different methods of controlling fullness are achieved in three different techniques:
  - drawing fabric for example gathers, shirring (smocking), ganging (smocking), easing
  - folding fabric for example darts, pleats and tucks
  - using bias for example, godgets and gores

### Sub-Topic 7: Collars

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• classify collars.</li> </ul>	<ul style="list-style-type: none"> <li>• Classification of collars:               <ul style="list-style-type: none"> <li>- flat collars</li> </ul> </li> </ul>

Specific Objectives	Content
<ul style="list-style-type: none"><li>• prepare collars appropriately.</li><li>• attach collars correctly.</li></ul>	<ul style="list-style-type: none"><li>- standing collars</li><li>- rolled collar</li><li>• Preparing collars</li><li>• Attaching collars</li></ul>

### Methodology

- Through text reading, guide learners to describe and classify collars.
- Through demonstration, guide learners to prepare and attach different types of collars.
- Through task-based learning, guide learners to prepare and attach collars on garments.

### Teaching/

### Learning Aids

- Fabric
- Collar patterns
- Hand needles
- Pins
- Tacking thread
- Iron and ironing boards
- Tape measure

### Assessment Strategies

- Learners:
  - describe the three basic classes of collars.
  - using illustrations, describe the different types of collars.
  - prepare and attach a Peter pan collar.

### Sub-Topic 8: Sleeves

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• describe the different types of sleeves.</li></ul>	<ul style="list-style-type: none"><li>• Type of sleeves:<ul style="list-style-type: none"><li>- set in</li></ul></li></ul>

Specific Objectives	Content
<ul style="list-style-type: none"> <li>• prepare sleeves for attachment.</li> <li>• attach the sleeve appropriately .</li> </ul>	<ul style="list-style-type: none"> <li>- raglan</li> <li>- kimono /Magyar</li> <li>• Preparation of sleeves</li> <li>• Attachment of sleeves:               <ul style="list-style-type: none"> <li>- flat</li> <li>- set in</li> </ul> </li> </ul>

### Methodology

- Using text reading, guide learners to draw and describe the different types of sleeves.
- Demonstrate the cutting, preparation and attachment of different sleeves.
- Through group and task-based learning, guide learners to prepare and attach different types of sleeves.
- Wrap up by highlighting the distinguishing features of the different sleeves.

### Teaching /Learning Aids

- Fabric
- Sleeve patterns
- Hand needles and sewing machines
- Pins
- Sewing threads
- Tacking threads
- Cutting scissors
- Iron and ironing board
- Tape measures

### Assessment Strategies

- Learners list the different types of sleeves
- Learners prepare and attach the sleeves on the article they are making under the supervision of the teacher

### Additional Notes

- Types of sleeves:
  - set-in sleeves: These sleeves are the most common. They are cut separately from the garment and set into the arm hole of that garment.
  - Raglan sleeves: This type of sleeve is sometimes used on blouses. The top of the sleeve is extended from the underarm to the neckline on both sides of the shoulder front and back. The sleeve forms part of the neckline.
  - Magyar / Kimono sleeve: The Kimono sleeve is loose fitting and cut in one with the garment. It basically forms an extension of the shoulder area. It is used for bathrobes and dressing gowns and night dresses.
  - cap sleeve

### Sub-Topic 9: Pockets

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• identify different types of pockets.</li><li>• explain the functions of pockets.</li><li>• construct pockets.</li><li>• describe the qualities of a good pocket.</li></ul>	<ul style="list-style-type: none"><li>• Types of pockets:<ul style="list-style-type: none"><li>- patch pockets</li><li>- in seam pockets</li><li>- bound pockets</li></ul></li><li>• Functions of pockets</li><li>• Construction of pockets above</li><li>• Qualities of a well made pocket</li></ul>

### Methodology

- Through task-based learning and guided discussion, let learners identify different types of pockets, explain their functions and work different types of pockets correctly.
- Through observation and guided discussion, lead learners to describe the qualities of a good pocket.
- Demonstrate the cutting, preparation and attachment of different pockets.
- Wrap up by highlighting the suitability of pockets in garments.



## **Teaching/Learning Aids**

- Fabric
- Pocket pattern
- Hand needle and sewing machines
- Pair of scissors
- Pins
- Sewing thread
- Tacking threads
- Iron and ironing board
- Tape measure
- Interfaces
- Buttons
- Zip fasteners
- Sewing machines

## **Assessment Strategies**

- Learners:
  - prepare and attach an in-seam pocket into a skirt.
  - suggest suitable pockets for garments like a shirt, trouser and jacket.
  - prepare and attach a pocket on the article they are making under the supervision of the teacher.

## Topic 15: Dress Patterns

Duration: 6 Periods

### General Overview

Dress patterns can be commercial (bought in standard sizes ready for use) or can be locally drafted using specific measurements. Dress patterns may be altered and adapted to suit specific figures, especially those that are not proportional. Apart from commercial paper patterns, and the procedure of drafting patterns, this topic also introduces the learners to the making of household articles, costing, pricing and displaying them.

### General Objectives

By the end of the topic, the learner should be able to:

- use commercial paper patterns correctly.
- draft and adapt basic patterns used in garments construction.

### Sub-Topic 1: Commercial Paper Patterns

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• explain a commercial paper pattern.</li><li>• identify the contents of a commercial paper pattern.</li><li>• interpret pattern markings.</li><li>• alter and adapt patterns to fit different figures.</li><li>• choose commercial paper patterns correctly.</li><li>• outline advantages and disadvantages of using commercial paper patterns.</li></ul>	<ul style="list-style-type: none"><li>• Meaning of commercial paper pattern</li><li>• Contents of a commercial paper pattern:<ul style="list-style-type: none"><li>- envelope (front and back)</li><li>- sewing guide</li><li>- tissue sheets</li></ul></li><li>• Interpretation of pattern markings</li><li>• Pattern alteration and adaptation</li><li>• Choosing commercial paper patterns: style, size, design features, simplicity and notions</li><li>• Advantages and disadvantages of commercial patterns</li></ul>

## Methodology

- Guide learners to explain the meaning of a commercial paper pattern.
- Guide learners to identify and explain the contents of a commercial paper pattern.
- Using guided discussion, guide learners to interpret pattern markings, describe and use different techniques of altering and adapting patterns.
- Using demonstration and group work, guide learners to alter and adapt commercial paper patterns to fit different figures.
- Using group discussions and observation, let learners choose commercial paper patterns.
- Through brainstorming, guide learners to discover the advantages and disadvantages of using commercial patterns.

## Teaching/Learning Aids

- Commercial paper patterns
- Fabric
- Cutting shears
- Tracing wheel
- Carbon paper
- Pins
- Tailor chalk

## Assessment Strategies

- Learners:
  - outline the criteria for choosing commercial paper patterns.
  - note the advantages of commercial paper patterns.
  - make summary notes on how to use commercial paper patterns.
  - complete their articles by finishing the raw edges.

## Additional Notes

- Advantages of commercial paper patterns:
  - They save time, energy, anxiety and money.
  - They are available in different sizes.
  - They are accurate.
  - They are inexpensive in the long run.
  - They give clothes a professional finish.

- They are easy to use.
- Commercial paper patterns ensure good lay out.
- They give guidance on transferring pattern markings.
- They help in alteration.
- They ensure accurate cutting.
- They create accurate fitting.
- Adjustments are necessary when the body measurements do not correspond with the pattern bought.
- Fabric preparations: Some fabrics shrink when washed and so it is essential to pre-shrink the fabric before cutting.
- Fabric lay out: A straight line with arrow heads indicating fabric grain shows the direction in which the piece should be laid. Single lines bent at two ends at the edge of the pattern meaning “place on fold” of fabric will appear at the centre back or centre front of the garment. “Cut 1”, Cut 2” are printed on the pattern piece to indicate the number of fabric pieces to be cut from one pattern piece.
- Cutting: This is done directly between two lines printed or a symbol 'scissors' are printed along the line to indicate cutting line and direction of cutting.

## Sub-Topic 2: Drafted Patterns

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• explain the meaning of drafted patterns.</li> <li>• list the tools used in pattern drafting.</li> <li>• take body measurements correctly.</li> <li>• explain the precautions of taking body measurements.</li> <li>• draft basic blocks.</li> </ul>	<ul style="list-style-type: none"> <li>• Meaning of drafted patterns</li> <li>• Tools used in pattern drafting: ruler, T-square, tailors' chalk, French curves, pins , tracing wheel</li> <li>• Procedure of taking measurements</li> <li>• Precautions of taking body measurements</li> <li>• Drafting basic blocks:               <ul style="list-style-type: none"> <li>- bodice</li> <li>- skirt</li> </ul> </li> </ul>

Specific Objectives	Content
<ul style="list-style-type: none"> <li>• adapt basic garment blocks.</li> <li>• alter the adapted patterns.</li> <li>• use given measurements to determine correct amount of fabric.</li> <li>• select suitable fabric for the pattern.</li> <li>• make and finish a selection of garments.</li> </ul>	<ul style="list-style-type: none"> <li>- sleeve</li> <li>- shorts</li> <li>• Adaptation of basic blocks</li> <li>• Alteration of adapted patterns</li> <li>• Computation of measurements to determine amount of fabric to be used.</li> <li>• Selection of fabric for the pattern</li> <li>• Making up and finishing of a presentable selection of garments for children and adults</li> </ul>

### Methodology

- Through demonstration, guide learners to take their body measurements in pairs.
- Demonstrate the drafting of patterns using the body measurements.
- Assign learners individual tasks to draft patterns using their own measurements.
- Let learners select a suitable fabric for the patterns drafted and make a finished section of a typical garment.
- Wrap up by highlighting the procedure of drafting patterns and selecting fabrics.

### Assessment Strategies

- Let learners draw pattern symbols and state their meaning.

### Sub-Topic 3: Household Articles

Specific Objectives	Content
The learner should be able to make and finish different types of household articles.	<ul style="list-style-type: none"> <li>• Making household articles:               <ul style="list-style-type: none"> <li>- pillowcases</li> <li>- cushion covers</li> <li>- curtains</li> <li>- table clothes</li> </ul> </li> </ul>

### Methodology

- Through whole class discussion, let learners name different household articles and list the skills used in their construction.
- Through demonstration, group work and task-based learning, guide learners to construct household articles.
- Let the groups present their articles to the class.
- Wrap up by highlighting the skills used in the cutting and construction of household articles.

### Teaching/Learning Aids

- Fabric
- Trimmings
- Embroidery thread
- Sewing thread
- Embroidery designs
- Motifs
- Needles
- Template

### Assessment Strategies

- Learners:
  - sketch various household articles in their books.
  - list the various methods of decorating household articles.
  - continue to finish up their articles and display during the next term.

### Sub-Topic 4: Costing and Display

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• determine the price of the articles made.</li></ul>	<ul style="list-style-type: none"><li>• Determinants when costing an item:<ul style="list-style-type: none"><li>- materials used</li><li>- contingency</li><li>- overhead costs (30%)</li><li>- labelling</li><li>- packaging</li></ul></li></ul>
<ul style="list-style-type: none"><li>• label and display the articles</li></ul>	<ul style="list-style-type: none"><li>• Techniques of display:</li></ul>

- |   |  |
|---|--|
| attractively.<br>• sell the items made. | - hungers<br>- mannequin/ dummies<br>- modelling |
|---|--|

### Methodology

- Guide learners to discuss the cost of different materials used in garment construction.
- Using mathematical illustrations, guide learners to work out the costing and pricing of one article.
- Guide learners to cost different articles in groups.
- Guide learners to present their findings to the whole class.
- Let learners prepare price labels.
- Conclude by showing learners how to display articles for sale.

### Teaching/Learning Aids

- Price list of different materials used

### Assessment Strategies

- Let learners make a list of sewing materials and their cost.
- Let learners practice the procedure of costing materials and articles made.

## PART TWO

This second part of the curriculum is intended to equip learners with practical skills in constructing garments. Emphasis in Part Two is given to design interpretation, body measurements, pattern making, choice of materials, laying and cutting. Other areas included are construction of garments and household articles, garment finishing and fitting.



## SENIOR FIVE TERM TWO

### Topic 1: Style Interpretation

Duration: 3 Periods

#### General Overview

Style refers to the characteristics that distinguish one particular item of clothing from another. Styles are used in garment construction to simulate individual preferences. This topic introduces the learner to the skills of style interpretation and sketching. Design details and other accompanying features determine a style and therefore a fashion. Knowledge about design details and features will enable the learners to gain skills of interpreting various styles.

#### General Objective

By the end of the topic, the learner should be able to interpret and sketch various styles.

#### Sub-Topic 1: Sketching

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• sketch different styles.</li> <li>• sketch the pattern pieces that comprise the style.</li> </ul>	<ul style="list-style-type: none"> <li>• Style sketches:               <ul style="list-style-type: none"> <li>- dress</li> <li>- jacket</li> <li>- pair of shorts</li> <li>- blouse/shirt</li> <li>- skirt</li> </ul> </li> <li>• Pattern piece of the style</li> </ul>

#### Methodology

- Through observation and the use of fashion books and drafted patterns, guide learners to identify the features that guide fashion interpretation.
- Through text reading, let learners explain the principles of sketching, drawing and designing styles.
- Demonstrate the sketching of styles and include some of the features that were identified by the learners.

- Through task-based learning, group learners to make style sketches including the identified design features.
- Let learners display their work for observation.
- Wrap up by commenting on the students' work and assigning them a task of making specific styles.

### **Teaching/Learning Aids**

- Fashion books
- French curves
- Pencils
- Textbooks
- Art books
- Coloured pencils

### **Assessment Strategies**

- Give learners an exercise to:
  - list the features that guide style interpretation i.e. pattern symbols, pockets, collars, darts, tucks, gathers and types of buttons openings.
  - sketch some specific styles.

## Topic 2: Body Measurements

Duration: 2 Periods

### General Overview

Pattern sizes are determined by accurate body measurements. Accuracy in taking body measurements enables the learners to alter patterns correctly so as to make fitting garments. This topic provides a practical opportunity to the learners to acquire skills in taking body measurements, thus, should be handled practically i.e. encourage learners to take their body measurements in pairs using correct tools. Accurate measurements can only be obtained when one is wearing well-fitting foundational and outer garments and standing at a right posture.

### General Objective

By the end of the topic, the learner should be able to take body measurements accurately.

### Sub-Topic 1: Taking Body Measurements

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• use the correct equipment in taking body measurements.</li> <li>• relate the body measurements to standard charts.</li> <li>• take accurate measurements of the body parts.</li> <li>• follow the correct order of taking body measurements.</li> </ul>	<ul style="list-style-type: none"> <li>• Body measuring equipment</li> <li>• Standard measurement charts</li> <li>• Points to consider when taking body measurements</li> <li>• Order of taking body measurements</li> </ul>

### Methodology

- Through demonstration, guide learners to work in pairs to take each other's body measurements in the correct order and relate this to standard charts.
- Guide learners to brainstorm the points to consider when taking body measurements.
- Through demonstration and task-based learning, guide learners to take their body measurements in pairs.

### **Teaching/Learning Aids**

- Tape measure
- Notebook
- Pen/pencil

### **Assessment Strategies**

- Give learners a group assignment to write down the points considered when taking body measurements, order of taking body measurements and to list down the body measuring equipment.

## SENIOR FIVE TERM THREE

### Topic 3: Pattern Making

Duration: 3 Periods

#### General Overview

A pattern is a paper or a cardboard shape from which parts of a garment are traced. This topic introduces the learners to the practical skills of making garment patterns. The topic prepares the learners for practical work in garment construction. The pattern making skills, interpretation, adjustments, layout and cutting should be practically covered.

#### General Objective

By the end of the topic, the learner should be able to draft garment patterns.

#### Sub-Topic 1: Pattern Drafting, Adaptation and Alteration

Specific Objectives:	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>list the equipment required for pattern drafting.</li> <li>draft basic block patterns.</li> <li>adapt basic block patterns to desired styles.</li> <li>alter the basic block patterns to suit a particular size.</li> </ul>	<ul style="list-style-type: none"> <li>Equipment and materials required to draft patterns</li> <li>Drafting basic blocks:               <ul style="list-style-type: none"> <li>bodice</li> <li>sleeve</li> <li>collar</li> <li>skirt</li> <li>shorts</li> </ul> </li> <li>Pattern adaptation</li> <li>Pattern alteration</li> </ul>

#### Methodology

- Through brainstorming and observation, guide learners to use appropriate equipment to draft basic blocks.

- Through observation and task-based learning, guide learners to adapt and alter basic block patterns.
- Through demonstration, guide learners to separate the patterns.
- Through guided discussion, let learners give highlights on:
  - Types of symbols used in patterns.
  - Why patterns are separated.

**Teaching/Learning Aids**

- Drafting papers
- Tracing wheel
- Readymade patterns
- Ruler
- Pencil
- French curves
- Carbon paper

**Assessment Strategies**

- Give learners a written assignment on:
  - pattern symbols in pattern making.
  - reasons for separating patterns.
  - advantages of preparing fabric before cutting.
  - the procedure for laying out and cutting different patterns.

## Topic 4: Choice of Materials

Duration: 2 Periods

### General Overview

Fabrics have distinct behavioural characteristics. They can be stiff and unyielding, crisp and business like or soft, flattery and feminine. Successful construction of garments largely depends on the material chosen. It is important to ensure that the fabric and the design in it must be of good taste. It is also important for an individual to develop perfect taste in garment selection. This topic analyses the factors that influence choice of materials used in construction of garments.

### General Objective

By the end of the topic, the learner should be able to choose the right type of material for a garment.

### Sub-Topic 1: Choice of Fabrics

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>choose fabrics according to the factors highlighted.</li> <li>choose the suitable materials for the style.</li> </ul>	<ul style="list-style-type: none"> <li>Choosing fabric according to the following factors:               <ul style="list-style-type: none"> <li>- occasion</li> <li>- purpose</li> <li>- colour</li> <li>- style</li> <li>- age</li> <li>- figure</li> </ul> </li> <li>Choice of materials according to style:               <ul style="list-style-type: none"> <li>- notions</li> <li>- trimming</li> <li>- lining</li> <li>- interlining</li> <li>- underlining</li> <li>- shoulder pads</li> <li>- fastenings</li> </ul> </li> </ul>

Specific Objectives	Content
<ul style="list-style-type: none"><li>• establish the right costs of materials used in the garments constructed.</li></ul>	<ul style="list-style-type: none"><li>- threads</li><li>- inter-facings</li><li>• Costing the materials used in garment construction</li></ul>

**Methodology**

- Through think-pair share, observation and group discussion, guide learners to identify fabrics suitable for different styles.
- Through brainstorming and discussion, guide learners to make appropriate choices for material to be used in the construction of their garments.
- Through task-based learning and field work, guide learners to cost the garments they have constructed.

**Teaching/Learning Aids**

- Samples of fabrics of different colours and texture
- Samples of notions and trims e.g. zips, buttons, Petersham, hooks and eyes, etc.

**Assessment Strategies**

- Give learners an assignment on choice of fabric when making garments for different occasions.



## SENIOR SIX TERM ONE

### Topic 5: Layout and Cutting

Duration: 5 Periods

#### General Overview

Before laying out a fabric, there are some necessary preparations to be done. This topic exposes the learners to the different ways and skills of laying and cutting out fabrics. The procedures of laying out and cutting different fabrics are also discussed here.

Laying out ensures accuracy to avoid any mistakes in cutting. If instructions for laying out are not followed carefully, the garment pieces will not fit together well and the finished product may not fit the weaver.

#### General Objective

By the end of the topic, the learner should be able to lay out patterns and cut out accurately.

#### Sub-Topic 1: Fabric Preparation

Specific Objective	Content
The learner should be able to prepare the fabric ready for laying out.	<ul style="list-style-type: none"> <li>• Preparation of fabric for cutting:               <ul style="list-style-type: none"> <li>- pulling thread</li> <li>- tearing</li> <li>- ravelling the thread</li> <li>- cutting along prominent line</li> <li>- pressing fabric</li> <li>- folding fabric</li> </ul> </li> </ul>

#### Methodology

- Through demonstration, guide learners to individually prepare the fabrics for laying out and cutting the fabric.
- Through demonstration, let learners individually prepare patterns and lay out.
- Through demonstration, guide learners to transfer markings from the pattern to the fabric.
- Through task-based learning, guide learners to transfer pattern markings to the fabric.

- Through group discussion, guide learners to describe the processes demonstrated.

### Teaching/Learning Aids

- Pieces of fabric
- Pair of cutting scissors
- Flat iron

### Assessment Strategies

- Give learners an assignment on the procedure for pattern preparation, fabric preparation, laying out, cutting and transferring pattern markings.

### Sub-Topic 2: Laying Out and Cutting

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• prepare the pattern ready for laying out.</li><li>• lay out the pattern piece correctly.</li><li>• transfer markings from the pattern to the garment</li><li>• cut the fabric according to guidelines.</li></ul>	<ul style="list-style-type: none"><li>• Pattern preparation: pressing</li><li>• Laying pattern piece:<ul style="list-style-type: none"><li>- follow grain</li><li>- pattern style</li><li>- fabric design</li></ul></li><li>• Transfer pattern markings:<ul style="list-style-type: none"><li>- tracing</li><li>- thread marking</li></ul></li><li>• Cutting out:<ul style="list-style-type: none"><li>- general guidelines</li><li>- cutting specific fabrics</li></ul></li></ul>

### Methodology

- Through demonstration and discussion, guide learners to individually prepare the fabric for laying out.
- Through demonstration, learners individually prepare patterns, lay out and cut the fabric.
- Through demonstration, guide learners to transfer markings from the pattern to the fabric and cut out the fabric.

### Teaching/Learning Aids

- Fabric

- Tailor's chalk
- Carbon paper
- Tracing wheel
- Pencil
- Scissors
- Threads
- Tape measure
- Iron

### **Assessment Strategies**

- Give learners a written test on describing the procedure for proper cutting and transferring pattern marking and to draw a lay out.

### **Additional Notes**

- Pattern preparation: pressing
- Laying pattern pieces:
  - Prepare your work table and collect your sewing tools.
  - Refer to the guide and pattern size and circle the cutting layout you will be using.
  - Plan the entire layout before you pin so that you can check that the pieces will fit on the fabric.
  - Place the large pattern pieces on fabric first.
  - Place the pieces as close together as possible without overlapping.
  - Keep straight grain arrows parallel to the selvedge so that the fabric will be straight when cut.
  - Pieces with 'place on fold' indicators must be placed directly on the fold of the fabric.
- Cutting out:
  - Cut in the direction of the grain of the fabric.
  - Do not move the fabric while cutting.
  - Mark centre lines and fold lines by clipping 5 mm in the edge of the fabric.
  - Cut using long, even strokes to prevent jagged edges. Use shorter strokes for curved areas.
  - Cut notches outwards.

- Check carefully that all pattern pieces are laid out on the fabric and that space has been left for any pieces which are to be duplicated e.g. collars, cuffs, pockets, etc.
- Cut out all pieces, cutting through the thick black outlines / cutting lines on printed patterns.
- Cut away from or parallel to yourself, never towards yourself.
- Lay aside cut out portions neatly, fold together sized cuttings of fabric and throw away small snippings of fabric.
- Transfer all necessary markings from the pattern to the fabric.
- Transferring pattern markings:
  - Pattern markings that show construction details should be transferred to the fabric for the cutting procedure. All markings should be done on the wrong side of the fabric. Pattern markings may be transferred using different methods:
    - thread marking
    - carbon paper
    - marking pencil and chalk
    - pressing

## Topic 6: Construction of Garments and Household Articles

Duration: 9 Periods

### General Overview

This topic deals with assembling of different sections of pattern pieces to make a garment or household article. Learners are expected to be well acquainted with pattern interpretation, laying out pattern pieces, cutting out the fabric and assembling the different fabric pieces that have been cut out to make a garment. The garments are then enhanced to improve on the appearance and the entire outlook, making them more attractive and marketable.

Garments are constructed using various processes. These should be worked correctly to ensure the beauty of the garments.

### General Objective

By the end of the topic, the learner should be able to assemble different sections of a pattern to make a garment and household articles.

### Sub-Topic 1: Assembling Garments

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• prepare the pattern pieces ready for assembling.</li> <li>• assemble different garments in their proper order.</li> </ul>	<ul style="list-style-type: none"> <li>• Preparation of pattern pieces:               <ul style="list-style-type: none"> <li>- basting curved edges</li> <li>- control fullness</li> <li>- attach interfacing</li> <li>- prepare collars, sleeves and facings, waistbands, pockets, bindings and piping</li> </ul> </li> <li>• Specific order of assembling garments:               <ul style="list-style-type: none"> <li>- dress</li> <li>- jacket</li> <li>- blouse/shirt</li> <li>- skirt</li> <li>- undergarments</li> </ul> </li> </ul>

**Methodology**

- Through demonstration, guide learners to individually prepare pattern pieces.
- Through demonstration, let learners individually assemble garments in their proper order.
- Through demonstration, guide learners to construct garments applying the correct processes.
- Through task-based learning, guide learners to enhance the garments made and attach care labels.

**Teaching/Learning Aids**

- Tacking thread
- Needles

**Assessment Strategies**

- Give learners an assignment to assemble garments and household articles for construction.

**Sub-Topic 2: Garment Construction Processes**

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• construct the garment using appropriate processes.</li><li>• decorate the garment creatively.</li><li>• attach correct care labels.</li></ul>	<ul style="list-style-type: none"><li>• Processes used in garment construction:<ul style="list-style-type: none"><li>- stitches</li><li>- seams</li><li>- fastenings</li><li>- openings</li><li>- edge finishing</li><li>- controlling fullness</li><li>- sleeves</li><li>- collars</li><li>- pockets</li></ul></li><li>• Enhancement of the garment:<ul style="list-style-type: none"><li>- embroidery</li><li>- appliqué</li><li>- lace, ribbons, tapes</li></ul></li><li>• Labelling of garments</li></ul>

### **Methodology**

- Through demonstration and discussion, guide learners to construct garments applying the correct processes.
- Through demonstration, guide learners to construct garments, neaten them, enhance them and attach care labels.

### **Teaching/Learning Aids**

- Sewing equipment
- Enhancement equipment
- Labels

### **Assessment Strategies**

- Give learners an assignment to make and finish any type of garment.

## SENIOR SIX TERM TWO

**Topic 7: Garment Finishing**

Duration: 2 Periods

**General Overview**

This topic introduces the learners to the various methods of neatening a finished garment. Finishing is important because it contributes grossly to the looks of the garment and is one way of adding value to the garment. This topic should be handled practically to equip the learners with skills to finish garments attractively.

**General Objective**

By the end of the topic, the learner should be able to finish the garment appropriately

**Sub-Topic 1: Neatening a Garment**

Specific Objective	Content
The learner should be able to use methods of neatening a garment appropriately.	<ul style="list-style-type: none"><li>• Methods of neatening a garment:<ul style="list-style-type: none"><li>- seam finishings</li><li>- hemming</li><li>- pressing</li><li>- ironing</li><li>- trimming unwanted threads</li></ul></li></ul>

**Methodology**

- Demonstrate the various methods of finishing a garment while the learners observe.
- Through demonstration and task-based learning, guide learners to finish the edges of the garments made using different methods.

**Teaching/Learning Aids**

- Fabric
- Threads
- Needles



- Iron
- Ironing board
- Muslin

### **Assessment Strategies**

- Give learners an assignment to work out various finishing processes and pin in their books.

## Topic 8: Garment Fitting

Duration: 8 Periods

### General Overview

Fitting is an important process in garment construction. The process of fitting ensures that garments made give a perfect fit for the figure and enables the learner to make possible alterations where necessary to improve the outlook of the finished garment. Although one may have made major alterations to the paper pattern before cutting out, there are often minor adjustments to be made during the fitting of the garment. This topic highlights the key factors to look for during fitting and the alterations to make.

Modelling is a method of displaying and promoting fashion. After constructing a garment, it is important to display the style by modelling so that it can be appreciated. This topic also deals with the different methods of displaying the garment.

### General Objective

By the end of the topic, the learner should be able to make a fitting garment.

### Sub-Topic 1: Fitting Garments

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• identify the qualities of a good fitting garment.</li><li>• identify appropriate areas of alteration.</li></ul>	<ul style="list-style-type: none"><li>• Qualities of a good fitting garment:<ul style="list-style-type: none"><li>- right positions for seams, darts and sleeves</li><li>- crease free</li><li>- ease of movement</li></ul></li><li>• Points to look for when fitting:<ul style="list-style-type: none"><li>- contour</li><li>- drape</li><li>- silhouette</li><li>- balance</li><li>- shoulder</li></ul></li></ul>

## Methodology

- Through demonstration, learners try on the garments constructed to ensure a perfect fit and identify the necessary alterations.
- Through demonstration, guide learners to alter garments that do not fit perfectly.
- Through demonstration and audio-visual media, learners model the finished outfits.

## Teaching/Learning Aids

- Made garments
- Mannequin

## Assessment Strategies

- Give learners a written exercise to describe the common fitting faults in garments and qualities of a well-fitting garment.

## Sub-Topic 2: Garment Alterations

Specific Objective	Content
The learner should be able to alter the identified areas in the garments.	<ul style="list-style-type: none"> <li>• Areas of alteration:               <ul style="list-style-type: none"> <li>- neck</li> <li>- bust</li> <li>- waist</li> <li>- hips</li> <li>- crotch</li> <li>- sleeves</li> </ul> </li> </ul>

## Methodology

- Guide learners to brainstorm the areas on garments that need alteration.
- Through demonstration, guide learners to correct the faults identified on the garment.

## Teaching/Learning Aids

- Garment for fitting

## Assessment Strategies

- Give learners an assignment to correct faults in a garment.

**Sub-Topic 3: Modelling**

Specific Objective	Content
The learner should be able to model the finished garment.	<ul style="list-style-type: none"><li>• Modelling the finished outfit:<ul style="list-style-type: none"><li>- catwalk</li><li>- pairing</li><li>- responding to rhythm</li></ul></li></ul>

**Methodology**

- Through demonstration, guide learners in pairs to select the method of modelling and display their garments before the rest of the class.
- Using role-play, let individuals model in different ways like cat walk, pairing and matching responding to rhythm.

**Teaching/Learning Aids**

- Samples of finished garments in different styles and modelling
- Fashion magazines
- Newspapers

**Assessment Strategies**

- Give an exercise on fashion modelling and examples of fashion models in Uganda and the world.

## **PART THREE (PROJECT WORK)**

This section deals with project/coursework. It equips the learners with practical skills in garment construction and therefore making them more prepared to accomplish the coursework requirements of Paper P630/3 and the timed practical of Paper P630/2. The projects to be covered under this topic are a garment to fit oneself, a child's dress, undergarment, household article, furnishing article as well as the learners' own initiative. The learners should be guided to design, draft and construct articles ranging from outfits to household furnishings. Each learner is expected to construct at least three sets of items for submission. Therefore, this section should be purely practical.

## SENIOR FIVE TERM TWO

**Topic 1: Outfit and Household Articles****General Overview**

This section deals with project/coursework. The learners are expected to display various skills used in garment construction to come up with attractive articles. They should be guided to design, draft and construct articles ranging from outfits to household furnishings. The learners are expected to display various skills used in garment construction to come up with attractive articles. Each learner is expected to construct at least three sets of items for submission.

Learners get skills of constructing and neatening garments and also making children's clothes which require a high level of creativity to ensure attractiveness to appeal to both the children and the buyers.

**General Objective**

By the end of the topic, the learner should be able to use skills acquired to construct a fitting article and a household item which portrays their creativity and innovativeness.

**Sub-Topic 1: Construction of a Garment to Fit Oneself**

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• sketch the right style of the outfit.</li><li>• take the body measurements according to style.</li><li>• draft the patterns for the outfit.</li><li>• choose the right fabric for the style.</li><li>• determine the amount of fabric needed depending on the style chosen.</li></ul>	<ul style="list-style-type: none"><li>• Sketching the garment styles, that is:<ul style="list-style-type: none"><li>- a dress and a jacket or coat</li><li>- a skirt and a blouse</li><li>- a shirt and trousers or shorts</li><li>- a coat and trousers</li><li>- two or three piece dress</li></ul></li><li>• Taking body measurements according to style</li><li>• Drafting the patterns</li><li>• Choice of fabric</li><li>• Determining the amount of fabric</li></ul>

Specific Objectives	Content
<ul style="list-style-type: none"> <li>• prepare the fabric for laying out.</li> <li>• lay out the pattern pieces on to the fabric transfer the pattern markings and cut out the pieces.</li> <li>• follow the correct order when making up a garment.</li> <li>• try on the garment for a perfect fit and make the necessary adjustments.</li> <li>• enhance the garment.</li> </ul>	<ul style="list-style-type: none"> <li>• Preparation of fabric for laying by straightening it and removing creases</li> <li>• Laying out the pattern, transfer of pattern markings and cutting out the pieces</li> <li>• Procedure of assembling up a garment</li> <li>• Fitting and making necessary adjustments</li> <li>• Finishing and enhancing the garment</li> </ul>

### Methodology

- Through demonstration, guide learners to take body measurements.
- Through guided discovery, let learners choose the right style and fabric for the outfit.
- Using project work, guide learners to draft the patterns for the outfit.
- Through demonstration, guide learners to determine the amount of fabric needed for the outfit.
- Through demonstration, guide learners to prepare the fabric, layout and cut out the pieces.
- Through demonstration, guide learners to transfer pattern markings onto the fabrics, tack and stitch out the garment.
- Through task-based learning, let learners try on the garments and make the necessary adjustments for a perfect fit and to enhance them using different finishing techniques.

### Teaching/Learning Aids

- Fashion books
- Textbooks
- Fabric
- Tape measure
- Drafting paper
- Rulers
- Curves
- Tracing wheel
- Carbon paper

## Assessment Strategies

- Give learners an assignment to record the measurements taken and sketch the style chosen for the outfit, record the type and amount of fabric needed for the outfit and list down the various ways of enhancing garments.

## Sub-Topic 2: Undergarments

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• sketch various styles suitable for undergarments.</li><li>• construct underwear or night dress using appropriate procedure.</li><li>• construct a petticoat showing creativity and good workmanship.</li><li>• construct a brassier showing creativity and good workmanship.</li></ul>	<ul style="list-style-type: none"><li>• Sketching styles for under garments</li><li>• Procedure of constructing knickers:<ul style="list-style-type: none"><li>- taking measurements</li><li>- drafting</li><li>- laying and cutting</li><li>- construction of pair of knickers</li><li>- finishing</li></ul></li><li>• Procedure of constructing a petticoat:<ul style="list-style-type: none"><li>- taking measurement</li><li>- drafting</li><li>- laying and cutting out</li><li>- construction of petticoat</li><li>- enhancement</li><li>- finishing</li></ul></li><li>• Procedure of constructing brassier:<ul style="list-style-type: none"><li>- taking measurement</li><li>- drafting</li><li>- laying and cutting out</li><li>- construction of brassier</li><li>- enhancement</li><li>- finishing</li></ul></li></ul>



## Methodology

- Through brainstorming, guide learners on choice of materials for making undergarments.
- Through demonstration, guide the learners to construct sketches of the chosen undergarment.
- Through demonstration, guide learners to draft, lay out and cut pattern pieces of the chosen undergarment.
- Through task-based learning, let the learners enhance and finish their garments.

## Teaching/Learning Aids

- Textbooks
- Fashion magazines

## Assessment Strategies

- Give learners an assignment to write down the points that guide in the making of undergarments, draw sketches for the chosen undergarment and explain the various methods of enhancing undergarments.

## Sub-Topic 3: Making a Child's Dress

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• sketch various styles suitable for children of different ages.</li> <li>• make children's garments showing creativity and good workmanship.</li> </ul>	<ul style="list-style-type: none"> <li>• Sketching different styles of children's clothes</li> <li>• Procedure of constructing a child's garment:               <ul style="list-style-type: none"> <li>- measurements</li> <li>- drafting</li> <li>- laying and cutting out</li> <li>- construction procedure</li> <li>- finishing</li> </ul> </li> </ul>

## Methodology

- Through demonstration and task-based learning, let learners construct a child's garment.
- Guide learners to brainstorm the different styles suitable for making children's clothes.

- Through demonstration, guide the learners to draw sketches of the chosen children's clothes.
- Through demonstration, guide learners to draft, lay out and cut pattern pieces of the chosen children's garments.
- Through task-based learning, let learners tack and stitch the children's garments and also enhance and finish the children's garments.

**Teaching/Learning Aids**

- Textbooks
- Fashion magazines

## SENIOR SIX TERM ONE

### Topic 2: Making a Furnishing Article

#### General Overview

In this topic, you are expected to guide the learners to design, draft and construct household furnishings. The learners are expected to display various skills used in the construction of articles for furnishing.

#### General Objective

By the end of the topic, the learner should be able to make an attractive article for furnishing.

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>choose a suitable furnishing article to be made.</li> <li>creatively combine different skills in the construction of an article for furnishing.</li> </ul>	<ul style="list-style-type: none"> <li>Choice of furnishing article</li> <li>Possible items to make:               <ul style="list-style-type: none"> <li>loose covers</li> <li>curtains</li> <li>table linen</li> <li>bed linen</li> <li>cushion cover or throw cushion</li> </ul> </li> <li>Skills in construction of furnishing:               <ul style="list-style-type: none"> <li>appliqué</li> <li>quilting</li> <li>faggoting</li> <li>bead work</li> <li>macramé</li> <li>patch work</li> <li>lacing</li> <li>binding</li> <li>pipng</li> <li>smocking</li> </ul> </li> </ul>

**Methodology**

- Through whole-class discussion, guide learners to identify different articles for furnishing and choose the article to make.
- Demonstrate the working of different skills of furnishing.
- Using task-based learning, let learners make items using different skills of furnishing.

**Teaching/Learning Aids**

- Cotton sheeting
- Form
- Fabric
- Thread

## SENIOR SIX TERM TWO

### Topic 3: Learner's Initiative

#### General Overview

In this topic, the teacher is expected to guide the learners to design and construct an article of their own initiative, using a variety of skills.

#### General Objective

By the end of the topic, the learner should be able to make an attractive article of his/her own initiative.

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>select and make one article of his/her choice.</li> <li>make an article that shows creativity and good workmanship.</li> </ul>	<ul style="list-style-type: none"> <li>Items to choose from:               <ul style="list-style-type: none"> <li>pillow cases</li> <li>cushion covers</li> <li>curtains</li> <li>table cloths</li> <li>bags</li> <li>wall hanging</li> <li>garments</li> </ul> </li> <li>Skills expected to be displayed on the selected article:               <ul style="list-style-type: none"> <li>neatness</li> <li>finishing according to fabric</li> <li>appropriate choice of style</li> <li>appropriate choice of fabric</li> <li>value addition</li> </ul> </li> </ul>

#### Methodology

- Through task-based learning, learners select an article.
- Using task-based learning, learners do the following:
  - design the article of their choice.
  - make necessary preparations for the construction of the article, for example, sketching, drafting.
  - construct the article.

- finish and enhance the article attractively.

### **Teaching/Learning Aids**

- Fabric
- Thread
- Other materials as desired by the learners depending on what they choose to make

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Uganda Advanced  
Certificate of Education

# **Foods & Nutrition**

TEACHING SYLLABUS



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## Introduction

Foods and Nutrition has been on the school curriculum for a long time. It was formalised in schools after the findings and the recommendations of the Phelps Stroke Commission of 1924/1925. It has evolved over time, first taught under Crafts and later under Domestic Science. After the re-establishment of the East African Community, it became one of the subjects on the school timetable examined at both Uganda Certificated of Education (UCE) and Uganda Advanced Certificate of Education (UACE).

This Foods and Nutrition teaching syllabus focuses on the study of foods and nutrition and the development of food production skills for healthy living and self reliance. It covers all the contents for the two years. The teacher is expected to teach, demonstrate and develop learners' manipulation skills in order to develop the production skills.

## Purpose of Teaching Foods and Nutrition

Currently, the education system is being vocationalised with the aim of equipping a learner with practical skills for self-sufficiency and sustainable development. Foods and Nutrition is one of the subjects through which vocationalisation will manifest. The Foods and Nutrition teaching syllabus has been developed to equip the learner with production skills in order to be self-reliant. It also lays emphasis on creativity and development of manipulation skills and resource management.

The teaching of Foods and Nutrition is in line with the Government White Paper and Education Policy Review Commission Report (1992), which calls for instilling positive attitudes towards productive work as one of the aims and objectives of secondary education.

This Teaching Syllabus is intended to promote uniformity of content coverage for Foods and Nutrition throughout all the A level secondary schools offering the subject in the country. The content to be covered for each class has been spelt out per term to enable effective acquisition of knowledge, development of concepts, skills, values and attitudes.



## **General Aims of Teaching Foods and Nutrition at A Level**

This syllabus aims at teaching both the theory and practical work in a systematic and orderly way so as to:

1. Systematically train the students by giving them scientific knowledge of food, nutrition, health and other practices related to the well being of a person.
2. Train the learners in practical skills which aim at preparing learners to meet the demands of the competitive employment and job market.
3. Train learners in entrepreneurship and food production skills which aim at making them job creators, self-reliant and productive in the society.
4. Provide basic 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.

## **Target**

This syllabus is supposed to be used by a Graduate Teacher of Food and Nutrition or Home Economics for learners of advanced level secondary education.

## **Scope and Depth**

The scope of the subject is outlined in the teaching sequence and the depth of the topics is indicated by the content as seen in the content column in the syllabus matrix.

## **Teaching Sequence**

The teaching sequence should follow the order in which the topics have been arranged as outlined below to promote effective teaching and sequential learning.

## **Section One: Foods and Nutrition**

This section focuses on food and the nutrients there in. It looks at how food is prepared, ingested, digested, absorbed and assimilated into body cells and tissues. Furthermore, it looks at the factors that affect the processes enumerated above from the external and internal perspective. It is important for the learner to analyse the value of food in relation to nutrition and health, and to apply the acquired principles in improving the nutrition and health status of individuals and communities.

## **Section Two: Science in the Home**

This section focuses on the science behind the application of appliances and equipment in the home. It looks at various fuels used by different equipment; ways of ensuring economy and safety while using these fuels besides time and labour saving. It also focuses on creation of a conducive work and living environment – colour, ventilation and lighting.

## **Section Three: Cookery**

This section deals with the planning, preparation, cooking and serving of meals for various categories of people such as the expectant mothers, lactating mothers, infants, school going children, adolescent, manual and sedentary workers, as well as planning meals for different health conditions like diabetes, obesity, hypertension and ulcers, among others.

## **Time Allocation**

A school term has 82 teaching days, which are spread through weeks, yielding 12 weeks a term. Being a skill-based subject, the time allocation is 13 periods of 40 minutes per week per term. It is important for the teachers to guide the learners on how to do individual study outside class time. The total number of periods to be spent on each topic has been stated in the syllabus.

## **How to Use the Teaching Syllabus**

In this syllabus, only 13 periods are allocated per week for all the three terms. Being a practical subject, ensure that skills are stressed during the

teaching process. Each class should carry out at least 8 practical lessons in a term. Students should be encouraged to practice the taught skills outside the teaching time. A number of teaching and learning strategies have been suggested. However, the teacher is encouraged to be resourceful and more creative when teaching the subject. The Foods and Nutrition department can have a garden to grow vegetables or even put up a snack shop/canteen to sell the food items made by the students in order to meet the demands of the subject.

This syllabus is arranged as follows: topic, duration, general overview, general objective(s), sub-topics, specific objectives and content. Specific objectives for each sub-topic have been spelt out, but as a teacher, you are free to come up with others as long as this will not distort the concepts.

Some references and instructional materials such as relevant Internet websites, electronic encyclopaedia, for example, e-Books; broadcast media, for example, TV and radios; other forms of media, for example, videos and audio video tapes; Ministry/departmental reports or reviews, statistical abstracts, for example, those of Ministry of Health, and magazines, etc, have been suggested. But they are not exhaustive. You are therefore encouraged to use other sources for effective teaching.

The following equipment and materials have been identified to aid in the teaching and learning process of Foods and Nutrition at A level. It should be noted, however, that this list is not exhaustive but simply points out the key equipment and materials that should be in the Foods and Nutrition laboratory. The teacher should therefore, look at other equipment and materials necessary in the teaching and learning of the subject.

- Sample of measuring equipment (weighing scales, measuring jars, cylinders and flasks, thermometers, cups, spoons, plates, standardised containers) and sample recipes to be increased/decreased.
- Sample of cutting equipment (cutting boards, knives, graters, shears, blenders) and fruits and vegetables in season.
- Sample of mixing equipment (sieves & sifters, mixing bowls, wooden spoons, blenders & food processors, whisks & beaters).
- Sample of cooking equipment and appliances (saucepans, baking trays & casseroles, scrappers & spatulas, spoons, forks and tongs,

cooling racks, slow/ hay box cookers, charcoal stoves, solid fuel ovens, kerosene stoves, gas cookers, electric cookers, toasters, microwave ovens).

- Materials for foods

## General Overview

This gives brief information about the topic. It is intended to help you focus your teaching for effective achievement of the general objective(s).

## Methodology

The teaching of A level Foods and Nutrition should focus on the production of a functional individual who is able to translate the knowledge, skills and values acquired into survival strategies in the communities and world of work for sustainable development. In addition, the knowledge and skills should lay a strong foundation for tertiary education.

Therefore, the methods used should provide the learners with the knowledge, enable them develop skills and values and understand concepts. Various methods have been suggested, but you are free to come up with more learner-centred approaches that facilitate active participation of learners, development of the learners' creativity and innovativeness.

The methodology provided gives guidance on how to handle respective topics and sub-topics. It promotes the learner-centred approach for effective acquisition of knowledge, understanding of concepts and development of skills, values and attitudes. The learner-centred methodology aims at fulfilling two of the broad aims of education, that is:

- To promote scientific, technical and cultural knowledge as well as skills needed for development.
- To eradicate illiteracy and to equip individuals with basic skills and knowledge to exploit the environment for self-development as well as national development, for better health, nutrition and family life, and the capability for continued learning.

You are, therefore, advised to ensure effective participation of all learners. You can use any other methodology as long as it enhances the acquisition of knowledge, understanding, development of skills and values.

## **Teaching/Learning Aids**

Various resources to enhance the teaching and learning process closely related to the methodology are suggested to help you and the learner to achieve the specific objectives of each sub-topic. A number of instructional materials and a variety of equipment, actual food materials, charts and recipe books, among others, have been suggested to facilitate the teaching and learning process.

## **Assessment Strategy**

Opportunities of assessing the learner's progress have been suggested at the end of each topic. Continuous assessment is recommended and should be conducted spontaneously as part of the teaching and learning process. The assessment is intended to help you determine how the learner has mastered the knowledge, concepts and developed practical skills in various topics. A number of activities are suggested to promote active participation and assessment of the learner in the teaching and learning process. This will help the learner to develop the necessary skills, attitudes and values. You can plan for more activities depending on the size of the class and the availability of resources in the school. Summative assessment will be conducted in Term Three of Senior Six and the examination format is spelt out in this Syllabus.

## **Mode of Assessment**

This syllabus is designed in such a way that the learners will be able to do at least two years' work before the examination. The content of this syllabus is to be taught by continuous assessment to be administered by the school by way of assignments, exercises, practical work, projects and coursework. The final examinations are to be administered by Uganda National Examinations Board (UNEBC) by way of theory Papers 1 and 2 and practical examination Paper 3 where a visiting examiner will assess the candidates. This syllabus is assessed using two modes, that is:

## **Continuous Assessment**

This can be done through observations, classroom exercises, tests, practical activities, projects, reports and course works basing on what the learner is able to do. The learners will need to be observed continuously to have their achievements recorded from the beginning to the end of the period of the

two years. The teacher is expected to assess and take note of the learner's activities in and outside class. All terms of Senior Five and Term One of Senior Six have continuous assessment. Terms two and three of Senior Six have continuous assessment done together with summative assessment.

### **Summative Assessment**

There are three papers that are done at the end of Senior Six. Paper 1(P640/1) and Paper 2 (P640/2) are theory papers; Paper 3 (640/3) is a practical paper. Paper 1 has two sections - section A comprises three essay type questions on Nutrition while Section B comprises three essay type questions on Foods. Candidates choose only two questions from each section and each question carries 25 marks. The time allocated for the examination is 3 hours. The examination is out of 100 marks. Paper 2 comprises six essay type questions on Science in the Home and candidates choose only four questions; each question carrying 25 marks. The time allocated for each paper is 2½ hours and it is marked out of 100 marks. Paper 3 has five practical questions and each candidate is allowed to take on the question of his/her choice. This paper has the planning examination which takes 2½ hours, 30 minutes for preparatory work before the examination and the actual practical exam takes 3 hours. The total marks allocated for this examination is 100.

### **Section One**

This section focuses on the principles of nutrition and common foods used in the country (Uganda). It comprises two main parts of Advanced Level Foods and Nutrition. It looks at the chemical components of food, thus, different nutrients found in food, their bioavailability and their functions in the body; effects of deficiency and toxicity. It also looks at the aim of cooking food, the principle behind each method of cooking, and the different methods of preserving food and conserving food nutrients. This section should be given a minimum of 5 lessons and a maximum of 6 lessons per week.

<b>LIST OF TOPICS</b>			
<b>SENIOR FIVE</b>	<b>Periods</b>	<b>SENIOR SIX</b>	<b>Periods</b>
<b><i>Term One</i></b>		<b><i>Term One</i></b>	
1: Introduction to Foods and Nutrition	4	22: Meal planning	6
2: Proteins	6	23: Digestion, Absorption and Metabolism of Nutrients	5
3: The Cooking of Food	8	24: Nutrition in Rehabilitation	5
4: Meat and Poultry	17	25: Nutrition Deficiency Diseases	7
5: Carbohydrates	8	26: Food Misinformation	6
6: Lipids	11		
<b><i>Term Two</i></b>		<b><i>Term Two</i></b>	
7: Fish	4	27: Food Spoilage, Contamination and Poisoning	6
8: Eggs	2	28: Food Preservation	10
9: Milk and Milk Products	7	29: The Food Path	3
10: Vitamins	9	30: Protecting the Food Supply	4
11: Cereals	5	31: Rechauffe' Dishes	4
12: Leavening agents	4	32: Stocks, Sauces, Soups and Hors' D'oeuvres	5
13: Mineral Elements	14		
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## SENIOR FIVE TERM ONE

### Topic 1: Introduction to Foods and Nutrition

Duration: 4 Periods

#### General Overview

Most foods are organic in nature, originating from both plant or animal sources, with only salt, water and a few minor additives deriving from mineral sources. Different foods provide different nutrients and no single food has all nutrients required to ensure good health. There are different determinants for nutrient requirements of individuals and these should be taken into consideration when handling the different nutrients. Many families have developed their own food habits basing on what they learnt from childhood.

#### General Objective

By the end of the topic, the learner should be able to examine the concepts of Foods and Nutrition.

#### Sub-Topic 1: Concepts of Food and Nutrition

Specific Objective	Content
The learner should be able to explain the different terms used in Foods and Nutrition.	<ul style="list-style-type: none"><li>• Meanings of different terms used in foods and nutrition:<ul style="list-style-type: none"><li>- food</li><li>- nutrition</li><li>- nutrients</li><li>- malnutrition (under nutrition &amp; over nutrition)</li><li>- optimum nutrition</li><li>- balanced diet</li><li>- metabolism (catabolism &amp; anabolism)</li><li>- nutritional status</li><li>- applied nutrition</li><li>- diet</li><li>- dietetics</li></ul></li></ul>



Specific Objective	Content
	<ul style="list-style-type: none"> <li>- diet therapy</li> <li>- nutritional deficiencies</li> <li>- meal</li> <li>- nutritionist</li> <li>- food habits</li> <li>- macro and micro nutrients</li> <li>- exclusive breast feeding</li> <li>- complementary feeding</li> </ul>

### Methodology

- Using guided discussions, guide learners to explain the terms commonly used in Foods and Nutrition.

### Teaching/Learning Aids

- Chart showing explanation of some terms.

### Assessment Strategy

- Give an exercise on the concepts of Food and Nutrition.

### Sub-Topic 2: Food Habits

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• define food according to different groups of people.</li> <li>• define food behaviour.</li> <li>• discuss the determinants of food behaviour or habits.</li> <li>• explain the relationship between food and the external environment.</li> </ul>	<ul style="list-style-type: none"> <li>• Definitions of food:               <ul style="list-style-type: none"> <li>- scientific (physical definition)</li> <li>- social definition</li> <li>- cultural definition</li> <li>- psychological definition</li> </ul> </li> <li>• Definition of food behaviour</li> <li>• Determinants of food behaviour /habits</li> <li>• External environment and its relation to food:               <ul style="list-style-type: none"> <li>- lifestyle</li> <li>- ecological factors</li> <li>- economic factors</li> <li>- technological factors</li> </ul> </li> </ul>

Specific Objectives	Content
<ul style="list-style-type: none"><li>• explain the relationship between food and the internal environment.</li></ul>	<ul style="list-style-type: none"><li>- political factors</li><li>- psychological factors</li><li>- social factors –(alcoholism, poverty, family disintegration)</li><li>- cultural factors</li><li>• Internal environment (physiological) and its relation with food:<ul style="list-style-type: none"><li>- ingestion factors</li><li>- digestion factors</li><li>- absorption and assimilation factors</li></ul></li></ul>

### Methodology

- Using guided discussion, guide the learners to define food according to different groups of people and food behaviour.
- Guide learners to discuss the determinants of food behaviour/habits.
- Guide the learners to discuss the relationship between food and external and internal environment.

### Teaching/Learning Aids

- Trips to museum

### Assessment Strategy

- Give an assignment on the factors that influence food habits.

## Topic 2: Proteins

Duration: 6 Periods

### General Overview

Proteins are organic chemicals made of carbon, hydrogen, oxygen, nitrogen and sometimes sulphur, phosphorus, iron, copper and zinc. They are classified according to structure and biological value. Proteins owe their properties from a number of factors and these affect their functions in the body. In order for proteins to be utilised by the body, digestion, absorption and metabolism should take place. Different categories of people require different amounts of proteins and indeed insufficient and excessive intake of proteins can result in body disorders or diseases.

### General Objective

By the end of the topic, the learner should be able to examine the classification, properties and functions of proteins.

### Sub-Topic 1: Chemical Structure of Proteins

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>define proteins.</li> <li>identify the chemical elements that make up a protein.</li> <li>describe the structure of an amino acid and the condensation and hydrolysis reactions of proteins.</li> </ul>	<ul style="list-style-type: none"> <li>Definition of proteins</li> <li>Chemical composition of proteins</li> <li>Structure of the amino acid and the condensation and hydrolysis reactions of proteins</li> </ul>

### Methodology

- Guide learners to define proteins and identify the chemical elements that make up proteins.
- Guide learners to describe the chemical structure of the amino acid, and the condensation and hydrolysis reactions of proteins.

- Modules used in bonding
- Chart showing the condensation and hydrolysis reaction of proteins

- Give a written test on the amino acid and protein structures.

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• classify proteins.</li> </ul>	<ul style="list-style-type: none"> <li>• Classification of proteins by:               <ul style="list-style-type: none"> <li>- structure (protein structures - primary, secondary, tertiary and quaternary structures (peptide bonds, sulphur bond, etc)</li> <li>- function</li> <li>- biological value (classification of amino acids).</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• discuss protein quality and its significance.</li> </ul>	<ul style="list-style-type: none"> <li>• Protein quality and its significance:               <ul style="list-style-type: none"> <li>- net protein utilisation</li> <li>- protein efficiency ratio</li> <li>- amino acid score</li> <li>- chemical score</li> <li>- nitrogen balance</li> <li>- protein supplementation</li> </ul> </li> </ul>

- Using guided discussions, allow the learners classify proteins.
- Guide the learners to discuss protein quality and its significance.

- Chart on protein structures

### Assessment Strategy

- Give a written test on the classification of proteins and protein quality.

### Sub-Topic 3: Properties of Proteins

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• discuss the physical properties of proteins.</li> <li>• discuss the chemical properties of proteins.</li> </ul>	<ul style="list-style-type: none"> <li>• Physical properties of proteins</li> <li>• Chemical properties of proteins</li> </ul>

### Methodology

- Guide learners to discuss the physical and chemical properties of proteins.

### Teaching/Learning Aids

- Chart showing effects of heat on proteins

### Assessment Strategy

- Give an exercise on properties of proteins.

### Sub-Topic 4: Functions and Sources of Proteins

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• enumerate the functions of proteins in the body.</li> <li>• state the sources of proteins.</li> </ul>	<ul style="list-style-type: none"> <li>• Functions of proteins</li> <li>• Sources of proteins</li> </ul>

### Methodology

- Guide learners to discuss the functions of proteins.
- In groups, let learners state the sources of proteins.

### Teaching/Learning Aids

- Charts on foods containing proteins

### Assessment Strategy

- Give a written exercise on the functions of proteins.

### Sub-Topic 5: Protein Requirements

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• discuss the factors that influence protein requirements.</li><li>• state the recommended dietary allowances (RDAs) of different categories of people and age groups.</li></ul>	<ul style="list-style-type: none"><li>• Factors that influence protein requirements</li><li>• Recommended dietary allowances for different categories of people and age groups.</li></ul>

### Methodology

- Using brainstorming, guide learners to discuss the factors that influence protein requirements and state the RDAs for the different categories of people and age groups.

### Teaching/Learning Aids

- Chart showing the protein RDAs for the different categories of people and age groups.

### Assessment Strategy

- Give an assignment on the factors that influence protein requirements in the body.

### Sub-Topic 6: Effect of Protein Deficiency/Excessive Intake

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• describe the effects of deficiency of proteins in the body.</li></ul>	<ul style="list-style-type: none"><li>• Effects of deficiency – (kwashiorkor, marasmus, etc)</li></ul>

Specific Objectives	Content
<ul style="list-style-type: none"> <li>describe the effects of excessive intake of proteins in the body.</li> </ul>	<ul style="list-style-type: none"> <li>Effects of excessive intake of proteins</li> </ul>

### Methodology

- Guide learners to brainstorm the effects of deficiency and excessive intake of proteins.

### Teaching/Learning Aids

- Visit a nutritional unit e.g. Mwana Mugimu in Mulago Hospital in Kampala. If there is a nutritional unit at the nearby hospital, arrange to visit it as one of the learning resources.

### Assessment Strategy

- Written reports on visits to a nutritional unit.

## Topic 3: The Cooking of Food

Duration: 8 Periods

### General Overview

Cooking is the application of heat to food. It improves the appearance, taste and aroma of food. Cooking makes many foods more digestible while at the same time making them safe by destroying bacteria and parasites. There are various methods of cooking and all of them have effects on the nutritive value of food.

### General Objective

By the end of the topic, the learner should be able to examine the different cooking methods, their use and effects on food.

### Sub-Topic 1: Principles of Cooking Food

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• explain the reasons for cooking food.</li><li>• state the aims of food preparation.</li><li>• classify methods of cooking.</li><li>• discuss the effect of moist heat on food.</li><li>• discuss the effect of dry heat on food.</li></ul>	<ul style="list-style-type: none"><li>• Reasons for cooking food</li><li>• Aims of food preparation</li><li>• Classification – (dry and moist heat methods)</li><li>• Effects of moist heat on food</li><li>• Effect of dry heat on food</li></ul>

### Methodology

- Guide learners to explain the reasons of cooking food, aims of food preparation and classify the methods of cooking food.
- In groups, guide the learners to discuss the effects of moist and dry heat methods of cooking on food.



## Teaching and Learning Aids

- Charts showing the different methods of cooking food

## Assessment Strategy

- Give a written exercise on the differences between moist and dry methods of cooking.
- Give an assignment on the effects of moist and dry heat on food.

## Sub-Topic 2: Moist Heat Methods of Cooking Food

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• define the method of cooking.</li> <li>• state the aims and principles governing the method of cooking.</li> </ul>	<ul style="list-style-type: none"> <li>• Moist methods of cooking include: boiling, steaming, stewing/ casseroling, simmering, poaching, braising/ pot roasting. For each of these give the following:               <ul style="list-style-type: none"> <li>- definition of the method of cooking</li> <li>- aims and principles governing the method of cooking</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• explain the method of heat transfer in each moist method of cooking.</li> <li>• explain the advantages and disadvantages of the method of cooking.</li> <li>• identify the foods suitable for the method of cooking.</li> </ul>	<ul style="list-style-type: none"> <li>• Methods of heat transfer in the method of cooking</li> <li>• advantages and disadvantages of the method of cooking</li> <li>• foods suitable for the method of cooking</li> </ul>

## Methodology

- Using guided discussion, let learners define the method of cooking and state its aims and principles.
- In groups, guide learners to explain the method of heat transfer in each method of cooking.

- In groups, guide learners to explain the advantages and disadvantages of each method of cooking.

### Teaching and Learning Aids

- Charts showing the principles behind the methods of cooking food.

### Assessment Strategy

- Give a written test on principles, advantages and disadvantages of each method of cooking.

### Sub-Topic 3: Dry Heat Methods of cooking

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• define the method of cooking.</li><li>• state the aims and principles governing the method of cooking.</li><li>• explain the method of heat transfer in each dry method of cooking.</li><li>• explain the advantages and disadvantages of the method of cooking.</li><li>• identify suitable foods for the method of cooking.</li></ul>	<ul style="list-style-type: none"><li>• Dry methods of cooking include: baking, frying and its types, roasting, grilling and barbecue. For each of these give the:<ul style="list-style-type: none"><li>• Definition of the method of cooking</li><li>• Aims and principles governing the method of cooking</li></ul></li><li>• Methods of heat transfer in each method of cooking</li><li>• Advantages and disadvantages of the method of cooking</li><li>• Foods suitable for the method of cooking</li></ul>

### Methodology

- Using guided discussions, let learners define each method of cooking and state its aims and principle.
- In groups, guide learners to explain the methods of heat transfer in each method of cooking.

- In groups, guide learners to identify the foods suitable for each method of cooking.

### **Teaching/Learning Aids**

- Charts showing the principles behind the methods of cooking food

### **Assessment Strategy**

- Give a written test on the principles, advantages and disadvantages of each method of cooking.

## Topic 4: Meat and Poultry

Duration: 17 Periods

### General Overview

Meat is the flesh of domestic and game animals such as beef, veal, mutton, ham, bacon and offals. Poultry is the term used for domestic birds such as chicken, duck, turkeys, geese and guinea fowl. Both meat and poultry provide first class proteins and appreciable amounts of fats, some mineral salts and vitamins. Gelatin is obtained from the connective tissue of animals and is used as a setting agent in most jellies, ice-cream and other sweets. Research of protein alternatives to meat has been taking place for some time. The most successful of the meat substitutes is soya protein, called textured vegetable protein (TVP).

### General Objectives

By the end of the topic, the learner should be able to:

- i) describe the structure and composition of meat and poultry.
- ii) examine the uses of gelatine in cookery.
- iii) describe the value of meat, poultry and Textured Vegetable Protein (TVP).

### Sub-Topic 1: Meat

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• define meat.</li><li>• identify the different types of meat.</li><li>• describe the structure and composition of meat.</li><li>• discuss the nutritive and dietetic value of meat.</li><li>• identify the causes of toughness in meat.</li><li>• describe the methods of tenderising meat.</li><li>• explain the factors to consider</li></ul>	<ul style="list-style-type: none"><li>• Definition of meat</li><li>• Types of meat</li><li>• Structure and composition of meat</li><li>• Nutritive and dietetic value of meat</li><li>• Causes of toughness in meat</li><li>• Methods of tenderising meat</li><li>• Factors to consider when</li></ul>

Specific Objectives	Content
when selecting meat. • discuss the effect of moist and dry heat on meat. • describe the different methods of cooking meat.	selecting meat • Effect of heat on meat - (moist and dry heat) • Different methods of cooking meat

## Methodology

- Using guided discussion, let learners define meat, identify the different types of meat, and describe the structure / composition and value of meat.
- Using brainstorming, allow learners to discuss the value of meat, causes of toughness in meat and methods of tenderising meat.
- In groups, guide learners to explain the factors to consider when selecting meat, discuss the effect of moist and dry heat and describe the different methods of cooking meat.

## Teaching and Learning Aids

- Visit to the abattoir, butcher, and meat processing plant

## Assessment Strategy

- Give an assignment on drawing the structure of meat.

## Sub-Topic 2: Gelatine

Specific Objectives	Content
The learner should be able to: • define gelatine. • state the source of gelatine. • describe the nutritive and dietetic value of gelatine. • explain the rules of using gelatine. • describe the use of gelatine in cookery.	• Definition of gelatine • Source of gelatine • Nutritive and dietetic value of gelatine • Rules of using gelatine • Use of gelatine in cookery

## Methodology

- Using brainstorming, ask learners to define gelatine and state its

sources.

- Using guided discussion let learners identify the nutritive, and dietetic value of gelatine and the rules for using it in cookery
- Demonstrate to the learners the use of gelatine in cookery.

### Teaching/Learning Aids

- Samples of gelatine

### Assessment Strategy

- Give an assessment on the use of gelatine in cookery.

### Sub-Topic 3: Offal

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• define offals.</li><li>• state the types of offals.</li><li>• discuss the nutritive and dietetic value of offals.</li><li>• describe the methods of cooking offals.</li></ul>	<ul style="list-style-type: none"><li>• Definition of offals</li><li>• Types of offals</li><li>• Nutritive and dietetic value of offals</li><li>• Methods of cooking offals</li></ul>

### Methodology

- Using brainstorming, let learners define offal; state the different types of offal and discuss the nutritive and dietetic value of offal.
- In groups, guide learners to describe the methods of cooking offal.

### Teaching/Learning Aids

- Pictures of offal from textbooks

### Assessment Strategy

- Give an assignment on the method of cooking offal practically.

### Sub-Topic 4: Textured Vegetable Protein (TVP)

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>define textured vegetable protein (TVP).</li> <li>describe the manufacture of TVP.</li> <li>discuss the nutritive and dietetic value of TVP.</li> <li>explain the advantages and disadvantages of using textured vegetable protein.</li> <li>describe the use of textured vegetable protein in cookery.</li> </ul>	<ul style="list-style-type: none"> <li>Definition of TVP</li> <li>Manufacture of TVP</li> <li>Nutritive and dietetic value of TVP</li> <li>Advantages and disadvantages of using TVP</li> <li>Use textured vegetable protein in cookery</li> </ul>

#### Methodology

- Guide the learners to brainstorm on the definition, manufacture, nutritive and dietetic value of TVP.
- Guide a discussion on the advantages and disadvantages of using TVP.
- In groups, let learners be guided to describe the use of TVP in cookery.

#### Teaching/Learning Aids

- Charts on basic steps of manufacturing of TVP

#### Assessment Strategy

- Give a written test on manufacture and value of TVP.

### Sub-Topic 5: Poultry

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>define poultry.</li> <li>identify the types of poultry.</li> <li>describe the composition and structure of poultry.</li> <li>discuss the nutritive and</li> </ul>	<ul style="list-style-type: none"> <li>Definition of poultry</li> <li>Types of poultry</li> <li>Composition and structure of poultry</li> <li>Nutritive and dietetic value of</li> </ul>

Specific Objectives	Content
dietetic value of poultry. <ul style="list-style-type: none"><li>• describe the methods of cooking poultry.</li></ul>	poultry <ul style="list-style-type: none"><li>• Methods of cooking poultry</li></ul>

### Methodology

- Guide learners to brainstorm on the definition, composition and structure of poultry.
- Using group discussion, let learners discuss the nutritive and dietetic value and methods of cooking poultry.

### Teaching/Learning Aids

- Real food items
- Cooking equipment

### Assessment Strategy

- Written tests on types of poultry, composition, structure and dietetic value.

### Sub-Topic 6: Game

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• define game.</li><li>• identify the types of game meat.</li><li>• describe the structure and composition of game meat.</li><li>• discuss the nutritive and dietetic value of game meat.</li><li>• describe the methods of cooking game meat.</li></ul>	<ul style="list-style-type: none"><li>• Definition of game meat</li><li>• Types of game meat - (birds and animals)</li><li>• Structure and composition of game meat</li><li>• Nutritive and dietetic value of game meat</li><li>• Methods of cooking game meat</li></ul>

### Methodology

- Use guided discovery to define game and explain its types.
- Using guided discussion, describe the structure, composition, nutritive and dietetic value of game.
- In groups, demonstrate the cooking of game meat.



### **Teaching/Learning Aids**

- Charts showing the composition of game meat

### **Assessment Strategy**

- Give a written test on the types, dietetic and nutritive value of game meat.

## Topic 5: Carbohydrates

Duration: 8 Periods

### General Overview

Carbohydrates are composed of carbon, hydrogen and oxygen. They are macronutrients and provide the major source of energy for people all over the world. The principal source of carbohydrates is plant foods. Carbohydrate is usually an obligatory fuel for the brain and it is necessary to replenish glycogen stores in muscle and to be available for rapid energy exertions. The blood glucose passes into tissues where it is oxidised and energy is released by means of one of the several pathways (glycolysis, tricarboxylic acid cycle-TCA) depending on circumstances. Its deficiency/excessive intake can lead to body disorders/diseases.

### General Objectives

By the end of the topic, the learner should be able to:

- i) examine the composition, sources and functions of carbohydrates in the body.
- ii) examine the effects of deficiency and excessive intake of carbohydrates.

### Sub-Topic 1: Classification of Carbohydrates

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• define carbohydrates.</li><li>• identify the chemical elements that make up carbohydrates.</li><li>• describe the formation of the carbohydrate molecule.</li><li>• classify carbohydrates.</li></ul>	<ul style="list-style-type: none"><li>• Definition of carbohydrates</li><li>• Chemical elements that make up carbohydrates</li><li>• Formation of the carbohydrate molecule - (condensation reaction)</li><li>• Classification of carbohydrates:<ul style="list-style-type: none"><li>- Monosaccharides - glucose, fructose and galactose</li><li>- Disaccharides - sucrose,</li></ul></li></ul>

Specific Objectives	Content
	maltose and lactose - Oligosaccharides - raffinose and stachyose - Polysaccharides - starches, celluloses, dextrins, inulin, hemi-celluloses, pectin, etc

### Methodology

- Using guided discussions, let learners define carbohydrates, identify the chemical elements that make up carbohydrates and describe the formation of the carbohydrate molecule.
- In groups, allow learners to classify carbohydrates.

### Teaching/Learning Aids

- Charts showing the structure and classes of carbohydrates

### Assessment Strategy

- Give a test on classification of carbohydrates.

## Sub-Topic 2: Properties and Functions of Carbohydrates

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• discuss the physical and chemical properties of carbohydrates.</li> <li>• enumerate the functions of carbohydrates in the body.</li> </ul>	<ul style="list-style-type: none"> <li>• Physical and chemical properties of carbohydrates - effects of heat (dry and moist), solubility, etc</li> <li>• Functions of carbohydrates in the body</li> </ul>

### Methodology

- In groups, guide learners to discuss the physical and chemical properties of carbohydrates and to enumerate their functions.
- Using guided discussions, let learners explain the homeostasis of glucose.

**Teaching/Learning Aids**

- Charts showing the properties of carbohydrates

**Assessment Strategy**

- Give a written assignment on functions and properties of carbohydrates.

**Sub-Topic 3: Sources and Intake of Carbohydrates**

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• identify sources of carbohydrates.</li><li>• state the RDA of carbohydrates for different age groups and categories of people.</li><li>• describe the effects of deficiency of carbohydrates.</li><li>• describe the effects of excessive intake of carbohydrates.</li></ul>	<ul style="list-style-type: none"><li>• Sources of carbohydrates</li><li>• Recommended dietary allowances of carbohydrates for different age groups and categories of people</li><li>• Effects of deficiency of carbohydrates</li><li>• Effects of excessive intake of carbohydrates - overweight and obesity, cardiovascular disease and dental caries, etc</li></ul>

**Methodology**

- Using brainstorming, guide learners to identify the sources and RDA of carbohydrates for different age groups and categories of people.
- Using guided group discussions, explain the effects of deficiency and excessive intake of carbohydrates.

**Teaching/Learning Aids**

- Charts on the RDAs of carbohydrates for different age groups and categories of people

**Assessment Strategy**

- Give a written exercise on deficiencies and excessive intake of carbohydrates.

## Topic 6: Lipids

Duration: 11 Periods

### General Overview

Lipids are organic compounds made of carbon, hydrogen and oxygen. They are greasy in nature and their constituent units are fatty acids and glycerol. The physical and chemical properties of lipids are diverse and are the major determinants of their functions in the body and uses in culinary practice. They are macro-nutrients which mainly supply the body with energy.

### General Objective

By the end of the topic, the learner should be able to examine the chemical nature, classification and role of lipids in the body.

### Sub-Topic 1: Structure and Classification of Lipids

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>define lipids.</li> <li>classify lipids.</li> </ul> <ul style="list-style-type: none"> <li>identify the chemical elements that make up lipids.</li> <li>describe the structure of fatty acids and glycerol.</li> </ul>	<ul style="list-style-type: none"> <li>Definition of lipids.</li> <li>Classification of lipids - (simple, conjugated and derived fats); (fats, oils)</li> <li>Other fat derivatives:               <ul style="list-style-type: none"> <li>cholesterol</li> <li>lipoproteins</li> <li>phospholipids</li> <li>glycolipids</li> </ul> </li> <li>Chemical elements that make up lipids - (fatty acids and glycerol)</li> <li>The structure of fatty acids - saturated and unsaturated fatty acid (essential and non essential fatty acids) and glycerol</li> </ul>

### Methodology

- Guide learners to brainstorm on the definition of and classification of lipids and other fat derivatives.

- In groups, guide learners to illustrate how elements combine to form the basic unit of a lipid and formation of glyceride.

### Teaching and Learning Aids

- Charts with structures of lipids
- A selection of fats and oils

### Assessment Strategy

- Written assignment on structure and classification of lipids, fat derivatives and sources of lipids

## Sub-Topic 2: Properties and Functions of Lipids

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• describe the physical properties of lipids.</li><li>• describe the chemical properties of lipids.</li><li>• discuss the effect of heat on lipids.</li><li>• enumerate functions of lipids in the body.</li><li>• explain the functions of lipids in cookery.</li></ul>	<ul style="list-style-type: none"><li>• Physical properties of lipids:<ul style="list-style-type: none"><li>- rancidity</li><li>- plasticity</li><li>- emulsions</li><li>- solubility, etc</li></ul></li><li>• Chemical properties of lipids:<ul style="list-style-type: none"><li>- hydrogenation</li><li>- saponification, etc</li></ul></li><li>• Effect of heat (melting, flash, smoke points)</li><li>• Functions of lipids in the body</li><li>• Functions of lipids in cookery</li></ul>

### Methodology

- Guide learners to brainstorm on the physical and chemical properties of lipids and the effect of heat on lipids.
- Using guided discussion, guide learners to enumerate the functions of lipids in the body and in cookery.

## Teaching/Learning Aids

- Real food materials
- Source of heat
- Cooking equipment
- Organised visits to a fat processing factory to see hydrogenation, saponification

## Assessment Strategy

- Give a written test on the functions, physical and chemical properties of lipids.

## Sub-Topic 3: Sources and Intake of Lipids

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• identify sources of lipids.</li> <li>• discuss the factors that influence lipid requirements.</li> <li>• examine the recommended dietary allowances of lipids for different categories and age groups.</li> <li>• discuss the effects of deficiency of lipids.</li> <li>• discuss the effects of excessive intake of lipids.</li> </ul>	<ul style="list-style-type: none"> <li>• Sources of lipids</li> <li>• Factors that influence lipid requirements</li> <li>• Recommended dietary allowances of lipids for different categories and age groups of people</li> <li>• Effects of deficiency of lipids</li> <li>• Effects of excessive intake of lipids:               <ul style="list-style-type: none"> <li>- Obesity</li> <li>- atherosclerosis and arteriosclerosis</li> <li>- hypertension</li> <li>- vitamin toxicity (fat soluble)</li> </ul> </li> </ul>

## Methodology

- Guide learners to brainstorm the sources of lipids and the factors that influence lipids requirements.

- In groups, use guided discussions to examine the RDAs of lipids for different categories and age groups, and the effects of deficiency and excessive intake.
- In groups, guide learners to discuss the effects of deficiency and excessive intake of lipids.

### **Teaching/Learning Aids**

- Charts of RDAs for different age groups and categories of people

### **Assessment Strategy**

- Give an exercise on factors which influence lipid requirements and the effects of deficiency and excessive intake of lipids



## SENIOR FIVE - TERM TWO

### Topic 7: Fish

Duration: 4 Periods

#### General Overview

Fish includes the white, oily and shell fish types. It is obtained from both fresh and salty water bodies. It is rich in high biological value protein and therefore suitable for children, invalids, and the elderly. Fish deteriorates very fast and therefore care must be taken during buying and storage.

#### General Objectives

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

- i) examine the structure, classification and value of fish.
- ii) describe proper ways of food processing and preservation.

#### Sub-Topic 1: Classification, Structure and Composition of Fish

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• classify fish.</li> <li>• describe the structure of fish.</li> <li>• explain the composition of fish.</li> </ul>	<ul style="list-style-type: none"> <li>• Classification of fish according to:               <ul style="list-style-type: none"> <li>- habitat - (fresh water fish, sea water fish)</li> <li>- composition – (oily fish, white fish, shell fish)</li> </ul> </li> <li>• Structure of fish – (muscle, connective tissue and fat)</li> <li>• Composition of fish</li> </ul>

#### Methodology

- Through whole class discussion, guide learners to classify fish, describe its structure and composition.

**Teaching/Learning Aids**

- Charts with different types of fish

**Assessment Strategy**

- Give a written test on classification, structure and composition of fish

**Sub-Topic 2: Value of Fish**

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• discuss the nutritive value of fish.</li><li>• discuss dietetic value of fish.</li><li>• discuss the economic value of fish.</li></ul>	<ul style="list-style-type: none"><li>• Nutritive value of fish</li><li>• Dietetic value of fish</li><li>• Economic value of fish</li></ul>

**Methodology**

- Through guided discussions, let learners explain the nutritive, dietetic and economic value of fish.

**Teaching and Learning Aids**

- Charts on different types of fish

**Assessment Strategy**

- Give an exercise on the value of fish.

**Sub-Topic 3: Fish Processing and Preservation**

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• explain the factors to consider when buying fish.</li><li>• describe the different methods of processing fish.</li><li>• describe the different methods of preserving fish.</li><li>• discuss the ways of storing fish.</li><li>• describe the methods of cooking fish.</li></ul>	<ul style="list-style-type: none"><li>• Factors to consider when buying fish</li><li>• Methods of processing fish – (cleaning, filleting, etc)</li><li>• Methods of preserving fish – (freezing, drying, chemical, etc)</li><li>• Storage of fish</li><li>• Methods of cooking fish</li></ul>

## **Methodology**

- Through guided discussions, let the learners explain the points to consider when buying fish and describe the different methods of processing fish.
- Using brainstorming, guide the learners to discuss the different ways of storing fish and describe suitable methods of cooking fish.

## **Teaching/Learning Aids**

- A visit to a fish processing plant

## **Assessment Strategy**

- Give an exercise on the methods of processing, preserving and storing fish.

## Topic 8: Eggs

Duration: 2 Periods

### General Overview

Eggs are mainly got from domestic birds, for example, turkeys, geese, hens, etc. Eggs are the most versatile of all cookery ingredients providing proteins of high biological value. They also provide some vitamins and mineral salts. They are graded in various ways according to weight and source, and need to be stored well to ensure freshness when used.

### General Objective

By the end of the topic, the learner should be able to examine the structure, composition and value of eggs.

### Sub-Topic 1: Structure, Composition and Value of Eggs

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• describe the structure of an egg.</li><li>• explain the composition of an egg.</li><li>• discuss the nutritive value of eggs.</li><li>• discuss the dietetic value of eggs.</li></ul>	<ul style="list-style-type: none"><li>• Structure of an egg</li><li>• Composition of an egg</li><li>• Nutritive value of eggs</li><li>• Dietetic value of eggs</li></ul>

### Methodology

- Guide the learners to describe the structure and composition of an egg.
- Through group discussion, guide the learners to discuss the nutritive and dietetic value of eggs.

### Teaching/Learning Aids

- Charts with structure of an egg

## Assessment Strategy

- Give an assignment on the value of eggs.

## Sub-Topic 2: Use, Storage and Effect of Heat on Eggs

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• explain the uses of eggs in cookery.</li> <li>• explain how eggs can be graded according to quality and size.</li> <li>• describe the methods of testing for freshness of eggs.</li> <li>• demonstrate safe storage of eggs.</li> <li>• discuss the methods of preserving eggs.</li> <li>• discuss the effects of heat on eggs.</li> </ul>	<ul style="list-style-type: none"> <li>• Uses of eggs in cookery</li> <li>• Grading of eggs - (quality and size)</li> <li>• Testing for freshness of eggs</li> <li>• Safe storage of fresh eggs</li> <li>• Methods of preserving eggs</li> <li>• Effects of heat on eggs</li> </ul>

## Methodology

- Through guided discussion, let learners explain the use, grading, testing and storage of eggs.
- Using group work, let learners discuss the methods of preservation, and the effect of heat on eggs.

## Teaching/Learning Aids

- Eggs
- Equipment

## Assessment Strategy

- Give an exercise on the effects of heat on eggs.

## Topic 9: Milk and Milk Products

Duration: 7 Periods

### General Overview

Milk is a very valuable food at all stages of human life, particularly for children, invalids and expectant and nursing mothers. Milk is obtained from cows, goats, asses and reindeer. All types of milk are very similar but vary slightly in composition and proportion. Milk products can be obtained from fresh milk or fermented milk. They include cream, yoghurt, butter, cheese, etc. It is important to store milk carefully to avoid growth of harmful bacteria which may cause souring. Milk will also keep longer if treated and processed into other milk products. Milk products vary in their nutritive value, composition and digestibility, and are used in various dishes in cookery.

### General Objectives

By the end of the topic, the learners should be able to:

- i) describe the composition and value of milk.
- ii) examine the types of milk, milk products and their uses in cookery.

### Sub-Topic 1: Composition, Value and Digestion of Milk

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• compare the composition of cow's and human milk.</li><li>• discuss the nutritive value of cow's milk.</li><li>• discuss the dietetic value of cow's milk.</li><li>• discuss the uses of milk in cookery.</li></ul>	<ul style="list-style-type: none"><li>• Comparison between cow's and human milk</li><li>• Nutritive value of cow's milk</li><li>• Dietetic value of cow's milk</li><li>• Uses of milk in cookery</li></ul>

### Methodology

- Guide learners to discuss the composition of cow's milk and human milk.
- Using groups, guide learners to discuss the nutritive and the dietetic value of milk.

## Teaching/Learning Aids

- Charts showing the composition of cow's and human milk.

## Assessment Strategy

- Written test on nutritive, dietetic value and digestion of milk.

## Sub-Topic 2: Milk Storage and Processing

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• explain the causes of milk spoilage.</li> <li>• explain the ways you can prevent milk spoilage.</li> <li>• discuss the storage of milk at home.</li> <li>• describe the different methods of processing and preserving milk.</li> <li>• discuss the effect of heat on milk.</li> </ul>	<ul style="list-style-type: none"> <li>• Spoilage of milk:               <ul style="list-style-type: none"> <li>- causes</li> <li>- prevention of spoilage</li> </ul> </li> <li>• Storage of milk at home</li> <li>• Processing of milk - (homogenisation, heat treatment, pasteurisation, sterilised milk (UHT), evaporated, condensed milk, dry milk powders, etc)</li> <li>• Effect of heat on milk</li> </ul>

## Methodology

- In small groups, guide learners to brainstorm on the causes of milk spoilage and ways to prevent it.
- Guide learners to discuss the storage of milk and the different methods of processing and preserving milk, and the effect of heat on milk.

## Teaching/Learning Aids

- Samples of sour milk, some processed milk i.e. dried milk, evaporated and condensed, UHT and pasteurized milk

## Assessment Strategy

- Give an assignment on types of processed milk.

### Sub-Topic 3: Milk Products

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• identify the different products made from milk.</li><li>• describe the methods of processing milk products.</li><li>• discuss the nutritive value of the milk products.</li><li>• discuss the dietetic value of milk products in the diet.</li><li>• discuss the effect of heat on milk products.</li><li>• discuss the uses of milk products in cookery.</li></ul>	<ul style="list-style-type: none"><li>• Milk products (butter milk, butter, ice cream, yoghurt, sour cream, cheese, etc)</li><li>• For each of the milk products cover the following:<ul style="list-style-type: none"><li>- methods of processing the milk product</li><li>- nutritive value of the milk product</li><li>- dietetic value of the milk product</li><li>- effect of heat on the milk product</li><li>- uses of the milk product in cookery</li></ul></li></ul>

### Methodology

- Through whole class discussion, guide learners to identify the different milk products and describe their methods of processing.
- Guide learners to discuss the value of milk products, their digestibility, and effect of heat.
- Using group discussion, let learners identify the uses of milk products in cookery.

### Teaching/Learning Aids

- Food items like cheese, yoghurt, ice cream, etc

### Assessment Strategy

- Give an assignment on the value of milk products.



## Topic 10: Vitamins

Duration: 9 Periods

### General Overview

Vitamins may be defined as organic compounds required in small amounts and necessary maintenance of good health. If vitamins are not sufficiently provided in the body, deficiency diseases may occur. Vitamins may be classified broadly into two groups namely; fat soluble and water soluble vitamins. Each of these vitamins has properties that affect their functions in the body.

### General Objective

By the end of the topic, the learner should be able to examine the structure, classification and role of both water and fat soluble vitamins in the body.

### Sub-Topic 1: Classification of Vitamins

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>define vitamins.</li> <li>classify vitamins.</li> <li>discuss the general characteristics of each of the two groups of vitamins.</li> </ul>	<ul style="list-style-type: none"> <li>Definition of vitamins</li> <li>Classification of vitamins</li> <li>General characteristics of each of the two groups of vitamins (fat soluble and water soluble)</li> </ul>

### Methodology

- Using guided discovery, let learners define and classify vitamins.
- In small groups, guide learners to discuss the general characteristics of vitamins.

### Teaching/Learning Aids

- Charts showing the classification of vitamins

### Assessment Strategy

- Give an exercise on the general characteristics of each of the two groups of vitamins.

**Sub-Topic 2: Fat Soluble Vitamins (A, D, E, K)**

Specific Objectives	Content
<p>For each of the vitamins, the learner should be able to:</p> <ul style="list-style-type: none"><li>• identify the chemical names of the vitamins.</li><li>• describe the chemical structure of the vitamins.</li><li>• discuss the physical and chemical properties of the vitamins.</li><li>• discuss the functions of the vitamins in the body.</li><li>• explain the factors that influence the absorption and metabolism of vitamins.</li><li>• state the sources of vitamins.</li><li>• State the RDAs of the vitamins.</li></ul> <ul style="list-style-type: none"><li>• describe the effects of deficiency and excessive intake of the vitamin.</li></ul>	<p>For each of the vitamins (A,D,E,K) give the following:</p> <ul style="list-style-type: none"><li>• chemical name of the vitamin</li><li>• chemical structure of the vitamin</li><li>• physical and chemical properties of the vitamin</li><li>• functions of the vitamin in the body</li><li>• factors that influence the absorption and metabolism of the vitamin</li><li>• sources of the vitamin</li><li>• recommended dietary allowance of the vitamin</li><li>• effects of deficiency and excessive intake of the vitamin</li></ul>

**Methodology**

- Using guided discussions, let learners draw the structure and describe the chemical nature of the vitamins.
- Using guided discovery, allow learners to discuss the physical and chemical properties and the functions of each vitamin in the body.
- Using guided discussions, let learners explain the absorption, metabolism and factors that favour or hinder the absorption and metabolism of each vitamin
- Let learners brainstorm on the sources, RDAs and effects of deficiency and excessive intake of each vitamin.

**Teaching/Learning Aids**

- Charts showing the chemical structures of vitamins

## Assessment Strategy

- Give written assignments on structure, functions and properties of fat soluble vitamins.

## Sub-Topic 3: Water Soluble Vitamins (B and C)

Specific Objectives	Content
<p>For each of the water soluble vitamins, the learner should be able to:</p> <ul style="list-style-type: none"> <li>• identify the chemical name.</li> <li>• describe the chemical structure.</li> <li>• discuss the physical and chemical properties.</li> <li>• discuss its functions in the body.</li> <li>• identify the factors that influence its absorption.</li> <li>• identify its sources.</li> <li>• state its recommended dietary allowance for different categories and age groups of people.</li> <li>• discuss the effects of its deficiency and excessive intake.</li> </ul>	<p>For each of the vitamins (B<sub>1</sub>, B<sub>2</sub>, B<sub>3</sub>, B<sub>5</sub>, B<sub>6</sub>, Folic acid, B<sub>12</sub>, Vitamin C) give the following:</p> <ul style="list-style-type: none"> <li>• Chemical name of the vitamin</li> <li>• Chemical structure of the vitamin</li> <li>• Physical and chemical properties of the vitamin</li> <li>• Functions of the vitamin in the body</li> <li>• Factors that influence its absorption</li> <li>• Sources of the vitamin</li> <li>• Recommended dietary allowance of the vitamin</li> <li>• Effects of deficiency and excessive intake of the vitamin.</li> </ul>

## Methodology

- Guide learners to identify the chemical name, draw and describe the structure of the vitamins by drawing chemical structures.
- Guide learners to discuss the physical and chemical properties and functions of each vitamin in the body.
- Guide learners to discuss the functions, absorption, metabolism and factors that favour and hinder their absorption.
- Using brainstorming, let learners identify the sources, RDAs and effects of deficiency and excessive intake of water soluble vitamins.

### **Teaching/Learning Aids**

- Charts with structures of the different vitamins

### **Assessment Strategy**

- Give a written assignment on functions and properties of water soluble vitamins.

## Topic 11: Cereals

Duration: 5 Periods

### General Overview

Cereals are edible seeds or grain of cultivated grasses. They are available all over the world and form staple foods of most communities. They include wheat, maize, rice, rye, oats, barley, millet and sorghum, among others. Cooking of cereals is essential for food to be digested and absorbed. Milling of cereals can be carried out by stone milling, roller milling or fragmentation. The milling process determines the type of flour and its use in cookery. If exposed to damp air, cereals take up moisture and go mouldy.

### General Objective

By the end of the topic, the learner should be able to examine the types, structure, composition, storage, value and use of cereals.

### Sub-Topic 1: Types, Role, Structure and Value of Cereals

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>define cereals.</li> <li>identify the different types of cereals and cereal products.</li> <li>discuss the role of cereals in the diet.</li> <li>describe the structure and composition of cereals in reference to wheat.</li> <li>discuss the nutritive and dietetic value of wheat.</li> </ul>	<ul style="list-style-type: none"> <li>Definition of cereals</li> <li>Types of cereals – (rice, millet, maize, wheat, etc); cereal products (pasta, oats, etc)</li> <li>The role of cereals in the diet</li> <li>Structure and composition of wheat cereal</li> <li>Nutritive and dietetic value of wheat</li> </ul>

### Methodology

- Guide the learners to define and classify cereals and their products.

- Through guided discussion, let learners discuss the role of cereals in the diet as well as a structure, composition of wheat and the nutritive value of cereals.
- Using brainstorming, guide learners to discuss the nutritive and dietetic value of wheat.

### Teaching/Learning Aids

- A selection of cereal and cereal products
- Charts with drawing of wheat grain

### Assessment Strategy

- Give an assignment on the value of cereals in the diet.

### Sub-Topic 2: Milling and Effect of Heat on Cereals

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• describe the milling process of wheat.</li><li>• discuss the effect of heat on cereals.</li><li>• identify the different types of flours and their uses in cookery.</li></ul>	<ul style="list-style-type: none"><li>• The process of milling wheat</li><li>• Effect of heat on cereals-(moist and dry heat)</li><li>• Types of flours and their uses in cookery</li></ul>

### Methodology

- Guide a discussion on wheat milling process.
- Guide learners to discuss the effects of heat on cereals.
- Through guided discussion, let learners identify the uses of different types of flours.

### Teaching/Learning Aids

- Types of wheat flour
- Organised visits to milling companies

## Assessment Strategy

- Give written tests on the wheat milling process.

## Sub-Topic 3: Storage of Cereals and Flours

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• demonstrate the storage of cereals and flours</li> <li>• identify other cereal-like foods.</li> <li>• describe the origin and uses of cereal-like products in cookery.</li> </ul>	<ul style="list-style-type: none"> <li>• Storage of cereals and flours</li> <li>• Other cereal-like foods-(tapioca, arrow root and sago)</li> <li>• Origin and use cereal-like foods in cookery</li> </ul>

## Methodology

- Guide learners to discuss the storage of cereals and flours.
- Using brainstorming, let learners identify other cereal-like foods, describing their origin and use in cookery.
- Use demonstrations on preparation, cooking and serving of cereal dishes.

## Teaching/Learning Aids

- Samples of cereal-like foods

## Assessment Strategy

- Give a test on uses of cereal-like foods in cookery.

## Topic 12: Leavening (Raising) Agents

Duration: 4 Periods

### General Overview

Leavening agents include air, steam and carbon dioxide. Their working is based on the principle of expansion of gases when heated. Leavening/raising agents are introduced into flour mixtures (cakes, bread, biscuits, batters, pastry) so that they can contribute to a risen, light, pleasant texture in these products. The lightness and porosity of cakes, bread and many other foods is achieved by the addition of a raising agent.

### General Objective

By the end of the topic, the learner should be able to:

- i) examine the types of raising agents and their action in cookery.
- ii) explain the use of raising agents in cookery

### Sub-Topic 1: Types and Actions of Leavening Agents

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• define the term leavening agent.</li><li>• explain the action of the different types of leavening agents.</li></ul>	<ul style="list-style-type: none"><li>• Definition of the term leavening agent</li><li>• Types and action of leavening agents:<ul style="list-style-type: none"><li>- mechanical (air)</li><li>- steam</li><li>- chemical (bicarbonate of soda, bicarbonate of soda and acid, baking powder)</li><li>- biological (yeast)</li></ul></li></ul>

### Methodology

- Guide learners to define the term leavening agent.
- Guide learners to identify the types of leavening agents and their actions.



## Teaching and Learning Aids

- Real raising agents like sodium bicarbonate, bicarbonate of soda, acid and yeast
- Wheat flour

## Assessment Strategy

- Give a written test on the types and actions of different raising agents.

## Sub-Topic 2: Uses and Storage of Leavening Agents

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• state the uses of the different raising agents in cookery.</li> <li>• discuss the ways of storing the different raising agents.</li> </ul>	<ul style="list-style-type: none"> <li>• Uses of the different raising agents in cookery – give examples in each case as follows:               <ul style="list-style-type: none"> <li>- mechanical action-sponge mixtures, etc</li> <li>- biological action –yeast mixtures, etc</li> <li>- chemical – creamed mixtures, etc</li> <li>- steam – pastries, batters, etc</li> </ul> </li> <li>• Storage of different raising agents</li> </ul>

## Methodology

- Guide learners to state the uses of the different raising agents in cookery.
- Guide discussions on the ways of storing raising agents.

## Teaching/Learning Aids

- Real raising agents
- Equipment
- Source of heat

## Activities of Assessment

- Give a test on the types of raising agents

## Topic 13: Mineral Elements

Duration: 14 Periods

### General Overview

Minerals are inorganic substances which are required in very small amounts (micronutrients). Mineral elements are classified as major or trace elements. These mineral elements have a number of essential functions to perform. Hence, the body must receive a sufficient supply of each of them if it is to remain healthy. They are important for both growth and maintenance of good health.

### General Objectives

By the end of the topic, the learner should be able to:

- i) examine the classification, role and metabolism of mineral elements (both the major and trace elements) in the body.
- ii) examine the effects of deficiency/excessive intake of these mineral elements in the body.

### Sub-Topic 1: Introduction to Mineral Elements

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• define mineral salts.</li><li>• classify mineral salts.</li><li>• state the general functions of mineral elements.</li><li>• state the general properties of mineral elements.</li></ul>	<ul style="list-style-type: none"><li>• Definition of mineral elements</li><li>• Classification of mineral elements (major and trace elements give examples in each case)</li><li>• General functions of mineral elements</li><li>• General properties of mineral elements</li></ul>

### Methodology

- Guide learners to define and classify mineral salts.
- Guide learners to brainstorm on the general functions and properties of mineral salts.

## Teaching/Learning Aids

- Chart on classification of mineral salts

## Assessment Strategy

- Written test on general functions and properties of mineral salts.

## Sub-Topic 2: Major Elements (Calcium, Phosphorus, Potassium, Sodium, Chlorine, Sulphur and Magnesium)

Specific Objectives	Content
<p>For each of the mineral elements, the learner should be able to:</p> <ul style="list-style-type: none"> <li>• describe its occurrence.</li> <li>• Explain its physiological functions.</li> <li>• explain the effects of deficiency and excessive intake in the body.</li> <li>• discuss factors that influence absorption and metabolism (hindering or facilitating factors) of the mineral element.</li> <li>• state the recommended daily allowances for the mineral element.</li> <li>• state the dietary sources.</li> </ul>	<p>For each of the major mineral elements (Ca, P, K, Na, Cl, S, Mg), discuss the following:</p> <ul style="list-style-type: none"> <li>• occurrence</li> <li>• physiological functions of each mineral</li> <li>• effects of deficiency and excessive intake in the body</li> <li>• factors that influence absorption and metabolism (hindering or facilitating factors) of the mineral element</li> <li>• recommended daily allowances for the mineral element</li> <li>• dietary sources of the mineral element</li> </ul>

## Methodology

- Guide learners in groups to discuss the occurrence, absorption, transport and metabolism of these nutrients.
- Guide learners to brainstorm the functions, deficiency, recommended daily intake and sources of each of the mineral salts above.

## Teaching/Learning Aids

- Chart on classification of major mineral elements

### Assessment Strategy

- Give an assignment on the factors affecting absorption and metabolism of these mineral salts.

### Sub-Topic 3: Trace Elements (Iron, Iodine, Zinc, Selenium, Manganese, Copper, Fluorine, Silicon)

Specific Objectives	Content
For each of the trace elements, the learner should be able to: <ul style="list-style-type: none"><li>• describe its occurrence.</li><li>• explain its physiological functions.</li><li>• explain the effects of deficiency and excessive intake in the body.</li><li>• discuss the factors that influence its absorption and metabolism.</li><li>• state the recommended dietary allowances.</li><li>• outline the dietary sources.</li></ul>	For each of the Trace elements (Fe, I, Zn, Se, Mn, Cu, Fl, Si), discuss the following: <ul style="list-style-type: none"><li>• occurrence</li><li>• physiological functions of each mineral</li><li>• effects of deficiency and excessive intake in the body</li><li>• factors that influence its absorption and metabolism (hindering or facilitating factors)</li><li>• recommended dietary allowances of each mineral element</li><li>• dietary sources of the mineral element</li></ul>

### Methodology

- Guide learners in a group discussion on occurrence, absorption, transport and metabolism of each of these trace mineral elements.
- Guide learners to state the factors that affect the absorption and metabolism of trace mineral elements.
- Guide learners to brainstorm on the physiological functions, efficiency, RDAs and dietary sources of each of the trace mineral elements.

### **Teaching/Learning Aids**

- Table showing trace elements, recommended dietary intake, functions and main food sources

### **Assessment Strategy**

- Give an assignment on the factors that affect absorption and metabolism of trace elements.

## Topic 14: Starch and Flour Mixtures

Duration: 19 Periods

### General Overview

These are mixtures made from different types of flours. They are used to make a variety of dishes such as batters, pastry, cakes, biscuits, cookies, scones, bread and other yeast dishes. Batters are made with plain flour, milk or water and usually egg. When making pastry, the proportion and method of incorporating the ingredients will determine the variety of textures in the finished product. When the protein in the wheat flour is mixed with water during bread making, the gluten becomes elastic and can be pushed by the carbon dioxide produced by the yeast.

Cakes can be classified in many ways but the most usual way is to group them according to the method by which ingredients are combined and the basic proportion of ingredients. Biscuits may be classified according to the method of making i.e. rubbing in, creaming, whisking and melting. The success of many of these products depends upon flour quality, proportion, method of incorporating and suitability of flour for the specific mixture.

### General Objectives

By the end of the topic, the learner should be able to:

- i) describe the steps to follow, rules to observe and common faults in the making of flour mixtures.
- ii) demonstrate proper skills in the choice, use and cooking of the various starch and flour mixture dishes.

### Sub-Topic 1: Batters

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• classify batters.</li><li>• state the uses of batters.</li><li>• explain the nutritional value of batter.</li><li>• outline the ingredients and proportions for making batter.</li></ul>	<ul style="list-style-type: none"><li>• Classification of batter</li><li>• Uses of batter</li><li>• Nutritional value of batter</li><li>• Ingredients and proportions for making batters</li></ul>

Specific Objectives	Content
<ul style="list-style-type: none"> <li>describe the preparation of dishes using batter.</li> </ul>	<ul style="list-style-type: none"> <li>Preparation of dishes using batter</li> </ul>

## Methodology

- Guide learners to discuss the classification, uses and nutritive value of batters.
- Guide learners to outline the ingredients and proportions for preparing batters for cooking different dishes.

## Teaching/Learning Aids

- Selection of food items
- Heat source
- Cooking equipment

## Assessment Strategy

- Give a test on the nutritive value and uses of batters.

## Sub-Topic 2: Pastry

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>identify the types of pastries.</li> <li>outline the ingredients and proportions for making each type of pastry.</li> <li>explain the rules for making the different types of pastry.</li> <li>describe the method of making each type of pastry.</li> <li>discuss the common faults that occur when making the different types of pastry.</li> </ul>	<ul style="list-style-type: none"> <li>Types of pastry (short crust, suet, flaky, rough puff pastry, puff, hot water e.g. choux)</li> <li>Ingredients and proportions for making each of the types of pastry</li> <li>Rules for making the different types of pastry</li> <li>Method of making each type of pastry</li> <li>Common faults when making the different types of pastry</li> </ul>

## Methodology

- Through guided discussions, let learners identify the different types of pastry, outline the ingredients used in making pastry and examine the rules for making each type of pastry.
- Through whole class discussion, guide learners to describe the basic skills in making different pastries and identify the common faults when making each of the pastries.

## Teaching /Learning Aids

- Selected food items
- Heat source
- Cookery equipment

## Assessment Strategy

- Give a test on types and rules for making pastry.

## Sub-Topic 3: Cakes

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• classify cakes</li><li>• outline the ingredients and proportions for making each type of cake.</li><li>• explain the functions of the basic ingredients in cake making.</li><li>• examine the rules for making the different types of cakes.</li><li>• describe the method of making the different types of cakes and their decorations.</li><li>• discuss the common faults that occur when making the different cakes.</li></ul>	<ul style="list-style-type: none"><li>• Classification of cakes - (rubbed in, creamed in, melted, whisked, all in one)</li><li>• Ingredients and proportions used for each of the types of cakes</li><li>• Functions of the basic ingredients in cake making.</li><li>• Rules for making the different types of cakes</li><li>• Method of making the different types of cakes and their decorations</li><li>• Common faults that occur when making the different cakes</li></ul>



## Methodology

- Through whole class discussion, guide learners to classify cakes and identify their ingredients in correct proportions.
- Through guided discussion, let learners explain the functions of the basic ingredients used in cake making, examine the rules and describe the methods of making different types of cakes and their decoration.
- Guide learners to discuss the common faults that occur when making the different types of cakes.

## Teaching/Learning Aids

- Selection of food items
- Heat source
- Cooking equipment

## Assessment Strategy

- Give a test on different types of cakes.

## Sub-Topic 4: Biscuits, Cookies and Scones

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• classify biscuits and cookies.</li> <li>• classify scones.</li> <li>• identify the proportions of the basic ingredients used in the making of different types of biscuits, cookies and scones.</li> <li>• describe the methods of making the different types of biscuits, cookies and scones.</li> </ul>	<ul style="list-style-type: none"> <li>• Classification of biscuits and cookies (-rubbed, creamed, melted, whisked)</li> <li>• Classes of scones:               <ul style="list-style-type: none"> <li>- rubbed in</li> <li>- batter scones e.g. girdle scones</li> </ul> </li> <li>• Proportions of the basic ingredients used in the making of different types of biscuits, cookies and scones</li> <li>• Methods of making the different types of biscuits, cookies and scones.</li> </ul>

## Methodology

- Through brainstorming, guide learners to classify biscuits, cookies and scones.
- Through whole class discussion, guide learners to identify the proportions of the basic ingredients and describe the methods used in making different types of biscuits, cookies and scones.

## Teaching/Learning Aids

- Selection of food items
- Cooking equipment

## Assessment Strategy

- Give a test on the proportions and ingredients used in making different types of biscuits, cookies and scones.

## Sub-Topic 5: Bread and other Yeast Dishes

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• outline the basic ingredients used in bread making.</li><li>• identify types of yeast dishes.</li><li>• identify the types of yeast used in cookery.</li><li>• describe the methods of making the different types of bread and other yeast dishes.</li><li>• discuss the reasons for faults in bread making.</li></ul>	<ul style="list-style-type: none"><li>• Basic ingredients used in bread making</li><li>• Types of yeast dishes</li><li>• Types of yeast used in cookery</li><li>• Methods of making the different types of bread and other yeast dishes</li><li>• Reasons for faults in bread making</li></ul>

## Methodology

- Through whole class discussion, guide learners to outline basic ingredients in bread making, identify types of yeast dishes and types of yeast used in cookery.
- Using guided discussion, guide learners to describe the methods of making the different types of bread and other yeast dishes.

- Using brainstorming, guide learners to discuss the common faults in bread making.

### **Teaching/Learning Aids**

- Selected food items
- Cooking/baking equipment

### **Assessment Strategy**

- Give an exercise on types of yeast and methods of bread making.

## SENIOR FIVE - TERM THREE

### Topic 15: Water and Electrolytes

Duration: 7 Periods

#### General Overview

The elemental composition of water is two parts hydrogen to one part of oxygen (H<sub>2</sub>O). It is the most remarkable liquid with properties that make it suited for various uses in the body. It is the single largest component of the body composition comprising 50-60% of the total body weight in an average adult. If fluids are withheld, there is a rapid deterioration and death may result within a few days. For optimum health, there must be homeostasis and for this to exist, the body must be in fluid and electrolyte balance. This means the water lost by healthy individuals must be replaced.

#### General Objective

By the end of the topic, the learner should be able to examine the distribution, properties and role of water in the body.

#### Sub-Topic 1: Chemical Nature and Distribution of Water in the Body

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• describe the chemical nature of water.</li><li>• describe the distribution of water in the body.</li><li>• examine the forces influencing water distribution.</li></ul>	<ul style="list-style-type: none"><li>• Water and its chemical nature (introduction):<ul style="list-style-type: none"><li>- as a unified whole</li><li>- components</li><li>- the particle</li></ul></li><li>• Distribution of water in the body:<ul style="list-style-type: none"><li>- body water and compartmentalisation</li><li>- overall water balance</li></ul></li><li>• Forces influencing water distribution:<ul style="list-style-type: none"><li>- the solute (electrolyte, plasma protein, organic</li></ul></li></ul>

Specific Objectives	Content
	compound) - the membranes that separate water components - (capillary wall and cell wall) - mechanism for movement of water across the membranes (osmosis, diffusion and active transport, filtration and pinocytosis)

### Methodology

- Using guided discovery, let learners describe the chemical nature of water and its distribution.
- Use brainstorming to guide learners to examine the forces influencing water distribution.

### Teaching/Learning Aids

- Charts showing the chemical nature of water

### Assessment Strategy

- Give a written test on chemical nature of water and forces influencing its distribution.

## Sub-Topic 2: Properties and Functions of Water in the Body

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• state the physical properties of water.</li> <li>• state the chemical properties of water.</li> <li>• discuss the functions of water in the body.</li> <li>• discuss the effects of deficiency and excessive intake of water.</li> </ul>	<ul style="list-style-type: none"> <li>• Physical properties of water</li> <li>• Chemical properties of water</li> <li>• Functions of water in the body</li> <li>• Effects of deficiency (dehydration) and excessive intake (intoxication) of water in the body</li> </ul>

## Methodology

- Guide learners to brainstorm the physical and chemical properties of water.
- Using guided discussion, learners discuss the functions of water in the body and the effects of deficiency and excessive intake of water in the body.

## Teaching/Learning Aids

- Charts showing properties of water

## Assessment Strategy

- Give an assignment on the functions of water in the body.

## Sub-Topic 3: Water and Electrolyte Balance

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• identify the electrolytes and their composition within the body.</li><li>• explain the electrolyte balance mechanisms.</li><li>• examine the role of the body organs in maintaining water and electrolyte balance.</li><li>• define acids, bases and buffers.</li><li>• explain the role of water and electrolytes in acid-base buffer system.</li><li>• examine the factors responsible for acidosis and alkalosis.</li></ul>	<ul style="list-style-type: none"><li>• Composition of electrolytes within the body</li><li>• Electrolyte balance mechanisms</li><li>• Body organs that play various roles in water and electrolyte balance:<ul style="list-style-type: none"><li>- gastro intestinal tract</li><li>- kidney</li><li>- lungs</li></ul></li><li>• Definition of acids, bases, buffers</li><li>• The role of water and electrolytes in acid-base buffer system:<ul style="list-style-type: none"><li>- protection against added acid and added base</li><li>- buffer system ratio in extracellular fluid</li></ul></li><li>• Factors that bring acidosis and alkalosis</li></ul>

## **Methodology**

- Guide learners to identify the electrolytes and their composition within the body.
- Using guided discussion, let learners explain the electrolyte balance mechanisms and examine the role of the body organs in maintaining water and electrolyte balance.
- Guide learners to define acids, bases and buffers and explain the role of water and electrolytes in acid-base buffer system.
- Using brainstorming, let learners examine the factors responsible for acidosis and alkalosis.

## **Teaching/Learning Aids**

- Charts showing the composition of electrolytes within the body

## **Assessment Strategy**

- Give an assignment on the factors responsible for acidosis and alkalosis.

## Topic 16: Vegetables

Duration: 6 Periods

### General Overview

Vegetables are important in diet because of their mineral and vitamin content, colour, flavour and variety they add to the meal. They may be served as hors d'oeuvres, as an accompaniment to meat and fish dishes or as a separate course. A good combination of pulses and nuts can provide the body with good amounts of protein. However, it is important to take care when buying, cooking and serving green vegetables so as to minimise the loss of water soluble vitamins.

### General Objectives

By the end of the topic, the learner should be able to:

- i) examine the types and value of vegetables.
- ii) demonstrate the methods of cooking vegetables while conserving nutrients.

### Sub-Topic 1: Classification, Value and Storage of Vegetables

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• Classify vegetables.</li><li>• discuss the nutritive value of vegetables.</li><li>• discuss the dietetic value of vegetables.</li><li>• outline qualities to look for when buying vegetables.</li><li>• describe the proper storage of vegetables.</li></ul>	<ul style="list-style-type: none"><li>• Classification of vegetables with their examples - (green leafy, roots and tubers, pulses and pods, fruits, stems and bulbs, flowers)</li><li>• Nutritive value of vegetables</li><li>• Dietetic value of vegetables</li><li>• Qualities to look for when buying vegetables</li><li>• Storage of vegetable</li></ul>



## Methodology

- Guide learners to brainstorm the classification, nutritive and dietetic value of vegetables.
- Guide learners to outline the qualities to look for when buying and how to store vegetables.

## Teaching/Learning Aids

- A selection of each type of vegetable

## Assessment Strategy

- Give an assignment on the classification and buying of vegetables.

## Sub-Topic 2: Use and Preservation of Vegetables

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• state the uses of vegetables in cookery.</li> <li>• discuss the effect of heat on vegetables.</li> <li>• describe the methods of preparing and cooking vegetables while conserving nutrients.</li> <li>• describe the methods of preserving vegetables.</li> <li>• describe the preparation and service of vegetable salads.</li> </ul>	<ul style="list-style-type: none"> <li>• Uses of vegetables in cookery</li> <li>• Effect of heat on vegetables</li> <li>• Methods of preparing and cooking vegetables while conserving nutrients - (sautéing, stir frying, etc)</li> <li>• Methods of preserving vegetables- (pickles, chutney, etc)</li> <li>• Preparation and service of vegetable salads such as:               <ul style="list-style-type: none"> <li>- fresh vegetable salads</li> <li>- cooked salads such as potato salad</li> </ul> </li> </ul>

## Methodology

- Guide learners to brainstorm on the effects of heat on vegetables.
- Guide learners to describe the methods of preparing and cooking vegetables while conserving nutrients, the methods of preserving vegetables and the preparation and serving of vegetable salads.

**Teaching/Learning Aids**

- Selected vegetable items

**Assessment Strategy**

- Give an assignment on the methods of cooking and preserving vegetables.

**Sub-Topic 3: Pulses and Nuts**

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• explain the different types of pulses and nuts.</li><li>• discuss the nutritive and dietetic value of pulses and nuts.</li><li>• explain the uses of pulses and nuts in cookery.</li></ul>	<ul style="list-style-type: none"><li>• Types of pulses and nuts</li><li>• Nutritive and dietetic value of pulses and nuts</li><li>• Uses of pulses and nuts in cookery</li></ul>

**Methodology**

- Guide the learners are to explain the different types of pulses and nuts and discuss their nutritive and dietetic value.
- Using brainstorming, let learners explain the uses of pulses and nuts in cookery.

**Teaching/Learning Aids**

- Selected food items

**Assessment Strategy**

- Give an exercise on the uses of pulses and nuts in cookery.

## Topic 17: Fruits

Duration: 2 Periods

### General Overview

Fruits are edible seed-bearing parts of the plant. They not only add valuable nutrients to our diet but also contribute to variety in texture, flavour and colour. In a meal, their high water and vitamin C content makes them refreshing, particularly when eaten raw and fresh for example, in fruit juices and salads. Fruits should be cooked over gentle heat for the minimum time with little water so as to conserve vitamins. Fruits can be successfully preserved by freezing, canning and drying, among other.

### General Objective

By the end of the topic, the learner should be able to examine the classification and value of fruits.

### Sub-Topic 1: Classification, Value and Storage of Fruits

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• classify fruits.</li> <li>• discuss the nutritive and dietetic value of fruits.</li> <li>• describe the proper storage of fruits.</li> </ul>	<ul style="list-style-type: none"> <li>• Classification of fruits (citrus, hard stone, berries, etc)</li> <li>• Nutritive and dietetic value of fruits</li> <li>• Proper storage of fruits</li> </ul>

### Methodology

- Guide learners to brainstorm the classification, nutritive and dietetic value of fruits.
- Guide learners to discuss the qualities to look for when buying fruits.
- Through whole class discussion, guide learners to describe the proper storage of fruits.

## Teaching/Learning Aids

- A selection of fruits

## Assessment Strategy

- Give an assignment on classification, buying and storage of fruits.

## Sub-Topic 2: Preservation and Use of Fruits in Cookery

Specific Objective	Content
The learner should be able to: <ul style="list-style-type: none"><li>• outline qualities to look for when buying fruits.</li><li>• discuss the effect of heat on fruits.</li><li>• describe the methods of cooking fruits.</li><li>• describe the methods of preserving fruits</li></ul> <ul style="list-style-type: none"><li>• describe the uses of fruits in cookery.</li></ul>	<ul style="list-style-type: none"><li>• Qualities to look for when buying fruits.</li><li>• Effect of heat on fruits</li></ul> <ul style="list-style-type: none"><li>• Methods of cooking fruits</li></ul> <ul style="list-style-type: none"><li>• Methods of preserving fruits:<ul style="list-style-type: none"><li>- jam</li><li>- chutney</li><li>- marmalade</li><li>- squashes</li></ul></li></ul> <ul style="list-style-type: none"><li>• Uses of fruits in cookery:<ul style="list-style-type: none"><li>- juices</li><li>- salad, etc</li></ul></li></ul>

## Methodology

- Guide learners to discuss the effects of heat and use of fruits in cookery.
- Guide learners to demonstrate the methods of cooking fruits while conserving nutrients and the preservation of fruits.
- Guide learners to brainstorm on the uses of fruits in cookery.

## Teaching/Learning Aids

- A selection of food items
- Food preparation equipment
- Heat source

## Assessment Strategy

- Give an exercise on fruit handling and preservation methods.

## Topic 18: Energy Metabolism

Duration: 08 Periods

### General Overview

Metabolism is the sum-total of all chemical reactions that take place within the body cells. Energy metabolism is an important process in which energy is released from the food to enable all body processes to take place. The energy in food is ultimately converted into heat and this helps to maintain the temperature of the body. The basic steps of energy metabolism are glycolysis, Krebs cycle and the Electron Transport Chain (ETC).

### General Objectives

By the end of the topic, the learner should be able to:

- i) describe the processes involved in energy release.
- ii) examine the energy requirements by the body.

### Sub-Topic 1: Energy Cycle

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• define energy and metabolism (catabolism and anabolism).</li> <li>• explain the process of transformation of energy in the human body.</li> </ul>	<ul style="list-style-type: none"> <li>• Definition of terms – energy, metabolism (catabolism, anabolism, gluconeogenesis, and glycolysis)</li> <li>• Energy transformation- (glycolysis, the Krebs cycle and electron transport chain)</li> </ul>

### Methodology

- Through brainstorming, guide learners to define the terms related to energy and metabolism. For example, catabolism and anabolism, gluconeogenesis and glycolysis.
- Guide learners to discuss the processes of glycolysis, Krebs cycle and the electron transport chain.

**Teaching/Learning Aids**

- Charts on basic steps of energy transformation in the body.

**Assessment Strategy**

- Give a written test on the processes of glycolysis and Krebs' cycle

**Sub-Topic 2: Control of Energy in Human Metabolism**

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• explain the mechanisms of energy control in human metabolism.</li><li>• examine the different types of metabolic reactions.</li></ul>	<ul style="list-style-type: none"><li>• Control of energy in human metabolism:<ul style="list-style-type: none"><li>- controlled reaction rate – (enzymes, co-enzymes and hormones)</li></ul></li><li>• Types of metabolic reactions</li></ul>

**Methodology**

- Guide the learners to discuss the mechanisms of energy control in human metabolism.
- Guide learners to brainstorm on the different types of metabolic reactions.

**Teaching/Learning Aids**

- Charts showing the different metabolic reactions

**Assessment Strategy**

- Give a written test on mechanisms of energy control in human metabolism and types of metabolic reactions.

### Sub-Topic 3: Requirements and Measurement of Energy

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• explain the factors that determine the total energy requirements of different groups of people.</li> <li>• define basal metabolic rate (BMR).</li> <li>• explain the factors that determine basal metabolic rate .</li> <li>• explain the measurement of energy (calories).</li> <li>• describe the methods of measuring basal metabolic rate – calorimeter.</li> <li>• explain the need for energy balance in the body.</li> </ul>	<ul style="list-style-type: none"> <li>• Factors that determine the total energy requirements - (basal metabolic rate, specific dynamic action, physical activity, etc)</li> <li>• Definition of basal metabolic rate (BMR)</li> <li>• Factors that determine basal metabolic rate</li> <li>• Measurement of energy (calories)</li> <li>• Methods of measuring basal metabolic rate – calorimeter</li> <li>• Energy balance:               <ul style="list-style-type: none"> <li>- the concept of energy balance</li> <li>- positive energy balance – obesity</li> <li>- negative energy balance – underweight and starvation</li> </ul> </li> </ul>

#### Methodology

- Guide learners to brainstorm on the factors that determine the total energy requirements of different groups of people.
- Using guided discussions, define basal metabolic rate (BMR) and explain the factors that determine it.
- Using guided discussions, let learners describe the methods of measuring BMR.
- Guide learners to brainstorm on the need for energy balance in the body.

#### Teaching/Learning Aids

- Charts showing the RDAs of energy

**Assessment Strategy**

- Give a written exercise on factors that determine the energy needs of individuals.

**Sub-Topic 4: Functions and Recommended Dietary Allowances of Energy**

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• explain the functions of energy in the body.</li><li>• outline the recommended daily allowances for different categories of people.</li></ul>	<ul style="list-style-type: none"><li>• Functions of energy in the body</li><li>• Recommended dietary allowances (RDAs) for different categories of people</li></ul>

**Methodology**

- Guide the learners to discuss the functions of energy in the body.
- Guide the learners to brainstorm the RDAs for different categories of people.

**Teaching/Learning Aids**

- Charts showing the RDAs of energy

**Assessment Strategy**

- Give a written exercise on functions of energy in the body.



## Topic 19: Fats and Oils

Duration: 04 Periods

### General Overview

Edible fats and oils are found stored as food reserves in many animal and plant sources. Fats and oils are of great importance in food science since they are used in home cooking, and as ingredients in many manufactured foods.

### General Objective

By the end of the topic, the learner should be able to examine the manufacture, classification and uses of fats and oils.

### Sub-Topic: Manufacture and Use of Fats and Oils in Cookery

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• describe the processing of cooking fats - margarine.</li> <li>• identify the different fats and oils.</li> <li>• differentiate between fats and oils.</li> <li>• state the uses of fats and oils in cookery.</li> </ul>	<ul style="list-style-type: none"> <li>• Processing of cooking fats-margarine</li> <li>• Types of fats and oils</li> <li>• Distinction between fats and oils -(visible and invisible fats</li> <li>• Uses of fats and oils in cookery</li> </ul>

### Methodology

- Guide learners to brainstorm the differences between fats and oils and their uses in cookery.
- Guide learners to explain the processing of margarine and identify other fats and oils used in cooking.

### Teaching/Learning Aids

- Different of fats and oils

### Assessment Strategy

- Give an assignment on the types of fats and oils and their uses in cookery.

## Topic 20: Sweetening Agents

Duration: 4 Periods

### General Overview

Sweeteners are substances used in cookery to make food sweet. They may be natural or artificial products. Natural sugar is mainly sucrose which is found in many forms such as granulated sugar, caster sugar, golden syrup, cubed sugar, icing sugar, honey, treacle and brown sugar. The artificial form includes saccharin, sodium saccharin, calcium saccharim, aspartame, mannitol, sorbital and xylitol. Sugar is a pure carbohydrate, and is used in many foods in cookery.

### General Objective

By the end of the topic, the learner should be able to examine the types of sugar and their uses in cookery.

### Sub-Topic 1: Forms and Composition of Sweetening Agents

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• identify the forms of sugar.</li><li>• examine the composition of sugar.</li></ul>	<ul style="list-style-type: none"><li>• Forms of sugar - ( brown sugar, granulated sugar, castor sugar, icing sugar, cubed sugar, golden syrup and treacle)</li><li>• Composition of sugar</li></ul>

### Methodology

- Guide learners to brainstorm on the forms and composition of sugar.

### Teaching/Learning Aids

- Forms of sugar: granulated sugar, icing sugar, golden syrup, etc
- Charts of artificial sweeteners

## Activities of Assessment

- Give an assignment on the forms and composition of sugar.

## Sub-Topic 2: Value of Sugar in Cookery

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• discuss the nutritive value of sugar.</li> <li>• discuss the dietetic value of sugar.</li> <li>• explain the uses of sugar in cookery.</li> <li>• explain the reasons for choosing sweeteners other than sugar.</li> <li>• explain the advantages and disadvantages of these sweeteners.</li> </ul>	<ul style="list-style-type: none"> <li>• Nutritive value of sugar</li> <li>• Dietetic value of sugar</li> <li>• Uses of sugar in cookery</li> <li>• Reasons for choosing other sweeteners-(glucose, honey, sorbitol, saccharin, aspartame, etc) other than sugar</li> <li>• Advantages and disadvantages of sweeteners</li> </ul>

## Methodology

- Guide learners to discuss the value (nutritive value and dietetic value) and uses of sugar in cookery.
- Guide learners to explain the reasons for choosing other sweeteners other than sugar and to explain the advantages and disadvantages of using sweeteners.

## Teaching/Learning Aids

- Different forms of sugar

## Assessment Strategy

- Give a test on the nutritional value and uses of sugar.

## Topic 21: Nutrition at Different Stages in Life

Duration: 16 Periods

### General Overview

Each stage of a person's life cycle is affected by his or her diet right from the prenatal period to old age. Poor nutrition in any of these stages may create health problems, shorten the life span, or both. Diet during pregnancy and lactation affects both the mother and the foetus, or developing baby. Therefore, good nutrition is especially important during pregnancy and lactation. Nutritional needs vary with age and specific needs of an individual.

### General Objective

By the end of the topic, the learner should be able to examine the nutritional requirements at various stages in the life cycle.

### Sub-Topic 1: Pregnancy and Lactation

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• explain the normal physical growth pattern challenges during pregnancy.</li><li>• explain the nutrient requirements during lactation.</li></ul>	<ul style="list-style-type: none"><li>• Pregnancy:<ul style="list-style-type: none"><li>- the relationship between nutrition and pregnancy</li><li>- weight gain in pregnancy – composition</li><li>- nutritional needs in pregnancy</li><li>- general dietary problems in pregnancy</li><li>- complications in pregnancy, control and management</li></ul></li><li>• Nutrient requirements during lactation</li></ul>

### Methodology

- Through whole class discussion, guide learners to explain the normal physical growth pattern during pregnancy.
- Using guided discussion, let learners explain the nutritional requirements of a pregnant and lactating mother.

## Teaching/Learning Aids

- Chart showing the nutritional needs during pregnancy and lactation.

## Assessment Strategy

- Give an assignment on the nutritional complications during pregnancy, their control and management.

## Sub-Topic 2: Nutrition in the Life Cycle

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• identify the nutritional needs for normal growth and development at various stages of life cycle.</li> <li>• describe the nutritional challenges of the stages of life cycle.</li> <li>• analyse the growth pattern in children in a normal life cycle.</li> <li>• describe the use of growth monitoring curves.</li> <li>• explain the importance of breastfeeding.</li> <li>• explain the points to consider when using alternative feeding.</li> <li>• explain the important points to consider when weaning a child.</li> </ul>	<ul style="list-style-type: none"> <li>• Nutritional requirements for normal growth and development at various stages -(infancy, childhood, adolescence, adulthood and ageing)</li> <li>• Nutritional challenges of the various stages of life cycle</li> <li>• Measurement of physical growth - growth pattern in a normal life cycle:             <ul style="list-style-type: none"> <li>- infancy</li> <li>- latent period of childhood</li> </ul> </li> <li>• Use of growth monitoring curves</li> <li>• Importance of breastfeeding</li> <li>• Points to consider when using alternative feeding</li> <li>• Points to consider when weaning a child</li> </ul>

## Methodology

- Guide learners to discuss the nutritional needs for growth and development at various stages, nutritional challenges of the various categories and physical growth pattern in children in a normal life cycle.

- Guide learners to demonstrate the use of growth monitoring curves.
- Guide learners to brainstorm on the importance of breastfeeding and points to consider when using alternative feeding and weaning a child.

**Teaching/ Learning Aids**

- Growth monitoring charts

**Assessment Strategy**

- Give a written assignment on the nutritional requirements of the different stages of development.

## SENIOR SIX TERM ONE

### Topic 22: Meal Planning

Duration: 06 Periods

#### General Overview

Food is a vital part of our lives and much of our time is spent on its preparation. Planning a meal involves making decisions about what foods to include and how to prepare them. This helps to ensure that individuals get the right kind of food and resources are utilised effectively. It is important to carry out wise shopping as it helps to cut down the cost of a meal without affecting the food value.

#### General Objectives

By the end of the topic, the learner should be able to:

- i) plan adequate meals for the different categories of people in the community.
- ii) demonstrate good shopping skills.

#### Sub-Topic 1: Shopping for Food

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• discuss the importance of wise food selection and purchasing.</li> <li>• explain the factors that affect food availability and choice.</li> <li>• outline the guidelines for shopping.</li> <li>• outline the different shopping outlets.</li> <li>• explain the advantages and disadvantages of the different</li> </ul>	<ul style="list-style-type: none"> <li>• Importance of wise food selection and purchasing</li> <li>• Factors affecting food availability and choice</li> <li>• Guidelines for shopping</li> <li>• Shopping outlets:               <ul style="list-style-type: none"> <li>- open markets</li> <li>- specialist shops</li> <li>- supermarket/self service shops</li> <li>- online shopping, etc</li> </ul> </li> <li>• Advantages and disadvantages of each of the shopping outlets</li> </ul>

Specific Objectives	Content
shopping outlets. <ul style="list-style-type: none"><li>describe the importance of consumer information.</li></ul>	<ul style="list-style-type: none"><li>Consumer information:<ul style="list-style-type: none"><li>nutrition information</li><li>bar coding, etc</li></ul></li></ul>

## Methodology

- Using guided discussion, guide learners to discuss the importance of wise food selection and purchasing, explain the factors that affect food availability and choice and outline the guidelines for shopping.
- Guide learners to brainstorm on the different shopping outlets, their advantages and disadvantages and the importance of consumer information.

## Teaching/Learning Aids

- Labelled items, newspaper adverts and flyers
- Organise for trips to markets and shopping centres

## Assessment Strategy

- Give an assignment on how to make a food budget.

## Sub-Topic 2: Rules for Meal Planning

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>explain the terms commonly used in meal planning.</li><li>outline the general rules to consider when planning meals.</li><li>identify the different meals in a day and meals for special occasions.</li></ul>	<ul style="list-style-type: none"><li>Terms commonly used in meal planning- (meal, menu, main meal, course, diet, balanced diet, high tea, snack, meal pattern, etc)</li><li>General rules to consider when planning meals</li><li>Meals in a day - (breakfast, lunch, supper, dinner); meals for special occasions - (buffets, packed meals, cocktail, barbecue, meals for festivities e.g.</li></ul>



Specific Objectives	Content
<ul style="list-style-type: none"> <li>plan meals for the different groups of people and special occasions.</li> <li>plan special diets for specific conditions.</li> </ul>	<p>weddings, birthdays, graduation, mobile food services e.g. ice cream, hot snack, etc)</p> <ul style="list-style-type: none"> <li>Meals for the different groups of people include:               <ul style="list-style-type: none"> <li>invalids and convalescents</li> <li>vegetarians</li> <li>expectant mothers</li> <li>children, etc</li> </ul> </li> <li>Meals for specific conditions include:               <ul style="list-style-type: none"> <li>low cholesterol diet</li> <li>gluten free diet</li> <li>diabetic diet</li> <li>ulcer diet</li> <li>anaemia</li> <li>renal/ low salt diet</li> <li>high fibre diet/ slimmer's diet</li> </ul> </li> </ul>

### Methodology

- Guide learners to explain the terms commonly used in meal planning; outline the general rules/points to consider when planning meals; identify the different meals in a day and the meals for special occasions.
- Using groups, guide learners to plan the different meals in a day for the different groups of people and meals for special conditions.
- Using brainstorming, guide learners to plan special diets for specific conditions.

### Teaching/Learning Aids

- A chart showing the terms commonly used in meal planning

### Assessment Strategy

- Give an exercise to learners to compile menus for special diets, occasions and different groups of people.

## Topic 23: Digestion, Absorption and Metabolism of Nutrients

Duration: 5 Periods

### General Overview

The food eaten cannot be used by the body cells until its molecules are broken down into smaller, soluble molecules and this is done by physical and chemical digestion. The digested nutrients of small molecular structure pass through the wall of the intestine and eventually, into the blood stream by the process of absorption. Metabolism involves the breakdown and build up of food materials (making of body tissue from nutrients and the release of energy).

### General Objective

By the end of the topic, the learners should be able to examine the digestion, absorption and metabolism of nutrients in the body.

### Sub-Topic 1: Digestion of Food

Specific Objectives	Content
<p>The learner should be able to</p> <ul style="list-style-type: none"><li>• describe the anatomy and physiology of the organs involved in digestion.</li><li>• explain the basic principles involved in digestion.</li><li>• describe the physical and chemical digestion process of food.</li></ul>	<ul style="list-style-type: none"><li>• The anatomy and physiology of the organs involved in digestion</li><li>• Basic principles involved in digestion</li><li>• Physical and chemical digestion process of food (proteins, carbohydrates, lipids)</li></ul>

### Methodology

- Through whole class discussion and illustration, guide learners to draw and describe the anatomy and physiology of the organs involved in digestion.

- Through group discussions, guide learners to describe the physical and chemical digestion process of food.

### Teaching/Learning Aids

- Chart showing the anatomy and physiology of the organs involved in digestion.

### Assessment Strategy

- Give an exercise on the physical and chemical digestion of macro-nutrients.

## Sub-Topic 2: Absorption and Metabolism of Nutrients

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• describe the absorption of nutrients (micro and macro).</li> <li>• discuss the metabolism of nutrients.</li> <li>• explain the uses of micro-nutrient metabolites.</li> </ul>	<ul style="list-style-type: none"> <li>• Absorption of nutrients - (micro and macro)</li> <li>• Metabolism of nutrients - (micro and macro)</li> <li>• Uses of micro-nutrient metabolites</li> </ul>

### Methodology

- Through group discussion, guide learners to explain the absorption of macro and micro-nutrients.
- Guide learners to discuss the metabolism of macro-nutrients – carbohydrates, proteins and lipids.
- Through guided discussion, let learners explain the uses of micro-nutrient metabolites.

### Teaching/Learning Aids

- Charts showing uses of micro-nutrient metabolites

### Assessment Strategy

- An exercise on the basic principles involved in digestion and absorption.

## Topic 24: Nutrition in Rehabilitation

Duration: 5 Periods

### General Overview

Nutritional disorders are caused by imbalances in specific food nutrients in the body. These can be due to over nutrition or under nutrition. Different disorders manifest differently and care should be taken to give the right diagnosis.

The primary goal of diet therapy in diseases is to bring healing and prevent occurrence of complications and disease. This is accomplished through nutritional management by increasing or reducing the use of certain foods while following recommended dietary guidelines.

### General Objective

By the end of the topic, the learner should be able to examine the principles of nutritional care, causes and management of various metabolic disorders.

### Sub-Topic 1: Principles of Nutritional Care for Metabolic Disorders

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• outline the common metabolic disorders.</li><li>• discuss the principles of nutritional care in different metabolic disorders.</li></ul>	<ul style="list-style-type: none"><li>• Metabolic disorders:<ul style="list-style-type: none"><li>- obesity</li><li>- diabetes mellitus</li><li>- peptic ulcers</li><li>- intestinal diseases</li><li>- liver diseases (cirrhosis)</li><li>- coronary disorders</li></ul></li><li>• Principles of nutritional care in different metabolic disorders.</li></ul>

### Methodology

- Through brainstorming, let learners outline the common metabolic disorders.

- Through guided discussion, let learners explain the principles for nutritional care in different metabolic disorders.
- Through group work, guide learners to discuss the nutritional care of people with different disease conditions.

### Teaching/Learning Aids

- Charts
- Pictures from textbooks and photographs

### Assessment Strategy

- Give a written test on identification of the common metabolic disorders.

## Sub-Topic 2: Causes and Symptoms of Metabolic Disorders

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• explain the causes of each of the above metabolic disorder.</li> <li>• describe the symptoms of each of the above metabolic disorder.</li> </ul>	<ul style="list-style-type: none"> <li>• Causes of each of the above metabolic disorder</li> <li>• Symptoms of each of the above metabolic disorder</li> </ul>

### Methodology

- Through whole class discussion, guide learners to identify the causes of and describe the symptoms of each metabolic disorder.

### Teaching/Learning Aids

- Charts showing different nutritional disorders
- Pictures from textbooks and photographs

### Assessment Strategy

- Written test on the causes and symptoms of metabolic disorders.

### Sub-Topic 3: Care and Management of Metabolic Disorders

Specific Objectives	Content
<ul style="list-style-type: none"><li>The learner should be able to discuss the care and management of each of the disorders.</li></ul>	<ul style="list-style-type: none"><li>Care and management of each of the metabolic disorders:<ul style="list-style-type: none"><li>- Diabetes</li><li>- Obesity</li><li>- Hypertension</li><li>- Stroke</li><li>- Micro-nutrient disorders</li></ul></li></ul>

#### Methodology

- Using group work, guide learners to discuss the care and management of each metabolic disorder.

#### Teaching/Learning Aids

- A section of foods recommended for school disorders
- Learners visit a hospitals and rehabilitation centres

#### Assessment Strategy

- Give a written test on the care and management of the various metabolic disorders.

## Topic 25: Nutritional Deficiency Diseases

Duration: 07 Periods

### General Overview

Nutritional deficiency diseases are diseases that occur due to lack of one or more nutrients in the body. They occur most commonly among the vulnerable groups in society (children, pregnant and lactating women, elderly) but can also occur among people in disadvantaged situations such as war torn areas and other displaced persons. Nutritional deficiency diseases can also occur in homes which are food insecure due to various reasons.

Malnutrition refers to serious health problems caused by poor nutrition over a long period of time. Generally, malnutrition occurs when people do not have enough to eat due to bad weather, poor transport, political problems, etc. Malnutrition includes under nutrition and over nutrition. When people make poor food choices or do not have enough to eat, they may not get the right balance of nutrients resulting in poor health.

### General Objective

By the end of the topic, the learner should be able to examine the causes, symptoms and management of various nutritional deficiency diseases.

### Sub-Topic 1: Ecology of Malnutrition

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>describe the ecology of malnutrition.</li> <li>discuss the general causes of malnutrition.</li> </ul>	<ul style="list-style-type: none"> <li>Ecology of malnutrition:               <ul style="list-style-type: none"> <li>host</li> <li>agent</li> <li>environment</li> </ul> </li> <li>General causes of malnutrition</li> </ul>

### Methodology

- Guide learners to brainstorm the ecology of malnutrition.

- Guide learners to discuss the general causes of malnutrition.

### Teaching and Learning Aids

- Charts on ecology of malnutrition

### Assessment Strategy

- Give a written test on general causes of malnutrition.

### Sub-Topic 2: Nutritional Deficiency Diseases

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• discuss the causes of the different nutritional deficiency diseases.</li><li>• describe the symptoms of the different nutritional deficiency diseases.</li><li>• explain the management and treatment of the different nutritional deficiencies</li></ul>	<ul style="list-style-type: none"><li>• Causes of the following nutritional deficiency diseases:<ul style="list-style-type: none"><li>- protein energy malnutrition</li><li>- vitamin A deficiency</li><li>- beri beri</li><li>- pellagra</li><li>- anaemia (megaloblastic, pernicious iron, etc)</li><li>- rickets</li><li>- scurvy</li><li>- mineral deficiency diseases - (oestomalacia, osteoporosis, goitre,</li></ul></li><li>• Symptoms of the above nutritional deficiency diseases.</li><li>• Management and treatment of the above nutritional deficiency diseases.</li></ul>

### Methodology

- In groups, guide learners to discuss the causes of the different nutritional deficiency diseases.
- Using whole class discussion, guide learners to describe the symptoms, management and treatment of each of the nutritional deficiency diseases.



### **Teaching/Learning Aids**

- Pictures from textbooks and photographs showing such disorders

### **Assessment Strategy**

- Give a written test on the causes of different nutritional deficiency diseases.

## Topic 26: Food Misinformation

Duration: 6 Periods

### General Overview

Food misinformation refers to misconceptions concerning food. It takes the forms of food fads, myths, and many others which occur in communities. Food misinformation occurs as a result of many factors and they can be dangerous to the nutritional status of the people who believe and follow them. The youth are easily prone to food misinformation since they are easily influenced by advertisements encouraging them to try new products.

### General Objective

By the end of the topic, the learner should be able to examine the types of food misinformation, their dangers in relation to nutrition and how they can be avoided.

### Sub-Topic 1: Existence and Dangers of Food Misinformation

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• explain the basic food misinformation concepts.</li><li>• distinguish between myths and scientific facts.</li><li>• explain the dangers of food misinformation.</li><li>• explain the causes of food misinformation.</li></ul>	<ul style="list-style-type: none"><li>• Explanation of basic food misinformation concepts:<ul style="list-style-type: none"><li>- food fads</li><li>- food myths</li><li>- food quacks</li><li>- food taboos</li><li>- food superstitions</li><li>- food fallacy</li></ul></li><li>• Differences between myths and scientific facts</li><li>• Dangers of food misinformation:<ul style="list-style-type: none"><li>- dangers to health</li><li>- needless money expenditure, etc</li></ul></li></ul>

Specific Objectives	Content
<ul style="list-style-type: none"> <li>• explain the reasons for existence of food misinformation.</li> <li>• identify common food fads, fallacies and idiosyncrasies in Uganda.</li> </ul>	<ul style="list-style-type: none"> <li>• Causes of food misinformation:               <ul style="list-style-type: none"> <li>- distrust of food market</li> <li>- lack of knowledge of scientific advances</li> <li>- persuasive advertisement, etc</li> </ul> </li> <li>• Reasons for existence of food misinformation:               <ul style="list-style-type: none"> <li>- scientific advances</li> <li>- food technology advancement</li> <li>- economic growth</li> <li>- mass communication media</li> <li>- emotional needs, etc</li> </ul> </li> <li>• Food fads, fallacies and idiosyncrasies in Uganda</li> </ul>

### Methodology

- Guide learners in groups to explain the various concepts of food misinformation.
- Using whole class discussion, guide learners to distinguish between myths and scientific facts.
- Guide learners to brainstorm the dangers of food misinformation.
- Guide learners to identify the causes of food misinformation and to explain the reasons for their existence
- Using brainstorming, guide learners to identify the common food fads, fallacies and idiosyncrasies in Uganda.

### Teaching/Learning Aids

- Textbooks, magazines and newspapers

### Assessment Strategy

- Give an assignment on the dangers of food misinformation.

## Sub-Topic 2: Vulnerable Groups to Food Misinformation

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• identify the vulnerable groups of people to food misinformation.</li><li>• examine the remedial measures to food misinformation.</li></ul>	<ul style="list-style-type: none"><li>• Vulnerable groups to food misinformation:<ul style="list-style-type: none"><li>- middle aged</li><li>- the elderly</li><li>- adolescents</li><li>- obese and diabetic</li></ul></li><li>• Remedial measures to food misinformation</li></ul>

### Methodology

- Through whole class discussion, guide learners to identify the groups of people that are vulnerable to food misinformation.
- Guide learners to discuss the remedial measures to food misinformation.

### Teaching/Learning Aids

- Food package, magazines with food advertisements

### Assessment Strategy

- Give an exercise on remedial measures to food misinformation.

## SENIOR SIX TERM TWO

### Topic 27: Food Spoilage, Contamination and Poisoning

Duration: 6 Periods

#### General Overview

Food spoilage is when food loses its natural appearance, texture, and taste as a result of chemical reactions involved in the process of ageing, decay or through the action of micro-organisms. Contamination of food is the existence of foreign material in the food. Food poisoning on the other hand, is an illness that develops as a result of consuming contaminated food. It occurs if food containing poison of chemical or biological origin is ingested.

Food borne diseases are got through consumption of food that contains bacteria responsible for the spread of diseases. These diseases are infectious and can be passed on from one person to another through faeces, unwashed hands and flies, among others.

#### General Objectives

By the end of the topic, the learner should be able to:

- i) examine the agents responsible for food spoilage, contamination and poisoning of food.
- ii) describe the symptoms of food borne diseases, their causes to the body and safety measures to prevent them.

#### Sub-Topic 1: Food Contamination

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>explain the terms: food spoilage, food poisoning and food contamination.</li> <li>classify agents of food spoilage, poisoning and contamination.</li> </ul>	<ul style="list-style-type: none"> <li>Explanation of the following terms:               <ul style="list-style-type: none"> <li>food spoilage</li> <li>food poisoning</li> <li>food contamination</li> </ul> </li> <li>Classification of agents of food spoilage and contamination</li> </ul>

## Methodology

- Using group discussions, guide learners to explain the terms food spoilage, food poisoning and food contamination and classify the agents that cause food spoilage.

## Teaching/Learning Aids

- Charts showing agents of food spoilage and contamination

## Assessment Strategy

- Give an assignment on agents that cause food spoilage and food contamination.

## Sub-Topic 2: Food Poisoning

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• explain the types of food poisoning.</li><li>• explain the causes of food poisoning.</li><li>• state the symptoms of food poisoning.</li><li>• discuss the measures to ensure food safety and hygiene.</li></ul>	<ul style="list-style-type: none"><li>• Types of food poisoning<ul style="list-style-type: none"><li>- Bacterial</li><li>- Chemical</li><li>- Biological, etc</li></ul></li><li>• Causes of food poisoning</li><li>• Symptoms of food poisoning</li><li>• Measures to ensure food safety - (kitchen, food and personal hygiene)</li></ul>

## Methodology

- Using whole class discussions, guide learners to explain the types of food poisoning, their causes and symptoms.
- Using group discussions, let learners discuss the measures to ensure food safety and hygiene.

## Teaching/Learning Aids

- Kitchen
- Equipment

- Contaminated foods

### Assessment Strategy

- Give a test on types of food poisoning and their symptoms.

### Sub-Topic 3: Food Borne Diseases

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• identify food borne diseases.</li> <li>• identify the agents/sources of food borne diseases.</li> <li>• identify symptoms of food borne diseases.</li> <li>• explain the causes of food borne diseases.</li> <li>• explain the measures to prevent food borne diseases.</li> </ul>	<ul style="list-style-type: none"> <li>• For each of the food borne diseases (cholera, typhoid dysentery, etc) give the:               <ul style="list-style-type: none"> <li>- agents/sources of the disease</li> </ul> </li> <li>• symptoms of the food borne disease</li> <li>• causes of the food borne disease</li> <li>• preventive measures of the food borne disease</li> </ul>

### Methodology

- Using group discussions, guide learners to identify food borne diseases, their sources/agents and symptoms.
- Using guided discussion, let learners explain the causes of food borne diseases and their preventive measures.

### Teaching/Learning Aids

- Charts on causes of food borne diseases

### Activities of Assessment

- Give a test on sources/agents, causes, symptoms and preventive measures of food borne diseases.

## Topic 28: Food Preservation

Duration: 10 Periods

### General Overview

The complex organic components of food are broken down by micro organisms and enzymes which cause changes in the flavour, colour, taste, and food texture. For effective food preservation, enzymes and microbial growth must be prevented. Foods are preserved to prolong their 'shelf life'. This is done by dehydration, addition of chemicals, heat treatment, freezing, etc. The different preservation methods may have different effects on the value of food.

### General Objective

By the end of the topic, the learner should be able to examine the aims, principles, methods and effects of food preservation on the value of food.

### Sub-Topic 1: Aims and Methods of Food Preservation

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• explain the meaning of food preservation.</li><li>• state the aims of food preservation.</li><li>• explain the principle governing each food preservation method.</li></ul>	<ul style="list-style-type: none"><li>• Meaning of food preservation</li><li>• Aims of food preservation</li><li>• Principles governing each food preservation method</li></ul>

### Methodology

- Guide learners to brainstorm the meaning and aims of food preservation.
- Guide learners to discuss the principles governing each method of food preservation.

### Teaching/Learning Aids

- Charts showing the principles of food preservation methods

### Assessment Strategy

- Give a written test on principles and aims of preservation.



## Sub-Topic 2: Methods of Food Preservation

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>describe the different methods of food preservation.</li> <li>identify the foods preserved by the different methods of preservation.</li> <li>explain the effects of the methods of preservation on the value of food.</li> </ul>	<ul style="list-style-type: none"> <li>Methods of food preservation:           <ul style="list-style-type: none"> <li>heat treatment (sterilisation, pasteurisation, canning and bottling)</li> <li>dehydration (sun drying, roller drying, spray drying, accelerated freeze drying)</li> <li>freezing and refrigeration</li> <li>removal of air</li> <li>irradiation</li> <li>chemical preservation (salting, smoking, etc)</li> <li>biological preservation (fermentation) used in the making of wine, cheese and yoghurt</li> </ul> </li> <li>Foods preserved using the different preservation methods (fruits, vegetables, meat, milk, fish, pulses, nuts, etc)</li> <li>Effects of the methods of preservation on the value of food.</li> </ul>

### Methodology

- With the aid of examples, guide learners to brainstorm the methods of food preservation.
- Using group work, guide learners to identify the foods preserved by the different methods.
- Using guided discussions, learners explain the effects of the methods of preservation on the value of food.

### **Teaching/Learning Aids**

- A chart showing methods of preservation

### **Assessment Strategy**

- Give a test on effects of the methods of preservation on the nutritive value of food.

## Topic 29: The Food Path

Duration: 03 Periods

### General Overview

The food path describes the various stages the food goes through from its source to the table. It may be from urban or rural, a short or long, or simple or complicated path. Anything that interferes with the food along the way is said to be a food block and may lead to malnutrition in an individual or community.

### General Objective

By the end of the topic, the learner should be able to examine the types of food paths and their blocks and relate these blocks to malnutrition in the community.

### Sub-Topic 1: Urban and Rural Food Paths

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>define the food path.</li> <li>describe the urban and rural food paths.</li> </ul>	<ul style="list-style-type: none"> <li>Definition of the food path</li> <li>Urban and rural food paths</li> </ul>

### Methodology

- Guide learners to brainstorm on the definition of the food path.
- Guide learners to describe the urban and rural food paths.

### Teaching/Learning Aids

- Flow chart showing urban and rural food path

### Assessment Strategy

- Give a test on the rural and urban food paths.

**Sub-Topic 2: Food Blocks along the Food Path**

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• identify the food blocks along the food paths.</li><li>• explain how the food blocks can cause malnutrition.</li><li>• explain ways in which to prevent the malnutrition caused by food blocks.</li></ul>	<ul style="list-style-type: none"><li>• Food blocks along the food paths</li><li>• Relationship between food blocks and malnutrition (causes)</li><li>• Remedies to malnutrition caused by food blocks</li></ul>

**Methodology**

- Guide learners to identify the different blocks along the food paths.
- Through group discussion, let learners explain the relationship between food blocks and malnutrition, and remedies to this form of malnutrition.

**Teaching/Learning Aids**

- Chart showing the food blocks along the food path.

**Assessment Strategy**

- Give a written assignment on how food blocks cause malnutrition.

## Topic 30: Protecting the Food Supply

Duration: 4 Periods

### General Overview

Consumers face many dangers at the various stages from food production to consumption. There is therefore need to constantly check and provide safety measures to ensure the consumer obtains quality products. Food harvesting/slaughter of animals, transportation and storage, processing/preservation and advertising, labelling and marketing are protected by a wide range of laws.

### General Objective

By the end of the topic, the learner should be able to examine the means of protecting food from the point of production to consumption.

### Sub-Topic 1: Harvesting and Slaughter of Animals

Specific Objectives	Content
<ul style="list-style-type: none"> <li>The learner should be able to discuss the means of protecting food during the harvesting and slaughter of animals.</li> </ul>	<ul style="list-style-type: none"> <li>Protection of food during harvesting/slaughter of animals</li> </ul>

### Methodology

- Through group discussion, guide learners to discuss the means of protecting food during harvesting and slaughter of animals.

### Teaching/Learning Aids

- Trip to the abattoir

### Assessment Strategy

- Give an exercise on the means of protecting food during harvesting and slaughter of animals.

**Sub-Topic 2: Transportation and Storage of Food**

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• describe the ways of protecting food during transportation.</li><li>• describe the ways of protecting food during storage.</li></ul>	<ul style="list-style-type: none"><li>• Ways of protecting food during transportation from the farmer to the consumer</li><li>• Ways of protecting food during storage to ensure safety and quality</li></ul>

**Methodology**

- Through group discussion, guide learners to describe the ways of protecting food during transportation.
- Through brainstorming, guide learners to describe the ways of protecting food during storage.

**Teaching/Learning Aids**

- Charts showing ways to ensure quality food during storage

**Assessment Strategy**

- Give an assignment on the ways of protecting food during transportation and storage.

**Sub-Topic 3: Processing and Preservation of Food**

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• describe ways to protect food during processing to ensure safety and quality.</li><li>• describe ways to protect food during preservation to ensure safety and quality.</li></ul>	<ul style="list-style-type: none"><li>• Ways of protecting food during processing to ensure safety and quality</li><li>• Ways of protecting food during preservation to ensure safety and quality</li></ul>

### Methodology

- Guide learners to describe the ways of protecting food during processing and preservation to ensure quality.

### Teaching and Learning Aids

- Real food materials packed, with labels.

### Assessment Strategy

- Give an exercise on the ways of protecting food during processing and preservation to ensure quality.

## Sub-Topic 4: Advertising, Labelling and Marketing of Food

Specific Objective	Content
The learner should be able to explain the importance of advertising, labelling and marketing of foods.	<ul style="list-style-type: none"> <li>• Importance of advertising, labelling and marketing of foods</li> </ul>

### Methodology

- Through group discussions, guide learners to explain the importance of advertising, labelling, and marketing of foods.

### Teaching and Learning Aids

- Real food materials in packages
- Pictures of food containers

### Assessment Strategy

- Give an assignment on the importance of advertising, labelling, and marketing of foods.

## Topic 31: Rechauffe' Cookery

Duration: 4 Periods

### General Overview

Food is an expensive item in the household budget. Therefore, leftover foods from one meal can be used to prepare other attractive, nutritious, tasty and safe foods by addition of fresh ingredients. This kind of cooking is called rechauffe cookery. Reheated foods should be handled carefully, so that food contamination is minimised and nutrients conserved.

### General Objective

By the end of the topic, the learner should be able to examine the use of leftover foods to prepare safe, attractive and nutritious dishes.

### Sub-Topic 1: Rules for Reheating Food

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• explain the rules for reheating foods.</li><li>• identify the methods of cooking reheated foods.</li></ul>	<ul style="list-style-type: none"><li>• Rules for reheating foods</li><li>• Methods of cooking reheated foods:<ul style="list-style-type: none"><li>- frying e.g. fritters, burgers, etc</li><li>- baking e.g. meat pies, fish pies, etc</li><li>- stewing e.g. curries, etc</li></ul></li></ul>

### Methodology

- Guide learners to explain the rules for reheating foods and identify the methods of cooking reheated foods.

### Teaching and Learning Aids

- Charts showing methods of cooking and rules for reheating foods

### Assessment Strategy

- Give an exercise on the rules of cooking leftover foods.



## Sub-Topic 2: Preparation of Rechauffe' Dishes

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• identify the dishes that use leftover foods.</li> <li>• demonstrate the preparation and presentation of rechauffe' dishes.</li> </ul>	<ul style="list-style-type: none"> <li>• Dishes that use leftover foods:               <ul style="list-style-type: none"> <li>- fish e.g. fish cakes</li> <li>- meat e.g. shepherd's pie</li> <li>- bread e.g. bread and butter pudding</li> <li>- vegetables e.g. potato cakes</li> <li>- stale cakes e.g. puddings</li> </ul> </li> <li>• Preparation and presentation of different rechauffe' dishes</li> </ul>

### Methodology

- Through whole class discussions, guide learners to identify the dishes that use leftover foods.
- Using guided discussion, guide learners to describe preparation and service of different left over dishes.

### Teaching/Learning Aids

- A chart showing methods of cooking reheated dishes

### Assessment Strategy

- Give an assignment to copy recipes of reheated dishes.

## Topic 32: Stocks, Sauces, Soups and other Hors D'oeuvres

Duration: 5 Periods

### General Overview

Stock is a liquid containing some of the flavouring constituents extracted by prolonged and gentle simmering. The basis of all good sauces and soups is a well flavoured stock. A sauce is a well flavoured liquid containing a thickening agent. It can be added to food to add contrast in flavour, colour, texture, etc. Hors d'oeuvres consist of a variety of highly flavoured, well seasoned, and colourful foods served in very small portions insufficient to satisfy hunger. Soups and other horse d'oeuvres are served as first course in a meal to aid appetite.

### General Objectives

By the end of the topic, the learner should be able to:

- i) differentiate stocks, soups and sauces.
- ii) examine the procedure and rules to follow when making stocks, soups and sauces.

### Sub-Topic 1: Stocks

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>differentiate the types of stocks.</li><li>state the principles involved in preparing the different types of stocks.</li><li>describe the preparation of different types of stocks.</li><li>outline the uses of different types of stocks.</li></ul>	<ul style="list-style-type: none"><li>Types of stocks:<ul style="list-style-type: none"><li>brown</li><li>white</li><li>vegetable</li><li>fish, etc</li></ul></li><li>Principles involved in preparing the different types of stocks</li><li>Preparation of different types of stocks</li><li>Uses of different types of stocks<ul style="list-style-type: none"><li>(foundation for soups, sauces and gravies)</li></ul></li></ul>

## Methodology

- Guide learners to differentiate the types of stocks and state the principles involved in making them.
- Using guided discussion, let learners describe the preparation of different types of stocks and outline their uses.

## Teaching/Learning Aids

- A chart showing the uses of stock

## Assessment Strategy

- Give an assignment on different types and uses of stocks.

## Sub-Topic 2: Sauces and Gravies

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• define a sauce and a gravy.</li> <li>• classify sauces.</li> <li>• classify gravies.</li> <li>• explain the uses of sauces.</li> <li>• discuss the nutritive and dietetic value of sauces.</li> <li>• describe the preparation and service of different sauces and gravies.</li> <li>• state the common faults that occur when preparing sauces and gravies.</li> </ul>	<ul style="list-style-type: none"> <li>• Definition of a sauce and a gravy</li> <li>• Classification of sauces:               <ul style="list-style-type: none"> <li>- roux sauces</li> <li>- cooked egg sauces</li> <li>- cold sauces</li> <li>- unclassified sauces, etc</li> </ul> </li> <li>• Classification of gravies</li> <li>• Uses of sauces</li> <li>• Nutritive and dietetic value of sauces</li> <li>• Preparation and service of sauces and gravies</li> <li>• Common faults that occur when preparing sauces and gravies</li> </ul>

## Methodology

- Guide the learners to define and classify sauces and gravies.
- Guide learners to brainstorm the uses, nutritive and dietetic value of sauces and gravies.

- Guide the learners to describe the preparation and service of sauces and gravies.
- Guide the learners to identify the common faults that occur when preparing sauces and gravies.

### Teaching/Learning Aids

- A chart showing classification of sauces

### Assessment Strategy

- Give an assignment on the nutritive and dietetic value of sauces.

### Sub-Topic 3: Soups and Hors D'oeuvres

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• state the types of soups.</li> <li>• discuss the nutritive and dietetic value of soups.</li> <li>• explain the principles governing the preparation and service of soups.</li> <li>• describe the preparation and service of different types of soups.</li> <li>• state the common faults when preparing soups.</li> <li>• define horse d'oeuvres and state their importance.</li> <li>• state other types of horse d'oeuvres apart from soup.</li> <li>• describe the preparation and</li> </ul>	<ul style="list-style-type: none"> <li>• Types of soups: <ul style="list-style-type: none"> <li>- thick soups (pureed, and those thickened by other ingredients)</li> <li>- thin soups</li> <li>- clear soups- broths</li> <li>- mixed soups, etc</li> </ul> </li> <li>• Nutritive and dietetic value of soups</li> <li>• Principles governing soup preparation and service</li> <li>• Preparation and service of different types of soups</li> <li>• Common faults when preparing soups</li> <li>• Definition of horse d'oeuvres and their importance</li> <li>• Other types of horse d'oeuvres: <ul style="list-style-type: none"> <li>- dressed horse d'oeuvres</li> <li>- plain horse d'oeuvres, etc</li> </ul> </li> <li>• Preparation and service of horse</li> </ul>

Specific Objectives	Content
service of a selection of horse d'oeuvres from each type.	d'oeuvres

### Methodology

- Guide the learners to identify the types of soups and discuss their nutritive and dietetic value.
- Guide the learners to brainstorm on the principles governing soup preparation, cooking and service.
- Through demonstration, guide learners to describe the preparation, cooking and service of a variety of soups and to identify the common faults when preparing soups.
- Guide learners to define horse d'oeuvres, state their types and describe their preparation and service.

### Teaching/Learning Aids

- Recipe books for soups and other horse d'oeuvres

### Assessment Strategy

- Give a written assignment on the nutritive and dietetic value of soups.

## SENIOR SIX TERM THREE

### Topic 33: Desserts

Duration: 4 Periods

#### General Overview

Desserts are dishes which are usually sweet. They may be hot or cold. The cold desserts are called sweets while the hot desserts are called puddings. Puddings can be steamed, fried or baked. The food value of any dessert depends on the ingredients used. They are served as a last course to seal off the appetite and should be chosen with care so that they supply constituents lacking in the rest of the meal and help overall balancing of the diets.

#### General Objective

By the end of the topic, the learner should be able to examine the classification, value and use of desserts.

#### Sub-Topic 1: Puddings

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• classify puddings.</li><li>• discuss the nutritive value of puddings.</li><li>• discuss the dietetic value of puddings.</li><li>• describe the preparation and service of a selection of puddings from each classification.</li></ul>	<ul style="list-style-type: none"><li>• Classification of puddings:<ul style="list-style-type: none"><li>- milk puddings</li><li>- custards and custard puddings</li><li>- steamed puddings</li><li>- puddings made with butter</li><li>- hot puddings with fruit</li><li>- hot puddings with pastry, etc</li></ul></li><li>• Nutritive value of puddings</li><li>• Dietetic value of puddings</li><li>• Preparation and service of puddings</li></ul>

## Methodology

- Guide learners to discuss the classification, nutritive and dietetic value of puddings.
- Guide learners to describe the preparation and service of puddings.

## Teaching/Learning Aids

- A chart showing the classification of puddings

## Assessment Strategy

- Give an exercise on the nutritive and dietetic value of puddings.

## Sub-Topic 2: Cold Sweets

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• classify sweets.</li> <li>• discuss the nutritive value of sweets.</li> <li>• discuss the dietetic value of sweets.</li> <li>• describe the preparation and service of a selection of sweets from each classification.</li> </ul>	<ul style="list-style-type: none"> <li>• Classification of sweets:               <ul style="list-style-type: none"> <li>- whole fruits</li> <li>- fruit salads</li> <li>- jellies</li> <li>- cold custard sweets, etc</li> </ul> </li> <li>• Nutritive value of sweets</li> <li>• Dietetic value of sweets</li> <li>• Preparation and service of sweets</li> </ul>

## Methodology

- Guide learners to discuss the classification, nutritive and dietetic value of sweets.
- Guide learners to describe the preparation and service of sweets.

## Teaching/Learning Aids

- A chart showing the classification of sweets

## Assessment Strategy

- Give an exercise on the nutritive and dietetic value of sweets.

## Topic 34: Convenience Foods

Duration: 4 Periods

### General Overview

Convenience foods are foods that are partially or totally processed by food manufacturers so that they are either ready to eat on purchase or require minimum cooking. Their popularity today has been contributed by the following factors:

- The changing patterns of life, mainly the fact that many women go out to work as well as running a home.
- An increase in foreign travel, modern advertising, colourful displays in supermarkets and a higher standard of living.
- Lack of time and the desire to reduce manual work has increased the demand for a wide variety of foods easily obtained, stored and prepared.

### General Objective

By the end of the topic, the learner should be able to examine the value and use of convenience foods.

### Sub-Topic 1: Use of Convenience Foods

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• define the concept of “convenience” foods.</li><li>• explain the reasons for the increased intake of convenience foods.</li><li>• state the different types of convenience foods with examples in each case.</li><li>• discuss the advantages of using convenience foods.</li><li>• discuss the disadvantages of using convenience foods.</li></ul>	<ul style="list-style-type: none"><li>• Definition of “convenience” foods</li><li>• Reasons for the increased intake of convenience foods</li><li>• Types and examples of convenience foods</li><li>• Advantages of using convenience foods</li><li>• Disadvantages of using convenience foods</li></ul>



Specific Objectives	Content
<ul style="list-style-type: none"> <li>demonstrate the use of convenience foods in cookery.</li> </ul>	<ul style="list-style-type: none"> <li>Use of convenience foods in cookery</li> </ul>

### Methodology

- Guide learners to brainstorm the definition, reasons for the increased consumption, types and examples of convenience foods.
- In groups, let learners discuss the advantages and disadvantages of using convenience foods.
- In groups, guide learners to demonstrate the use of convenience

### Teaching/Learning Aids

- Samples of convenience foods

### Assessment Strategy

- Give an exercise on the advantages and disadvantages of using convenience foods.

## Sub-Topic 2: Value of Convenience Foods

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>discuss the nutritive value of convenience foods.</li> <li>discuss the dietetic value of convenience foods.</li> </ul>	<ul style="list-style-type: none"> <li>Nutritive value of convenience foods</li> <li>Dietetic value of convenience foods</li> </ul>

### Methodology

- Guide learners to discuss the nutritive value of convenience foods.
- Through brainstorming, guide learners to discuss the dietetic value of convenience foods.

### Teaching/Learning Aids

- A chart showing the value of convenience foods

### Assessment Strategy

- Give a written exercise on the value of convenience foods.

## Topic 35: Food Additives

Duration: 4 Periods

### General Overview

There are natural or artificial substances that are added to food for one or a combination of the following purposes:

- to make it more palatable.
- improve the nutritive value.
- increase shelf life.
- to improve cooking properties.
- for easy processing.

Some of these additives are beneficial to health while others if taken in large amounts are harmful and as such, they should be used with care.

### General Objective

By the end of the topic, the learner should be able to examine the types and value of food additives used in food preparation/processing.

### Sub-Topic 1: Classification of Food Additives

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• define food additives.</li><li>• classify food additives.</li></ul>	<ul style="list-style-type: none"><li>• Definition of food additive</li><li>• Classification of the following food additives:<ul style="list-style-type: none"><li>- colouring</li><li>- flavourings</li><li>- preservatives</li><li>- nutritional additives</li><li>- improvers</li><li>- emulsifiers, etc</li></ul></li></ul>

### Methodology

- Guide learners to brainstorm the definition of food additives.

- Through discussions, guide learners to classify food additives used in food preservation/processing.

### Teaching/Learning Aids

- Samples of food additives

### Assessment Strategy

- Give an exercise on the classification of food additives.

## Sub-Topic 2: Advantages and Disadvantages of Food Additives

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• explain the advantages of using food additives.</li> <li>• explain the disadvantages of using food additives.</li> </ul>	<ul style="list-style-type: none"> <li>• Advantages of using food additives</li> <li>• Disadvantages of using food additives</li> </ul>

### Methodology

- In groups, guide learners to explain the advantages and disadvantages of food additives.

### Teaching/Learning Aids

- Samples of food additives

### Assessment Strategy

- Give an exercise on the advantages and disadvantages of using food additives.

## Topic 36: Beverages

Duration: 8 Periods

### General Overview

A beverage is any kind of drink that is either served hot or cold. It may serve as a stimulant for refreshing or for nourishing. Drinks are a popular way of meeting the body's need for water. Some are stimulants, and certain drinks contribute not only to the energy value but also useful amounts of fluoride and vitamin C.

### General Objective

By the end of the topic, the learner should be able to examine the types, value and preparation of beverages.

### Sub-Topic 1: Types of Beverages

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• define beverages.</li><li>• identify the types of beverages.</li></ul>	<ul style="list-style-type: none"><li>• Definition of beverages</li><li>• Types of beverages (hot or cold):<ul style="list-style-type: none"><li>- refreshing</li><li>- stimulating</li><li>- nourishing</li></ul></li></ul>

### Methodology

- Guide learners to brainstorm on the definition and types of beverages.

### Teaching/Learning Aids

- Samples of beverages

### Assessment Strategy

- Give a test on types of beverages.

## Sub-Topic 2: Value of Beverages

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• discuss the nutritive value of beverages.</li> <li>• discuss the dietetic value of beverages.</li> </ul>	<ul style="list-style-type: none"> <li>• Nutritive value of beverages</li> <li>• Dietetic value of beverages</li> </ul>

### Methodology

- Guide learners to discuss the nutritive and dietetic value of beverages.

### Teaching and Learning Aids

- Charts showing groupings of beverages and their value.

### Assessment Strategy

- Give a test on the value of beverages.

## Sub-Topic 3: Preparation of Beverages

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• explain the factors to consider when preparing and serving the different types of beverages.</li> <li>• describe the preparation of different types of beverages.</li> </ul>	<ul style="list-style-type: none"> <li>• Factors to consider when preparing and serving the different types of beverages</li> <li>• Preparation of beverages:               <ul style="list-style-type: none"> <li>- Hot beverages e.g. tea, coffee, cocoa, soy beverage, Milo, drinking chocolate, bournivita, etc</li> <li>- Cold beverages e.g. fruit juices, milkshakes, flavoured chocolate drink, iced coffee, iced tea, "bushera", etc</li> </ul> </li> </ul>

**Methodology**

- Guide learners to brainstorm the factors to consider when preparing and serving the different types of beverages.
- Using demonstrations, describe the method of preparing the different types of beverages.

**Teaching/Learning Aids**

- Samples of beverages
- Heat source
- Cooking and serving equipment

**Assessment Strategy**

- Give an exercise on the factors to consider when preparing and serving the different types of beverages.

## Topic 37: Seasonings and Flavourings

Duration: 04 Periods

### General Overview

These are types of additives used in food preparation to improve the flavour and taste of food. They may be in solid or liquid form. Seasonings and flavourings are used in cooking to supplement the natural flavour of food. In doing so, they excite the appetite and increase the flow of the digestive juices thereby making the food more easily digested. Too much of either can spoil a dish so it is advisable to use them sparingly at first to discover the differences they can make in a dish and then they may be used more liberally.

### General Objective

By the end of the topic, the learner should be able to examine the types and use of seasonings and flavourings.

### Sub-Topic 1: Seasonings (Condiments)

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>differentiate between seasonings and flavourings.</li> <li>identify the types of seasonings.</li> <li>describe the use of the different types of seasonings.</li> <li>discuss the advantages and disadvantages of using seasonings.</li> </ul>	<ul style="list-style-type: none"> <li>Differences between seasonings and flavourings</li> <li>Types of seasonings - (salt, pepper, vinegar, etc)</li> <li>Use of seasonings</li> <li>Advantages and disadvantages of using seasonings</li> </ul>

### Methodology

- Guide learners to brainstorm on the differences between seasonings and flavourings.
- Guide the learners to discuss the types, use, advantages and disadvantages of using seasonings.

## Teaching/Learning Aids

- Samples of seasonings

## Assessment Strategy

- Give an exercise on types of seasonings, advantages and disadvantages of using them.

## Sub-Topic 2: Flavourings

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• identify the types of flavourings.</li><li>• describe the use of the different types of flavourings.</li><li>• discuss the advantages and disadvantages of using flavourings.</li></ul>	<ul style="list-style-type: none"><li>• Types of flavourings:<ul style="list-style-type: none"><li>- herbs</li><li>- spices</li></ul></li><li>• Use of flavourings</li><li>• Advantages and disadvantages of using flavourings</li></ul>

## Methodology

- Guide the learners to brainstorm on the types, use, advantages and disadvantages of using flavourings.

## Teaching/Learning Aids

- Samples of herbs and spices

## Assessment Strategy

- Give an exercise on types of flavourings, advantages and disadvantages of using them.



## SECTION TWO: SCIENCE IN THE HOME

The section of Science in the Home is Part Two of Advanced Level Foods and Nutrition. It focuses on the scientific principles in different activities in the home for example cookery, laundry, house cleaning, etc. This section should be given a minimum of 3 and a maximum of 4 lessons per week.

<b>LIST OF TOPICS</b>			
<b>SENIOR FIVE</b>	<b>Periods</b>	<b>SENIOR SIX</b>	<b>Periods</b>
<b><i>Term One</i></b>		<b><i>Term One</i></b>	
1. The Kitchen	24	9. Electricity	36
2. Materials in the Home	12		
<b><i>Term Two</i></b>		<b><i>Term Two</i></b>	
3. Forces	4	10: Ventilation and Illumination	12
4. Matter	12	11: Water	13
5. Simple Machines	6	12: Detergents	8
6. Pressure	14	13: Application of Simple Chemistry in the Home	3
<b><i>Term Three</i></b>		<b><i>Term Three</i></b>	
7. Heat and Thermodynamics	28	14: Safety in the Home	12
8. Fuels	8	15: Management of Family Resources	12

## SENIOR FIVE - TERM ONE

### Topic 1: The Kitchen

Duration: 24 Periods

#### General Overview

This is a very essential topic as it gives the introduction of Paper II Foods and Nutrition. The kitchen is the most active centre of the house. A comfortable, well-planned and hygienic kitchen will make work easier and more pleasant. Correct planning, designing and equipping the kitchen is very important as it plays a great role in the efficient and comfortable working by the home maker.

#### General Objectives

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

- i) identify the factors to consider when designing and equipping the kitchen.
- ii) describe the choice, mode of operation and safety when using household equipment.
- iii) develop the aesthetic value of working in a well equipped, organised and hygienic kitchen.

#### Sub-Topic 1: Designing the Kitchen

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• define the term kitchen.</li><li>• describe the factors to consider when designing and planning the kitchen.</li></ul>	<ul style="list-style-type: none"><li>• Definition of the kitchen</li><li>• Factors to consider when designing and planning (with reference to efficiency, safety, comfort, hygiene, storage space and kitchen surfaces) ventilation, lighting, heating and use of colour for surfaces, walls and ceilings</li></ul>

## Methodology

- Guide learners to brainstorm the definition of the kitchen and its arrangement.
- Through discussion, guide the learners to explain the factors to consider when planning, designing and equipping the kitchen.

## Teaching and Learning Aids

- The design of the Home Economics laboratory, school kitchen, and learners' home kitchen.
- Textbooks

## Assessment Strategy

- Give learners an assignment on the factors to consider when designing and planning the kitchen.

## Sub-Topic 2: Kitchen Plans

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• define the term work triangle and outline its work areas.</li> <li>• illustrate kitchen plans.</li> <li>• describe kitchen plans with reference to work triangle, space, size and shape.</li> </ul>	<ul style="list-style-type: none"> <li>• Definition of the term work triangle and its work areas (storage, preparation &amp; cooking area)</li> <li>• Illustration of kitchen plans (U-plan, L-plan, parallel plan, and one wall plan)</li> <li>• Description of kitchen plans with reference to work triangle, space, size and shape</li> </ul>

## Methodology

- Guide learners to brainstorm on the definition of the work triangle and the work areas.
- Illustrate to the learners the kitchen plans ("U", "L", parallel and one wall kitchen plans) in relation to the work triangle/ work areas.
- Through question and answer method, let learners identify the characteristics of kitchen surfaces.

**Teaching/Learning Aids**

- Work areas of the school kitchen
- Kitchen plans of the Home Economics laboratory, school kitchen and homes of the learners
- Textbooks

**Assessment Strategy**

- Give an assignment on the work triangle, its main areas and types of kitchen plans.

**Sub-Topic 3: Refuse Disposal**

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• discuss the methods and importance of refuse disposal.</li><li>• illustrate the construction of refuse bins and sinks.</li><li>• explain the, choice, use and care of refuse bins and sinks.</li></ul>	<ul style="list-style-type: none"><li>• Methods and importance of refuse disposal</li><li>• Construction of kitchen sinks and refuse bins</li><li>• Choice, use and care of refuse bins and sinks</li></ul>

**Methodology**

- Let learners brainstorm the definition of refuse and refuse disposal.
- Through guided group discussion, let learners identify the methods and importance of refuse disposal.
- Through illustration and discussions, guide learners on the construction, choice, use and care of refuse bins.
- Organise field trips to disposal sites.

**Teaching/Learning Aids**

- Real objects like school refuse bins and sinks
- Textbooks with diagrams of sinks and bins

**Assessment Strategy**

- Give an exercise on the methods and importance of refuse disposal.

## Sub-Topic 4: Kitchen Equipment

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• classify kitchen equipment.</li> <li>• explain the factors to consider when choosing kitchen equipment in general.</li> </ul>	<ul style="list-style-type: none"> <li>• Classification of kitchen equipment and examples in each group</li> <li>• Factors to consider when choosing kitchen equipment</li> </ul>

### Methodology

- Guide learners to brainstorm on the classification of kitchen equipment and their choice in general.
- Through discussions, guide learners on the selection of various kitchen equipment.

### Teaching/Learning Aids

- Real objects like equipment in the school laboratory
- Textbooks

### Assessment Strategy

- Give a test on classification and factors to consider when choosing kitchen equipment in general.

## Topic 2: Materials in the Home

Duration: 12 Periods

### General Overview

Metals, wood, glass, ceramics and plastics constitute a reasonable percentage of the materials used for surfaces in the home hence it is vital for learners to understand their classification and their properties to enable efficient use and care for them. Some equipment in the home are finished with an external coating of enamel, paint, varnish and formic so learners should understand their properties, care and cleaning in order to maintain them.

### General Objective

By the end of this topic, the learner should be able to identify the different household metals, non metals and their various coatings giving their choice, use, and care and cleaning.

### Sub-Topic 1: Metals

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• identify the various types of metals used in the home.</li><li>• discuss the qualities, use and care of various metals in the home.</li></ul>	<ul style="list-style-type: none"><li>• Types of metals (aluminium, steel, copper, brass, silver, zinc, nickel, bronze, tin, gold)</li><li>• Qualities, use, care and cleaning of various metals</li></ul>

### Methodology

- Guide learners to brainstorm the different types of metals used in the home.
- Guide learners to discuss the different materials found in the home.
- Through group discussions, guide learners to identify the qualities, use and care of different materials used in the homes.

## Teaching/Learning Aids

- Different types of metals e.g. aluminium pans, stainless steel teapots/sauceboats, brass/copper water taps, gold trophies, etc
- Textbooks

## Assessment Strategy

- Give an assignment on the types, qualities, use and care of the different metals in the home.

## Sub-Topic 2: Non-Metals

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• identify the different non-metallic items in the home for example plastics, glass, wood and ceramics.</li> <li>• discuss the qualities, use and care of various non-metallic items in the home.</li> </ul>	<ul style="list-style-type: none"> <li>• Types of non-metals:           <ul style="list-style-type: none"> <li>- Plastics:               <ul style="list-style-type: none"> <li>○ thermoplastics: acrylics, cellulose, polythene, polyethylene, polypropylene, polystyrene, polyurethane (foam plastics), polytetrafluorethylene P.T.F.E (coated silicon, polyvinyl chloride P.V.C)</li> <li>○ thermosetting plastics: Melamine, phenolics</li> </ul> </li> <li>- glass (lead/flint, lime and borosilicate), Wood and Ceramics</li> </ul> </li> <li>• Qualities, use, care and cleaning of non-metallic items made from the above various</li> </ul>

## Methodology

- Guide learners to brainstorm the different types of non-metals found in the home.
- Illustrate using real objects like wooden chopping boards, plastic plates and glass bowls.
- Demonstrate the use and care of the different non-metals.

### Teaching/Learning Aids

- Different types of plastics, glass bowls, and wooden chopping boards
- Textbooks

### Assessment Strategy

- Give a written exercise on the types, qualities, use and care of the different non metals in the home.

### Sub-Topic 3: Coating Materials

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• discuss the types of coating materials.</li><li>• explain the qualities, use and care of the different materials used to coat surfaces for example enamel, formica, paint and varnish.</li></ul>	<ul style="list-style-type: none"><li>• Types of coating materials:<ul style="list-style-type: none"><li>- enamel</li><li>- formica</li><li>- paint</li><li>- varnish</li></ul></li><li>• Qualities, use, care and cleaning of various coating materials</li></ul>

### Methodology

- Guide learners to brainstorm the different types of coating materials found in the home.
- Through discussions, guide learners to explain the qualities, care and cleaning of various coating materials.

### Teaching/Learning Aids

- Textbooks
- Real objects like table-tops, mugs, trays, refrigerators, cookers, wooden doors, etc.

### Assessment Strategy

- Give an assignment on the different types of coating materials, their use and care.



## SENIOR FIVE - TERM TWO

### Topic 3: Forces

Duration: 04 Periods

#### General Overview

We encounter several forces in our daily lives and these include gravitational, centripetal and centrifugal forces. The application of these forces is of importance in the operation of household equipment for example vacuum cleaners, spin dryers, washing machines, etc. Household appliances use different forces to do work but learners should be knowledgeable on the safety precautions to be taken when using these appliances.

#### General Objective

By the end of this topic, the learner should be able to explain the different types of forces, their effects and applications in various appliances in the home.

#### Sub-Topic 1: Types of Forces

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• define force.</li> <li>• identify the types of forces and their effects.</li> </ul>	<ul style="list-style-type: none"> <li>• Definition of force</li> <li>• Types of forces (gravitational, centripetal, centrifugal, suction, capillarity, tensional, viscous, magnetic, frictional, electric)</li> </ul>

#### Methodology

- Guide learners to brainstorm the definition of force.
- Through guided discussion, let learners identify the different types of forces.
- Demonstrate to the learners the use of each force-driven appliance.

#### Teaching/Learning Aids

- Textbooks

- Charts

### Assessment Strategy

- Give a written exercise on the types of forces and their effects.

## Sub-Topic 2: Application of different Forces in Appliances/ Equipment

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• explain the principles behind the operation of various equipment that apply forces.</li><li>• discuss the construction of equipment that are driven by various forces.</li><li>• explain the choice, care, use and safety precautions when using appliances/equipment.</li></ul>	<ul style="list-style-type: none"><li>• Principles behind the operation of appliances/equipment that apply forces (washing machines, vacuum cleaners, carpet sweepers, rotary beater, egg whisks, blenders, food mixers, hair driers)</li><li>• Construction of the equipment that apply forces</li><li>• Choice, care, use and safety precautions when using appliances in relation to the forces</li></ul>

### Methodology

- Through demonstration, help learners to understand the construction of equipment that apply forces.
- Through question and answer method, guide learners to identify the choice and safety precautions when using appliances in relation to their forces.
- Guide the learners to draw and label appliances which use different forces.

### Teaching/Learning Aids

- Real appliances/equipment e.g. vacuum cleaners
- Textbooks

### **Assessment Strategy**

- Give a written test on application of different forces in equipment and safety precautions while using various appliances.

## Topic 4: Matter

Duration: 12 Periods

### General Overview

Matter exists in three states i.e. solids, liquids and gases. Matter is made up of tiny particles which are arranged differently according to the state. All materials in the home are formed differently either as solids, liquids or gases basing on the arrangement of their tiny particles. This topic enables learners to know the role of the properties of matter in our day-to-day life for example diffusion, surface tension, osmosis, capillarity and absorption.

The topic also gives learners a scientific knowledge of measuring various quantities such as length, volume and weight which are very vital in food preparation and other preparations in the home. Good knowledge of the applications of principles of relative density cannot be ignored as it can be used in simple household experiments like finding out if eggs are stale and if milk has been adulterated.

### General Objective

By the end of this topic, the learner should be able to outline the states of matter, its properties and application in the home for example in measurements of weights and density.

### Sub-Topic 1: States of Matter

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• define matter and its states.</li><li>• explain the existence of matter using the kinetic theory.</li></ul>	<ul style="list-style-type: none"><li>• Definition of matter and the states of matter.</li><li>• Kinetic theory explaining the existence of matter</li></ul>

### Methodology

- Guide learners to brainstorm the definition of matter.
- Demonstrate using real objects to show the existence of the states of matter.
- Guide and discuss with the learners the states of matter.

## Teaching/Learning Aids

- Objects like rulers, stones, etc.
- Textbooks
- Charts

## Assessment Strategy

- Give an assignment on definition of the states of matter and use of the kinetic theory to explain the existence of matter.

## Sub-Topic 2: Properties of Matter and their Applications

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• explain the properties of matter.</li> <li>• explain the application of the properties of matter in daily life.</li> </ul>	<ul style="list-style-type: none"> <li>• Properties of matter.</li> <li>• Application of the properties of matter in daily life:               <ul style="list-style-type: none"> <li>- diffusion</li> <li>- surface tension (detergent action, water proofing, release agents and polishes)</li> <li>- adhesion and cohesion</li> <li>- osmosis</li> <li>- absorption and adsorption</li> <li>- capillarity (raising damp, sweating of concrete floors, colour migration, etc)</li> </ul> </li> </ul>

## Teaching/Learning Aids

- Textbooks
- Charts

## Methodology

- Guide learners to brainstorm the different states of matter.
- Through discussions, guide learners on the different properties of matter

- Demonstrate some properties of matter for example diffusion and capillarity.

### Assessment Strategy

- Give a written test on the properties of matter and their application in daily life.

### Sub-Topic 3: Measurement of Matter

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• identify the different ways of measuring matter (length, volume, weight).</li><li>• explain the care of weighing equipment.</li></ul>	<ul style="list-style-type: none"><li>• Ways of measuring matter e.g. handy measures, weighing scales, measuring and determination of volumes, weights and length</li><li>• Care of weighing equipment</li></ul>

### Teaching/Learning Aids

- Real objects like weighing scale, rulers, etc.
- Textbooks

### Methodology

- Demonstrate the use of equipment like weighing scales.
- Guide learners to discuss the different measurement units.

### Assessment Strategy

- Give an exercise on measurement of matter and the care of weighing equipment.

### Sub-Topic 4: Density

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• explain the measurement of density.</li><li>• state Archimedes principle and</li></ul>	<ul style="list-style-type: none"><li>• Definition of density and its measurement</li><li>• Archimedes principle and the</li></ul>

Specific Objectives	Content
the law of floatation.	law of floatation and their application in the home

### Methodology

- Guide learners to brainstorm on the definition and measurement of density.
- Demonstrate the measurement of density of various objects.
- Guide a discussion on stating of Archimedes principle and the law of floatation.

### Teaching/Learning Aids

- Textbooks
- Real objects that float on water

### Assessment Strategy

- Give an exercise on the definition of density, its measurement, state the Archimedes principle and the law of floatation.

### Sub-Topic 5: Relative Density

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• define relative density and give its measurement.</li> <li>• explain the application of hydrometers.</li> <li>• explain the applications of relative density.</li> </ul>	<ul style="list-style-type: none"> <li>• Definition of relative density and its measurement</li> <li>• Application of hydrometers (lactometers, saccharometers and salinometers)</li> <li>• Applications of relative density</li> </ul>

### Methodology

- Let learners brainstorm on the definition and measurement of relative density.
- Through group discussions, guide learners to identify the applications of relative density.

- Demonstrate the use of hydrometers e.g. lactometers using real lactometers and textbooks.
- Experiment the application of relative density like testing for freshness of eggs using a strong brine solution.

**Teaching/Learning Aids**

- Textbooks
- Real objects like lactometers used to test the amount of water in milk

**Assessment Strategy**

- Give a written test on definition of relative density, its measurement and application of hydrometers and relative density.



## Topic 5: Simple Machines

Duration: 6 Periods

### General Overview

A machine is a device that makes work easier. However, when using them, we should consider the working principles and safety precautions that would enable us to use less energy and avoid accidents. There are different groups of simple machines classified according to their working mechanisms and these include levers, pulleys, wedges, wheel and axle, etc.

### General Objective

By the end of the topic, the learner should be able to comprehend the types, application and use of simple machines in relation to mechanical advantage, velocity ratio and efficiency.

### Sub-Topic 1: Relationship between Mechanical Advantage, Velocity Ratio and Efficiency

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>define simple machines and the terms used in machines.</li> <li>explain the relationship between mechanical advantage, velocity ratio and efficiency of simple machines.</li> </ul>	<ul style="list-style-type: none"> <li>Definition of simple machines, mechanical advantage, velocity ratio and efficiency of a machine</li> <li>Relationship between mechanical advantage, velocity ratio and efficiency of simple machines</li> </ul>

### Methodology

- Guide learners to brainstorm the definition of simple machines and the terms used in machines.
- Use talk and chalk method to illustrate the relationship between mechanical advantage, velocity ratio and efficiency.

### Teaching/Learning Aids

- Simple machines in the Home Economics laboratory

- Textbooks

### Assessment Strategy

- Give an assignment on definition of simple machines and the relationship between mechanical advantage, velocity ratio and efficiency of machines.

### Sub-Topic 2: Types and Application of Simple Machines

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• illustrate the different classes of levers, types of pulleys and other simple machines.</li><li>• describe the application and use of the different types of simple machines.</li></ul>	<ul style="list-style-type: none"><li>• Types and applications of simple machines:<ul style="list-style-type: none"><li>- levers (1<sup>st</sup> class, 2<sup>nd</sup> class, 3<sup>rd</sup> class)</li><li>- pulleys (single fixed, single movable, ball &amp; tackle)</li><li>- wedges (e.g. knives, pangas)</li><li>- inclined planes (e.g. stairs, ladders)</li><li>- screws, weighing equipment</li><li>- wheel &amp; axle, gears &amp; wheels</li></ul></li></ul>

### Methodology

- Using question and answer method, guide learners to identify examples of simple machines.
- Guide a discussion on the working and efficiency of various machines like pulleys.
- Illustrate the application and use of simple machines using drawings and labelling of simple machines like knives, pair of scissors, screws, etc.

### Teaching/Learning Aids

- Real simple machines e.g. claw hammer, pair of tongs, harmer, pair of tongs, wheelbarrows, etc.
- Charts
- Textbooks

## **Activities of Assessment**

- Give a written test on uses and illustration of different types of simple machines.

## Topic 6: Pressure

Duration: 14 Periods

### General Overview

Pressure is very useful in our day to day activities. It is important to know the types of pressure and how they can be applied in the home to improve efficiency of work and to reduce accidents. The types of pressure include liquid pressure, gas pressure, steam pressure and solid pressure. It is important for one to identify the importance of these types of pressure so as to make work easier and efficient.

Good knowledge of the measurement of pressure is important because excess of it can have a number of negative effects.

### General Objective

By the end of this topic, the learner should measure and apply pressure in a home for example in water pumps, taps, syringes, sprays, bicycle tyres, etc.

### Sub-Topic 1: Measurement of Pressure

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• explain the effect of pressure exerted by solids on various surfaces.</li><li>• describe the formula and measurement of pressure.</li></ul>	<ul style="list-style-type: none"><li>• Definition of pressure and illustration of the effect of pressure exerted by solids on various surfaces.</li><li>• Describe the formula and measurement of pressure (using a Barometer)</li></ul>

### Methodology

- Guide learners to brainstorm on the definition of pressure and its measurement.
- Guide learners to discuss the effects of pressure exerted by solids
- Illustrate the measurement of pressure using a barometer.

## Teaching and Learning Aids

- Textbooks (pictures)
- Charts with illustrations

## Assessment Strategy

- Give an assignment on definition of pressure, its formula and measurement using a barometer.

## Sub-Topic 2: Types of Pressure and their Applications

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• identify the types of pressure.</li> <li>• explain the applications of different types of pressure.</li> </ul>	<ul style="list-style-type: none"> <li>• Types of pressure and their applications:           <ul style="list-style-type: none"> <li>- liquid pressure (lift and force pumps, water taps, syringe, siphon, lavatory flush, ball valve, gas water supply, domestic water supply, drinking straws, rubber sucker)</li> <li>- gas pressure (gas governor, pressure gauge, town gas supply, aerosol sprays)</li> <li>- steam pressure (coffee percolator, pressure café set, coffee maker)</li> <li>- solid pressure (furniture stands, stilettos, cutting equipment, sewing needles, injection, bicycle/car tyres)</li> </ul> </li> </ul>

## Methodology

- Guide learners to brainstorm the different types of pressure and equipment that use them.
- Demonstrate the application of different types of pressure using real objects like siphons, pressure cookers, water taps, aerosol sprays, bicycle tyres, etc.

**Teaching Learning Aids**

- Textbooks
- Real objects such as siphons, pressure cookers, water taps, aerosol sprays, bicycle tyres, etc.
- Charts for illustration

**Assessment Strategy**

- Give a written test on the types of pressure and their application in the home.

## SENIOR FIVE TERM THREE

### Topic 7: Heat and Thermodynamics

Duration: 28 Periods

#### General Overview

Different objects react differently to temperature changes under different conditions. It is therefore important that learners understand the effects of heat and their applications in daily life. Heat effects like condensation can bring about moisture and dampness which have various effects on surfaces, materials and food.

When matter is heated, it expands and when cooled it contracts. If changes are resisted, large forces are created which are sometimes useful but sometimes a nuisance. Therefore, it is essential for students to understand the application of expansion in solids and fluids, and liquids and gases.

Melting refers to the change of state from solids to liquids while boiling is the change from liquids to gas. It is important for the learner to identify the application of melting in the home (rendering, automatic sprinkler systems and melting in sugar confectionery).

Evaporation is a process by which a liquid turns to vapour. Evaporation and cooling have very many applications in the home hence this unit helps the learner to know these applications like drying of clothes, spray drying of milk and the factors that affect this process.

Humidity means the presence of water vapour in the atmosphere. It is important to study humidity because excess of it has effects on the body and surfaces in the home hence it has to be controlled.

Refrigerators operate on the principle of evaporation on cooling. When liquids evaporate, they draw heat from the surrounding and produce a cooling effect that is used in refrigeration. Refrigerators use liquids called refrigerants.

Specific heat capacity refers to the heat required to produce a unit temperature rise in unit mass, while latent heat refers to hidden energy which does not cause a temperature change but causes a change in state of matter. When a solid is heated, it may melt and change its state from solid

to liquid and if a liquid is heated, it changes its state from liquid to vapour without change in temperature. It is important for learners to know of this hidden energy change. The study of the specific heat capacity of water accounts for the use of water to cool engines and in the central heating system.

Heat travels from one point to another through three methods i.e. conduction, convection and radiation. It is important for the learner to understand these forms of heat transfer in solids, liquids and gases so that they apply them in their daily life processes like cooking.

### General Objectives

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

- i) apply the effects of heat changes on the various states of matter.
- ii) apply the effects of thermal expansion for example in thermometers, thermostats and refrigerators.
- iii) apply the effects of thermodynamics in maintaining a conducive living atmosphere in the home.

### Sub-Topic 1: Heat and its Measurement

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• define heat and temperature.</li><li>• illustrate the different types of thermometers.</li><li>• explain the measurement of temperature using different thermometers, giving the thermometer scales.</li><li>• explain the properties of thermometric liquids.</li></ul>	<ul style="list-style-type: none"><li>• Definition of heat and temperature</li><li>• Different types of thermometers and their uses (laboratory thermometers, room thermometers, bimetallic thermometers, bath thermometers, meat thermometers, oven thermometers)</li><li>• Measurement of temperature using different thermometers, giving the thermometer scales</li><li>• Properties of thermometric liquids (alcohol and mercury) and comparison in their use</li></ul>



## Methodology

- Through brainstorming, guide learners to define heat and temperature.
- Illustrate the different types of thermometers using real objects like the clinical thermometer.
- Demonstrate the use of some types of thermometers like laboratory and clinical thermometer to the learners.
- Through discussion, guide the learners on properties of thermometric liquids.

## Teaching/Learning Aids

- Real objects like thermometers (clinical and laboratory thermometers)
- Textbooks
- Charts illustrating the bimetallic thermometer

## Assessment Strategy

- Give an exercise on definition of heat and temperature, types of thermometers and properties of thermometric liquids.

## Sub-Topic 2: Expansion in Solids and Fluids

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• define expansion and contraction.</li> <li>• explain the operation of a bimetallic strip and equipment which use it.</li> <li>• identify the applications of expansion in solids and fluids in the home.</li> </ul>	<ul style="list-style-type: none"> <li>• Definition of expansion and contraction and its causes</li> <li>• Operation of a bimetallic strip and equipment like thermometers, fire alarms, automatic flashing lights and room thermostats that use a bimetallic strip</li> <li>• Applications of expansion in solids and fluids (liquids and gases) in the home</li> </ul>

## Methodology

- Guide learners to brainstorm on the definition of expansion and its causes.

- Guide a group discussion on the definition of expansion of solids, liquids, and gases.
- Demonstrate expansion in fluids using simple experiments like boiling water in a sauce pan.

### Teaching/Learning Aids

- Textbooks
- Real objects

### Assessment Strategy

- Give a written exercise on the definition of expansion, its causes and applications.

## Sub-Topic 3: Melting (Fusion) and Boiling and their Applications in the Home

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• differentiate between melting and boiling.</li><li>• discuss the application of boiling and melting in the home.</li><li>• explain the effects of pressure and dissolved substances on the boiling point of liquids and ice.</li><li>• describe the principle behind the operation of a pressure cooker.</li></ul>	<ul style="list-style-type: none"><li>• Definition and difference between melting and boiling</li><li>• Application of boiling points and melting (rendering, automatic sprinkler systems) in the home</li><li>• The effects of pressure and dissolved substances on the boiling point of liquids and ice</li><li>• Operation of a pressure cooker</li></ul>

### Methodology

- Through question and answer method, guide learners to differentiate between boiling and melting.
- Through discussions, guide learners on the application of melting and boiling.
- Demonstrate and illustrate the use of a pressure cooker to the learners.

## Teaching/Learning Aids

- Real objects like a pressure cooker
- Textbooks
- Charts with illustrations like automatic sprinkler systems and pressure cookers

## Assessment Strategy

- Give a group assignment on the application of boiling and melting, and the principle behind the operation of a pressure cooker.

## Sub-Topic 4: Evaporation and Cooling

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• define evaporation and cooling.</li> <li>• discuss the factors that affect the rate of evaporation.</li> <li>• explain the applications of evaporation and cooling in the home.</li> <li>• differentiate between boiling and evaporation.</li> </ul>	<ul style="list-style-type: none"> <li>• Definition of evaporation and cooling</li> <li>• Factors that affect the rate of evaporation</li> <li>• Applications of evaporation and cooling in the home e.g. drying of clothes etc</li> <li>• Differences between boiling and evaporation</li> </ul>

## Methodology

- Guide learners to brainstorm the definitions of evaporation and boiling.
- Guide learners to discuss the factors affecting the rate of evaporation.
- Illustrate evaporation using real objects like covered boiling water.

## Teaching/Learning Aids

- Real objects like covered boiling water, drying clothes
- Textbooks

### Assessment Strategy

- Give an assignment on the factors that affect the rate of evaporation and the applications of evaporation and cooling in the home e.g. drying of clothes.

### Sub-Topic 5: Condensation and Distillation

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• define condensation and distillation.</li><li>• discuss the applications of condensation and distillation.</li><li>• draw and label the distillation apparatus.</li></ul>	<ul style="list-style-type: none"><li>• Definition of condensation and distillation</li><li>• Applications of condensation and distillation</li><li>• Illustration of the distillation apparatus</li></ul>

### Methodology

- Guide learners to brainstorm the definition of condensation and distillation.
- Guide a group discussion on applications of condensation and distillation.
- Demonstrate and illustrate using diagrams and labelling of distillation apparatus in the chemistry laboratory.

### Teaching/Learning Aids

- Textbooks
- Experimentation of the distillation apparatus from the chemistry laboratory.

### Assessment Strategy

- Give learners an assignment on the applications of condensation and distillation.

## Sub-Topic 6: Humidity and Damp

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• define humidity and outline its sources and effects.</li> <li>• explain and illustrate measurement of water vapour in the atmosphere.</li> <li>• discuss the applications of humidity in the home.</li> <li>• explain the different types of damp, their causes and control.</li> </ul>	<ul style="list-style-type: none"> <li>• Definition of humidity, its sources and effects</li> <li>• Measurement of water vapour in the atmosphere using the interior of a hair hygrometer</li> <li>• Applications of humidity e.g. air conditioners, humectants, humidistat and steaming</li> <li>• The different types of damp, their causes and control (penetrating damp, rising damp and condensation damp)</li> </ul>

### Methodology

- Guide learners to brainstorm the definition of humidity.
- Through question and answer method, let learners identify the sources and effects of humidity.
- Guide learners to discuss the types, causes and control of damp.
- Illustrate types of damp using drawings on charts.

### Teaching/Learning Aids

- Textbooks
- Realia e.g. observation of damp on windows and wall plaster
- Charts illustrating air conditioners

### Assessment Strategy

- Give a written test on definition of humidity, its sources, effects and applications of humidity e.g. air conditioners.

**Sub-Topic 7: Refrigeration**

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• identify the examples of refrigerants and their characteristics.</li><li>• differentiate between the types of refrigerators and work cycles.</li><li>• illustrate the construction and main parts of the different types of refrigerators.</li><li>• explain the choice, care and cleaning of the refrigerators.</li><li>• identify the types, care and working principle of deep freezers.</li></ul>	<ul style="list-style-type: none"><li>• Examples of refrigerants and their characteristics (Freon and liquid ammonia)</li><li>• Types of refrigerators giving their differences and work cycles (compression type and absorption type)</li><li>• Construction and main parts of the different types of refrigerators</li><li>• Choice, care and cleaning of the refrigerators</li><li>• Types, care and working principle of deep freezers (chest freezers, upright freezers)</li></ul>

**Methodology**

- Guide learners to brainstorm on the definition of refrigeration, types of refrigerants and their characteristics.
- Guide a group discussion on use, care and safety precautions when using refrigerators.
- Illustrate using real objects like refrigerators and deep freezers and charts to help learners differentiate between the different types of refrigerators and freezers.
- Using question and answer method, guide learners to explain the care and cleaning of refrigerators.

**Teaching/Learning Aids**

- Textbooks
- Real objects like refrigerators and deep freezers

**Assessment Strategy**

- Give a written test on types of refrigerators and their construction.

## Sub-Topic 8: Heat Capacity and Latent Heat

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• define latent heat and specific latent heat.</li> <li>• explain the determination of specific latent heat of fusion of ice and specific latent heat of vaporisation of water.</li> </ul>	<ul style="list-style-type: none"> <li>• Definition of latent heat and specific latent heat.</li> <li>• Determination of specific latent heat of fusion of ice and specific latent heat of vaporisation of water</li> </ul>

### Methodology

- Guide learners to brainstorm on the definition of latent heat, latent heat of fusion, latent heat of vaporisation and specific heat capacity.
- Through group discussions, guide learners on the determination of specific latent heat of fusion and vaporisation.

### Teaching/Learning Aids

- Textbooks
- Charts

### Assessment Strategy

- Give a group assignment on determining latent heat and specific heat capacity.

## Sub-Topic 9: Forms of Heat Transfer

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• define conduction, convection and radiation.</li> <li>• discuss the different forms of heat transfer in solids, liquids and gases.</li> </ul>	<ul style="list-style-type: none"> <li>• Definition of the 3 forms of heat transfer i.e. conduction, convection and radiation</li> <li>• Different forms of heat transfer in solids, liquids and gas</li> </ul>

## Methodology

- Guide learners to brainstorm the definition of the different forms of heat transfer.
- Through question and answer method, guide learners to differentiate between the different forms of heat transfer in solids, liquids and gases.
- Through group discussions, guide learners on the application of good and poor heat conductors.

## Teaching/Learning Aids

- Textbooks
- Real objects like hot pans and flasks

## Assessment Strategy

- Give learners an exercise on conduction, convection and radiation.
- Give learners an exercise on the uses of good and poor conductors of heat.

## Sub-Topic 10: Application of Methods of Heat Transfer

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• explain the applications of conduction in the home.</li><li>• explain the applications of convection in the home.</li><li>• explain the applications of radiation in the home.</li></ul>	<ul style="list-style-type: none"><li>• The applications of Conduction (food preparation, beddings, insulation of buildings)</li><li>• The applications of convection (food preparation, hot water supply system, room ventilation)</li><li>• The application of radiation (grilling, vacuum containers, central heating system, radiant heaters, green house effect)</li></ul>

## Methodology

- Through discussions, guide learners on the application of conduction, convection and radiation.
- Using question and answer method, guide learners to identify examples of good and bad conductors of heat.



- Illustrate heat transfer using real objects like flasks, ovens, etc.
- Demonstrate convection currents using boiling water.

### **Teaching/Learning Aids**

- Real objects like vacuum flasks, radiant heaters, etc.
- Charts
- Textbooks

### **Assessment Strategy**

- Give a group assignment on the applications of conduction, convection and radiation.

## Topic 8: Fuels

Duration: 8 Periods

### General Overview

A fuel is a substance which is used as a source of heat. Different fuels are being used in Uganda for example charcoal, wood, paraffin, gas and electricity. Learners need to understand the precautions to take when using different fuels to avoid accidents like fires. There are several types of equipment in our homes that use the given fuels and learners should be able to identify this equipment, their construction, use, working principle, choice, care and safety precaution.

Learners should also appreciate the different ways of saving fuel because the cost of fuels is high.

### General Objectives

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

- i) identify the different types of fuels, their production and safety when using them.
- ii) explain the ways of saving fuel when using various equipment.

### Sub-Topic 1: Classification of Fuels

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• identify the different types of fuels.</li><li>• explain the characteristics of a good fuel.</li></ul>	<ul style="list-style-type: none"><li>• Different types of fuels and their sources: Renewable fuels and non renewable fuels (electricity, solid, liquid, gas and solar).</li><li>• Characteristics of a good fuel</li></ul>

### Methodology

- Guide learners to brainstorm the definition of fuels.
- Through group discussions, guide learners on classification of fuels.
- Using question and answer method, guide learners to identify the characteristics of a good fuel.

### Teaching/Learning Aids

- Real objects like charcoal, gas cylinders and firewood
- Textbooks

### Assessment Strategy

- Give an oral exercise on classification of fuels and the characteristics of a good fuel.

## Sub-Topic 2: Production, Advantages and Disadvantages of Fuels

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• explain the production of various fuels.</li> <li>• discuss the advantages and disadvantages of using various fuels.</li> </ul>	<ul style="list-style-type: none"> <li>• Production of different fuels (solid fuels, electricity, gas and liquid fuels)</li> <li>• Advantages and disadvantages of different types of fuels</li> </ul>

### Methodology

- Through question and answer method, guide learners to identify the sources of various fuels.
- Organise study trips to areas where fuels like charcoal and biogas are produced.
- Demonstrate the production of various fuels using charts and audio visual aids.
- Through group discussions, guide learners on the advantages and disadvantages of various fuels.

### Teaching/Learning Aids

- Real objects of the various fuels like charcoal, firewood, gas. etc
- Textbooks
- Learners experience

## Activities Assessment

- Give an assignment on the production of various fuels and the advantages and disadvantages of using the various fuels.

## Sub-Topic 3: Equipment that Use Different Fuels

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• draw the various equipment that use various fuels.</li><li>• explain the care and safety precautions when using equipment that use fuels.</li><li>• calculate gas bills for various equipment.</li></ul>	<ul style="list-style-type: none"><li>• Construction and operation of equipment using different fuels<ul style="list-style-type: none"><li>- Solid (3 stones, block fire, charcoal stoves, charcoal ovens)</li><li>- Liquid/Paraffin (oil stoves, primus stoves, oil lamps, pressure lamps)</li><li>- Gas (gas cookers, gas stoves, gas lamps)</li></ul></li><li>• Choice, use, care and safety precautions of Equipment that use various fuels, both traditional and modern</li><li>• Calculation of gas bills for various equipment</li></ul>

## Methodology

- Let learners brainstorm the construction and operation of equipment driven by fuels.
- Using question and answer method, guide learners to explain the choice and safety precautions when using the various fuel-driven equipment.
- Demonstrate the use of the various fuel-driven equipment e.g. gas cookers.
- Through talk and chalk, guide learners on calculation of gas bills.

## Teaching/Learning Aids

- Real equipment
- Textbooks

## **Activities Assessment**

- Give a group assignment on the use of the various fuels and calculation of gas bills.

## SENIOR SIX-TERM ONE

### Topic 9: Electricity

Duration: 36 Periods

#### General Overview

Electricity is a form of energy which can be used for heating, lighting and powering homes and industries. It can be generated in many forms including static electricity, chemical electricity, photo electricity and current electricity.

Electricity can be produced from water, coal, oil, atomic energy or wind in turbine generators. It is essential for learners to know other different forms of generating electricity like photo electricity and their applications like in burglar alarms, colorimeters, boiler fires, etc.

Electricity has made work easier in houses through powering machines but it can cause severe burns, shock and in extreme cases death, if not well handled. It is important for learners to understand the electric terms, signs and symbols, costing and operation of electrically driven equipment to ensure safety and economy when using electricity.

Meters record the number of units in Kilo Watt hours of electricity used. It is very important for learners to know how to read meters as it can help them to check on how much electricity a particular appliance uses. Domestic wiring helps learners to know the different colour codes to ensure electric safety.

Magnets are used in many appliances of an electric current that produce magnetism or electromagnetism. They are used in cycle dynamos, electric bells, lifts or electromagnetic brakes

Transformers are apparatus for changing the voltage of an alternating current from one value to another; they either step it up or step it down. Electric motors form a whole host of many electrical devices ranging from domestic appliances such as vacuum cleaners, washing machines, dryers, blenders, etc, to electro locomotives and lifts.

#### General Objective

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

- i) read and interpret electric symbols and calculate family electric bills.
- ii) make simple electric connections and repairs in the home.
- iii) use electric equipment skilfully and consciously to ensure safety in the home.

### Sub-Topic 1: Terms and Symbols Used in Electricity

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• define electricity.</li> <li>• define the terms used in electricity.</li> <li>• draw different signs and symbols used in electricity (cell, switch , circuit breaker).</li> </ul>	<ul style="list-style-type: none"> <li>• Definition of electricity</li> <li>• Terms used in electricity (electric circuit, coulomb, volt, resistance)</li> <li>• Diagrams of different signs and symbols used in electricity (cell, switch, circuit breaker)</li> </ul>

### Methodology

- Using question and answer method, guide learners on different electric symbols and signs.
- Illustrate the different signs and symbols used in electricity using charts and real symbols on electric equipment.
- Through group discussions, guide learners on the different terms used in electricity.

### Teaching/Learning Aids

- Textbooks
- Real objectives (signs and meters, etc.).
- Charts

### Assessment Strategy

- Give an oral exercise on the definition of different terms used in electricity.

## Sub-Topic 2: Static Electricity

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• describe an experiment to show the existence of static electricity.</li><li>• outline the useful and negative applications of static electricity.</li><li>• explain the cause and control of lightning.</li></ul>	<ul style="list-style-type: none"><li>• Definition of static electricity and an experiment to show the existence of static electricity</li><li>• Useful and negative applications of static electricity</li><li>• Cause and control of lightning. The lightning conductors</li></ul>

### Methodology

- Guide learners to carry out a simple experiment on the existence of static electricity e.g. rubbing pens on sleeves of clothes and then use trend to attract scraps of paper.
- Use question and answer method on the applications of static electricity.
- Through group discussions, guide learners to identify the cause and control of lightning.

### Teaching/Learning Aids

- Real objects (pens, papers, clothes)
- Charts
- Chalk board
- Textbooks with illustrations of lightning conductors

### Assessment Strategy

- Give an assignment on the definition of static electricity and an experiment to show the existence of static electricity.

## Sub-Topic 3: Chemical Electric Energy

Specific Objectives	Content
The learners should be able to: <ul style="list-style-type: none"><li>• explain the construction and operation of a simple cell.</li><li>• explain the applications of a</li></ul>	<ul style="list-style-type: none"><li>• Construction and operation of a simple cell</li><li>• Applications of a simple cell (dry</li></ul>



Specific Objectives	Content
simple cell (dry cells, accumulators). • outline the care and maintenance of lead acid accumulators.	cells, accumulators) diagram of a dry cell • Care and maintenance of lead acid accumulators

### Methodology

- Guide learners to discuss the construction and operation of a simple cell.
- Illustrate the construction of a dry cell using a real object.

### Teaching/Learning Aids

- Real objects e.g. dry cells
- Charts
- Textbooks

### Assessment Strategy

- Give an assignment on the construction and applications of a simple cell.

### Sub-Topic 4: Current Electricity

Specific Objectives	Content
The learners should be able to: • define conductors and insulators of electricity and give their applications in the home. • explain the application of series and parallel connections in the home. • draw the different circuits in the home.  • calculate electromotive force (emf), internal resistance, external resistance and electrical power, wattage and cost of electricity used in the home (monthly bills).	• Definition of conductors and insulators of electricity and their applications in the home • Application of series and parallel connections in the home • Diagrams of the different circuits in the home (old type and modern ring circuit installations) • Calculation of electromotive force (emf), internal resistance, external resistance and electrical power, wattage and cost of electricity used in the home (monthly bills)

Specific Objectives	Content
<ul style="list-style-type: none"><li>• describe an experiment to determine the wattage of an electric current.</li></ul>	<ul style="list-style-type: none"><li>• Experiment to determine the wattage of an electric appliance</li></ul>

### Methodology

- Through question and answer method, guide learners to identify the different electric conductors and insulators used in the home and to give their applications in the home.
- Illustrate the different circuits in the home.
- Through talk and chalk, guide learners to calculate the cost of electricity in the home and calculation of fuse sizes.
- Carry out an experiment to determine the wattage of an electric appliance.

### Teaching/Learning Aids

- Textbooks
- Charts for ring circuits

### Assessment Strategy

- Give learners a written test on definition of conductors and insulators, the application of the series and parallel connection, calculation of emf, external resistance and internal resistance and the cost of electricity in the home.

### Sub-Topic 5: Heating Effect of Electricity

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• outline the factors affecting the heating effect of an electric current.</li><li>• describe an experiment to show the heating effect of an electric current.</li><li>• explain the applications of electrical heating.</li></ul>	<ul style="list-style-type: none"><li>• Factors affecting the heating effect of an electric current</li><li>• Experiment to show the heating effect of an electric current</li><li>• Applications of electrical heating and principles of operation:</li></ul>

Specific Objectives	Content
<ul style="list-style-type: none"> <li>illustrate and explain the principles of operation of various equipment that use electricity for heating.</li> </ul>	<ul style="list-style-type: none"> <li>food preparation equipment: electric cookers (principle of operation, components, modern features e.g. rotisseries, glass doors and autotimers), care and cleaning</li> <li>microwave ovens</li> <li>automatic rice cookers</li> <li>toasters</li> <li>rotisseries</li> <li>food/plate warmers</li> <li>electric baines maries</li> <li>electric kettles</li> <li>water heaters (electrical immersion heaters, instantaneous water heaters)</li> <li>laundry and cleaning equipment:               <ul style="list-style-type: none"> <li>washing machines (washing actions for example tumble, pulsator and agitator)</li> <li>dryers (wringler, spin dryer, tumbler)</li> <li>electric irons (dry irons and steam irons)</li> <li>dish washers</li> </ul> </li> <li>others: local or room heaters:               <ul style="list-style-type: none"> <li>flexible heating elements. (electric blankets, carpets, wall paper heaters and saving fuel on water heating)</li> <li>electric lighting</li> </ul> </li> <li>The choice, care and cleaning of the above electrically operated equipment</li> </ul>
<ul style="list-style-type: none"> <li>explain the choice, care and cleaning of electrically operated equipment.</li> </ul>	

## Methodology

- Through question and answer method, guide learners to identify and classify electrically driven equipment.
- Through group discussions, guide learners to identify the factors affecting the heating effect of electricity and the application of electric heating (water heaters, washing machines, electric irons, electric cookers, etc)
- Carry out an experiment to determine the heating effect of an electric current in the physics laboratory.
- Study tours to electronic shops and industries.

## Teaching/Learning Aids

- Real objects (cookers, electric irons, etc)
- Charts with illustrations (washing machines, electric baines maries, etc)

## Assessment Strategy

- Give learners a group assignment on the factors affecting the heating effect of an electric current, an experiment to determine the heating effect of an electric current, application of electrical heating and diagrams of electrically driven equipment that apply the heating effect.

## Sub-Topic 6: Meter Reading, Domestic Wiring Electrical Safety

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• determine the number of units used.</li><li>• explain the new and old colour codes of the live, neutral and earth wires.</li><li>• outline the various ways of ensuring electrical safety.</li><li>• describe the role of the various electric safety devices.</li></ul>	<ul style="list-style-type: none"><li>• Determination of the number of units used</li><li>• Explanation of the new and old colour codes of the live, neutral and earth wires and plugs</li><li>• Ensuring safety when using electricity</li><li>• Electric safety devices (fuses, circuit breakers):<ul style="list-style-type: none"><li>- fuses (types of fuses, reasons why fuses blow and</li></ul></li></ul>

Specific Objectives	Content
	replacing a re-wirable fuse, testing a cartridge fuse and calculation of fuse size.) - circuit breakers - time switches and two way switches

## Methodology

- Using question and answer method, get the learners' prior knowledge on colour codes.
- Through discussions, guide learners on electric safety devices in the home.
- Demonstrate using plugs, fuses (practically wiring a 3 pin plug and replacing blown fuse wires).
- Carry out an experiment to replace a blown fuse wire.
- Use talk and chalk method to show learners the calculations on fuse size and give them an exercise.

## Teaching/Learning Aids

- Real objects (meter box, fuses and plugs)
- Charts
- Textbooks with diagrams of fuses

## Assessment Strategy

- Give an assignment on determination of the number of units used on electric meters, new and old colour codes of electric wires and ways of ensuring electric safety.

## Sub-Topic 7: Heating Effects of Electricity

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• outline the factors affecting the heating effect of an electric current.</li> <li>• describe an experiment to show</li> </ul>	<ul style="list-style-type: none"> <li>• Factors affecting the heating effect of an electric current.</li> <li>• Applications of electrical heating.</li> </ul>

Specific Objectives	Content
the heating effect of an electric current. <ul style="list-style-type: none"><li>• explain the applications of electrical heating.</li><li>• illustrate and explain the principles of operation of various equipment that use electricity for heating.</li></ul>	<ul style="list-style-type: none"><li>• Principles of operation of various equipment that use electricity for heating.</li></ul>

### Methodology

- Guide learners to brainstorm the factors affecting the heating effect of an electric current.
- Through discussions, guide learners on the applications of electrical heating.
- Through guided discussion, learners explain the principles of operation of various equipment that use electricity for heating.

### Teaching/Learning Aids

- Textbooks
- Charts
- Electrical appliances

### Assessment Strategy

- Give an assignment on operation and application of electrical appliances.

## Sub-Topic 8: Other Forms of Generating Electricity

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• explain the different ways of generating electricity on a large scale.</li> <li>• draw the diagram of a quartz crystal spark generator and a photo electric cell.</li> <li>• explain the applications of photo electricity.</li> </ul>	<ul style="list-style-type: none"> <li>• Generating electricity on a large scale using coal, wind and gas</li> <li>• Diagram of a quartz crystal spark generator and a photo electric cell</li> <li>• Applications of photo electricity:               <ul style="list-style-type: none"> <li>- automatic door openers</li> <li>- fire alarms and burglar</li> <li>- colorimeters</li> </ul> </li> </ul>

### Methodology

- Let learners brainstorm the large scale generation of electricity.
- Through discussions, guide learners on the applications of photo electricity (automatic door openers, colorimeters, fire alarms, burglar alarms).
- Use charts to illustrate the diagrams of fire alarms, colorimeters, etc.

### Teaching/Learning Aids

- Textbooks
- Charts
- Educational visits to power plants

### Assessment Strategy

- Give an assignment on operation and application of a photo electric cell.

## Sub-Topic 9: Magnetism and its Applications in the Home

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• define magnetism.</li><li>• outline the laws of magnetism.</li><li>• describe the methods of magnetisation and demagnetisation.</li><li>• explain the applications of electromagnetism.</li></ul>	<ul style="list-style-type: none"><li>• Definition of magnetism</li><li>• Laws of magnetism</li><li>• Methods of magnetisation and demagnetisation</li><li>• Applications of electromagnetism:<ul style="list-style-type: none"><li>- electric bell</li><li>- circuit breakers</li><li>- bicycle dynamo</li><li>- telephone receiver</li><li>- lift or electromagnetic brakes</li></ul></li></ul>

### Methodology

- Through question and answer method, let learners define magnetism and identify its properties.
- Through question and answer method, let learners identify examples of appliances which use magnets.
- Through group discussions, guide learners on magnetism, demagnetisation, and applications of electro magnetism.
- Illustrate the action of bicycle dynamos and magnets using real objects and charts.

### Teaching/Learning Aids

- Real objects (electric bells, magnets) bicycle dynamos
- Charts

### Assessment Strategy

- Give an oral exercise on definition of magnetism, methods of magnetisation and demagnetisation and application of electro magnetism.



## Sub-Topic 10: Transformers, Motors and Motor Driven Appliances

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>differentiate between a step up and step down transformer.</li> <li>describe the operation of an electric motor.</li> <li>explain the construction, choice, principle of operation and care of motor driven equipment.</li> </ul>	<ul style="list-style-type: none"> <li>Differences between a step up and step down transformer</li> <li>Operation of an electric motor</li> <li>Construction, choice, principle of operation and care of various motor driven equipment:               <ul style="list-style-type: none"> <li>hair dryers and hair shavers</li> <li>vacuum cleaners, carpet sweepers and floor polishers</li> <li>food mixers, blenders, food processors</li> </ul> </li> </ul>

### Methodology

- Through discussions, guide learners on the differences between a step up and step down transformers and the appliances which use motors.
- Using question and answer method, let learners identify the equipment that use motors.
- Illustrate the operation of electrical devices like a blender.
- Through guided group discussion, let learners identify the care of motor driven equipment.

### Teaching/Learning Aids

- Real objects [blenders, vacuum cleaners, hair dryers]
- Charts
- Textbooks

### Assessment Strategy

- Give a written test on the differences between a step up and step down transformer, operation of an electric motor and diagrams of motor driven equipment (blender, food processor, hair dryer and vacuum cleaner).

## SENIOR SIX - TERM TWO

### Topic 10: Ventilation and Illumination

Duration: 12 Periods

#### General Overview

Good ventilation and lighting is very essential for healthy and comfortable life. Good ventilation in homes and work places helps to get rid of undesirable gases which is essential for health living.

Good lighting makes vision possible and prevents straining of eyes. It also makes a room bright, cheerful and free from pests and accidents. Different equipment give off light in different ways and intensities. Precautions have to be taken while using them to ensure safety and economy.

Sound, just like light, can be reflected, refracted and absorbed and if not controlled, it causes discomfort, deafness, headache and other side effects. It is hence essential to control noise from entering rooms during house construction for comfortable and healthy living.

Selecting colours for a home is an enjoyable adventure. Careful choice of colours can make a very interesting effect in the home. Basic principles about colour help in formation of an excellent architectural finishing.

#### General Objectives

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

- i) discuss the importance of good ventilation and lighting in the home and how these can be achieved and maintained.
- ii) identify the different types of colour schemes and how they are used to decorate or correct faults of given rooms of the home.
- iii) explain the use of acoustics for a comfortable home environment.

## Sub-Topic 1: Ventilation

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• explain the principles and purpose of ventilation.</li> <li>• explain the causes and effects of poor ventilation.</li> <li>• discuss the methods of ventilation.</li> </ul>	<ul style="list-style-type: none"> <li>• Definition, principle and purpose of ventilation</li> <li>• Causes and effects of poor ventilation</li> <li>• Methods of ventilation:               <ul style="list-style-type: none"> <li>- natural ventilation (doors and windows and how they can be located for ventilation)</li> <li>- artificial or mechanical (electric fans , coopers disc, extractor fans, air conditioners and cooker hoods)</li> </ul> </li> </ul>

### Methodology

- Using question and answer method, guide learners to define ventilation and give its purpose.
- Through discussions, guide learners on the principles of ventilation.
- Guide learners to brainstorm the methods of ventilation.
- Demonstrate the methods of locating windows for ventilation using the classroom.

### Teaching/Learning Aids

- Real objects e.g. ventilators
- Textbooks
- Charts

### Assessment Strategy

- Give an oral exercise on the importance and principle of good ventilation.

## Sub-Topic 2: Sources, Importance and Methods of Lighting Rooms

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• identify the sources of light.</li><li>• explain the importance of lighting rooms.</li><li>• discuss the methods of lighting various rooms in the home.</li><li>• explain the importance and care of various light fittings and fixtures.</li></ul>	<ul style="list-style-type: none"><li>• Sources of light (natural and artificial lighting)</li><li>• Importance of good lighting in the home, types of glare and its prevention</li><li>• Methods of lighting rooms:<ul style="list-style-type: none"><li>- generalised lighting</li><li>- direct lighting</li><li>- indirect lighting</li><li>- decorative lighting</li></ul></li><li>• Importance and care of light fittings and fixtures</li></ul>

### Methodology

- Trough question and answer method, guide learners to identify the sources and importance of good lighting.
- Demonstrate the effect of glare using real objects like mirrors and through guided group discussion, let learners identify the ways of preventing it.
- Through textbooks and charts, illustrate the methods of lighting rooms in the home.
- Through discussions, guide learners on the importance and care of various light fittings and fixtures.

### Teaching/Learning Aids

- Textbooks
- Real objects like mirrors

### Assessment Strategy

- Give an exercise on the methods of lighting various rooms in the home.

### Sub-Topic 3: Lighting Equipment

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• explain the ways of ensuring economy on lighting in the home.</li> <li>• discuss the factors to consider when lighting a room.</li> <li>• discuss the choice, use and safety precautions when using lighting equipment.</li> </ul>	<ul style="list-style-type: none"> <li>• Ways of ensuring economy on lighting in the home</li> <li>• Factors to consider when lighting a room</li> <li>• Choice, use, care and safety precautions when using various lighting equipment. Solar and sunlight (natural lighting), electric lamps &amp; bulbs, gas lamps, pressure lamps, paraffin-oil lamps &amp; tins, wax candles, battery torches &amp; lamps</li> </ul>

### Methodology

- Guide learners to brainstorm on ensuring economy when lighting the home.
- Through question and answer method, let learners identify the factors to consider when lighting a room.
- Through group discussions, guide learners on the choice, use, care and safety precautions when using lighting equipment.
- Illustrate the construction and operation of lighting equipment using real objects, for example fluorescent tubes and bulbs.

### Teaching/Learning Aids

- Real objects for example fluorescent tubes, bulbs, lamp shades, etc.
- Charts
- Textbooks and magazines

### Assessment Strategy

- Give an exercise on factors to consider when lighting rooms and ways of ensuring economy on lighting.

**Sub-Topic 4: Colour**

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• identify the properties of colour and elements of design.</li><li>• discuss the types of colour schemes using the colour wheel.</li><li>• discuss the factors to consider when choosing a colour scheme.</li><li>• explain how colour is used to correct faults in the home.</li></ul>	<ul style="list-style-type: none"><li>• Properties of colour and elements of art and design in colour (i.e. colour, light, line, texture and form)</li><li>• Diagram of the colour wheel and colour schemes: (monochromatic, analogous, complementary and triad colour scheme)</li><li>• Factors to consider when choosing a colour scheme</li><li>• The use of colour to correct faults in the home</li></ul>

**Methodology**

- Guide learners to brainstorm on the properties of colour.
- Through discussions, guide learners to identify the elements of art and design (colour, light, line and texture).
- Using charts illustrate the colour wheel and use it to explain the different colour schemes.
- Through question and answer method, guide learners to identify the factors to consider when choosing a colour scheme.
- Demonstrate the use of colour in correction of faults in the home.

**Teaching/Learning Aids**

- Various colours
- Colour charts
- Textbooks

**Assessment Strategy**

- Give an exercise on the colour wheel and discuss the different types of colour schemes.

## Sub-Topic 5: Sound and Acoustics

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• discuss the properties of sound and their applications in the home.</li> <li>• identify the effects of noise.</li> <li>• explain the use of acoustics in house construction.</li> </ul>	<ul style="list-style-type: none"> <li>• Properties of sound and their applications in the home</li> <li>• Effects of noise in a room and the difference between sound and noise</li> <li>• How to prevent loud noise (use of acoustics in house construction)</li> </ul>

### Methodology

- Through discussions, guide learners on the properties of sound.
- Through question and answer method, guide learners to define noise and identify its effects.
- Organise study visits to buildings in busy and noisy towns for learners to identify the use of acoustics in house construction.

### Teaching/Learning Aids

- Textbooks
- Charts
- School buildings

### Assessment Strategy

- Give an oral exercise on the properties of sound and effects of noise

## Topic 11: Water

Duration: 13 Periods

### General Overview

Water is very essential in our lives and it is an important medium of many household activities. There are very many sources of water used in the home such as wells, springs, lakes, etc. Contaminated water causes real or potential harm to human health. Therefore, it is very essential to purify drinking water to remove harmful micro organisms. It is also important to treat waste water before it is deposited into lakes for safety reasons.

### General Objectives

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

- i) discuss the sources of water, its types, uses, ways of purification and storage.
- ii) purify and store water for use at home.
- iii) illustrate the procedure of sewage disposal and treatment.

### Sub-Topic 1: Sources Properties, Types and Uses of Water

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• discuss the sources of water.</li><li>• identify the properties and uses of water.</li></ul>	<ul style="list-style-type: none"><li>• Sources of water (underground water sources and surface water sources)</li><li>• Properties and uses of water</li></ul>

### Methodology

- Guide learners to brainstorm the sources and properties of water.
- Organise educational visits (field trips) to various water sources.

### Teaching/Learning Aids

- Realia (wells, rivers, lakes, etc)



- Charts showing different sources of water
- Textbooks

### Assessment Strategy

- Give an oral exercise on the sources properties and uses of water

### Sub-Topic 2: Types of Water

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• distinguish the types of water (soft &amp; hard water).</li> <li>• discuss the various ways of removing hardness from water and measuring water hardness.</li> <li>• explain the advantages and disadvantages of the soft and hard water.</li> </ul>	<ul style="list-style-type: none"> <li>• Types of water: soft water and hard water (temporary hardness and permanent hardness)</li> <li>• Removal of hardness and measurement of water hardness (total hardness, permanent hardness and temporary hardness)</li> <li>• Advantages and disadvantages of the soft and hard water</li> </ul>

### Methodology

- Guide learners to brainstorm the types of water.
- Guide discussions on the removal of water hardness.
- Experiment on disadvantages of hard water to see time taken for lather formation and amount of detergent used.
- Carry out an experiment to measure hardness of water (total and permanent).
- Through question and answer method, guide learners to identify the advantages and disadvantages of hard water.

### Teaching/Learning Aids

- Textbooks
- Charts showing removal of water hardness
- Real objects (detergents, water, etc)

### Assessment Strategy

- Give a written exercise on the advantages and demerits of each of the types of water and measurement of water hardness.

### Sub-Topic 3: Water Purification

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• illustrate the ways of purifying water.</li><li>• describe the supply and storage of household water.</li></ul>	<ul style="list-style-type: none"><li>• Water purification (home and commercial):<ul style="list-style-type: none"><li>- the sand filter, candle filter</li><li>- alum dosing, chlorination, coagulation fluoridation</li></ul></li><li>• Supply and storage (direct and indirect water systems of water heating)</li></ul>

### Methodology

- Guide learners to brainstorm the methods of water purification at home.
- Illustrate local water treatment like the use of sand filters.
- Through discussions, guide learners on commercial treatment of water.
- Organise educational visits to water treatment plants.

### Teaching/Learning Aids

- Textbooks
- Charts showing water purification
- Real objects seen on field trips

### Assessment Strategy

- Give an assignment on the methods of water treatment.

### Sub-Topic 4: Sewage Disposal

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• discuss the disposal and treatment of sewage.</li><li>• explain the methods of drainage</li></ul>	<ul style="list-style-type: none"><li>• Sewage disposal (e.g. cesspits, septic tanks), sewage treatment</li><li>• Methods of drainage (open,</li></ul>

Specific Objectives	Content
and care of drains.	closed and concealed drains) care and cleaning of drains

### Methodology

- Through question and answer method, guide learners to identify the sources of sewage.
- Through discussions, guide learners on sewage disposal and treatment.
- Organise educational visits to sewage works.
- Illustrate commercial sewage treatment plants using audiovisual aids.

### Teaching/Learning Aids

- Real objects like cesspools, septic tanks, etc.
- Field trips to sewage plants
- Photographs/ pictures
- Audiovisual aids (use of recorded information)

### Assessment Strategy

- Give a group assignment on sewage treatment process and care of drains.

## Topic 12: Detergents

Duration: 8 Periods

### General Overview

Water is not able to break down dirt from surfaces unless aided because it is affected by surface tension, water hardness and inability to dissolve grease. Detergents break down the surface tension of water aiding the removal of dirt from clothes and surfaces. Soaps are made from fats and oils while synthetic (soapless) detergents are made from fatty alcohols and petroleum by-products. Cleaning agents can be obtained locally or commercially. It is essential for learners to know the manufacture, properties and use of a variety of detergents to ensure efficient cleaning of the surfaces without damaging them.

### General Objectives

By the end of the topic, the learner should be able to:

- i) classify detergents giving their uses and properties.
- ii) identify locally available detergents/cleaning agents like salt, sand, emery, charcoal, ash, pawpaw leaves, etc.

### Sub-Topic 1: Choice, Classification and Use of Detergents

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• identify the factors to consider when choosing detergents.</li><li>• classify detergents.</li><li>• explain the use of different detergents.</li><li>• illustrate the cleaning action of detergents.</li></ul>	<ul style="list-style-type: none"><li>• Choice of detergents</li><li>• Classification of detergents (soap, soapless, enzyme, alkalis, acids, grease solvents, water solvents, abrasives, bleaches, polishes)</li><li>• Use of different detergents</li><li>• Cleaning action of detergents</li></ul>

## Methodology

- Use question and answer method to get choice and use of detergents from students.
- Guide learners to brainstorm the definition and classification of detergents.
- Through discussions, guide learners on classification of detergents.
- Through talk and chalk, illustrate the cleaning action of detergents.

## Teaching/Learning Aids

- Real objects e.g. Nomi, Omo, Sunlight, Aerial, etc.
- Textbooks

## Assessment Strategy

- Give an oral exercise on definition, classification, choice and use of detergents.

## Sub-Topic 2: Soap and Soapless Detergents

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• describe the manufacture of soap and soapless detergents.</li> <li>• discuss the advantages and disadvantages of soap and soapless detergents.</li> </ul>	<ul style="list-style-type: none"> <li>• Manufacture of soap and soapless detergents</li> <li>• Advantages and disadvantages of soap and soapless detergents</li> </ul>

## Methodology

- Guide learners to brainstorm the differences between soaps and soapless detergents.
- Guide group discussion on the properties and manufacture of soap and soapless detergents.
- Organise field trips to soap manufacturing industries.

## Teaching/Learning Aids

- Charts
- Video tapes with soap manufacturing process

**Assessment Strategy**

- Give an assignment on the manufacture of soap and soapless detergents.

**Sub-Topic 3: Locally Obtained Detergents**

Specific Objective	Content
The learner should be able to list the different types of local detergents and cleaning agents.	<ul style="list-style-type: none"><li>• Local detergents and cleaning agents (salt, sand, emery, ash, charcoal, egg shells, pawpaw leaves)</li></ul>

**Methodology**

- Through question and answer method, guide learners to identify the materials used in manufacturing local detergents.
- Practically illustrate the manufacture of local detergents using local materials.

**Teaching/Learning Aids**

- Real objects e.g. ash, charcoal, etc
- Textbooks
- Study trips to laundry companies like Apex dry cleaners, White Rose dry cleaners, etc.

**Assessment Strategy**

- Give an assignment on the manufacture of local detergents.

## Topic 13: Application of Simple Chemistry in the Home

Duration: 3 Periods

### General Overview

Cookery requires a good knowledge of chemistry. This is evident from the variety of cooked products and food additives available like cooking oils, fats, colourings, sweeteners and preservatives. It is therefore essential for learners to understand chemical science in order to appreciate the chemical nature of foods and the changes achieved on cooking. Home makers should also understand the response of the effects of heat, light and water on cleaning agents and textiles used in the home.

Oxidation is the process of addition of oxygen to an element or compound. There are some important oxidation processes which are useful in a home e.g. combustion, explosion, aerobic respiration, bleaching and rusting. Reduction is the removal of oxygen from a compound or the addition of hydrogen to a compound. Neutralisation consists of interaction of an acid and a base or an alkali to form a salt and water. The symbol pH describes the number of hydrogen ions present in a solution or the acidity or alkalinity of a solution.

### General Objective

By the end of the topic, the learner should be able to explain the properties of different substances and processes used in cookery and laundry.

### Sub-Topic 1: Oxidation

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>define oxidation.</li> <li>discuss the processes of oxidation.</li> <li>explain the applications of oxidation.</li> </ul>	<ul style="list-style-type: none"> <li>Definition of oxidation</li> <li>Processes of oxidation i.e. combustion, aerobic respiration, bleaching, rusting</li> <li>Applications of oxidation e.g. food packaging, food preservation, enzymatic</li> </ul>

Specific Objectives	Content
	browning of foods, oxidative bleaching, disinfectants and antiseptics

### Methodology

- Guide learners to brainstorm the definition of oxidation and its processes.
- Guide discussions on the applications of oxidation.

### Teaching/Learning Aids

- Real objects (packed foods)
- Textbooks

### Assessment Strategy

- Give an assignment on the definition and applications of oxidation.

## Sub-Topic 2: Reduction

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• define reduction.</li><li>• explain the applications of reduction.</li></ul>	<ul style="list-style-type: none"><li>• Definition of reduction</li><li>• Applications of reduction i.e. hydrogenation (hardening of edible fats), flour quality, anti-oxidants, reducing bleaches</li></ul>

### Methodology

- Guide learners to brainstorm the definition of reduction.
- Guide discussions on the applications of reduction.

### Teaching/Learning Aids

- Real objects like (margarine)
- Textbooks

### Assessment Strategy

- Give an assignment on the definition and the applications of reduction.



### Sub-Topic 3: Neutralization and pH

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• define neutralisation and pH.</li> <li>• explain the measurement of pH.</li> <li>• discuss the applications of neutralisation and pH.</li> </ul>	<ul style="list-style-type: none"> <li>• Definition of neutralisation and pH</li> <li>• Measurement of pH.</li> <li>• Applications of neutralisation e.g. water purification and applications of pH e.g. cake making, jam making, cooking vegetables and laundry</li> </ul>

#### Methodology

- Guide learners to brainstorm the definition of neutralisation and pH.
- Carry out an experiment on the measurement of pH using litmus paper.
- Guide learners to discuss the applications of neutralisation and pH.

#### Teaching/Learning Aids

- Real objects like litmus paper
- Textbooks

#### Assessment Strategy

- Give a written test on the definition of pH, its measurement and applications.

## SENIOR SIX TERM THREE

### Topic 14: Safety in the Home

Duration: 12 Periods

#### General Overview

There are accidents in the home and no matter how minor, they will cause anxiety or tension and will upset the normal tone of the family. First aid is given to preserve life, prevent the condition from worsening and to prevent bleeding. Every member of the family should learn what to do in case of an accident or illness at home. Fires are common accidents in the world around us, occurring in homes, schools, factories and others places. This necessitates the need for fire extinguishers, both in homes and organisations to be able to fight fire accidents.

#### General Objective

By the end of this topic, the learner should be able to carry out simple first aid in order to save life during accidents.

#### Sub-Topic 1: First Aid, Types, Causes and Remedies of Accidents

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• define first aid</li><li>• state rules for first aid.</li><li>• list the components of a first aid box</li><li>• describe the types, causes and remedies (first aid) of accidents.</li><li>• discuss the remedies /first aid to the different accidents.</li></ul>	<ul style="list-style-type: none"><li>• Definition</li><li>• Rules of first aid</li><li>• Components of the first aid box</li><li>• Types, causes and remedies (first aid) of accidents like falls, fires, buns, scalds, cuts, poisoning, sprains, broken bones, shocks, bites and stings</li><li>• Remedies (first aid) to the different accidents</li></ul>

## Methodology

- Through question and answer method, guide learners to identify the types and causes of accidents.
- Guide learners to discuss the causes and remedies (first aid) of different accidents.
- Demonstrate with learners the different first aid procedures for different accidents.

## Teaching/Learning Aids

- Charts
- Textbooks
- Magazines
- Video tapes

## Assessment Strategy

- Give an oral exercise on definition of first aid and causes of and remedies to accidents in the home.

## Sub-Topic 2: Safety Precautions in the Home

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• discuss the safety precautions in the home.</li> <li>• explain the construction, working, use and care fire extinguishers (as safety devices).</li> </ul>	<ul style="list-style-type: none"> <li>• Safety precautions in the home i.e. in food preparation, on floors, use of electric appliances</li> <li>• Construction, working, use and care of fire extinguishers</li> </ul>

## Methodology

- Guide learners to identify the safety precautions in the home.
- Through discussions, guide learners on the operation of various fire extinguishers.
- Guide learners to practically use fire extinguishers.

### **Teaching/Learning Aids**

- Real objects (fire extinguishers, first aid kits)
- Textbooks
- Magazines

### **Assessment Strategy**

- Give a written test on the use, construction and care of fire extinguishers.

## Topic 15: Management of Family Resources

Duration: 12 Periods

### General Overview

There is need for careful manipulation of resources available in our homes in order to achieve what is required in life. The way we manipulate our resources depends on our interests, circumstances in life and family background.

Good budgeting and management of money is very important in order to satisfactorily supply family needs. Time is the only resource that individuals share alike as everyone has 24 hours to use in a day. It is a very scarce resource as it cannot be multiplied and therefore, we should not squander it. While we all have the same amount of time at our disposal, not all have the same energy. Therefore, good knowledge of energy management is important to all home makers in order to save their body reserves during work.

### General Objective

By the end of the topic, the learner should be able to manage their resources and prevent fatigue when working.

### Sub-Topic 1: Management of Resources

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• define resources</li> <li>• state types of resources.</li> <li>• define money</li> <li>• discuss the management of money.</li> </ul>	<ul style="list-style-type: none"> <li>• Definition and types of resources (human &amp; material resources)</li> <li>• Definition of money and guidelines in managing money               <ul style="list-style-type: none"> <li>- types of income</li> <li>- guidelines to prepare a budget, its advantages and disadvantages</li> </ul> </li> </ul>

### Methodology

- Guide learners to brainstorm the definitions of resources and money.

- Explain the various ways of managing money and preparation for budgets and their advantages.

**Teaching/Learning Aids**

- Textbooks
- Real objects e.g. money

**Assessment Strategy**

- Give a group assignment on the types of resources and guidelines to prepare a budget.

## Sub-Topic 2: Management of Time

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• discuss the management of time.</li> <li>• define time and motion study, giving their objectives.</li> <li>• explain the factors to consider when making time plans.</li> </ul>	<ul style="list-style-type: none"> <li>• Management of time (definition, time plan, factors to consider when making a time plan)</li> <li>• Time and motion study (definition and objectives)</li> <li>• Factors to consider when making time plans</li> </ul>

### Methodology

- Guide learners to brainstorm the definition of time.
- Explain the characteristics of time.
- Through group discussions, guide learners to identify factors to consider when making time plans and how to save time.

### Teaching/Learning Aids

- Textbooks

### Assessment Strategy

- Give a group assignment on characteristics of time and making time plans.

## Sub-Topic 3: Management of Energy

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• define energy as a resource.</li> <li>• discuss the types and management of energy.</li> <li>• discuss the causes and ways to avoid fatigue.</li> </ul>	<ul style="list-style-type: none"> <li>• Definition of energy</li> <li>• Types of energy resources and management of energy</li> <li>• Definition of fatigue, its causes and ways to avoid fatigue</li> </ul>

**Methodology**

- Guide learners to brainstorm the definition of energy and fatigue.
- Guide group discussions on types of resources and management of energy.
- Through question and answer method, guide learners to identify the causes of and ways to avoid fatigue.

**Teaching/Learning Aids**

- Textbooks

**Assessment Strategy**

- Give a written test on management of energy and ways of controlling fatigue.



## SECTION THREE: COOKERY

This section among other things focuses on the study of the science of food and its values. It also covers the development of healthy living and self reliance, imparting entrepreneurship and food productive skills for job creation. The teacher is expected to teach, demonstrate and guide the learners to develop practical skills in preparing, cooking and serving various dishes attractively.

<b>LIST OF TOPICS</b>			
<b>SENIOR FIVE</b>	<b>Periods</b>	<b>SENIOR SIX</b>	<b>Periods</b>
<b><i>Term One</i></b>		<b><i>Term One</i></b>	
1: Meat	25	16: Pastry	20
2: Poultry	10	17: Yeast Cookery	15
3: Fish	15	18: Desserts	15
4: Time Plan	10	19: Beverages	10
<b><i>Term Two</i></b>		<b><i>Term Two</i></b>	
5: Eggs	10	20: Rechauffé Dishes	20
6: Milk	10	21: Convenience Foods	20
7: Cheese	10	22: Packed Meals	20
8: Carbohydrate Cookery	10		
9: Stocks and Soups	10		
10: Sauces	10		
<b><i>Term Three</i></b>		<b><i>Term Three</i></b>	
11: Traditional Dishes	15	23: Hors D'oeuvres	20
12: Vegetable Proteins	10	24: Batters	20
13: Fruits and Vegetables	10	25: Food Preservation	20
14: Cakes	15		
15: Biscuits and Scones	10		

## SENIOR FIVE - TERM ONE

### Topic 1: Meat

Duration: 25 Periods

#### General Overview

Meat is animal flesh, which is usually cooked before consumption. It is a first class protein; therefore it has a prime position in the diet. Guide the learners in identifying the types and cuts of meat, the preparation, cooking and presentation of various meat dishes.

Minced meat is that meat which has been ground or broken into smaller pieces using a mincer, shredder or a mortar. Meat is minced to allow faster penetration of heat thus saving fuel and cooking time and it is easily digested. Uses of minced meat include making snacks and sauces, among others.

Textured vegetable protein is synthetic meat. It is a high protein food manufactured by a spinning or extrusion process from soya beans. It can be used in part or completely instead of meat in recipes.

Gelatine is a protein food obtained from the collagen of young animals. It is transparent, tasteless and odourless and it is used to make jelly, ice cream and other sweets.

Offals refer to all the internal edible organs of an animal. They are rich in protein, vitamin C, vitamin A, zinc, sodium, iron and B group vitamins. Offals include kidney, liver, heart, tongue, sweet breads, brains, tripe and entail.

#### General Objective

By the end of the topic, the learner should be able to prepare, cook and serve meat using different methods of food preparation.

## Sub-Topic 1: Cooking and Serving Meat Dishes

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• identify the different types and cuts of meat.</li> <li>• identify the different methods of cooking meat.</li> <li>• prepare and cook meat dishes.</li> <li>• serve and present meat dishes attractively.</li> </ul>	<ul style="list-style-type: none"> <li>• Cuts of meat:             <ul style="list-style-type: none"> <li>- shoulder</li> <li>- breast</li> <li>- wing centre</li> <li>- loin centre</li> <li>- side fillet</li> <li>- side loin chops</li> <li>- centre loin chops</li> <li>- neck</li> <li>- tail</li> <li>- head sir loin</li> <li>- ribs</li> <li>- knuckle</li> </ul> </li> <li>• Methods of cooking meat:             <ul style="list-style-type: none"> <li>- boiling</li> <li>- stewing / simmering</li> <li>- frying</li> <li>- grilling</li> <li>- roasting</li> <li>- braising</li> <li>- baking</li> <li>- barbecuing</li> </ul> </li> <li>• Practical exercise on preparing and cooking meat dishes</li> <li>• Serving meat dishes:             <ul style="list-style-type: none"> <li>- use right and clean equipment</li> <li>- serve meat dishes correctly</li> <li>- garnishing meat dishes:                 <ul style="list-style-type: none"> <li>○ use attractive garnishes</li> <li>○ treat garnishes hygienically</li> </ul> </li> </ul> </li> </ul>

### Methodology

- Guide the learners to discuss the cuts and methods of cooking meat dishes.

- Demonstrate to the learners the preparation, cooking and serving of meat dishes attractively.
- In groups, guide the learners to carry out practical work on preparation, cooking and serving meat dishes.

### Teaching/Learning Aids

- Teaching cards (prepared recipe cards), cuts from magazines, news (decoupages), charts with different steps or procedures followed when making meat dishes
- Charts with well presented meat dishes, well arranged serving tables, where possible electronic learning

### Assessment Strategy

- Give a practical test on preparing, cooking and serving various dishes from different cuts of meat.
- Give learners a practical exercise on preparing, cooking and serving various dishes from different cuts of meat. The learner should write down the recipe in a specific order.

### Additional Notes

The cuts of meat and suitable methods of cooking, for example for beef, the following methods are used for the respective cuts.

Method of cooking	Cuts of meat
• Roasting	• shoulder, breast, wing centre, loin centre and side fillet
• Grilling/frying	• sideloin chops, centre loin chops, fillet
• Stewing	• neck tail, breast, head, knuckle
• Braising	• fillet and breast

### Note

- Different cuts of meat from different animals may be cooked in different ways. You should encourage learners to find out how cuts from various meats can be prepared
- Garnish the meat dishes using vegetables, some herbs e.g. parsley and mint.
- Use correct and clean equipment when serving meat dishes

## Sub-Topic 2: Minced Meat Cookery

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• identify different minced meat dishes.</li> <li>• prepare and cook various dishes using minced meat.</li> <li>• garnish and serve minced meat dishes.</li> </ul>	<ul style="list-style-type: none"> <li>• Minced meat dishes:               <ul style="list-style-type: none"> <li>- shepherd's pie</li> <li>- meat cakes</li> <li>- spaghetti Bolognese</li> <li>- kebabs</li> <li>- meat chaps</li> <li>- meat loaf</li> <li>- meat balls</li> <li>- beef burgers</li> <li>- Scotch egg</li> <li>- pizza</li> <li>- meat sandwiches</li> </ul> </li> <li>• Garnishing minced meat dishes: examples of garnishes for minced meat dishes are vegetables, parsley</li> </ul>

### Methodology

- Guide learners to discuss the various dishes that are made from minced meat and their accompaniments.
- Demonstrate to the learners the preparing, cooking and serving of minced meat dishes and the accompaniments attractively.

### Teaching/Learning Aids

- Charts with various minced meat dishes
- Charts with various recipes for minced meat dishes
- Recipe cards, cuttings from magazines and newspapers
- Electronic learning

### Assessment Strategy

- Give learners an assignment on different minced meat dishes.

### Sub-Topic 3: Preparing, Cooking and Serving Meat Dishes with Pastry

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• identify meat dishes with pastry.</li><li>• prepare, cook and serve meat dishes with pastry.</li></ul>	<ul style="list-style-type: none"><li>• Meat dishes with pastry:<ul style="list-style-type: none"><li>- Meat roly poly</li><li>- Cornish pasties</li><li>- Meat pie</li><li>- Quiche Lorraine</li></ul></li><li>• Cooking and serving meat dishes with pastry:<ul style="list-style-type: none"><li>- main methods of cooking are: baking, boiling and frying</li><li>- garnishes for meat dishes with pastry are vegetables, parsley and mint</li></ul></li></ul>

#### Methodology

- Guide learners to discuss the different meat dishes with pastry.
- Demonstrate to the learners the preparation, cooking and serving of meat dishes with pastry.
- Guide the learners to carry out practical work on meat dishes with pastry.

#### Teaching/Learning Aids

- Charts showing the meat dishes with pastry
- Recipe cards

#### Assessment Strategy

- Give the learners an exercise on writing out recipes on meat dishes with pastry.

## Sub-Topic 4: Preparing, Cooking and Serving Meat Accompaniments

Specific Objectives	Content
The learner should be able to prepare, cook and serve meat accompaniments.	<ul style="list-style-type: none"> <li>• Suitable accompaniments for meat:               <ul style="list-style-type: none"> <li>- vegetables like salad, cooked vegetables</li> <li>- carbohydrates e.g. pumpkin, cassava, matooke, gonja, potatoes, yams, pasta, rice</li> <li>- sauces e.g. Tomato sauce, Tomato ketchup, mayonnaise, dumplings</li> </ul> </li> </ul>

### Methodology

- Guide the learners to discuss the different meat accompaniments.
- Demonstrate to the learners the preparation, cooking and serving of meat dishes accompaniments.
- Guide the learners to carry out practical work on preparation, cooking and serving meat accompaniments.

### Teaching/Learning Aids

- Recipe cards and books for meat dishes.

### Assessment Strategy

- Give the learners an assignment to write recipes of meat accompaniments dishes.

## Sub-Topic 5: Textured Vegetable Protein (TVP)

Specific Objective	Content
The learner should be able to prepare, cook and serve TVP dishes.	<ul style="list-style-type: none"> <li>• Preparation, cooking and serving of TVP dishes e.g.               <ul style="list-style-type: none"> <li>- TVP stew</li> <li>- TVP mixed with other</li> </ul> </li> </ul>

Specific Objective	Content
	vegetables like peas, beans, green vegetables, groundnut sauce - Vegetable stews enriched with TVP

### Methodology

- In groups, guide the learners to carry out practical work on TVP dishes.

### Teaching/Learning Aids

- A chart showing the diagram of textured soya protein.
- Actual textured vegetable protein that is packaged.

### Assessment Strategy

- Give learners a practical test on preparing, cooking and serving TVP dishes and stews enriched with TVP.
- Ask learners to write down the recipe on TVP dishes.

### Sub-Topic 4: Offal

Specific Objectives	Content
<ul style="list-style-type: none"><li>• The learner should be able to prepare, cook and serve offals.</li></ul>	<ul style="list-style-type: none"><li>• Preparation, cooking and serving of dishes made from offals e.g.<ul style="list-style-type: none"><li>- stews (liver/kidney/heart)</li><li>- katogo</li><li>- grilled/fried (liver/kidney)</li><li>- roasted (liver/kidney)</li><li>- stuffed &amp; steamed goat stomach</li></ul></li></ul>

### Methodology

- Demonstrate to the learners the preparing, cooking and serving of dishes from offal.
- Guide the learners in groups to prepare, cook and serve offal dishes.



## Teaching/Learning Aids

- Charts with diagrams of different types of offal
- Textbooks containing different types of offal and offal dishes
- Magazines with recipes of offal dishes
- Recipe cards for practical work

## Assessment Strategy

- Give a practical exercise on preparing, cooking and serving attractive offal dishes.
- Let the learners write out recipes in their recipe books.

## Sub-Topic 5: Gelatine

Specific Objective	Content
The learner should be able to use gelatine in cookery.	<ul style="list-style-type: none"> <li>• Use of gelatine in cooking dishes like:               <ul style="list-style-type: none"> <li>- jellies</li> <li>- ice cream</li> <li>- other sweets</li> <li>- fondant icing</li> </ul> </li> </ul>

## Methodology

- Guide learners to discuss the different uses of gelatine.
- Through group work, guide learners to prepare, cook and serve gelatine dishes in groups.

## Teaching/Learning Aids

- Recipe cards
- Diagram from textbooks
- Cut-outs from newspapers
- Charts with different ways of serving gelatine dishes

## Assessment Strategy

- Give an exercise on preparing, cooking and attractively serving dishes made from jellies.

## Topic 2: Poultry

Duration: 10 Periods

### General Overview

Poultry is the name given to birds that can be eaten. These birds include chicken, turkeys, ducks, guinea fowls, geese, etc. Poultry dishes provide proteins of high biological value in the diet. They can be prepared and cooked in various ways to add variety in the diet. Different methods used to cook poultry dishes include stewing, frying, boiling, grilling, roasting, steaming, etc. The teacher will guide the learner in preparing, cooking and serving different poultry dishes such as chicken stews, curries, roasts, grills and barbecue.

### General Objective

By the end of this topic, the learner should be able to prepare, cook and serve poultry dishes attractively.

### Sub-Topic 1: Cooking Poultry Dishes

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• identify the different methods of preparing and cooking poultry dishes.</li><li>• Prepare and cook poultry dishes e.g. to stuff and cook chicken.</li></ul>	<ul style="list-style-type: none"><li>• Preparation of poultry dishes i.e. dressing and marinading</li><li>• Methods of cooking poultry dishes:<ul style="list-style-type: none"><li>- boiling e.g. boiled chicken</li><li>- stewing/simmering e.g. chicken stew</li><li>- frying e.g. plain fried chicken, chicken fritters</li><li>- grilling e.g. grilled chicken</li><li>- braising e.g. braised chicken</li><li>- baking e.g. chicken pie, pizza, quiche lorraine</li><li>- steaming e.g. chicken</li></ul></li></ul>

Specific Objectives	Content
<ul style="list-style-type: none"> <li>• Serve poultry dishes attractively.</li> </ul>	luwombo, stuffed steamed chicken luwombo <ul style="list-style-type: none"> <li>- roasting e.g. roast stuffed chicken</li> <li>- chicken sandwiches</li> </ul> <ul style="list-style-type: none"> <li>• Serving the poultry dishes attractively:               <ul style="list-style-type: none"> <li>- garnishes for poultry dishes include: tomatoes, carrots, parsley, lettuce, cabbage, mint, coriander</li> <li>- accompaniments to poultry dishes include carbohydrate foods such as potatoes, rice, pasta, matooke, millet bread, sauces, gravy, lemon slices, chopped egg white, sieved egg yolk and bacon rolls</li> </ul> </li> </ul>

## Methodology

- Demonstrate the following processes of preparing and cooking chicken:
  - dressing chicken.
  - marinating chicken.
  - stuffing baking / steaming chicken.
  - fry chicken with various coatings.
  - stew, braise, steam, grill and boil chicken.
- In groups, let learners carry out practical work on the demonstrated dishes and other chicken dishes got from recipe books.

## Teaching/Learning Aids

- Charts with various poultry dishes
- Charts with various recipes for the poultry dishes
- Recipe cards, cuttings from newspapers and magazines
- Electronic learning

**Assessment Strategy**

- Carving the chicken
- Give an exercise on preparing, cooking and serving various poultry dishes and their accompaniments.
- Ask the learners to write down recipes in their recipe book.

## Topic 3: Fish

Duration: 15 Periods

### General Overview

Fish is a very important source of high biological value protein and a good source of vitamins and mineral salts.

Thorough preparation is essential when handling fish. Preparation of fish involves scaling, removing the entrails, and trimming, filleting or making cutlets and washing.

Fish gets ready easily so a lot of care and attention must be taken to prevent disintegration and over cooking. Cooking methods suitable for fish include stewing, poaching, grilling, baking, etc.

It should be served attractively to stimulate the flow of digestive juices. It is commonly served with a lemon slice to minimise the strong smell and to soften the bones that may be accidentally swallowed. Fish can be served with carbohydrate foods, vegetables and sauces. These serve as accompaniments to the fish creating balanced meals and adding variety in the diet.

### General Objective

By the end of the topic, the learner should be able to prepare, cook and serve fish dishes.

### Sub-Topic 1: Fish Cookery

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• prepare fish for cooking in different ways.</li> </ul>	<ul style="list-style-type: none"> <li>• Preparation of fish for cooking includes:               <ul style="list-style-type: none"> <li>- salting.</li> <li>- removing entrails.</li> <li>- trimming.</li> <li>- washing and drying.</li> <li>- filleting/fish cutlets.</li> <li>- preparation of vegetables</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• cook and serve fish using</li> </ul>	<ul style="list-style-type: none"> <li>• Methods of cooking fish:</li> </ul>

Specific Objectives	Content
different methods of food preparation.	<ul style="list-style-type: none"><li>- frying e.g. fried fish fillets</li><li>- grilling e.g. whole grilled fish</li><li>- baking e.g. baked fish</li><li>- stewing / simmering e.g. fish stew</li><li>- boiling/ steaming e.g. steamed/ boiled fish</li><li>- poaching e.g. fish mornay</li><li>- braising e.g. braised fish</li></ul>
• serve and garnish fish dishes.	• Serving and garnishing fish dishes e.g. with parsley, vegetables, herbs like mint, parsley, coriander, lemon slices
• prepare, cook and serve suitable accompaniments for fish.	• Suitable accompaniments for fish e.g. vegetables, carbohydrates, sauces (e.g. tartar sauce, parsley sauce)

### Methodology

- Guide the learners to discuss the preparation and methods of cooking fish.
- Demonstrate the preparation, cooking, and attractively serving fish dishes.
- Through group work, guide learners to prepare fish filleting individually.
- In groups, prepare the learners to carry out practical work on the cooking and serving of the fish dishes.

### Teaching/Learning Aids

- Teaching cards
- Charts with different steps followed when making fish dishes
- Charts with well presented fish dishes
- Fish platters

### Assessment Strategy

- Timed practical exercises on preparation, cooking and serving fish dishes.

## Additional Notes

### Methods of cooking fish

Method	Dishes
• Frying	• Fish cakes, fish fillets, fried whole fish, etc.
• Grilling	• Grilled fish fillet
• Baking	• Fish soufflé, stuffed baked fish flan, fish pie, fish au gratin, baked fish Russian fish, pie
• Stewing/summering	• Fish stew, dry fish in groundnuts stew
• Poaching	• Poached fish
• Braising	• Kedgeree

- Serving fish: ways of serving fish such as on fish platters, a bed of vegetables, with cooked cereals such as rice, spaghetti garnished with cooking herbs such as parsley, mint, dill, coriander, tarragon, marjoram, rosemary, lemon slices, etc. It may also be served with the following sauces such as lemon sauce, cucumber sauce, and parsley sauce.
- Suitable accompaniments for fish include the following:
  - vegetables e.g. carrots, green pepper, cabbage, French beans, lettuce, tomatoes, etc.
  - carbohydrates e.g. Irish potatoes, rice, spaghetti, etc.
  - sauces e.g. tartar sauce, parsley sauce, dill sauce, 1000 island sauce, savoury lemon sauce, cucumber sauce etc.

### Note:

Apart from tilapia, Nile perch, mud fish and lung fish that are commonly available in Uganda, there are also other types of fish such as lobsters, shrimps, oyster, crabs, etc that may be cooked and served using any of the above methods.

## Topic 4: Time Plan

Duration: 10 Periods

### General Overview

A time plan is a framework in which specific tasks should be accomplished. There is need to plan carefully in order to accomplish tasks at hand. This involves identifying which activities need more time to accomplish than others.

A time plan includes proper time management; kitchen, personal and food hygiene; economy of time, materials and fuel; costing, calculation and suitable choice of dishes. The manipulation stage of the plan involves writing down skills in preparing and cooking the different chosen dishes. Presentation is a way of serving food to the consumers so that it can be eaten. Food has to be presented attractively so that it stimulates appetite.

### General Objective

By the end of this topic, the learner should be able to make and use a time plan effectively.

### Sub-Topic 1: General Efficiency

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• choose suitable dishes and allocate the time correctly.</li><li>• state the reasons for choice of dishes.</li><li>• give reasonable estimated costs for the materials required.</li><li>• state the right previous preparations for given dishes.</li><li>• write down the order of work with right allocation of time.</li></ul>	<ul style="list-style-type: none"><li>• Choice of dishes</li><li>• Reasons for choice of dishes i.e. Nutritional and practical reasons which should be related to the question as much as possible</li><li>• Costing of food materials with a grand total</li><li>• Previous preparations carried out before the actual practical examinations</li><li>• Order of work (giving appropriate time to each dish, a brief recipe, having time to</li></ul>



Specific Objectives	Content
<ul style="list-style-type: none"> <li>calculate a given nutrient content with reference to the food tables.</li> </ul>	wash/clean up and giving great attention to the special points) <ul style="list-style-type: none"> <li>Calculation of nutrient content of foods</li> </ul>

### Methodology

- Guide learners to discuss the preparation of time plans.
- In groups, guide learners to prepare time plans using a specific question.

### Assessment Strategy

- Give an exercise on making time plans of selected questions.

### Sub-Topic 2: Manipulation

Specific Objectives	Content
<ul style="list-style-type: none"> <li>The learner should be able to use correct skills and methodology in both preparation and cooking of dishes.</li> </ul>	<ul style="list-style-type: none"> <li>Using correct skills and methodology during:               <ul style="list-style-type: none"> <li>food preparation</li> <li>cooking of various dishes</li> </ul> </li> </ul>

### Methodology

- Guide learners to discuss the different manipulation skills of the dishes chosen.
- In groups, assign the learners a question to discuss the various manipulation skills in food preparation.

### Teaching/Learning Aids

- Charts with different manipulation skills for a specific dish
- Textbooks with different manipulation skills

### Assessment Strategy

- Give learners a selection of five dishes and write down the manipulation skills for each dish.

### Sub-Topic 3: Presentation of Dishes

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• make beautiful centre pieces, food menus cards and food tags.</li><li>• demonstrate the right skills in preparing and cooking of the dishes chosen.</li><li>• use equipment for serving correctly.</li><li>• lay the table and serve the food with reference to the question.</li><li>• garnish savoury dishes and or decorate sweet dishes.</li></ul>	<ul style="list-style-type: none"><li>• Quality of equipment i.e. suitability, size and cleanliness.</li><li>• Table linen, table mats, serviettes, food nets, napkins and cutlery, doily papers</li><li>• Different types of garnishes and decorative materials suitable for various dishes and centre pieces suitable for given occasions</li><li>• Decorative materials include cherries, slices of lemon/oranges, icing sugar, desiccated coconut, jam</li></ul>

### Methodology

- Guide the learners to discuss the making of beautiful centre pieces, menu cards, food tags, laying serving tables considering the colour scheme.
- In groups, guide learners to carry out practical work on making beautiful centre pieces, menu cards, food tags, laying serving tables and considering the colour schemes.

### Teaching/Learning Aids

- Charts with different presentation of dishes and meals
- Textbooks with different presentation of dishes and meals

### Assessment Strategy

- Give a practical exercise on making centre pieces, menu cards, food tags and table laying.

## SENIOR FIVE TERM TWO

### Topic 5: Eggs

Duration: 10 Periods

#### General Overview

Eggs are an important source of high biological value protein in the diet. They contain minerals, vitamins and fats. The fats in eggs are emulsified making eggs easily digested and absorbed. Eggs are very useful in cookery. Birds that provide eggs for human consumption include hens, ducks, turkeys, ostrich, guinea fowls. Eggs may be cooked using various methods. They provide quick and tasty meals. They are very valuable cooking ingredients because of the many uses they have in cookery. Eggs are versatile, reasonably cheap, quick and easy to prepare.

#### General Objectives

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

- i) cook and serve eggs using different methods of food preparation.
- ii) demonstrate the uses of eggs in cookery.

#### Sub-Topic 1: Egg Cookery

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• identify different methods of cooking eggs.</li> <li>• cook eggs using the methods identified.</li> <li>• serve the egg dishes and garnish (if necessary).</li> </ul>	<ul style="list-style-type: none"> <li>• Methods of cooking eggs:               <ul style="list-style-type: none"> <li>- boiling e.g. boiled eggs</li> <li>- poaching e.g. poached eggs</li> <li>- scrambling e.g. scrambled eggs</li> <li>- baking eggs e.g. baked egg custard</li> <li>- frying e.g. fried egg, Spanish omelette, French omelette and Scotch egg</li> </ul> </li> <li>• Garnishes for egg dishes: sliced vegetables e.g. tomatoes, green pepper, herb vegetables e.g. parsley, mint, dill</li> </ul>

Specific Objectives	Content
<ul style="list-style-type: none"><li>• prepare and serve suitable accompaniments for egg dishes.</li></ul>	<ul style="list-style-type: none"><li>• Accompaniment for egg dishes: toasted bread, fresh bread, vegetables, etc</li></ul>

### Methodology

- Discuss the methods of cooking eggs and egg accompaniments.
- Demonstrate the preparation, cooking and serving of egg dishes and egg accompaniments.
- Give group practical work on preparation, cooking and serving egg dishes and egg accompaniments.

### Teaching/Learning Aids

- Teaching cards/charts with the steps followed when preparing egg dishes and their accompaniments
- Charts with well presented egg dishes

### Assessment Strategy

- Give a practical exercise on preparing, cooking and attractively serving egg dishes and their accompaniments.
- Write down recipes in particular books.

## Sub-Topic 2: Functions of Eggs in Cookery (Culinary Uses of Eggs)

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• identify the functions of eggs in cookery.</li><li>• demonstrate the use of eggs in cookery.</li></ul>	<ul style="list-style-type: none"><li>• Use of eggs in cookery:<ul style="list-style-type: none"><li>- enriching – e.g. cakes</li><li>- binding – e.g. meat balls, chaps, kebabs</li><li>- coating – e.g. coated chicken, fish fillets, French toast</li><li>- glazing - e.g. bread rolls, pies, sausage rolls</li><li>- emulsifying – e.g. cakes, mayonnaise</li></ul></li></ul>

Specific Objectives	Content
	<ul style="list-style-type: none"> <li>- aerating – e.g. whisked mixtures</li> <li>- thickening – e.g. custards, sauces, soups cheese flan, quinche lorraine</li> <li>- garnishing- e.g. vegetable salads</li> <li>- clarifying e.g. broths, wines</li> <li>- main dish e.g. omelettes, scrambled eggs</li> </ul>

### Methodology

- Guide learners to discuss the different uses of eggs in cookery e.g. binding, coating, etc.
- Demonstrate the different ways of using eggs in cookery.
- In groups, guide learners to carry out practical work on different ways of using eggs in cookery.

### Teaching/Learning Aids

- Recipe card

### Assessment Strategy

- Give an exercise on preparing, cooking and serving egg dishes.
- Let the learners write down the recipes in a particular book.

**Hint:** Remember to emphasise the effects of heat on protein as you handle the protein foods.

Duration: 10 Periods

Milk is the most complete food known and because of this, it is of high biological value. It is easy to prepare, cook and digest. Therefore, it is ideal for babies, children, the elderly, invalids and adults. There are a variety of dishes made from milk which may be served in different ways. Milk is used to enrich, improve texture and appearance of dishes.

## General Objective

### Sub-Topic 1: Milk Dishes

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Specific Objectives	Content
<ul style="list-style-type: none"> <li>• serve milk dishes attractively.</li> </ul>	<ul style="list-style-type: none"> <li>• Ways of serving i.e. decorating using cherries, mint, jam, lemon and garnishing using parsley, cheese, mint</li> </ul>

## Methodology

- Demonstrate to the learners the preparation, cooking and serving of milk dishes.
- Guide learners to carry out practical work on the preparation, cooking and serving of milk dishes.

## Teaching/Learning Aids

- Recipe cards, charts, relevant textbooks

## Assessment Strategy

- Give practical work on preparation, cooking and serving of milk dishes.
- Ask learners to write down the recipes in their recipe books which you will mark.

## Sub-Topic 2: Uses of Milk in Cookery (Culinary Uses of Milk)

Specific Objective	Content
The learner should be able to identify the uses of milk in cookery.	<ul style="list-style-type: none"> <li>• Uses of Milk in Cookery               <ul style="list-style-type: none"> <li>- glazing e.g. bread, scones, buns</li> <li>- beverages e.g. coffee, tea, drinking chocolate, milk shakes, milk</li> <li>- as an ingredient e.g. in puddings, custards, white sauces</li> <li>- texture and consistency of food e.g. creamed potatoes, porridge</li> <li>- enriching food e.g. porridge, cereals, traditional vegetable</li> </ul> </li> </ul>

Specific Objective	Content
	dishes e.g. pumpkin leaves, gobbe in milk

### Methodology

- Guide the learners to discuss the different uses of milk in cookery.
- Demonstrate the different ways of using milk in cookery.
- In groups, guide learners to carry out practical work on different ways of using milk in cookery.

### Teaching/Learning Aids

- Charts with various ways of using milk in cookery
- Recipe cards, cuttings from magazines and newspapers
- Electronic learning

### Assessment Strategy

- Give the learners an exercise on preparing, cooking and serving milk dishes to show the different ways of using milk in the diet.
- Give an exercise on writing down the recipes in a recipe book.

**Hint:** Remember to emphasise when each of the prepared dishes may be served during meal preparation and presentation.



## Topic 7: Cheese

Duration: 10 Periods

### General Overview

Cheese is a means of preserving the food value of milk in a condensed form which can be stored longer than the milk itself. It is a very valuable food because it provides high biological value proteins, vitamins, mineral salts, fat and unique flavour.

Cheese should be reduced in size and cooked to ease its digestibility. Care should be taken to prevent over cooking because it renders the cheese tough and indigestible. Cheese is an important food item in the diet which can be used in the preparation of various dishes.

### General Objectives

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

- i) prepare, cook and serve cheese dishes.
- ii) demonstrate the uses of cheese in cookery.

### Sub-Topic 1: Methods of Cooking Cheese

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>identify methods of cooking cheese.</li> <li>use cheese in preparing different dishes.</li> </ul>	<ul style="list-style-type: none"> <li>Methods of cooking cheese:               <ul style="list-style-type: none"> <li>grilling e.g. cheese on bread toast, cheese rarebit</li> <li>frying e.g. cheese balls, cheese cutlets, cheese cassava, cheese omelette</li> <li>baking with cheese e.g. quiche' lorraine, cheese pie, cheese pastry, pizza, cheese scones, cheese biscuits, cassava au gratin, cauliflower au gratin, spaghetti au gratin</li> </ul> </li> <li>Carbohydrates dishes with cheese e.g. au gratin, bread sandwich cheese pastry dish</li> </ul>

Specific Objectives	Content
<ul style="list-style-type: none"><li>• serve dishes that have been cooked with cheese.</li></ul>	(savoury flans), sandwiches. <ul style="list-style-type: none"><li>• Serving cheese dishes with other dishes attractively garnished</li></ul>

### Methodology

- Guide learners to discuss the different methods of cooking cheese.
- Demonstrate the procedure of preparing, cooking and serving cheese dishes.
- In groups, guide learners to carry out practical work on preparing, cooking and serving cheese dishes.

### Teaching/Learning Aids

- Recipe cards, charts illustrating dishes made using different methods of cooking.
- Cuttings from magazines and newspapers showing well served cheese dishes.

### Sub-Topic 2: Uses of Cheese in Cookery

Specific Objective	Content
The learners should be able to identify uses of cheese in cookery.	<ul style="list-style-type: none"><li>• Uses of cheese in cookery:<ul style="list-style-type: none"><li>- as a snack e.g. cheese omelette, cheese sandwiches, cheese biscuits</li><li>- to enrich e.g. cassava augratin</li><li>- add flavour, colour and texture</li><li>- as a filling in sandwiches and pastry</li></ul></li></ul>

### Methodology

- Guide the learners to discuss the different ways of cooking and serving cheese.
- Demonstrate the preparation, cooking and serving of different dishes with cheese.
- Guide learners to break up into groups and carry out the practical work on the preparation, cooking and serving of different dishes with cheese.

## Teaching/Learning Aids

- Recipe cards
- Charts with various ways of using and serving cheese dishes
- Electronic learning

## Assessment Strategy

- Give a practical exercise on preparing, cooking and serving cheese dishes.
- Guide learners to write down the recipes in a recipe book.

**Hint:** Moderate temperatures should be used especially when using dry heat because high temperatures denature protein in cheese.

## SENIOR FIVE TERM TWO

### Topic 8: Carbohydrate Cookery

Duration: 10 Periods

#### General Overview

Carbohydrates are the cheapest and most abundant foods which provide plenty of calories to the body. They should be served with other dishes to provide a balanced diet. They also add variety to the meal.

Carbohydrate foods can be cooked in various ways e.g. steaming, boiling, frying, grilling, roasting, etc. Various carbohydrate foods react differently to different forms of heat e.g. roasted carbohydrates dextrinize when dry heat is applied; boiled or steamed foods absorb water, swell and gelatinise. After preparing the carbohydrate dishes, they have to be served attractively. Carbohydrate dishes are served with other nutrients to complete a meal.

#### General Objective

By the end of this topic, the learner should be able to cook and serve various carbohydrate dishes.

#### Sub-Topic 1: Cooking Carbohydrate Dishes (Starches, Sugars)

Specific Objective	Content
The learner should be able to prepare and cook various carbohydrate dishes.	<ul style="list-style-type: none"><li>• Carbohydrate dishes (starches and sugars):<ul style="list-style-type: none"><li>- rice dishes e.g. fried rice, vegetable rice, pilau rice, risotto</li><li>- maize meal dishes e.g. posho, porridge</li><li>- millet/sorghum dishes e.g. millet bread, porridge, “bushera” beverage</li><li>- cassava dishes e.g. cassava balls, scotch egg, steamed</li></ul></li></ul>

Specific Objective	Content
	cassava - plantain e.g. steamed/boiled matooke, “kivuvu” and “gonja” - potato cookery e.g. potato balls, scotch egg, steamed potato, potato chips - carbohydrates cooked with other foods like beans/peas/offals/meats for “katogo” - pasta e.g. macaroni, spaghetti boiled or made into augratins - dishes with wheat flour e.g. chapatti, pastry, cakes, scones, biscuits, yeast mixtures, mandazi, - sugar e.g. caramel, beverages, cakes, biscuits, custards

## Methodology

- Guide learners to discuss the different carbohydrate foods and dishes and the methods of cooking them.
- Demonstrate the methods of preparing and cooking different carbohydrate dishes.
- Guide the learners to form groups and carry out practical work on preparing and cooking carbohydrate dishes.

## Teaching/Learning Aids

- Charts of different foods and dishes on carbohydrates
- Cuttings from magazines and newspapers
- Electronic learning

**Assessment Strategy**

- Give a practical exercise on preparing, cooking and serving various carbohydrate dishes.
- Guide learners to write down the recipes in their recipe books.

**Sub-Topic 2: Serving Carbohydrate Dishes**

Specific Objective	Content
The learner should be able to serve and garnish carbohydrate dishes.	<ul style="list-style-type: none"><li>• Serve and garnish carbohydrate foods attractively e.g. by use of parsley, carrots</li></ul>

**Methodology**

- Guide the learners to discuss ways of serving and garnishing various carbohydrate dishes.
- Demonstrate the garnishing and serving of carbohydrate dishes.
- In groups, guide learners to carry out practical work on serving and garnishing carbohydrate dishes.

**Teaching/Learning Aids**

- Cuttings from magazines and newspapers on how to serve and garnish carbohydrate dishes
- Electronic learning

**Assessment Strategy**

- Give a practical exercise on serving and garnishing carbohydrate dishes.

## Topic 9: Stocks and Soups

Duration: 10 Periods

### General Overview

Soups play an important role in a nourishing balanced meal. Because of their good flavour, they act as stimulants at the beginning of meals. They are used in invalid cookery as a form of liquid food which is easily digested. The various types of soups include thin, thickened and purees.

A stock is a well flavoured liquid which is obtained by simmering a food in water for some time in order to extract flavour from it. They have very little food value on their own and therefore are used as a basis of soups, sauces and gravies.

### General Objective

By the end of the topic, the learner should be able to identify, cook and serve different types of stock and soups.

### Sub-Topic 1: Stocks and Soups

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>differentiate a soup and a stock.</li> <li>classify stock.</li> <li>Prepare, cook and use the stock.</li> <li>classify soups.</li> </ul>	<ul style="list-style-type: none"> <li>Difference between a soup and a stock</li> <li>Types of stock e.g.               <ul style="list-style-type: none"> <li>vegetable stock</li> <li>meat stock</li> <li>fish stock</li> <li>chicken stock</li> </ul> </li> <li>Preparation, cooking and using the stock</li> <li>Types of soups               <ul style="list-style-type: none"> <li>Thin soups:                   <ul style="list-style-type: none"> <li>clear soups (rich bone stock clarified with eggs)</li> <li>broths (meats and vegetables, thickened)</li> </ul> </li> </ul> </li> </ul>

Specific Objectives	Content
<ul style="list-style-type: none"> <li>• serve soups attractively.</li> <li>• prepare accompaniments and garnish soups attractively.</li> <li>• identify flavourings that may be used in the preparation of stock.</li> </ul>	<ul style="list-style-type: none"> <li>- Thickened soups:               <ul style="list-style-type: none"> <li>○ meat and vegetable soups</li> <li>○ tomato soup (using fresh tomatoes)</li> <li>○ tomato soup (using tomato puree)</li> <li>○ cream of tomato soup</li> <li>○ avocado soup, cucumber soup</li> <li>○ brown onion soup</li> <li>○ French onion soup</li> </ul> </li> <li>- Purees               <ul style="list-style-type: none"> <li>○ carrot soup</li> <li>○ pea soup</li> <li>○ mushroom soup</li> <li>○ potato soup</li> <li>○ bean soup</li> </ul> </li> <li>• Serving of different types of soups attractively and correctly e.g. serve using right equipment prepare, cook and serve soups with their accompaniments and garnish them attractively.</li> <li>• Accompaniments for soups are: croutons, dinner rolls, brown or white bread, slices of bread with grilled cheese</li> <li>• Examples of flavourings that may be used in the preparation of stock include: celery, coriander, leeks, onions, garlic, parsley, mint, rosemary, bouquet garni and cinnamon stick.</li> </ul>

### Methodology

- Guide learners to discuss the difference between stock and soups and types of stock.



- Demonstrate the particular procedure of preparing and cooking stock.
- Organise learners into groups to carry out the practical on preparing, cooking and garnishing different soups.

### **Teaching/Learning Aids**

- Recipe cards
- Charts with diagrams showing the different flavourings
- Textbooks

### **Assessment Strategy**

- Give an exercise on preparing and cooking different types of stocks and soups.

## Topic 10: Sauces

Duration: 10 Periods

### General Overview

A sauce is a well flavoured liquid containing a thickening agent. It may be simple or elaborate. Sauces have several functions in the diet including giving flavour to dull dishes; adding nutritive value to a dish and improving the texture and appearance of certain foods.

A coating sauce at boiling point must coat the back of a wooden spoon and only just settle to its own level in the saucepan. It must be used at once and the food to be coated must be hot if the coating is to be smooth. The proportion of the liquid depends on the consistency of the coating sauce required. In sauce-making, preparation ingredients should be carefully blended and properly seasoned to preserve the distinctive flavour and make them suitably adoptable to the dishes they are meant for.

A pouring sauce at boiling point should just glaze the back of a wooden spoon and should flow freely when poured. A binding sauce or panada should be thick enough to bind dry ingredients together.

### General Objective

By the end of the topic, the learner should be able to identify, cook and serve sauces.

### Sub-Topic 1: Roux Sauces

Specific Objectives	Content
The learners should be able to: <ul style="list-style-type: none"><li>• define roux sauces.</li><li>• classify roux sauces.</li><li>• prepare, cook and serve roux sauces.</li></ul>	<ul style="list-style-type: none"><li>• Definition of roux sauces</li><li>• Classification of roux sauces</li><li>• Preparation, cooking and serving roux sauces</li></ul>

### Methodology

- Guide learners to discuss the classification and cooking of roux sauces.
- Demonstrate the procedure of preparing and cooking roux sauces.
- In groups, guide learners to carry out practical work on roux sauces.

## Teaching/Learning Aids

- Recipe cards
- Newspaper and magazine cuttings
- Electronic learning where possible

## Assessment Strategy

- Writing recipes in a particular recipe book.
- Give an exercise on preparing, cooking and serving sauces and their accompaniments.

## Sub-Topic 2: Cooked Egg Sauces

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• define cooked egg sauces.</li> <li>• classify cooked egg sauces.</li> <li>• prepare, cook and serve cooked egg sauces.</li> </ul>	<ul style="list-style-type: none"> <li>• Definition of cooked egg sauces</li> <li>• Classification of cooked egg sauces</li> <li>• Preparation, cooking and serving of cooked egg dishes.</li> </ul>

## Methodology

- Guide the learners to discuss the classification of cooked egg sauces.
- Demonstrate to the learners procedures of cooking and serving cooked egg sauces.
- In groups, guide the learners to carry out practical work on preparing, cooking and serving cooked egg sauces.

## Teaching/Learning Aids

- Recipe cards
- Newspapers and magazine cuttings
- Electronic learning where possible

## Assessment Strategy

- Give practical exercise on preparing, cooking and serving cooked egg sauces.

**Sub-Topic: 3 Cold Sauces**

Specific Objectives	Content
The learners should be able to: <ul style="list-style-type: none"><li>• define cold sauces.</li><li>• classify cold sauces.</li><li>• prepare, cook and serve cold sauces.</li></ul>	<ul style="list-style-type: none"><li>• Definition of cold sauces</li><li>• Classification of cold sauces</li><li>• Preparation, cooking and serving of cold sauces</li></ul>

**Methodology**

- Guide learners to discuss the classification of cold sauces.
- Demonstrate to the learners the procedure of preparing, cooking and serving cold sauces.
- In groups, let the learners carry out practical work on preparing, cooking and serving cold sauces.

**Teaching/Learning Aids**

- Recipe cards
- Newspapers and magazine cuttings
- Electronic learning and computer where possible

**Assessment Strategy**

- Give practical exercises on preparing, cooking and serving cold sauces.

**Sub-Topic 4: Unclassified/Miscellaneous Sauces**

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• define unclassified sauces.</li><li>• prepare, cook and serve unclassified /miscellaneous sauces.</li></ul>	<ul style="list-style-type: none"><li>• Definition of unclassified/miscellaneous sauces</li><li>• Preparation, cooking and serving unclassified/miscellaneous sauces</li></ul>

**Methodology**

- Using discussion method, guide the learners to understand unclassified/miscellaneous sauces.
- Demonstrate the preparation, cooking and serving of unclassified sauces.

- In groups, let the learners carry out practical exercises on preparing, cooking and serving of unclassified/miscellaneous sauces.

### **Teaching/Learning Aids**

- Recipe cards
- Newspapers and magazine cuttings
- Electronic learning where possible

### **Assessment Strategy**

- Give practical exercises on preparing, cooking and serving of unclassified/ miscellaneous sauces.

## SENIOR FIVE TERM THREE

### Topic 11: Traditional Dishes

Duration: 15 Periods

#### General Overview

Traditional dishes are foods which are readily available within a given community. They are reasonably cheap. Most of them provide a staple variety within their communities. They are also nourishing and help to complete a balanced diet.

Traditional dishes are grouped in different ways i.e. traditional protein dishes, traditional carbohydrate dishes and traditional vegetable dishes.

Traditional protein dishes are a main dish of a meal. They are usually served with other nutrients to form a balanced meal. In this topic, we shall identify, prepare, cook and serve traditional dishes.

Traditional carbohydrate dishes are staple foods within the locality that provide carbohydrates and add variety to the diet. They are readily available throughout the year and are easy to prepare, cook and serve.

Traditional vegetable dishes provide a variety of texture, flavour and colour in the diet. There is a wide variety of vegetables which may be served as accompaniments to meals. Vegetables are classified according to the part of the plant which is edible. Vegetables include cauliflower, cabbage, nakati, etc. Vegetables provide a variety of nutrients including vitamins, mineral salts and also add fibre (cellulose) and water in the diet.

#### General Objective

By the end of the topic, the learner should be able to prepare, cook and serve a variety of traditional dishes.

#### Sub-Topic 1: Traditional Protein Dishes

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• identify traditional protein dishes from different parts of the country.</li></ul>	<ul style="list-style-type: none"><li>• Traditional protein dishes:<ul style="list-style-type: none"><li>- “luwombo” of chicken/beef/groundnuts/fi</li></ul></li></ul>

Specific Objectives	Content
<ul style="list-style-type: none"> <li>• prepare, cook and serve traditional protein dishes from different parts of the country.</li> </ul>	<ul style="list-style-type: none"> <li>sh</li> <li>- pasted fish/beef/chicken/mushroom etc</li> <li>- “malewa” (bamboo shoots) in groundnuts</li> <li>- “mishebebe” (pumpkin leaves) in groundnuts</li> <li>- likote/pasted “ggobe”/pasted cow pea leaves</li> <li>- magila”</li> <li>- “firinda”</li> <li>- “eshabwe”</li> <li>- okra and meat stew/okra and bean stew</li> <li>- “boo” (okra and ggobe with groundnuts)</li> <li>- ntula in groundnuts</li> <li>- malakwang</li> <li>- “ekyadoi” (Jobyo in milk or groundnuts)</li> <li>- “ggobe” in milk</li> <li>- “molokoni” (animal hooves and lower legs)</li> <li>• Serving traditional protein dishes:               <ul style="list-style-type: none"> <li>- serve according to the part of the country</li> <li>- serve attractively</li> <li>- garnish the traditional protein dishes</li> </ul> </li> </ul>

### Teaching/ Learning Aids

- Recipe cards
- Textbooks

## Methodology

- Brainstorm the different traditional protein dishes from different parts of the country, their preparation, cooking and serving.
- Demonstrate the preparation, cooking and serving of traditional protein dishes.
- Let learners break into groups and carry out the practical on preparing, cooking and serving traditional protein dishes.

## Assessment Strategy

- Give practical exercises on preparing, cooking and serving traditional protein dishes.

## Sub-Topic 2: Traditional Carbohydrate Dishes

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• identify traditional carbohydrate dishes from different parts of the country.</li><li>• prepare, cook and serve traditional carbohydrate dishes from different parts of the country.</li></ul>	<ul style="list-style-type: none"><li>• Traditional carbohydrate dishes:<ul style="list-style-type: none"><li>- millet bread</li><li>- potato flour bread</li><li>- cassava flour bread</li><li>- maize flour bread (posho)</li><li>- steamed matooke/cassava/potatoes /gonja/yams/pumpkin/kivuvu</li><li>- katogo</li><li>- amukeke</li><li>- stuffed pumpkin</li><li>- Mugoyo</li></ul></li><li>• Serving traditional carbohydrate dishes:<ul style="list-style-type: none"><li>- serve correctly</li><li>- use right and clean equipment</li></ul></li></ul>

## Methodology

- Brainstorm the preparation, cooking and serving of the traditional carbohydrate dishes according to their basic communities.



- Demonstrate preparation, cooking and serving of the traditional carbohydrate dishes.
- Split into groups to carry out practical work on traditional carbohydrate dishes.

### Teaching/Learning Aids

- Recipe cards

### Assessment Strategy

- Give a practical test on preparing, cooking and serving traditional carbohydrate dishes.
- Ask learners to write down the recipes in the recipe books.

### Sub-Topic 3: Traditional Vegetable Dishes

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• identify traditional vegetable dishes from different parts of the country.</li> <li>• prepare cook and serve vegetable traditional dishes from different parts of the country.</li> </ul>	<ul style="list-style-type: none"> <li>• Traditional vegetable dishes:               <ul style="list-style-type: none"> <li>- steamed nakati, doodo, jobyo, ggobe, pumpkin leaves, bean leaves, cassava leaves, potato leaves</li> <li>- boiled mixed vegetables</li> <li>- ntula, egg plants etc</li> </ul> </li> <li>• Serving traditional carbohydrate dishes:               <ul style="list-style-type: none"> <li>- use correct equipment</li> <li>- use clean equipment</li> <li>- serve attractively</li> </ul> </li> </ul>

### Methodology

- Demonstrate to the learners the preparation, cooking and serving of traditional vegetable dishes from different parts of the country.
- Let learners break up into groups and carry out practical work on the preparation, cooking and serving of traditional vegetable dishes

### **Teaching/Learning Aids**

- Recipe cards
- Textbooks
- Charts on the different types of vegetables and their classification

### **Assessment Strategy**

- Give the learners a practical exercise on preparing, cooking and serving traditional vegetable dishes in the correct way.
- Ask the learners to write out recipes in their recipe books.

## Topic 12: Vegetable Proteins

Duration: 10 Periods

### General Overview

Vegetable proteins are very useful in the vegetarian cookery. They provide second class proteins and careful combination of them can provide all the essential amino acids needed by the body. They should be prepared, cooked and served with care to conserve the nutrients. Ground nuts, beans and peas are a popular source of plant protein especially among the middle and low income groups. They also make a good source of protein for vegans, but supplementation is important to ensure provision of all the essential amino acids.

### General Objective

By the end of this topic, the learner should be able to prepare, cook and serve vegetable proteins.

### Sub-Topic 1: Ground nut Cookery

Specific Objective	Content
<ul style="list-style-type: none"> <li>The learner should be able to prepare, cook and serve ground nuts using different methods.</li> </ul>	<ul style="list-style-type: none"> <li>Groundnut dishes:               <ul style="list-style-type: none"> <li>Groundnut stew</li> <li>Luwombo:</li> </ul> </li> <li>Variations of groundnut stew. Use ground nuts to prepare other dishes e.g. groundnut cookies, cakes, rock buns, pasted fish, pasted meat, pasted beans, "malewa", "mishebebe," dry fried ground nuts, roasted groundnuts, luwombo with smoked meat or mushrooms</li> </ul>

### Methodology

- Guide learners to discuss the preparation, cooking and serving of groundnut sauce in different forms.
- Demonstrate the preparing, cooking and serving of groundnut sauce.

- Guide learners to carry out the practical work on the preparation, cooking and serving of groundnut dishes.

### Teaching/Learning Aids

- Recipe cards
- Textbooks

### Assessment Strategy

- Give a practical test on preparing, cooking and serving groundnut dishes

### Sub-Topic 2: Beans/Peas Cookery

Specific Objective	Content
The learner should be able to prepare, cook and serve beans/peas in different ways.	<ul style="list-style-type: none"><li>• Beans / peas dishes:<ul style="list-style-type: none"><li>- bean/ peas stew</li><li>- baked beans/peas</li><li>- boiled beans/peas</li><li>- bean/ peas relish</li><li>- “magila”</li><li>- “firinda”</li><li>- “omugoyo”</li><li>- beans/pea croquettes</li><li>- filling for pastry, samosas and sandwiches</li><li>- pizzas</li><li>- soups</li><li>- sauces</li><li>- deep fried peas/soya</li></ul></li></ul>

### Methodology

- Guide learners to discuss the preparation, cooking and serving of different dishes made with beans and peas.
- Demonstrate the procedures of preparing and serving dishes made with beans and peas.
- In groups, guide learners to carry out practical work on the preparation, cooking and serving of dishes made with beans and peas.

- Through demonstration, guide learners to attractively serve the various dishes made with beans and peas.

### **Teaching/Learning Aids**

- Recipe cards
- Textbooks

### **Assessment Strategy**

- Give a practical test on preparing, cooking and serving different dishes with beans and peas.

## Topic 13: Fruits and Vegetables

Duration: 10 Periods

### General Overview

Fruits and vegetables are important for the essential vitamins and mineral elements they contain. They also add texture, roughage, flavour and colour to the diet. Fruits and vegetables can be served as an accompaniment to a dinner, or as a separate course. They may be used as a substitute for meat in the diet especially the pulses. Because of their bright colour and texture, they may be used for decorating and garnishing. Fresh fruits and vegetables are mainly served as accompaniments to main dishes in a meal.

A lot of care should be taken when handling them to avoid contamination and conserve the nutrients in them. A dressing may be used to avoid oxidation, improve taste, moisten and sterilize the fruits and vegetables. Fresh fruits and vegetables may be bulky and difficult to digest due to the amount of cellulose present. To soften the fibre and make it more digestible, fruits and vegetables should be cooked. This also preserves colour and flavour. Care should be taken when cooking fruits and vegetables to minimise the loss of vitamins, minerals and extractives.

### General Objective

By the end of this topic, the learner should be able to prepare, cook and serve various dishes of fruits and vegetables while avoiding nutrient loss.

### Sub-Topic 1: Raw Fruits and Vegetables

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• prepare and serve fresh vegetables and fruits attractively (by dressing and decorating them) in different forms.</li><li>• conserve nutrients utilising the proper handling methods of fruits and vegetables.</li></ul>	<ul style="list-style-type: none"><li>• Fresh fruits and vegetables (salads):<ul style="list-style-type: none"><li>- fruit salads and vegetable salads</li><li>- fruit salad dressings: yoghurt, thick syrup, custard sauce</li><li>- vegetable salad dressings: vinaigrette/French</li></ul></li></ul>

Specific Objectives	Content
	dressing, mayonnaise, yoghurt, salad cream, 1000 island sauce - fruits juices and drinks i.e. - mixture of 3-4 fruits like: mango, pineapple, pawpaw, passion, melon, orange, lemon and tangerine - “mubisi” (banana juice)

### Methodology

- Guide learners to discuss the preparation and serving of dishes made from fruits and vegetables.
- Demonstrate the particular procedures of preparing and serving fresh fruit and vegetable dishes and salad dressings.
- In groups, guide learners to carry out the practical on the preparation and serving of fruit and vegetable dishes with dressings.

### Teaching/Learning Aids

- Recipe card
- Textbook

### Assessment Strategy

- Give practical exercises on preparing and serving fresh fruits and vegetable dishes with their dressings.
- Let learners formulate their own salad recipes and write them in their books.

### Sub-Topic 2: Cooked Fruits and Vegetables

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• prepare, cook and serve vegetables and fruits attractively.</li> </ul>	<ul style="list-style-type: none"> <li>• Cooked vegetables and fruits:               <ul style="list-style-type: none"> <li>- fried vegetables</li> <li>- steamed vegetables</li> </ul> </li> </ul>

Specific Objectives	Content
<ul style="list-style-type: none"><li>• conserve nutrients, colour and texture of the fruits and vegetables.</li></ul>	<ul style="list-style-type: none"><li>- stuffed vegetables.</li><li>- sautéed vegetables (conservative method)</li><li>- buttered vegetables</li><li>- boiled vegetables</li><li>- stewed (preserved) fruits e.g. jam, chutney</li><li>- fruit crumbles – pineapple, apple</li><li>- pineapple upside down</li><li>- dried fruits in cakes, puddings</li><li>- fruit egg custard</li><li>- vegetable pickles</li><li>- tomato chutney</li><li>- stuffings and fillings</li><li>- stir fried vegetables</li></ul>

### Methodology

- Guide the learners to discuss the various methods of cooking fruits and vegetables.
- Demonstrate to the learners the ways of preparing, cooking and serving cooked fruits and vegetables.
- In groups, guide learners to carry out practical exercises on preparing, cooking and serving cooked fruits and vegetables.

### Teaching/Learning Aids

- Recipe cards
- Cuttings from magazines and newspapers showings ways of decorating and garnishing cooked fruits and vegetables
- Textbooks

### Assessment Strategy

- Give practical exercises on preparing, cooking and serving fruits and vegetables correctly.
- Let learners formulate their own recipes on cooked vegetables and fruits and write them down in their recipe books.



## Topic 14: Cakes

Duration: 15 Periods

### General Overview

Cakes are sweet dishes that can be served as accompaniments to hot or cold beverages or may be used as desserts. The proportion of fat to flour will influence the method of mixing any given cake mixture. Cakes may be made by rubbing-in, creaming, and whisking, melting or all-in-one method. The main methods of cooking cakes are baking and steaming. Cakes can be iced to improve their appearance and make them attractive. Icing and fillings will add flavour and give variety to an otherwise plain cake. Examples of functions where decorated cakes can be used include: weddings, birthday parties, Christmas, introductions, anniversaries, etc.

Creamed cakes are those made by the creaming method. Cakes made by this method should be light and even textured. The higher the proportion of fat, sugar and eggs to flour, the richer the cake will be. If equal quantities of fat, sugar, eggs and flour are used, no extra liquid or baking powder should be required.

Rubbed in cakes are those made by the rubbed-in method. Cakes made by this method are quick to prepare but are rather dry and will not keep long. The proportion of fat to flour and sugar should be half or less than half fat to flour. The mixture might become sticky and difficult to handle if those proportions are exceeded.

Whisked cakes are those made using the whisking method. The eggs are beaten with the sugar and flour is folded in. The eggs should be fresh as these will whisk more readily and hold more air. This method is used for making sponge cakes. A true sponge cake does not contain any fat in the mixture and because of this, the cake will not keep for a long time.

Melted cakes are those made using the melting method. Fat is usually melted with sugar and syrup and added to the flour in liquid form. It is important to cool the syrup mixture to avoid formation of lumps and hardening of the gluten.

All-in-one method is a quick method of preparing cakes. Major ingredients like sugar, flour, margarine and eggs are used in equal quantities. All ingredients are put in a large mixing bowl at once and beaten well using a wooden spoon or an electric mixer.

## General Objective

By the end of this topic, the learner should be able to prepare, cook and serve different types of cakes.

## Sub-Topic 1: Creamed Cakes

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• prepare, cook and serve cakes using creamed mixtures.</li><li>• produce fine textured creamed cake products.</li></ul>	<ul style="list-style-type: none"><li>• Creamed cakes e.g.<ul style="list-style-type: none"><li>- queen cakes</li><li>- butterfly cakes</li><li>- fruit cakes</li><li>- birthday cakes</li><li>- Victoria sandwich</li><li>- marble cakes</li><li>- banana cakes</li><li>- plain cakes</li><li>- chocolate cakes and other variations</li></ul></li></ul>

## Methodology

- Guide learners to discuss the creaming method of cake making.
- Demonstrate the procedure of the creaming method of cake making.
- In groups, guide learners to carry out a practical on creaming method of cake making.

## Teaching/Learning Aids

- Recipe cards

## Assessment Strategy

- Give a practical test on preparing, cooking and serving creamed cakes.
- Let learners write the recipes in their recipe book.

## Sub-Topic 2: Rubbed-in Cakes

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• prepare, cook and serve cakes using rubbing-in method.</li> <li>• produce crumbled textured rubbed in cake products.</li> </ul>	<ul style="list-style-type: none"> <li>• Rubbed-in cakes e.g.               <ul style="list-style-type: none"> <li>- rock buns</li> <li>- raspberry buns</li> <li>- plain cakes</li> <li>- banana cake</li> <li>- scones</li> <li>- plain cakes</li> <li>- jam buns</li> </ul> </li> </ul>

### Methodology

- Guide learners to discuss the rubbed in cakes.
- Demonstrate the procedure of cake making using the rubbing in method.
- Let the learners carry out practical work on rubbed-in cakes.

### Teaching/Learning Aids

- Recipe cards
- Textbooks

### Assessment Strategy

- Give a practical exercise on preparing, cooking and serving rubbed in cakes
- Let learners write out recipes in their recipe books.

## Sub-Topic 3: Whisked Cakes

Specific Objectives	Content
The learner should be able to : <ul style="list-style-type: none"> <li>• prepare, cook and serve cakes using whisking method.</li> <li>• produce spongy cake products.</li> </ul>	<ul style="list-style-type: none"> <li>• Whisked cakes               <ul style="list-style-type: none"> <li>- sponge cakes and their variations.</li> <li>- Swiss roll</li> <li>- fruit flans</li> <li>- vanilla drops</li> <li>- chocolate, etc</li> </ul> </li> </ul>

## Methodology

- Guide the learners to discuss the whisking method of cake making.
- Demonstrate the procedure of the whisking method of cake making.
- In groups, let the learners carry out practical work on preparing, cooking and serving whisked cake mixtures.

## Teaching/Learning Aids

- Recipe cards

## Assessment Strategy

- Give a practical test on preparation, cooking and serving of whisked cakes.
- Let learners write down the recipes in their recipe books.

## Sub-Topic 4: Melted Cakes

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• prepare, cook and serve cakes using melting method.</li><li>• produce open fine textured cake products.</li></ul>	<ul style="list-style-type: none"><li>• Melted cakes e.g.<ul style="list-style-type: none"><li>- ginger bread</li><li>- parkins</li><li>- flap jacks</li><li>- muffins</li></ul></li></ul>

## Methodology

- Guide the learners to discuss the methods of preparing, cooking and serving melted cakes.
- Demonstrate the procedure of the melting method of cake making.
- In groups, let the learners carry out practical work on the preparing, cooking and serving melted cake mixtures.

## Teaching/Learning Aids

- Recipe cards

## Assessment Strategy

- Give a practical test on preparing, cooking and serving melted cakes.
- Ask learners to write down recipes in their recipe books.

## Sub-Topic 5: All-In-One Cakes

Specific Objective	Content
The learner should be able to prepare, cook and serve cakes using the all – in – one method.	<ul style="list-style-type: none"> <li>• All-in-one cakes e.g.               <ul style="list-style-type: none"> <li>- plain cakes</li> <li>- rich cakes</li> </ul> </li> </ul>

## Methodology

- Guide the learners to discuss the all-in-one method of cake making.
- Demonstrate the procedure of the all-in-all method of cake making.
- Let the learners carry out practical work on all in-one cake making method.

## Teaching/Learning Aids

- Recipe card

## Assessment Strategy

- Give a practical test on preparation, cooking and serving of all in-one cakes.
- Let learners write down the recipes in a recipe book.

**Note:** Emphasise faults in cake making, their causes and the possible remedies.

## Sub-Topic 6: Decorating Cakes

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• acquire various manipulative skills of icing cakes.</li><li>• attractively decorate cakes using different types of icing and decorations.</li></ul>	<ul style="list-style-type: none"><li>• Types of cake icings:<ul style="list-style-type: none"><li>- butter icing</li><li>- royal icing</li><li>- glaze icing</li><li>- fondant icing/ sugar paste, etc.</li><li>- frosting</li><li>- lemon curd</li></ul></li></ul>

### Methodology

- Guide the learners to discuss the various methods of decorating cakes.
- Demonstrate the procedure of the cake decorating types.
- In groups, let the learners carry out practical work on cake decorations.

### Teaching/Learning Aids

- Recipe card
- Cuttings from magazines of various cake decorations
- Textbooks on cake decoration
- Photographs of decorated cakes

### Assessment Strategy

- Give a test on preparing and using decorative materials on the functional cakes.
- Let learners write down recipes in their recipe books.

## Topic 15: Biscuits and Scones

Duration: 10 Periods

### General Overview

Biscuits may be classified according to the method of making like those in cakes. They have less moisture than cakes and they remain flat after baking. Biscuits are more crunchy and light in weight than scones and cakes. Biscuits are sometimes referred to as cookies. Scones are made by the rubbing in method and have a low fat content and a high proportion of chemical raising agents.

Biscuits and scones are bites which are light and quick to prepare and are suitable accompaniments to beverages. Biscuits are usually pricked and dried out in moderately hot ovens to prevent rising and ensure crispness.

Scones are thicker and moister than biscuits. The consistency of the scone dough should be soft and elastic so a high proportion of liquid is used to mix the dough.

### General Objective

By the end of this topic, the learner should be able to prepare, cook and serve various types of biscuits and scones.

### Sub-Topic 1: Methods of Making Biscuits

Specific Objectives	Content
<p>The learner should be able prepare, cook and serve biscuits using:</p> <ul style="list-style-type: none"> <li>• creaming method.</li> </ul> <ul style="list-style-type: none"> <li>• rubbing-in method.</li> </ul>	<ul style="list-style-type: none"> <li>• Biscuits made by creaming method e.g.               <ul style="list-style-type: none"> <li>- Hungarian biscuits</li> <li>- Belgium biscuits</li> <li>- Shrewsbury biscuits</li> <li>- Simsim/coconut/groundnut biscuits</li> <li>- piped biscuits</li> </ul> </li> <li>• Biscuits made by rubbing-in method e.g.               <ul style="list-style-type: none"> <li>- shortbread biscuits</li> </ul> </li> </ul>

Specific Objectives	Content
<ul style="list-style-type: none"><li>• melting method.</li></ul>	<ul style="list-style-type: none"><li>- chocolate pinwheels</li><li>- cheese straws</li><li>- simsim/coconut/groundnut biscuits</li><li>• Biscuits made by melting method<ul style="list-style-type: none"><li>- ginger snaps</li><li>- ginger nuts</li><li>- brandy snaps</li><li>- sponge fingers</li></ul></li></ul>

### Methodology

- Guide learners to discuss the different methods of preparing, cooking and serving biscuits.
- Demonstrate the procedure of preparing, cooking and serving biscuits.
- In groups, let the learners carry out practical work on preparing, cooking and serving biscuits.

### Teaching/Learning Aids

- Recipe cards
- Cuttings from magazines showing different types of biscuits

### Assessment Strategy

- Give a practical test on preparing, cooking and serving biscuits using different methods.
- Let the learners write down recipes in their recipe books.

### Sub-Topic 2: Making Cookies

Specific Objective	Content
The learner should be able to prepare, cook and serve different types of cookies.	<ul style="list-style-type: none"><li>• Preparation and cooking of a variety of cookies:<ul style="list-style-type: none"><li>- raspberry cookies /jam cookies</li><li>- chocolate cookies</li><li>- coconut cookies</li><li>- ground nut cookies</li><li>- sultana cookies</li></ul></li></ul>



## Methodology

- Guide learners to discuss the different methods of preparing, cooking and serving cookies.
- Demonstrate the procedure of preparing, cooking and serving cookies.
- In groups, let the learners carry out practical work on preparing, cooking and serving cookies.

## Teaching/Learning Aids

- Recipe cards
- Cuttings from magazines showing different types of cookies.

## Assessment Strategy

- Give a practical test on preparing, cooking and serving cookies using different methods.
- Let the learners write down recipes in their recipe books.

## Sub-Topic 3: Making Scones

Specific Objective	Content
The learner should be able to prepare, cook and serve sweet scones and savoury scones.	<ul style="list-style-type: none"> <li>• Sweet scones e.g. plain scones (oven, girdle scones and drop scones)</li> <li>• Savoury scones e.g. cheese scones</li> </ul>

## Methodology

- Guide the learners to discuss the types of scones and their preparation, cooking and serving.
- Demonstrate the procedure of preparing, cooking and serving the scones discussed.
- In groups, let learners carry out practical work on the preparing, cooking and serving scones.

## Teaching/Learning Aids

- Recipe cards
- Cuttings from magazines and newspapers

**Assessment Strategy**

- Give a practical text on preparing, cooking and serving different types of scones.
- Let learners write down recipes in their recipe books.

## SENIOR SIX TERM ONE

### Topic 16: Pastry

Duration: 20 Periods

#### General Overview

Pastry is a mixture of flour, fat, water and salt. The proportion and method of mixing these will determine the variety and texture of finished pastry. Richer pastries may have sugar, eggs or cheese added. Well made pastry should be light, flaky, crispy and not hard and should crumble easily. A mixture of half lard and half margarine is the best. The fat must be cold and fresh.

There are various types of pastry which may be used together with other foods to prepare different dishes. The raising agent used is usually air incorporated by sieving the flour, rubbing-in the fat and rolling and folding the dough. Pastry may be served alone e.g. in chapatti or may be filled with other foods to make pies, ice cream cones, flans, etc.

#### General Objective

By the end of the topic, the learner should be able to prepare, cook and serve pastry dishes.

#### Sub-Topic 1: Types of Pastry

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• identify the different types of pastry.</li> <li>• prepare and cook various dishes from the given types of pastry.</li> <li>• serve the pastry dishes attractively.</li> <li>• differentiate the various pastries by texture of the cooked product.</li> </ul>	<ul style="list-style-type: none"> <li>• Preparation of different types of pastry:               <ul style="list-style-type: none"> <li>- short crust e.g. Cornish pasties, sausages rolls, pies, tarts</li> <li>- flaky e.g. Russian fish pie, sausage rolls, pies, tarts</li> <li>- rough puff e.g. sausage rolls, pies</li> <li>- puff pastry e.g. Éccles cakes, vol-an-vents vanilla slices, cheese pies</li> </ul> </li> </ul>

Specific Objectives	Content
	<ul style="list-style-type: none"><li>- hot water e.g. veal and ham pie, pork pie</li><li>- suet pastry e.g. steak and kidney pie, jam roly-poly</li><li>- choux e.g. dumplings, roly-poly, layer pudding, E'ccles</li><li>- fried pastry e.g. chapatti, samosas, sweet pastry, rissoles</li></ul> <p><b>Note:</b> The above types of pastry can be sweet or savoury</p>

### Methodology

- Guide learners to discuss the preparation, cooking and serving the dishes that use the different types of pastry.
- Demonstrate to the learners the preparing, cooking and serving of the different types of pastry.
- In groups, let the learners practise the preparing, cooking and serving the different types of pastry.

### Teaching/Learning Aids

- Recipe cards
- Textbooks

### Assessment Strategy

- Give a practical test on preparing, cooking and serving dishes using different types of pastry.
- Let the learners write down recipes in a particular book.

## Topic 17: Yeast Mixtures

Duration: 15 Periods

### General Overview

Yeast is a natural raising agent which has the power of producing carbon dioxide by fermentation. It is the carbon dioxide gas which is of importance to the baker. Yeast should be fresh and in good condition so that its activity is sufficient to raise the dough. The conditions necessary for fermentation of yeast are sugar, warmth, and moisture and usually water or milk at lukewarm temperature.

Sweet bread is made from dough where sugar has been added. Sugar is usually added to act as an activator for the yeast. A high percentage of the sucrose is hydrolysed to form invert sugar which remains in the dough contributing to the final colour and flavour of the baked products.

Savoury bread on the other hand is made from dough in which salt has been added. Salt is added to influence the rate of fermentation, strengthen the gluten and to improve the flavour and taste of bread.

### General Objective

By the end of the topic, the learner should be able to prepare, cook and serve various yeast products.

### Sub-Topic 1: White Bread

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"> <li>• make sweet white bread.</li> <li>• make savoury white bread.</li> </ul>	<ul style="list-style-type: none"> <li>• Sweet bread:               <ul style="list-style-type: none"> <li>- fancy bread rolls</li> <li>- Chelsea buns.</li> <li>- doughnuts</li> <li>- tea rings</li> <li>- cottage loaves</li> </ul> </li> <li>• Savoury bread:               <ul style="list-style-type: none"> <li>- savoury buns</li> <li>- pizzas</li> <li>- savoury doughnuts, simsim bread</li> </ul> </li> </ul>

## Methodology

- Guide learners to discuss the different types of sweet and savoury bread.
- Demonstrate the method of preparing, cooking and serving sweet and savoury bread.
- Using group work, guide learners to carry out the practical work on the use of instant yeast and making sweet and savoury bread.

## Teaching/Learning Aids

- Recipe cards
- Computer where possible

## Assessment Strategy

- Preparing, cooking and serving sweet bread and savoury bread.
- Write down recipes in their recipe books.

## Sub-Topic 2: Brown Bread (Whole Meal Bread)

Specific Objective	Content
The learner should be able to make brown bread (whole meal bread).	<ul style="list-style-type: none"><li>• Preparation of brown bread (whole meal bread):<ul style="list-style-type: none"><li>- savoury brown loaves</li><li>- savoury brown buns</li><li>- sweet brown loaves</li><li>- sweet brown buns</li></ul></li></ul>

## Methodology

- Guide learners to discuss the different types of savoury and sweet whole meal bread.
- Demonstrate the method of preparing, cooking and serving savoury and sweet whole meal bread.
- In groups, let learners carry out the practical work on preparing, cooking and serving savoury and sweet whole meal bread.

## Teaching/Learning Aids

- Recipe cards
- Cuttings from magazines and newspapers
- Whole meal flour

### **Assessment Strategy**

- Give practical exercises on preparing, cooking and serving of savoury bread.
- Ask learners to create recipes and write them down in their recipe book.

## Topic 18: Desserts

Duration: 08 Periods

### General Overview

Desserts are sweet dishes that are usually eaten at the end of a main meal. They are important in the diet because they seal or wind up the appetite after eating a main meal. The nutritive value includes carbohydrates, vitamins, water and fibre. They may be served cooked or raw.

Puddings must be chosen carefully as they are an important part of a meal. They should balance or round off the meal. Texture, colour, flavour and nutritive value should be considered. A jelly is a soft, glutinous food made from fruit syrup or meat juice. Jellies should have a bright colour, be clear, and well set but not too stiff and should have a good fruit flavour. It is easy to do and is refreshing. Jellies are usually set in well designed containers so that they assume that shape.

### General Objective

By the end of the topic, the learner should be able to prepare, cook and serve desserts.

### Sub-Topic 1: Puddings

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"><li>• identify the different types of puddings.</li><li>• prepare and cook the different types of puddings.</li><li>• serve the different types of puddings.</li></ul>	<ul style="list-style-type: none"><li>• Types of puddings:<ul style="list-style-type: none"><li>- Hot puddings:<ul style="list-style-type: none"><li>○ Milk puddings e.g. custard, rice puddings, arrowroot pudding, semolina pudding, custard pudding.</li><li>○ Baked pudding e.g. queen of puddings, bread and butter puddings, soufflés, fruit crumble, chocolate, castle, sultana sponge,</li></ul></li></ul></li></ul>



Specific Objectives	Content
	<p>pineapple upside down.</p> <ul style="list-style-type: none"> <li>○ Steamed puddings e.g. fruit pudding, chocolate pudding, jam pudding, roly-poly, raisin pudding, Christmas pudding, steamed sponge pudding, syrup lemon sponge, lemon pudding, steamed ginger pudding, custard.</li> <li>- Cold puddings:               <ul style="list-style-type: none"> <li>○ Fruit salads</li> <li>○ Fruit fools e.g. banana fool</li> <li>○ Chocolate mouse</li> <li>○ Ice cream</li> <li>○ Pastry flans</li> <li>○ Sponge flans.</li> <li>○ Mixed fruit in custard</li> <li>○ Cold scouffles e.g. orange, lemon, coffee soufflés</li> <li>○ Trifle</li> </ul> </li> </ul>

## Methodology

- Guide learners to discuss the different types of puddings.
- Demonstrate the procedure of preparing, cooking and serving puddings.
- In groups, guide learners to carry out practical work on preparing, cooking and serving puddings.

## Teaching/Learning Aids

- Recipe cards
- Electronic learning
- Textbooks

**Assessment Strategy**

- Give a practical exercise on preparing, cooking and serving puddings correctly.
- Let learners write out recipes in their recipe books.

**Sub-Topic 2: Moulds and Jellies**

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• identify and make the different types of moulds and jellies.</li><li>• make the different types of moulds and jellies.</li></ul>	<ul style="list-style-type: none"><li>• Preparation of moulds and jellies:<ul style="list-style-type: none"><li>- Dishes made as moulds:<ul style="list-style-type: none"><li>○ honey comb mould</li><li>○ fruit mould</li><li>○ corn flour mould</li></ul></li><li>- Dishes made as jellies:<ul style="list-style-type: none"><li>○ fruit in jelly</li><li>○ apricot jelly</li><li>○ lemon jelly</li></ul></li></ul></li></ul>

**Methodology**

- Guide learners to discuss the different types of jellies and moulds.
- Demonstrate the procedure for making moulds and jellies.
- In groups, guide learners to carry out practical work on making moulds and jellies.

**Teaching/Learning Aids**

- Recipe cards
- Cuttings from magazines and newspapers
- Electronic learning where possible

**Assessment Strategy**

- Preparing, cooking and serving of moulds and jellies.
- Let learners write down recipes in their recipe books.

## Topic 19: Beverages

Duration: 10 Periods

### General Overview

Beverages are flavoured drinks which may be served hot or cold depending on the weather. Some are stimulants while some drinks contribute to the energy value of the diet e.g. fresh fruit drinks provide vitamin C, water, and sugar.

Beverages play various roles in the diet such as stimulating, refreshing and nourishing. Beverages should be handled carefully to prevent deterioration due to fermentation or growth of micro-organisms.

### General Objective

By the end of the topic, the learner should be able to prepare, cook and serve beverages.

### Sub-Topic 1: Types of Beverages

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• identify the different types of beverages.</li> <li>• prepare cook and serve different beverages.</li> </ul>	<ul style="list-style-type: none"> <li>• Different types of beverages:               <ul style="list-style-type: none"> <li>- stimulating e.g. tea, coffee, cocoa, alcoholic drinks</li> <li>- refreshing beverages e.g. fresh fruit drinks, fresh fruit punch, fruit wines</li> <li>- nourishing beverages e.g. milk, milkshake, porridge, cold cereal drinks like 'bushera'</li> </ul> </li> <li>• Serving beverages attractively e.g. with:               <ul style="list-style-type: none"> <li>- a slice of lemon on the glass/jar</li> <li>- a strawberry mounted on straw</li> </ul> </li> </ul>

Specific Objectives	Content
	<ul style="list-style-type: none"><li>- cherries in fruit drink/juice</li><li>- clean, decorated equipment</li></ul>

### Methodology

- Guide learners to discuss the types of beverages.
- Demonstrate the procedures of preparing, cooking and serving beverages.
- In groups, let learners carry out practical work on preparing, cooking, serving and decorating beverages.

### Teaching/Learning Aids

- Recipe cards
- Cut outs from magazines or newspapers

### Assessment Strategy

- Give practical exercises on preparing, cooking, serving and decorating beverages.

## SENIOR SIX TERM TWO

### Topic 20: Rechauffé Dishes

Duration: 20 Periods

#### General Overview

Rechauffe dishes are made from leftover foods in order to avoid waste in the kitchen. Leftover foods should be carefully handled to avoid contamination which may cause food poisoning to the consumer. Leftover dishes should be seasoned, garnished and served attractively to enhance their food value and appearance.

Rechauffe dishes are made from various foods such as meat, fish, vegetables, etc. Care should be taken to minimise nutrient loss in these dishes.

#### General Objective

By the end of this topic, the learner should be able to prepare, cook and serve rechauffe dishes.

#### Sub-Topic 1: Leftover/Reheated Dishes

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• identify different leftover foods and dishes and their uses.</li> <li>• prepare and cook different leftover foods.</li> </ul>	<ul style="list-style-type: none"> <li>• Uses for different foods are:               <ul style="list-style-type: none"> <li>- Fish leftover dishes:                   <ul style="list-style-type: none"> <li>○ fish curry</li> <li>○ Russian fish pie</li> <li>○ fish cakes</li> <li>○ kedgerree</li> <li>○ fish pasties, etc</li> </ul> </li> <li>- Meat leftover dishes:                   <ul style="list-style-type: none"> <li>○ meat curry</li> <li>○ shepherd's pie</li> <li>○ rissoles</li> <li>○ burgers</li> <li>○ fritters</li> </ul> </li> </ul> </li> </ul>

Specific Objectives	Content
<ul style="list-style-type: none"> <li>• use different methods of cooking rechauffe dishes.</li> <li>• serve left over dishes.</li> </ul>	<ul style="list-style-type: none"> <li>○ pasties croquettes</li> <li>○ pies</li> <li>○ samosas</li> <li>- Bread leftover dishes               <ul style="list-style-type: none"> <li>○ bread &amp; butter pudding</li> <li>○ queen of puddings</li> <li>○ bread sauce</li> </ul> </li> <li>- Vegetable leftover dishes               <ul style="list-style-type: none"> <li>○ omelettes</li> <li>○ salads</li> <li>○ potato croquettes</li> <li>○ potato scones</li> <li>○ potato cakes</li> <li>○ bean curry</li> <li>○ pea curry</li> </ul> </li> <li>- Stale cakes:               <ul style="list-style-type: none"> <li>○ puddings</li> <li>○ trifle</li> </ul> </li> <li>• Methods of cooking reheated dishes:               <ul style="list-style-type: none"> <li>- frying e.g. fritters, burgers, meat. rissoles, fried vegetables</li> <li>- Baking e.g. meat pies, fish pies, pastry covered dishes</li> <li>- stewing e.g. curries</li> </ul> </li> <li>• Serving left-over dishes: garnish the dishes attractively with vegetables and herbs</li> </ul>

### Methodology

- Guide learners to discuss the preparation, cooking and serving of different leftover dishes.
- Demonstrate the procedure of preparing, cooking and serving different leftover dishes.
- Let the learners carry out practical work on preparing, cooking and serving leftover dishes.

## **Teaching/Learning Aids**

- Recipe card
- Electronic-learning

## **Assessment Strategy**

- Give practical exercises on preparing, cooking and serving rechauffe dishes.

## Topic 21: Convenience Foods

Duration: 20 Periods

### General Overview

These are foods that are partially or completely processed so that they are either ready or require minimum preparation by the consumer. The food value of convenience foods is often equal to that of fresh food. The use of convenience foods helps to cut out time spent in frequent shopping expeditions and preparation of ingredients. A stock of these foods is particularly valuable for emergencies, for example, in case of illness, bad weather or unexpected visitors.

Convenience foods will give standard results provided the user follows carefully the maker's directions for storage and use especially the storage of frozen foods.

### General Objective

By the end of this topic, the learner should be able to prepare, cook and serve convenience foods.

### Sub-Topic 1: Preparing, Cooking and Serving Convenience Foods

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• identify different types of convenience foods.</li></ul>	<ul style="list-style-type: none"><li>• Different types of convenience foods:<ul style="list-style-type: none"><li>- custard and blancmange powders, cold desserts, coffee, porridge, cake mixtures, TVP foods</li><li>- instant pie fillings, coffee, porridge and cake mixtures, TVP foods, etc.</li><li>- ready to eat dishes e.g. biscuits, cakes, puddings, pies, tarts, cheese spreads</li><li>- canned foods e.g. beans, peas,</li></ul></li></ul>



Specific Objectives	Content
<ul style="list-style-type: none"> <li>• prepare, cook and serve convenience foods.</li> </ul>	<p>stews, soups, baby food, sausages, fish, beef, vegetable, fruits</p> <ul style="list-style-type: none"> <li>- frozen foods e.g. ice cream, sausage rolls, and burgers</li> <li>- packets of jelly cubes or crystals, glaze for flans, packets of sauces, fillings for pastries, stock cubes</li> <li>- cooked and chilled foods e.g. fresh pasta, sea food, cold meats, fruits</li> <li>- commercial sauces e.g. Worcester, Soy sauce, barbecue sauce, tomato sauce, salad cream</li> <li>- instant desserts</li> </ul> <ul style="list-style-type: none"> <li>• Different methods of cooking convenience foods:               <ul style="list-style-type: none"> <li>- boiling</li> <li>- steaming</li> <li>- stewing</li> <li>- frying</li> <li>- roasting</li> <li>- baking</li> <li>- braising, etc</li> </ul> </li> <li>• Serving convenience food:               <ul style="list-style-type: none"> <li>- use garnishes attractively</li> <li>- use decorations creatively</li> </ul> </li> </ul>

## Methodology

- Guide learners to discuss the preparation, cooking and serving of different convenience foods.
- Demonstrate the procedure of preparing, cooking and serving dishes using convenience foods.
- In groups, let learners carry out practical work on the preparation, cooking and serving of convenience foods.

### **Teaching/Learning Aids**

- Recipe cards
- Electronic-learning

### **Assessment Strategy**

- Give practical test on cooking and serving different convenience foods.

## Topic 22: Packed Meals

Duration: 20 Periods

### General Overview

People take packed meals to work, schools or picnics in preference to buying meals in canteens or restaurants. Such meals should be well planned and prepared to provide a balanced diet and also to avoid contamination. The packed meals should also include a drink and easy to cook foods.

Packed meals should be substantial and should supply one third of the daily intake of the nutrients and energy required by the body. Garnishing should be emphasised when serving to improve on the appearance of the food.

Packed meals should be carefully packed so that they are not crushed or damaged in transit. Delicate items should be packed above more robust foods. Food should be wrapped individually before packing.

### General Objective

By the end of the topic, the learner should be able to prepare, cook and pack meals.

### Sub-Topic 1: Cooking Packed Meals

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• identify suitable dishes for packing.</li> <li>• prepare and cook dishes to be packed.</li> </ul>	<ul style="list-style-type: none"> <li>• Dishes suitable for packing:               <ul style="list-style-type: none"> <li>- sandwiches and rolls e.g. meat</li> <li>- pastries, cakes, biscuits, scones</li> <li>- egg and cheese flan, whole eggs</li> <li>- soups</li> <li>- whole fruits</li> <li>- cold beverages like fruit drinks, drinking water</li> <li>- hot beverages like milk, tea, coffee</li> </ul> </li> </ul>

Specific Objectives	Content
	<ul style="list-style-type: none"><li>• Methods of preparation:<ul style="list-style-type: none"><li>- slicing</li><li>- chopping</li><li>- shredding</li><li>- washing</li></ul></li><li>• Methods of cooking packed dishes:<ul style="list-style-type: none"><li>- frying</li><li>- baking</li><li>- roasting</li><li>- grilling</li><li>- simmering</li><li>- boiling</li></ul></li></ul>

### Methodology

- Guide the learners to discuss the suitable dishes and their methods of preparation and cooking.
- Demonstrate the preparation and cooking of packed meals.
- Guide learners to carry out practical work on the preparation and cooking of packed meals.

### Teaching/Learning Aids

- Recipe cards
- Electronic learning

### Assessment Strategy

- Give practical exercise on preparing and cooking packed meals.

### Sub-Topic 2: Packing Meals

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• use packing equipment and materials appropriately.</li></ul>	<ul style="list-style-type: none"><li>• Packing equipment and materials:<ul style="list-style-type: none"><li>- flasks</li><li>- plastic containers (cutlery, cups, plates, bottles)</li></ul></li></ul>

Specific Objectives	Content
<ul style="list-style-type: none"> <li>• pack the food correctly.</li> </ul>	<ul style="list-style-type: none"> <li>- disposable plates, cutlery, cups)</li> <li>- aluminium packs</li> <li>- napkins and serviettes</li> <li>• Pack the food in the order of eating and correct presentation (all foods should be well decorated or garnished)</li> </ul>

### Methodology

- Guide learners to discuss the suitable methods of packing meals.
- Demonstrate the preparation and packing of meals.
- Guide learners to carry out practical work on the preparation and packing of meals.

### Teaching/Learning Aids

- Packing containers
- Cuttings from magazines and newspapers

### Assessment Strategy

- Give practical exercises on preparation and packing of meals.

## SENIOR SIX TERM THREE

### Topic 23: Hors D'oeuvres

Duration: 20 Periods

#### General Overview

These are cold foods which are well flavoured, seasoned and colourfully served in small portions to stimulate appetite before a main meal. They are usually served in small portions insufficient to satisfy the appetite. Hors d'oeuvres may be plain or dressed, cooked or raw. Methods of cooking hors d'oeuvres include boiling, grilling, stewing, baking, frying, etc. Hors d'oeuvres may be served for luncheon, dinner or supper. The wide choice of colour and versatility of the dishes makes any item and combination of items suitable for snacks and salads at any time of day. Salads may be served as an accompaniment to hot or cold foods and as dishes on their own.

#### General Objective

By the end of the topic, the learner should be able to prepare, cook and serve a variety of hors d'oeuvres.

#### Sub-Topic 1: Cooking Hors D'oeuvres

Specific Objectives	Content
The learner should be able to: <ul style="list-style-type: none"><li>• identify, prepare and cook a variety of hors d'oeuvres.</li></ul>	<ul style="list-style-type: none"><li>• Types of hors d'oeuvres:<ul style="list-style-type: none"><li>- plain hors d'oeuvres e.g. green vegetable salads, smoked almond, melon, tomato juice, fruit juices.</li><li>- dressed hors d'oeuvres e.g. asparagus tips rolled in ham, crab meat in avocado pear, cheese in avocado pear, egg in avocado pear, mixed vegetables, dressed rice in avocado, stuffed</li></ul></li></ul>

Specific Objectives	Content
<ul style="list-style-type: none"> <li>• prepare and cook a variety of hors d'oeuvres.</li> <li>• serve the hors d'oeuvres correctly and attractively.</li> <li>• identify suitable garnishes for Hors d'oeuvres.</li> </ul>	<p>eggs, savoury biscuits topped with egg slices.</p> <ul style="list-style-type: none"> <li>• Methods of preparing hors d'oeuvres include peeling, chopping, cutting into required shapes and sizes, carving, seasoning, dressing, garnishing, marinading.</li> <li>• Methods of cooking:               <ul style="list-style-type: none"> <li>- boiling e.g. boiled eggs, vegetables</li> <li>- grilling e.g. chicken, meat, fish.</li> <li>- stewing e.g. chicken, meat.</li> <li>- baking e.g. savoury biscuits.</li> <li>- poaching e.g. eggs, fish.</li> </ul> </li> <li>• Methods of serving hors d'oeuvres:               <ul style="list-style-type: none"> <li>- in a patty case</li> <li>- on thinly buttered toast</li> <li>- in a vegetable e.g. avocado</li> </ul> </li> <li>• Garnishes for Hors d'oeuvres include: parsley, carrots, cucumber, mint, dill, celery, coriander, watercress, lettuce, tomatoes, beetroot, croutons, etc.</li> </ul>

## Methodology

- Guide learners to discuss the different types and methods of cooking hors d'oeuvres.
- Demonstrate the preparing, cooking and serving of hors d'oeuvres.
- Guide learners to carry out practical work on preparing, cooking and serving hors d'oeuvres.

## Teaching/Learning Aids

- Recipe cards
- Textbooks

### **Assessment Strategy**

- Give a practical test on preparing, cooking and serving a variety of hors'do'evres.
- Write down recipes in the recipe book.



## Topic 24: Batters

Duration: 20 Periods

### General Overview

Batters are made with plain flour, milk or water. They usually contain more fluid than ordinary flour mixtures. They are beaten thoroughly to entrap air which when heated expand. They vary in consistency according to their use in a recipe. Batters may be used to introduce moisture and air in dishes, as coating batters or fritter batter. Batter dishes may be fried or baked.

### General Objective

By the end of the topic, the learner should be able to prepare, cook and serve batters.

### Sub-Topic 1: Batters

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• identify the different types of batters.</li> </ul>	<ul style="list-style-type: none"> <li>• Types of batters:               <ul style="list-style-type: none"> <li>- Thin (pouring) batter– used for:                   <ul style="list-style-type: none"> <li>○ toad-in the hole</li> <li>○ Yorkshire pudding</li> <li>○ pancakes</li> </ul> </li> <li>- Coating batter used for:                   <ul style="list-style-type: none"> <li>○ deep fried fish</li> <li>○ poultry joints</li> </ul> </li> <li>- Fritter batter used for:                   <ul style="list-style-type: none"> <li>○ banana, apple, pineapple fritters</li> <li>○ corned beef</li> <li>○ sausage fritters</li> <li>○ fish fritters</li> <li>○ chicken fritters</li> </ul> </li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• prepare, cook and serve dishes using the different types of batters.</li> </ul>	<ul style="list-style-type: none"> <li>• Serving batters:               <ul style="list-style-type: none"> <li>- correct and clean equipment</li> <li>- garnish or decorate the dishes attractively using</li> </ul> </li> </ul>

Specific Objectives	Content
	parsley, mint, cherries, lemon, orange, etc - excess fat should be drained off before serving the foods

### Methodology

- Guide learners to prepare, cook and serve different types of batter dishes.
- Demonstrate the preparation, cooking and serving of different types of batters.
- Let learners get into groups to do the practical work on the preparation, cooking and serving of different types of batters.

### Teaching/Learning Aids

- Recipe cards
- Recipe books
- Electronic learning

### Assessment Strategy

- Give a practical exercise on preparing, cooking and serving dishes made with different types of batters.

## Topic 25: Food Preservation

Duration: 20 Periods

### General Overview

This is a form of processing food in order to prolong its shelf life and to be used later when not available. Examples of methods of preserving foods include chemical methods (use of salt in pickles, sugar in jams) and traditional methods (smoking fish/beef, sun drying fruits, grains).

### General Objectives

By the end of the topic, the learner should be able to preserve and pack various types of foods.

### Sub-Topic 1: Preserving Food

Specific Objectives	Content
<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• identify the different methods of preserving food.</li> <li>• preserve and process different foods.</li> </ul>	<ul style="list-style-type: none"> <li>• Methods of preserving foods:               <ul style="list-style-type: none"> <li>- refrigeration</li> <li>- freezing</li> <li>- drying</li> <li>- heat treatment</li> <li>- chemical treatment</li> <li>- smoking</li> <li>- fermentation</li> <li>- irradiation</li> </ul> </li> <li>• Preserving and processing different foods:               <ul style="list-style-type: none"> <li>- jam (uses sugar, lemon juice and heat) e.g. apricot, pineapples, pawpaw, mangoes, berries, plums, cherries, etc</li> <li>- chutney (uses sugar, vinegar salt and heat) e.g. mango, tomato chutney</li> </ul> </li> </ul>

Specific Objectives	Content
<ul style="list-style-type: none"><li>• pack the preserved foods correctly.</li></ul>	<ul style="list-style-type: none"><li>- marmalade (uses sugar, lemon juice and heat) e.g. orange, and lemon</li><li>- pickles (uses spiced vinegar and heat to blanch) e.g. onion, cabbage, cucumber</li><li>• Packing preserved and processed foods:<ul style="list-style-type: none"><li>- jam jars or bottles</li><li>- plastic containers</li><li>- cans</li></ul></li></ul>

### Methodology

- Guide learners to discuss the different methods of preserving food.
- Demonstrate the different methods of preserving food.
- Guide learners to carry out practical work on the preservation of different foods e.g. jam, chutney, pickles, jellies, ketchup, marmalade and yoghurt.
- Through demonstration and practical work, guide learners to pack different preserved foods e.g. jam, chutney, etc.

### Teaching/Learning Aids

- Local foods like fruits, vegetable, etc
- Equipment for preparation and heating
- Preserved foods
- Packing equipment

### Assessment Strategy

- Give a practical exercise on preserving various types of foods.

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