



Republic of Zambia

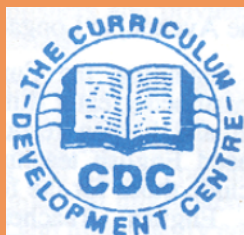
Ministry of Education

**FOOD AND NUTRITION**

**TEACHING MODULE**

**FORM 1**

**TERM 1**



Developed by the Curriculum Development Centre

Lusaka

2025



Republic of Zambia

Ministry of Education

Directorate of Curriculum Development

# **FOOD AND NUTRITION**

## **TEACHING MODULE**

**FORM 1**

**TERM 1**

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## Preface

The **Competence-Based Form One (1) Food and Nutrition Teaching Module** is a comprehensive guide designed to empower educators with the tools and knowledge needed to cultivate a profound understanding of food and nutrition among learners. As our world continues to evolve, the importance of equipping future generations with the skills to make informed dietary choices has never been greater. This module is rooted in a competence-based approach, ensuring that learners acquire theoretical knowledge and develop practical skills that will serve them throughout their lives.

This module aims to bridge the gap between knowledge and practice, providing teachers with a dynamic curriculum that fosters critical thinking, creativity, and problem-solving abilities. It encompasses various topics, from the fundamentals of nutrition science to contemporary issues such as sustainable eating practices and food security. Each lesson is meticulously crafted to be engaging and interactive, encouraging learners to explore and experiment with various concepts related to food and nutrition.

We recognise that teachers play a pivotal role in shaping the minds and habits of young individuals. Therefore, this module also includes comprehensive resources and support for educators, enabling them to confidently guide their learners through the complexities of food and nutrition. With a focus on hands-on activities, real-world applications, and culturally relevant content, this module aims to make the learning experience both meaningful and enjoyable.

Ultimately, our goal is to inspire a generation of informed, health-conscious individuals who understand the profound impact of their food choices on their well-being and the environment. We hope this module will serve as a valuable resource in your teaching journey, sparking curiosity, fostering healthy habits, and nurturing a lifelong appreciation for the role of food in our lives.

Kamoko Joel (Mr.)  
**Permanent Secretary-Educational Services**  
**MINISTRY OF EDUCATION**

## Acknowledgement

We would like to express our deepest appreciation to all the dedicated Food and Nutrition teachers, lecturers from Colleges of Education and Universities, Subject Associations, and Cooperating Partners whose unwavering commitment and invaluable expertise have shaped this module. Your passion for nurturing young minds, your innovative teaching methods, and your tireless efforts to promote healthy eating habits have been instrumental in the development of this comprehensive guide.

We also extend our gratitude to the Zambia Education Enhancement Project (ZEEP) for the financial support and Zambia Educational Publishing House (ZEPH) for the technical support towards the development and finalization of the module.

Finally I wish to acknowledge the dedication and hard work of all the staff at the Curriculum Development Centre (CDC), whose tireless efforts ensured the successful completion of the development process of the module.

Charles Ndakala (Dr.)  
Director - Curriculum Development  
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## INTRODUCTION

This **Food and Nutrition Form 1 Competence Based Teachers' Module** provides learners access to the interesting and essential field of nutrition, which impacts our everyday lives. Eating healthy is not just about satisfying hunger; it is about nourishing our bodies, supporting growth, and maintaining overall well-being.

In this guide, the teacher will help learners explore the basics of nutrition, learn about different food groups, and understand how their choices influence their health. Learners will be guided through the fundamentals of a balanced diet, the importance of vitamins and minerals, and the role of various nutrients in their bodies. Practical activities and real-life examples will help them apply what they have learned, making the concepts easier to grasp and more relevant to their daily lives.

Whether preparing a simple meal at home or learning about global food systems, this module aims to build learners' competences in making informed food choices. They will gain valuable skills in planning nutritious meals, understanding food labels, and recognising the importance of hygiene and safety in food preparation. These competences are vital not just for the health of the learners but also for the well-being of their family and community.

This teaching module has equally integrated some cross-cutting issues such as financial education, entrepreneurship, environmental health and nutrition, and waste management.

Let us get on this educational journey together, where learners will develop a deeper appreciation for the food they eat and the nutrition it provides. Their newfound knowledge will empower them to lead a healthier, more informed life, making them not just learners, but knowledgeable advocates for good nutrition.

## PURPOSE OF THE MODULE

The purpose of the module is to illustrate teaching and learning activities that:

- a) are consistent with teaching and learning in a competence-based curriculum;
- b) show processes that allow the achievement of 21<sup>st</sup> Century Skills such as creativity, collaboration, communication and critical thinking;
- c) demonstrate how food and nutrition can be actively taught with the teacher acting as a facilitator of the learning process;
- d) show what activity-based and learner-centred teaching and learning could look like where learners actively learn in small cooperative groups.



## HOW TO USE THE MODULE

This module provides a collection of suggested learning activities and teaching strategies designed to enhance learners' scientific competences. These activities emphasise hands-on experiences, such as manipulating real objects, interacting with nature, and learning through practice. It is crucial to understand that the desired competences and 21st-century skills will not be achieved solely by covering topics but are developed through the way teaching and learning activities are carried out. Learners are expected to acquire general competences as they interact with the material under the guidance of the teacher. These essential competences include analytical thinking, effective communication, collaboration, critical thinking, environmental sustainability, real-world application, problem-solving, and the development of essential scientific skills.





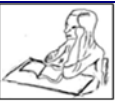

The activities within this module are intended to be integrated into the teacher's existing lesson plans, not to replace them entirely. Teachers are encouraged to adapt these suggested activities to suit their specific class situation, learner abilities, and available resources. The topics and activities presented in this module align with the 2024 Food and Nutrition Syllabus.

Some topics in the module begin with a "Hook" – an opening statement designed to stimulate learners' curiosity and motivate them to learn. This could be a provocative question, a relevant scenario, or something that encourages learners to think critically. Teachers are encouraged to create the hooks that best provoke their learners' curiosity and motivation. Consider incorporating problem-solving scenarios into your hooks. In this Module, you will also find the “CONTENT TIP”, which is intended to be for the attention of the teacher and NOT the learner, to guide the learning activities.

## Margin icons

While working through this module you will notice the frequent use of margin icons. These icons serve to “signpost” a particular piece of text, a new task or a change in activity; they have been included to help you to find your way around this module.

A complete icon set is shown below. We suggest that you familiarize yourself with the icons.

		
<b>Activity</b>	<b>Assessment</b>	<b>Activity Process</b>
		
<b>Terminology</b>	<b>Content tip</b>	<b>Summary</b>

## **Topic: 1.1 KITCHEN AND FOOD LABORATORY**

### **Introduction**

Teaching of the kitchen and food laboratory, an essential component of the Form 1 Competence-Based Food and Nutrition. Teachers play a very important role in shaping the minds of learners, guiding them to understand and appreciate the importance of food safety, hygiene, and the science behind food preparation.

In the vibrant world of culinary arts, the kitchen serves as the epicenter of creativity, sustenance, and innovation. This chapter will provide a comprehensive overview of essential kitchen fundamentals, laying the foundation for competence-based education for a Form One learner. As future chefs, food technologists, or simply culinary enthusiasts, it is important to gain an in-depth understanding of various types of kitchens, the essential tools and equipment they house, and the ingenuity involved in improvising kitchen utensils.

Additionally, the chapter will highlight the importance of a well-equipped food laboratory and prioritise safety and first aid protocols crucial to maintaining a secure kitchen environment. Through a series of hands-on activities, theoretical lessons, and practical demonstrations, learners will develop critical competences that will serve them throughout their lives. They will learn to apply scientific methods to everyday cooking, make informed choices about nutrition, and cultivate a lifelong appreciation for healthy eating habits.

By the end of this chapter, teachers will have a comprehensive toolkit to inspire and engage learners, fostering a deep understanding of the kitchen's role in promoting health, wellness, and creativity.

## General Competences

<b>Analytical Thinking</b>	Understanding the nutritional value of different foods.  Making healthy food choices and plan balanced meals.
<b>Collaboration</b>	Developing skills in teamwork, communication, and problem-solving.  Collaborating effectively on cooking projects and practical tasks.
<b>Creativity and Innovation</b>	Experimenting with ingredients and cooking techniques.  Adapting recipes and come up with innovative culinary solutions.
<b>Critical Thinking</b>	Solving problems that arise during food preparation

### Hook

Imagine you are a young chef-in-training, entering the busy kitchen of a renowned restaurant in Kitwe for the very first time. The head chef welcomes you and shows you around, explaining the various types of kitchens and their specific setups: the fast-paced, highly organised commercial kitchen compared to the intimate, comfortable home kitchen. As you begin to explore, you notice a variety of utensils and equipment, from the humble whisk to the state-of-the-art sous-vide machine. Suddenly, the chef challenges you to improvise and create a makeshift strainer using only a fork and a cheesecloth. You accept the challenge, your creativity and problem-solving skills put to the test. Later, in the food laboratory, you experiment with new recipes and techniques, blending culinary arts with scientific exploration. But the most critical lesson of the day comes when a fellow trainee accidentally cuts their finger, and the chef demonstrates the importance of kitchen safety and first aid, ensuring that everyone is prepared to handle emergencies.



## Key Terms

<b>TERM</b>	<b>MEANING</b>
<b>Kitchen</b>	This is a working space where food is prepared and cooked for individual, family, or commercial consumption
<b>Food laboratory</b>	This is a space where scientific experiments and tests are conducted to analyse and develop food products with an emphasis on research, testing, and quality control.
<b>Kitchen utensils</b>	These are small tools and devices used for preparing, cooking, and serving.
<b>Kitchen equipment</b>	Refers to large machines and appliances used in food preparation, cooking, and storage.
<b>Improvisation</b>	This is the act of creating or performing something spontaneously without prior planning or preparation.
<b>Safety</b>	Refers to the protection of people, property, and the environment from harm, injury, or damage.
<b>First Aid</b>	Refers to the initial care and treatment provided to a person who has been injured or suddenly fallen ill to preserve life, prevent further harm, and promote recovery.
<b>Labour-saving devices</b>	Refer to tools, equipment, or technology designed to reduce the physical effort, time, and difficulty required to perform various tasks.

## Sub-Topic 1- Types of Kitchen

### Introduction

In this sub-topic, the teacher will focus on an enlightening journey to explore the diverse types of kitchens that exist, each designed to cater to different culinary needs and environments. Whether it is the fast-paced, meticulously organised commercial kitchen, the intimate and versatile home kitchen, or the specialised food laboratory used for scientific experimentation, each type of kitchen offers unique opportunities and challenges. Understanding these kitchen types will not only enhance the learners' culinary skills but also equip them with the knowledge to efficiently navigate and utilise any kitchen setup, ensuring a solid foundation for their future undertakings in food and nutrition. There are various types of kitchens such as residential, commercial, institutional, industrial, outdoor, mobile, galley, open kitchen, modular, traditional and smart kitchens.

This topic will focus on the types of kitchen which vary in size, layout and style basing on the preferences and needs. Kitchen environment is designed for food preparation and cooking emphasizing on cleanliness and sanitation. The primary purpose is food preparation, cooking and serving. The focus is on producing high quality, safe and appealing food for consumption.

**Specific Competence:** Design different types of kitchen



**Learning Activity 1** Comparing and contrasting types of kitchen :( *home, industrial and mobile kitchen...*)

### Learning Environment

#### Natural

- i. Physical: Indoor activity  
Learners visit traditional setup (firewood and charcoal) and modern kitchen (electric or gas).  
Learner to compare fuel sources, efficiency, hygiene and present their observations.

#### Artificial

- i. Physical  
Learners create small models of different kitchen types (domestic, traditional and modern) and label key features and discuss their functions.

- ii. Virtual  
Learners to watch simulations of different types of kitchen.

### **Technological**

- i. Physical:  
Learners to explore different kitchen layouts and interact with the virtual kitchen appliances
- ii. Virtual  
Learners to watch Videos (on a projector or screen) on different types of kitchen.



### **Activity process**

- Learners visit traditional and modern kitchen setups.
- Learners in groups discuss similarities and differences of different types of kitchen.
- Groups create posters, models or slides detailing the similarities and differences of various types of kitchens.
- Critique and Analyse work done by the groups.



### **Content Tips**

#### Basic types of kitchen and shapes

- Residential kitchens: These are designed for private homes and apartments.
- Commercial kitchens: These are found in restaurants, cafes, hotels and other food service establishments.
- Institutional kitchens: These serve hospitals, schools, colleges, universities and other institutions.
- Industrial kitchens: These are designed for large-scale food manufacturing and processing.
- Mobile kitchens: These are designed for temporary or mobile food service operations such as food trucks, festivals or events.

- Open kitchens: These are designed to be part of the living space, with minimal separation between the cooking area and the rest of the room.
- There are a variety of shapes such as L-shaped, U-shaped, parallel, Island, Galley, ...



### **Learning Activity 2** Demonstrate the functions of the kitchen.

## **Learning Environment**

### **Natural**

- Physical: Indoor activity  
Learners to store food according to storage spaces (perishables, semi-perishables and non-perishables).  
Learners to role play different key kitchen functions (cooking, storage, cleaning, maintenance, safety).

### **Artificial**

- Physical  
Learners to clean and store kitchen utensils and equipment.
- Virtual  
Learners to watch simulations of different types of kitchen.

### **Technological**

- Physical:  
Learners to gamify different functions of the kitchen.
- Virtual  
Learners to watch videos on a projector or screen of different functions of the kitchen.



### **Activity process**

- Learners in groups to demonstrate the functions of the kitchen (store foods, prepare, cook, serve meals and clear up).
- Learners in groups to role play different key functions of a kitchen.
- Critique and Analyse work done by the groups.





## Content tips

- **Food Storage:** Refrigerators, pantries, and cabinets are used for storing food.
- **Food Preparation:** Counter space and various tools facilitate food preparation.
- **Cooking:** Stoves, ovens, and microwaves are used for cooking.
- **Clean-up:** Dishwashers and sinks are essential for cleaning up after meals.
- **Dining:** Some kitchens incorporate dining areas for casual meals.
- **Social Hub:** Increasingly, kitchens function as social gathering spaces.
- **Multifunctional Space:** Depending on the household, kitchens may also accommodate laundry or home office work.



**Learning Activity 3:** Design different residential kitchen layouts and their characteristics.

## Learning Environment

### Natural

- i. Physical: Indoor activity  
Learners to create different kitchen layouts and deliberate on the characteristics of each layout.

### Artificial

- i. Physical  
Learners to arrange different kitchen layouts.
- ii. Virtual  
Learners to watch simulations of different kitchen layouts.

### Technological

- i. Physical:  
Learners to visit different kitchen showrooms, restaurant or home kitchens with various kitchen layouts (identify and list technologies for each).

- ii. Virtual:  
Learners to virtually design different kitchen layouts.



### Content Tips

- **Layout Importance:** Kitchen layout is essential for a functional and efficient space.
- **One-Wall/Galley:** These layouts are space-saving, with one-wall being compact and galley efficient for small kitchens, though both can feel cramped.
- **L-Shaped/U-Shaped:** L-shaped kitchens offer versatility and a good work triangle, while U-shaped provides ample space but can feel closed off.
- **Island/Peninsula:** Islands offer extra workspace but require a large kitchen; peninsulas provide similar benefits while being connected to a wall.
- **Layout Considerations:** Choosing the right layout depends on the kitchen's size, your lifestyle, the work triangle, traffic flow, and personal preferences.
- **Common Layouts:** The most common kitchen layouts include one-wall, galley, L-shaped, U-shaped, island, and peninsula.

**Expected Standard**- Different types of kitchen designed correctly



### Assessment

#### Sample Questions

#### Multiple Choice Questions (MCQs)

1. Describe open kitchens? (a) These are designed to be part of the living space, with minimal separation between the cooking area and the rest of the room. (b) These are found in restaurants, cafes, hotels and other food service establishments. (c) These serve hospitals, schools, colleges, universities and other institutions. (d) layout that is not fully enclosed by walls, often connecting to other living areas like the dining or living room.

**Answer:** (d)

2. Which of the following is the definition of the term 'ergonomics'? (a) A work sequence of food storage > preparation > cooking > serving > clearing up (b) The lines joining the

centre points of the large pieces of equipment. (c) A sequence of work surface > fridge > work surface > sink > work surface > cooker > work surface is very important. (d) The study of work and its environment in order to achieve maximum efficiency.

**Answer:** (d) The study of work and its environment in order to achieve maximum efficiency.

- **Open-ended Questions**

1. A client has a small apartment and wants to maximize the functionality of their limited kitchen space. Propose a kitchen layout and suggest specific appliances and storage solutions that would address their needs, considering both budget and space constraints.

**Sample answer:** For a small apartment kitchen, I'd prioritize multi-functional appliances and storage to maximize limited space and minimize clutter. Utilizing vertical space with shelving and wall organizers expands storage without sacrificing floor or counter space. Adequate lighting, including ambient, task, and accent lights, is essential for functionality and creating a welcoming atmosphere. These features together enhance efficiency, safety, and overall enjoyment of the small kitchen

2. Analyse points to consider when planning a kitchen.

**Sample answer:** Positioning: - Conveniently located to have good light and open view; Types of kitchen: - A suitable type of kitchen should be chosen; Surfaces: - (walls, floor coverings and work surfaces) and Ventilation: - This is essential to allow steam, odours, grease, stale air and heat to escape from the kitchen to avoid condensation.

3. Give a detailed account on the designing of a kitchen.

**Sample answer:** Layout and flow: - The kitchen should be organised efficiently to promote a good work triangle (sink, cooker, refrigerator). Consider common designs like U-shaped, L-shaped or Galley. Storage: - Maximise space for cabinets, drawers, and so on and so forth. Counter space: - Enough space for food preparation, cooking and socialising is cardinal. Lighting: - Adequate lighting combining different types is important for proper functionality. Safety: - Store sharp objects, hot items or surfaces and hazardous items out of reach of children, cover all naked electric wires



## Summary

### Key Points

- **Types of kitchen:** Kitchens are designed for different purposes, ranging from residential (homes) to commercial (restaurants), institutional (schools), industrial (food production), and mobile (food trucks). Open kitchens blend with living spaces.
- **Diverse Kitchen Shapes:** Common kitchen shapes include L-shaped, U-shaped, parallel, island, and galley, each influencing the kitchen's flow and usability.
- **Core Kitchen Functions:** All kitchens, regardless of type or shape, provide food storage (refrigeration, pantries), food preparation areas (counter space, tools), cooking facilities (stoves, ovens), and clean-up areas (sinks, dishwashers).
- **Kitchens as Social Hubs:** Increasingly, kitchens serve as gathering spaces for socializing, especially in open-plan designs.
- **Additional Kitchen Features:** Some kitchens may incorporate dining areas, while others might even include laundry facilities or a home office.
- **Impact of Kitchen Layouts:** Specific kitchen layouts (one-wall, galley, L-shaped, U-shaped, island, peninsula) significantly affect space utilization, efficiency, and overall functionality.

## Sub-Topic 2- Kitchen Utensils and Equipment.

### Introduction

The kitchen is a focal point of a home and one of the functions of the kitchen is for storage of food, utensils, pieces of equipment and other related kitchen items. Hence the necessity of the kitchen being spacious to accommodate all sorts of utensils and equipment.

There is an enormous range of small and large pieces of equipment available in kitchenware shops. It is important to consider a wide range of points when selecting utensils and equipment. Utensils and equipment must be well made and durable and must not be difficult to clean or too complicated to operate. Utensils and equipment must be the right type and size in accordance with the requirements

**Specific Competence 1:** Classify kitchen utensils and equipment.



**Learning Activity 1:** Identify and use different categories of kitchen utensils and equipment.

### **Learning Environment**

#### **Natural:**

- i. Physical: Indoor activity

Learners to create a list of common utensils (e.g. whisk, tongs, blenders, mixers...)

Learners in groups to find and identify each utensil in the kitchen.

#### **Artificial**

- i. Physical

Learners to prepare a set of utensil pictures or flashcards.

Learners to match the utensil with its correct name.

- ii. Virtual

Learners to watch simulations on use of different categories of kitchen utensils and equipment.

#### **Technological:**

- i. Physical

Learners in groups to be assigned with a kitchen equipment station.

Learners to operate the equipment safely and correctly to prepare a simple dish.

- ii. Virtual

Learners to create cooking demonstration videos that showcase different utensils and equipment.

Learners to identify the utensils and equipment used.



### Activity process

- Learners to create a list of common utensils (e.g. whisk, tongs, blenders, mixers...)
- Learners in groups to find and identify each utensil in the kitchen.
- Learners to match the utensil with its correct name.
- Learners to watch simulations on use of different categories of kitchen utensils and equipment.
- Learners to operate the equipment safely and correctly in the preparation of simple dishes.
- Learners to identify the utensils and equipment used in different cooking videos.



### Content tips

#### Classification of kitchen utensils and equipment.

- **Cutting utensils:** - Used for preparing ingredients, such as chopping, slicing, dicing, Examples include knives, graters, and peelers.
- **Baking utensils:** - Used for preparing and baking foods like cakes, pastries, bread. Examples include baking tins, baking sheets, roasting tins.
- **Cooking utensils:** - Used for cooking and heating food. Examples include saucepans, casseroles, and kettles.
- **Utensils for separating:** - Used for separating solids from liquids, powders from coarsely crushed foods. Examples include colanders, sieve.
- **Measuring tools:** - For measuring smaller quantities. Examples include measuring cups, spoons, and jars.
- **Cooking equipment:** - For cooking foods such as ovens, stoves, fryers, grills.
- **Refrigeration equipment:** - For chilling and freezing foods. Examples include refrigerators, freezers, and ice machines. Food preparation equipment such as food processors, mixers, meat grinders.



**Learning Activity 2:** Discuss choice, care and use of utensils and equipment.

## Learning Environment

### Natural:

i. Physical

Learners to display the kitchen utensils and equipment and sort them into categories based on their function.

Learners to state the choices to consider when purchasing these tools. (cutting, mixing, cooking, measuring).

### Artificial

i. Physical

Learners to create a kitchen set up simulation where they will arrange and use kitchen utensils and equipment to understand their care and proper storage.

Learners to role-play cooking tasks using utensils and equipment as well as practice storing utensils properly for hygiene and efficiency.

ii. Virtual

Learners to watch a simulation of different kitchen utensils and equipment.

### Technological

i. Physical

Learners to use basic kitchen utensils like blender and come up with interesting dishes.

ii. Virtual

Learners to watch videos (on a screen) on different types of kitchen utensils and equipment.



### Activity process

- Learners to sort the kitchen utensils and equipment based on their functions.
- Learners in groups to demonstrate the functions of the kitchen utensils as well as state the points to consider when purchasing, care and storage of the tools.

- Learners to watch videos (on a screen) on different types of kitchen utensils and equipment.
- Learners in groups to role play cooking tasks using kitchen utensils and equipment.
- Critique and analyze work done by the groups.



## Content tips

### Utensils

- **Cutting tools:** knives, cutting boards, scissors.
- **Mixing and blending tools:** whisks, spoons, spatulas and blenders.
- **Cooking tools:** tongs, slotted spoons, wooden spoons.
- **Measuring tools:** measuring cups, measuring spoons.

### Equipment

- **For cooking: cookers:** (electric, gas, paraffin, coal, charcoal, solar).
- **For storage:** (chest freezer, refrigerator).
- **For cleaning:** (dish washing machine, washing machine).

### Choice of utensils and equipment

- **Selecting the right tools: choose** utensils and equipment that suit the task, ingredient and cooking method.
- **Material consideration:** consider the material of utensils and equipment (stainless steel, non-stick, glass).
- **size and capacity:** choose utensils and equipment that are the right size and task.

### Care of utensils and equipment

- **Cleaning:** Clean utensils and equipment after each use to prevent bacterial growth.
- **Storage:** Store utensils and equipment properly to prevent damage and maintain organization.
- **Maintenance:** Regularly check and maintain equipment to ensure proper function.

### Use of utensils and equipment

- **Safe handling:** Handle utensils and equipment safely to prevent accidents and injuries.
- **Use proper techniques:** Use proper technique when using utensils and equipment (chopping, stirring).
- **Efficient use:** use utensils and equipment efficiently to minimize waste and save time.

### Safety precautions



- **Handle hot equipment with care:** Use oven mitt and pot holders when handling hot equipment.
- **Prevent slips and falls:** Clean up spills immediately and ensure the floor is clear of obstacles.
- **Use utensils and equipment correctly:** follow the manufacturer’s instructions and use common sense when using utensils and equipment.



**Learning Activity 3:** Demonstrate the correct use of utensils and equipment safely and effectively.

### Learning Environment

#### Natural:

- i. Physical

Learners to clean and sanitize the workspace, utensils, and equipment

Learners to show how to operate the equipment safely and effectively, including setting temperatures, using controls, and handling hot or sharp parts and demonstrate the use of protective gear, such as oven mitts or aprons, to prevent injuries.

#### Artificial

- i. Physical

Learners to create a mock kitchen setup with artificial utensils and equipment, such as plastic or wooden replicas.

- ii. Virtual

Learners to create a virtual instructor to demonstrate proper usage and handling of utensils and equipment.

#### Technological:

- i. Physical

Learners to utilize video conferencing tools to remotely demonstrate the correct use of utensils and equipment.

- ii. Virtual

Learners to create immersive virtual reality experiences that simulate real-world kitchen environments and utensil usage.



**Activity process**

- Conduct a class practical lesson on the correct use of utensils and equipment safely and effectively.
- Learners in groups to demonstrate the use of various utensils and equipment during food preparation, cooking and serving of meals in class.



### Content Tips

- **Preparation:** Select necessary utensils/equipment, prepare the workspace, and develop a step-by-step guide.
- **Introduction:** Introduce each utensil/piece of equipment and its purpose.
- **Safety Features:** Highlight and explain all safety features of the tools and equipment
- **Demonstration:** Clearly demonstrate the correct and safe usage of each item.
- **Q&A:** Allow time for questions and provide clear answers.
- **Practice:** Facilitate guided practice followed by independent practice.
- **Feedback:** Provide ongoing feedback and support during practice sessions.
- **Effectiveness:** Use visual aids, encourage interaction, evaluate learning/safety awareness, and refine the demonstration process
- **Expected standard:** Classify kitchen utensils and equipment



### Assessment:

#### Sample Questions

Multiple Choice Questions (MCQs):

1. Which of the following categories **BEST** describes a grater?

a) Cutting utensils b) Mixing utensils c) Cooking utensils d) Food preparation utensils

**Answer:** d) Food preparation utensils

2. A chef is preparing a pasta dish and needs to drain the cooked pasta. Which of the following utensils is BEST suited for this task?

- a) A saucepan b) A mixing bowl c) A colander d) A frying pan

**Answer:** c) A colander

- **Open-ended Questions:**

1. What two versatile baking tools would you recommend for each of these categories below, and how could a beginner use each tool?

- a) Mixing/Combining Tools b) Measuring Tools

Sample Answers

**Mixing:**

- **Tool 1: Large Mixing Bowl:** A set of nesting bowls in various sizes is essential. A beginner can use a large bowl for mixing batter, kneading dough, or tossing ingredients like fruit for a pie.
- **Tool 2: Spatula (Rubber or Silicone):** A flexible spatula is great for scraping down the sides of bowls, folding ingredients together gently (like when adding air to a batter), and spreading batter evenly in a pan.

**Measuring:**

- **Tool 1: Measuring Cups (Dry):** A set of dry measuring cups (usually metal or plastic) is crucial for accurately measuring dry ingredients like flour, sugar, and oats. Beginners should learn the proper "leveling" technique (scooping and then leveling off with a straight edge).

2. Talk about a situation you had to use something other than the right tool in the kitchen. What was the problem, what did you use instead, and why did it work?

**Possible Answers (Examples):**

- **Problem:** Needed to roll out dough but didn't have a rolling pin.
- **Substitute:** Used a clean wine bottle (or a straight-sided drinking glass).
- **Why it worked:** The bottle/glass was cylindrical and smooth, just like a rolling pin, so it could flatten the dough evenly.
- **Problem:** Needed to separate egg yolks from whites but didn't have an egg separator.
- **Substitute:** Used a clean, empty plastic water bottle.
- **Why it worked:** You can gently squeeze the bottle, create a vacuum, and "suck up" the yolk, leaving the white behind.



## Summary

### Key points

- The kitchen is a focal point of a home and one of the functions of the kitchen is for storage of food, utensils, pieces of equipment, hence the need of a spacious kitchen to accommodate all sorts of utensils and equipment.
- It is important to consider a wide range of points when selecting utensils and equipment in order for them to last long.
- Include facts on the use, choice and care of utensils and equipment inclusive of Labour-serving devices

## Sub-Topic 3- Improvisation of kitchen utensils

### Introduction

Improvising kitchen utensils refers to the creative and resourceful use of available materials to substitute for traditional utensils. Improvisation can be necessary when traditional utensils are unavailable. Improvising kitchen utensils is beneficial because it promotes resourcefulness, preparedness for emergencies, and sustainability. It is also crucial to keep in mind safety considerations such as cleanliness, food safety, and careful handling.

**Specific Competence:** Make kitchen utensils



**Learning Activity 1** Discussing improvisation of kitchen utensils and equipment:( definition, benefits of improvisation...)

## Learning Environment

### Natural

- i. Physical: Indoor activity  
Learners to create and make use of readily available items in place of specialized kitchen tools (Creating a makeshift colander, improving a grater, whisker...).

### Artificial

- i. Physical indoor activity  
Learners to create a **makeshift knife**: Instead of just using any sharp object, artificial improvisation might involve shaping a piece of metal or stone into a specific knife-like tool.

**Learners to Combine tools:** Learners to weld a spatula to a whisk to create a hybrid tool for flipping and mixing simultaneously.

- ii. Virtual  
Learners to identify a common cooking challenge that could be solved with a specialized utensil, e.g. breaking lumps using a whisker.  
Learners to use 3D modeling software to design a custom utensil that addresses the problem.  
Learners to print their designs and test them in a real or virtual kitchen setting.

### Technological

- i. Physical:

Learners to identify a specific kitchen challenge (e.g., peeling a particular fruit, straining a specific food).

Learners to sketch and model their own tool design using 3D modeling software.

Learners to 3D print their designs and test their functionality in a real kitchen setting.

ii. Virtual:

Learners to create online platforms where they can share their improvised kitchen tool ideas, recipes, and cooking tips



### Activity process

- Learners to identify missing kitchen utensil and equipment.
- Learners in pairs to create the missing utensil and equipment.
- Groups to 3D print designs and test their functionality in a real kitchen.
- Learners to create online platforms where they can share their improvised kitchen tools ideas, recipes and cooking tips.



### Content Tips

- Kitchen improvisation means using what you have instead of specialized tools.
- It requires resourcefulness, problem-solving, creativity, and adaptability.
- This practice can save money and reduce kitchen clutter.
- It encourages creativity and builds cooking confidence. Examples include using a bottle as a rolling pin or a fork as a whisk.
- Ultimately, it's about being clever and adaptable in the kitchen.



## **Learning Activity 2:** Identifying situations that require improvisation of kitchen

utensils:

### **Learning Environment**

#### **Natural:**

- i. Physical: Indoor activity

learners to imagine they are on a camping trip and don't have access to all the usual kitchen utensils. How would they improvise to prepare a meal?

#### **Outdoor activity:**

Learners to organize an outdoor challenge where learners have to prepare a meal using limited utensils and equipment.

#### **Artificial**

- i. Physical

Learners to share examples of improvising kitchen utensils from their cultural backgrounds or family traditions.

- ii. Virtual

Learners to watch simulations on identifying situations that require improvisation of kitchen utensils:

#### **Technological:**

- i. Physical

Learners to create a solar oven using a cardboard box, aluminum foil, and plastic wrap to create a solar oven

Learners to create a make shift oven using available local materials e.g. metals or pan bricks with cement and sand.

- ii. Virtual

Learners to create an online cooking game where the learners have to improvise kitchen utensils to complete recipes.



## Activity process

- Learners to imagine a camping trip and how they can improvise utensils to prepare a meal.
- Learners to improvise several different situations with reference to improvisation of utensils e.g. natural resources in food preparation, improvised cutting boards, making of shift knives, cooking, make shift pots, use of utensils,
- Learners to organize and do the out-door cooking challenge game.
- Learners to participate in the cultural exchange activity and share examples of improvising kitchen utensils from their cultural backgrounds or family traditions.
- Learners to watch simulations on identifying situations that require improvisation of kitchen utensils.
- Learners to create a solar oven, make shift oven using available local materials e.g. card board, aluminum foil paper, plastic wrap, pan bricks, sand and cement or metals.
- Learners to create an online cooking game where they can improvise utensils to complete recipes.



## Content tips

### Situations requiring improvisation

- **Limited equipment:** when kitchen utensils are not available or are in short supply.
- **Emergency situations:** power outages, natural disasters, or unexpected events that require quick thinking.
- **Outdoor activities:** camping, picnics, or outdoor events where kitchen utensils may not be readily available.
- **Cultural or traditional cooking:** preparing traditional dishes that require specialized utensils that may not be available.
- **Resource constraints:** limited financial resources or access to kitchen utensils.

### Identifying improvisation opportunities



- **Assessing available resources:** there is need in this dynamic world to evaluate available materials and equipment to determine what can be used as substitutes.
- **Thinking Creative:** considerations for alternative uses for available materials and equipment.
- **Problem Solving:** problems need to be solved and creative solutions be made to make use of available resources.



**Learning Activity 3** Demonstrating how to improvise kitchen utensils and equipment using everyday household items: (*Grater, oven, can opener, colander...*)

## Learning Environment

### Natural

#### i. Physical:

Learners to create specific kitchen tools, such as tongs, a whisk, or a grater, using only locally available materials.

### Artificial

#### i. Physical

Learners to use basic techniques like carving, weaving, and joining to make kitchen equipment and utensils.

#### ii. Virtual

Learners to search their homes for items that could *potentially* be used for these tasks. Learners to take photos or videos of their found objects.

### Technological

#### i. Physical:

Learners to identify common materials (wood, metal, plastics, ceramics) and understand their basic properties.

Learners to assess the suitability of found objects for kitchen use.

#### ii. Virtual:

Learners to create a virtual "kitchen" environment.

Learners to design improvised kitchen tools using available materials.



### Activity Process

- Learners to highlight a wider range of situations where improvisation of kitchen utensils can be applied.
- Learners in small groups to research and present on specific situations requiring improvisation of kitchen utensils.
- Learners to create specific kitchen tools.
- Learners to demonstrate improvisation of some kitchen utensils and equipment using everyday household items.



### Content Tips

- Improvisation in the kitchen is the creative adaptation of everyday objects for cooking tasks.
- It's a skill that involves understanding tool functions and recognizing potential in other items.
- This practice is useful when conventional kitchen tools are unavailable or impractical.
- Improvisation highlights the environmental benefits of reusing and repurposing materials.
- It makes cooking more accessible to individuals with limited resources.
- Thinking outside the box is key to successful kitchen improvisation.

**Expected Standard**- Kitchen utensils made correctly



### Assessment

#### Sample Questions

Multiple Choice Questions (MCQs):

1. In a kitchen setting, the act of using readily available items in place of specialized tools is best described as:

- a) Resourcefulness b) Adaptability c) Improvisation d) Innovation

**Answer:** (c) improvisation

2. Which of the following is the MOST effective and SAFE substitute for opening a can when a can opener is unavailable?

- a) A sturdy spoon or metal spatula b) A sharp knife c) A rock or concrete edge d) Your teeth

**Answer:** a) A sturdy spoon or metal spatula

### **Open-ended Questions:**

1. Discuss three distinct advantages of improvising with kitchen tools. Explain why each advantage is important in a kitchen or cooking context.

#### **Sample answers**

- **Enhanced Problem-Solving Skills:** Improvising forces you to think creatively and analytically about the function of a tool and how to achieve the same result with something else. This strengthens your problem-solving abilities, which are essential for any cook, as recipes don't always go as planned, and you might encounter unexpected challenges.
- **Resourcefulness and Adaptability:** Improvising teaches you to make the most of what you have available. This is particularly valuable when you're missing an ingredient or tool, or when cooking in a limited environment (like camping or a small kitchen). Being resourceful means, you can still create delicious meals even with constraints.
- **Reduced Waste and Sustainability:** By finding alternative uses for items, you already own, you avoid the need to purchase specialized tools that might only be used occasionally. This reduces clutter, saves money, and promotes a more sustainable approach to cooking by minimizing consumption and waste.

2. Describe a specific cooking or food preparation task you've performed where you had to use an item not designed for that purpose. Explain what you were trying to achieve, what you used as a substitute, and why that substitution was effective.

## Sample answers

- **Mashing Potatoes:** "I was making mashed potatoes and realized I didn't have a potato masher. My goal was to get the potatoes smooth and creamy. I used a clean, empty wine bottle as a substitute. It worked surprisingly well because the bottle's smooth, flat bottom was able to crush and break up the potatoes. It wasn't quite as efficient as a masher, and it took a little more effort to get the potatoes completely smooth, but it did the job."
- **Whisking Eggs:** "I was making an omelet and needed to whisk the eggs. I didn't have a whisk, so I used a fork. I was trying to incorporate air into the eggs to make them light and fluffy. The fork worked because its tines, when moved quickly back and forth, could beat the eggs and incorporate some air. It wasn't as effective as a whisk, and it took longer, but it was good enough for a simple omelet."

3. You need to grind whole spices for a recipe but don't have a mortar and pestle. Describe TWO different items you could use as substitutes. For EACH substitute, explain how you would use it and what makes it a suitable (though perhaps not ideal) replacement for a mortar and pestle. Consider factors like safety and effectiveness.

- **Rolling Pin and Flat Surface:** "I could use a rolling pin and a clean, flat surface, like a cutting board. I would place the spices on the cutting board and then use the rolling pin to crush and grind them by rolling it back and forth over the spices. This works because the rolling pin provides a hard, heavy surface to apply pressure and break down the spices. It's not ideal because it can be a bit messy, and it's harder to get a fine, even grind compared to a mortar and pestle."
- **Food Processor (or Blender):** "Another option would be a food processor or blender. I would put the spices in the food processor/blender and pulse them until they are ground to the desired consistency. This works because the blades can quickly chop and grind the spices. However, a food processor/blender might not be the best choice for small quantities of spices, and it can be easy to over-process them into a powder if you're not careful. Also, cleaning the food processor/blender afterward can be more involved than cleaning a mortar and pestle."



## Summary

### Key Points Recap:

- Improvisation of kitchen utensils refers to the creative and resourceful use of available materials to substitute for traditional.
- Improvisation can be necessary in situations where traditional utensils are not available. Improvisation of kitchen utensils is beneficial as it promotes resourcefulness, for emergency situations and sustainability.
- It is also cardinal to bear in mind safety considerations such as cleanliness, food safety and careful handling.

## Sub-Topic 4- Food laboratory

### Introduction

This topic focuses on the kitchen and food laboratory, being a controlled environment where food scientists, technicians, and learners conduct various tests and analysis to evaluate the quality, safety, and nutritional content of food. It is a topic that looks at various instruments and facilities which include among others, microscopes, ovens and incubators, pH meters and thermometers, and chromatography equipment. Nutritional content of food e.g. protein, fat, carbohydrates, vitamins, and minerals are determined. The importance of the food industry is supported through innovations and development, providing accurate nutrition labelling and information to the learners. Learners will gain knowledge and skills on the identification of food laboratory tools and equipment: (*pH meters, thermometers, incubators...*) and analysis of the roles of the food laboratory in terms of food testing, quality control, and product development which they will be able to relate to as they explore their world in various careers in a world of technology

**Specific Competence:** Use food Laboratory tools and equipment



**Learning Activity 1** identifying food laboratory tools and equipment (pH meters, thermometer, incubators)

## Learning Environment

### Natural:

- i. Physical  
Learners to observe instructors or experienced professionals using food laboratory tools and equipment.  
Learners to participate in hands-on activities and experiments with reference to food laboratory tools and equipment.

### Artificial

- i. Physical  
Learners to follow instructor's guidance and demonstrations using food laboratory tools and equipment.  
  
Learners to observe safety protocols and procedures when using food laboratory tools and equipment.
- ii. Virtual  
Learners to explore virtual labs and equipment simulations

### Technological:

- i. Physical  
Learners to participate in hands-on training and exercises on using food laboratory tools and equipment.  
Learners to explore the food laboratory and equipment simulations.
- ii. Virtual  
Learners to read interactive labels and manuals on food laboratory tools and equipment.  
  
Learners to ask questions and seek feedback through online forums or live chats.



## Activity process

- Introduce the tools and equipment: Show and explain the different tools and equipment.
- Have participants identify and label: Ask participants to identify and label each tool and equipment.

- **Assign tasks:** Assign each group a specific task that requires the use of different tools and equipment.
- **Assess participant understanding:** Assess participant understanding through a quiz or class discussion.



### Content Tips

Food laboratory tools and equipment refers to the various devices, instruments, and machinery used to analyze, test, and prepare food samples in the laboratory setting. These tools help food scientists, technologists, and analysts to ensure the quality, safety and nutritional value of products. Some common examples of food laboratory tools and equipment include:

**Microscopes:** for examining food samples at the microscopic level.

**Spectrophotometers:** for measuring the absorbance or transmittance of light by food samples.

**Chromatography equipment:** (e.g., HPLC, GC): for separating and analyzing food components.

**PH meters:** for measuring the acidity or alkalinity of food samples.

**Texture analyzers:** for measuring the physical properties of food (e.g. hardness, crunchiness).

**Moisture analyzers:** for measuring the moisture content of food samples

**Autoclaves:** for sterilizing equipment and food samples.

**Ovens and incubators:** for heating or incubating food samples at controlled temperatures.

**Centrifuges:** for separating food components based on density

**Homogenizers:** for mixing and blending food samples

These tools and equipment help food laboratories to perform various tests and analyses, such as:

Microbiological testing (e.g., detecting pathogens)

Chemical testing (e.g., measuring nutrient content, detecting contaminants)

Physical testing (e.g., measuring texture, moisture content)

Sensory evaluation (e.g., taste, smell, appearance)

**NOTE:** the specific tools and equipment used can vary depending on the type of food being analyzed, the purpose of the analysis, and the specific tests being performed.



**Learning Activity 2:** Analysing roles of the food laboratory: (*Food testing, quality control, product development...*)

## **Learning Environment**

### **Natural:**

#### i. Physical

Learners to display the packaged food items (milk, juice, biscuit, canned food) and allow learners to check on ingredients, nutrients, correct weights (use scales) ensuring quality control.

Learners in groups to use test strips to test acidity, in fruits, juice or milk and conduct a starch test using iodine on food sample to understand how food laboratories ensure food safety (free from pathogens), quality control and product development and present their findings.

### **Artificial**

#### i. Physical

Learners to role-play tasks in groups on food testing, quality control, (use scales to verify package weight) and propose packaging improvements, so as to ensure food safety, product development and maintain public health.

#### ii. Virtual

Learners to explore on an online food laboratory simulation to conduct virtual tests (checking food acidity, analyzing labels)

### **Technological:**



i. Physical

Learners to conduct physical food tests, analyse quality and propose product improvement.

ii. Virtual

Learners to watch videos (on a screen/projector) on how scientists test food for safety and quality (ensuring food meets expected standards).



### Activity process

- Learners to display the packaged food items and allow learners to check on ingredients, nutrients, correct weights (use scales) ensuring quality control.
- Learners to state the roles of food safety, testing and development.
- Learners in groups to role play cooking tasks on food testing and quality control.
- Use digital scales to verify weight.
- Discuss on how technology helps improve food safety and suggest new product ideas as well as suggesting packing improvements
- Critique and analyse work done by the groups.



### Content tip:

#### Food testing:

- Conduct tests to detect nutrients (protein, fats, carbohydrates) and contaminants(pathogens)
- Ensure food safety by testing for harmful substances like pesticides.

- Analyse food quality by assessing texture, colour and appearance.

### Quality control

- Monitor food products for consistence and standardization (texture, appearance).
- Conduct microbial testing to detect harmful bacteria or spoilage
- Check food packaging for integrity and ensure it meets safety standards.

### Product development

- Develop new products to meet consumer needs.
- Test product for texture, shelf life.
- Modify existing products to improve nutritional value to address dietary trends.
- **Expected standards:** Different types of kitchen designed correctly



### Assessment

#### Sample Questions

#### Multiple choice.

1. Which of the following BEST describes the primary goal of quality control in food production?
  - a) Enhancing the visual appeal of food products.
  - b) Ensuring consistent product quality and safety.
  - c) Minimizing production expenses.
  - d) Maximizing the shelf life of food products.

**Answer:** b) Ensuring consistent product quality and safety.

2. What is the PRIMARY function of food laboratories in the context of quality control?
  - a) Developing innovative food products and recipes.
  - b) Conducting scientific analysis of food samples.
  - c) Designing attractive and informative food packaging.
  - d) Creating marketing campaigns for food products.

**Answer:** b) Conducting scientific analysis of food samples.

### **Open ended question**

3. Imagine a batch of snack food has inconsistent texture – some pieces are too hard, others too soft. Describe the steps you would take, utilizing the principles of quality control, to investigate the CAUSE of this inconsistency and implement a solution to prevent it from recurring.

#### **Sample Answer**

**Initial Assessment & Data Collection:** I would first examine quality control records from recent batches, specifically focusing on texture measurements (e.g., using a texture analyser), ingredient specifications (e.g., moisture content, protein levels), and any reported deviations from standard operating procedures (SOPs). I would also collect samples from the inconsistent batch for further analysis.

**Process Investigation:** I would then investigate the entire production process. This would involve:

- **Ingredient Sourcing:** Verify supplier quality certifications and check incoming ingredient quality against specifications.
- **Mixing/Processing:** Review mixing times, temperatures, and equipment calibration. Look for potential inconsistencies in the mixing or cooking process.
- **Cooking/Baking:** Analyse cooking times, temperatures, oven/fryer performance, and oil quality (if applicable).
- **Packaging:** Check packaging integrity and sealing to ensure proper moisture control.
- **Environmental Factors:** Consider temperature and humidity in the production and storage areas, as these can affect product texture.

**Laboratory Analyses:** I would conduct laboratory tests on the collected samples, including:

- **Texture Analysis:** Quantify the texture differences between acceptable and inconsistent samples using a texture analyser.

- **Moisture Content:** Determine the moisture content of the samples, as variations can significantly impact texture.
- **Sensory Evaluation:** Conduct a trained sensory panel to describe the textural differences and identify any off-flavours or other quality defects.
- **Microbial Testing:** If there's a concern about spoilage or contamination, microbial testing would be performed.

**Root Cause Analysis:** Based on the data collected, I would perform a root cause analysis (e.g., using a fishbone diagram or 5 Whys) to identify the underlying cause of the texture inconsistency. For example, it might be due to inconsistent ingredient quality, equipment malfunction, or variations in the cooking process.

**Solution Implementation & Monitoring:** Once the root cause is identified, I would work with the production team to implement corrective actions. This might involve adjusting ingredient specifications, calibrating equipment, revising SOPs, or implementing more frequent quality checks. After implementing the solution, I would closely monitor the production process and conduct regular quality checks to ensure the inconsistency is resolved and doesn't recur.

4. A food manufacturer wants to develop a new line of healthy, convenient, high-protein, and low-fat meals targeting health-conscious consumers. Describe the key stages of your product development process for this new food line, emphasizing how you would balance *nutritional considerations* and *sensory appeal* throughout the process.

### Sample Answer

**Market Research & Concept Development:** I would begin with thorough market research to understand the target consumer's needs, preferences, and current market trends for healthy, convenient meals. This would include surveys, focus groups, and analysis of competitor products. Based on this research, I would develop a clear product concept, defining the target audience, desired nutritional profile (macronutrient ratios, specific vitamins/minerals), and potential product formats (e.g., ready-to-eat meals, meal kits, frozen entrees).

**Recipe Formulation & Prototyping:** I would formulate initial recipes focusing on high-protein, low-fat ingredients. This would involve selecting appropriate protein sources (e.g., lean meats, poultry, fish, plant-based proteins), healthy fats, and complex carbohydrates. I would prioritize ingredients with proven health benefits and avoid excessive use of added sugars, sodium, and unhealthy fats. Initial prototypes would be prepared and undergo preliminary sensory evaluations (e.g., informal taste tests) to assess palatability and identify areas for improvement.

**Nutritional Analysis & Sensory Evaluation:** Prototypes would undergo detailed nutritional analysis to verify that they meet the desired nutritional profile. Simultaneously, more rigorous sensory evaluations would be conducted with a trained panel or a larger consumer group. These evaluations would assess various sensory attributes, including appearance, aroma, texture, flavor, and overall acceptability.

**Recipe Refinement & Optimization:** Based on the feedback from nutritional analysis and sensory evaluations, I would refine and optimize the recipes. This iterative process would involve adjusting ingredient ratios, cooking methods, and flavorings to achieve the optimal balance between nutritional value and sensory appeal. For example, if a high-protein ingredient makes the product too dry, I might explore adding healthy fats or incorporating moisture-retaining ingredients.

**Packaging & Shelf-Life Testing:** Appropriate packaging would be selected to maintain product quality, freshness, and safety. Shelf-life testing would be conducted to determine the product's storage stability and ensure it meets food safety standards. The packaging design would also be considered from a consumer perspective, including labeling, convenience, and attractiveness.

**Pilot Production & Scale-Up:** Before full-scale production, a pilot production run would be conducted to validate the production process and ensure consistent product quality. This would also provide an opportunity to identify any potential challenges in scaling up production.

**Product Launch & Monitoring:** After a successful pilot run, the new product line would be launched. Post-launch monitoring would be essential to track consumer feedback, sales data, and product quality to ensure continued success and identify any areas for further improvement.

**NOTE:** Consider adding more



## Summary

### Key points

#### Types of Tools and Equipment

- Measurement Tools: Thermometers, digital scales, measuring cups, and pH meters.
- Cooking Equipment: Stovetops, ovens, microwaves, slow cookers, and deep fryers.
- Laboratory Equipment: Microscopes, centrifuges, autoclaves, texture analyzers, and rheometers.
- Safety Equipment: Lab coats, gloves, goggles, first aid kits, and fire extinguishers.

#### Functions and Uses

- Food Preparation: Mixers, blenders, food processors, graters, and peelers.
- Food Analysis: Spectrophotometers, gas chromatography, and mass spectrometry.
- Food Storage: Refrigerators, freezers, and dishwashers.

#### Importance of Proper Use

- Safety: Proper use of equipment prevents accidents and injuries.
- Accuracy: Proper use of equipment ensures accurate results and measurements.
- Efficiency: Proper use of equipment saves time and increases productivity.

#### Maintenance and Cleaning

- Regular Cleaning: Clean equipment regularly to prevent contamination.
- Proper Storage: Store equipment properly to prevent damage.

- Maintenance Schedules: Follow maintenance schedules to ensure equipment is in good working condition.

## Sub-Topic 5- Safety

### Introduction

This sub-topic introduces learners to safety precautions that prevent accidents and injuries in the kitchen and food laboratory. It helps them know how they can be protected as individuals from food borne illnesses, infections, and other health hazards. Learners will acquire skills on handling of food safely, storing food at correct temperatures, and avoiding cross-contamination which is crucial among other things in their daily lives and future career prospects. Following safety precautions can prevent food poisoning, which can be life- threatening. Accidents such as burns, cuts, and electrical shocks can also be prevented. Allergic reactions which can be severe will be prevented and lives can be saved. By following safety guidelines, individuals can ensure a safe and healthy environment.

**Specific Competence:** Practice safety precautions



**Learning Activity 1:** Discussing different types of safety: (*Environmental, Physical, Health...*)

### Learning Environment

#### Natural:

##### i. physical: indoor activity

Learners in groups to act out different safety scenarios (e.g. Environmental, pollution, physical, health hand washing)

##### Physical: outdoor activity

Learners to participate in various safety-related activities, such as environmental, physical, and healthy safety.

## Artificial

i. Physical

Learners to use a virtual fire extinguisher to put out a virtual fire.

ii. Virtual

**Safety video production:**

Learners to create videos on different safety topics (environmental, physical, health) and share them with the class.

## Technological:

i. Physical

Learners to collect and sort out recyclable materials, highlighting the importance of environmental safety.

ii. Virtual

Learners to watch videos on safety (e.g., environmental, physical, health) and analyze the content.



### Activity process

-Learners to act out different safety scenarios (e.g. environmental, pollution, physical, health hand washing).

-Learners to host a safety fair, where they participate in various safety – related activities, such as environmental, physical, and healthy safety.

-Learners to use a virtual fire extinguisher to put out a virtual fire.

-Learners to create videos on different safety topics (environmental, physical, health) and share amongst themselves.



-Learners to organize a recycling relay where they collect and sort recyclable materials highlighting the importance of environmental safety.

-Learners to analyze and discuss the contents of the provided videos on safety (e.g. environmental, physical, health)



## Content tips

### Environmental safety

- **Food handling and storage:** Food should be handled and stored properly to prevent contamination and spoilage.
- **Food waste management:** Proper disposal of food waste is important to prevent environmental pollution.
- **Pest control:** Methods to control pests in food preparation and storage areas must be known.

### Physical safety

- **Kitchen safety:** Safe use of kitchen equipment, utensils, and appliances.
- **Food preparation safety:** safe handling of food during preparation, including proper cutting, chopping, and cooking techniques.
- **Fire safety:** prevention and response to kitchen fires.

### Healthy safety

- **Personal hygiene:** importance of personal hygiene practices, such as hand washing and proper attire.
- **Food borne illnesses:** prevention and control of foodborne illnesses, including proper food handling and cooking techniques.
- **Allergens and intolerances:** identification and management of common food allergens and intolerances.



**Learning Activity 2:** Explaining safety rules: (*Wearing protective clothing, proper tool handling...*)

- **Learning Environment.**

**Natural:**

i. Physical

Learners to display protective clothing (apron, gloves, hairnet, closed shoes) and kitchen tools (knives, peelers, graters, mixing spoons) on two different tables.

Learners in groups to demonstrate how to wear protective clothing correctly as well as the proper way to handle, use and store the kitchen tools safely.

**Artificial**

iii. Physical

Learners to role-play tasks in pairs where one demonstrates unsafe practice (not wearing gloves or apron properly), and other person discusses and corrects the mistake, explaining why these items are crucial for safety which is essential in food preparation.

(ii) Virtual

Learners to explore on an online cooking or kitchen safety where a learner is tasked to select a correct protective clothing and handling tools safely or choose the right gloves for a specific task or picking the knife with the right grip.

Learner to develop virtual competences in food safety, tool handling and also enhances their decision-making skills by analyzing false scenario and apply safety rules effectively to correct unsafe practices so as to prevent kitchen accidents.

**Technological:**

i. Physical

-Learners to engage in a hands-on simulation before cooking where they engage groups to act on different roles including, handling knives safely, preventing burns, cleaning spills and proper hand washing before handling food.

-Learners to identify mistakes or good practice and discuss potential accidents if safety rules are ignored.

-Learners to observe a classroom setup and identify potential safety hazards as well as suggesting ways to minimize risks (keeping knives away from the edge, spills, hot utensils).

ii. Virtual

-Learners to use online interactive simulation to test and improve their food safety knowledge in a virtual setting.



### Activity process

- Learners in groups to demonstrate how to wear protective clothing correctly.
- Learners to demonstrate the proper way to handle, use and store the kitchen tools safely including other safety practices.
- Learners to observe a classroom setup and identify potential safety hazards as well as suggesting ways to minimize risks (keeping knives away from the edge, spills, hot utensils).
- Learners to use online interactive simulation to test and improve their food safety knowledge in a virtual setting.
- Critique and analyse work done by the groups and pairs.



### Content tip:

#### **Wearing protective clothing:**

- Always wear a clean apron to prevent contamination.
- Use a hair net or cap to keep hair from falling into food.
- Wear shoes to prevent injuries from spills or falling objects.
- Use gloves when handling raw food to maintain hygiene.

#### **Proper tool handling:**

- Hold knives with a firm grip and cut away from the body.

- Use correct tool for each task. (cutting boards for chopping).
- Store sharp tools safely to prevent accidents.
- Keep kitchen tools clean and dry to prevent contamination.

### **Personal hygiene and kitchen cleanliness:**

- Wash hands before and after handling food.
- Keep finger nails short and clean.
- Clean and disinfect work surfaces before and after use.
- Dispose of waste properly to avoid contamination.

### **Fire and Electric Safety:**

- Turn off stoves and electrical appliances when not in use.
- Use dry hands when handling electrical equipment.
- Know the location of the fire extinguishers and how to use it.

### **Safe Food Handling:**

- Store food at the right temperature to prevent spoilage.
- Avoid cross- contamination by using separate cutting boards for raw and cooked foods.
- Cook food to the recommended temperature to kill bacteria.



**Learning Activity 3:** Analysing safety symbols: (*Warning signs, hazard symbols, fire safety symbols...*)

- **Learning Environment**

### **Natural**

- ii. Physical: Outdoor activity
  - Learners to explore and recognize examples of different safety symbols on appliances, packaging and other kitchen tools such as fire exit, hot surface, flammable, electric shock hazard, wear gloves on a kitchen scavenger hunt.

-Learners to set up a relay race where students need to identify and act on different kitchen safety symbols such as how to safely handle hot items with appropriate gloves.

## **Artificial**

### iii. Physical

-Learners to set up an obstacle course where they must avoid or respond to various kitchen hazards represented by safety symbols such as students walking around a designated “hot stove” area without touching it; Plugging in a blender with proper caution and ensure they handle a cord properly.

### iv. Virtual

-Learners to design new kitchen safety symbols to represent specific precautions they think should be in the kitchen (such as safe knife handling, avoiding cross-contamination).

-Learners to watch a virtual story or animation of a kitchen accident or situation, where they have to recognize and react to safety symbols during the narrative such as a person burns his hand on a hot spot – identify the symbol that would warn them of the danger.

## **Technological**

### v. Physical:

-Learners to use Augmented Reality (AR) headsets or apps on their mobile devices to see and interact with 3D kitchen environments and as they encounter kitchen safety symbols, they respond correctly to each symbol by performing the associated safety action such as clearing a spill, switching off a stove.

-Learners to work in groups to respond to different kitchen safety scenarios projected onto a smart board.

### vi. Virtual:

-Learners to watch videos (on a projector or screen) of different virtual cooking classes with safety symbols.

-Learners to use a flashcard app or website to study and test their knowledge of kitchen safety symbols.



### Activity process

- Learners explore and recognize examples of different safety symbols on appliances, packaging and other kitchen tools.
- Learners set up an obstacle course where they must avoid or respond to various kitchen hazards represented by safety symbols.
- Learners to design new kitchen safety symbols to represent specific precautions they think should be in the kitchen.
- Learners to watch videos (on a projector or screen) to show learners' different virtual cooking classes with safety symbols.
- Learners work in groups to respond to different kitchen safety scenarios projected onto a smart board.
- Critique and Analyse work done by the groups.



### Content Tips

- Keep knives sharp. A sharp knife is less likely to slip and cause injury.
- Use a cutting board. Cutting boards protect your countertop and provide a stable surface for cutting.
- Cut away from yourself. This will help prevent the knife from slipping and cutting you.
- Store knives properly. When you are not using knives, store them in a knife block or sheath.
- Be careful when using heat. Always use oven mitts or potholders when handling hot pots and pans.
- Keep flammable materials away from the stove. This includes things like oven mitts, towels, and paper towels.

- Clean up spills immediately. This will help prevent slips and falls.
- Keep kids and pets out of the kitchen when you are cooking. This will help prevent accidents.
- If you have a fire in the kitchen, turn off the heat and cover the flames with a lid or baking sheet. Do not try to put out a grease fire with water.
- If you are burned, run cool water over the burn for 10-15 minutes. Do not use ice or apply any ointments to the burn.



**Learning Activity 4:** Designing safety posters: (*Emergency exit, fire, no smoking...*)

## Learning Environment

### Natural

- ii. Physical: Indoor activity
  - Learners to design different posters representing ways of safety in the kitchen (Posters e.g. emergency exit, fire, no smoking, Quick Feet, Safe Retreat, Turning pot handles inwards...)

### Artificial

- iii. Physical
  - Learners to create a rough sketch of their poster, organizing: (title, key messages short, clear safety tips...).
- iv. Virtual
  - Learners to design and make a cartoon image of a person quickly (but safely) stepping back from a splattering pan on the stove.
  - Learners to show an image of someone tripping over a misplaced object in the kitchen.

### Technological

- iii. Physical

-Learners to gamify safety practices.

iv. Virtual

-Learners to learn how to prevent accidents and injuries through interactive simulations.



### Activity process

- Learners to Identify Key Hazards: Brainstorm the most common kitchen hazards in their specific environment. Consider burns, cuts, slips/trips/falls, fire hazards, and food safety. Are there any specific issues that have occurred before?
- Learners to Brainstorm visual ideas that will effectively communicate their safety messages. Think about images, illustrations, or even simple icons. Visuals should be clear, relevant, and easy to understand.
- Learners to write concise and impactful text for their posters. Use short slogans or headlines to grab attention. Keep the text brief and to the point. Use a font that is easy to read from a distance.
- Learners to design draft versions of their posters. Get feedback from others to ensure the messages are clear and the designs are effective.
- Learners to show the draft posters to colleagues, supervisors, or other relevant personnel for feedback. Are the messages clear? Are the visuals effective? Are there any errors? Basing on the feedback the learners receive, they will revise their posters as needed. Make sure all errors are corrected and the designs are optimized for clarity and impact. Once learners are satisfied with the revisions, finalize their posters and prepare them for printing or digital distribution.
- Learners Print their posters on durable material (if necessary) and post them in strategic locations in the kitchen.





## Content Tips

**Title:** "Kitchen Safety: Cook Smart, Stay Safe!"

**Slogan:** "A clean, organized kitchen is a safe kitchen."

**Content:**

- Keep the kitchen clean and clutter-free.
- Wipe up spills immediately.
- Store knives and sharp objects properly.
- Use oven mitts and pot holders.
- Never leave cooking unattended.
- Keep a fire extinguisher readily available.
- Know where the first aid kit is located.

**Burn Prevention:**

**Title:** "Burn Prevention: Handle with Care!"

**Slogan:** "Ouch! Burns hurt. Be careful around heat."

**Content:**

- Use oven mitts and pot holders when handling hot items.
- Turn pot handles inwards to prevent knocking them over.
- Keep a safe distance from the stovetop and oven.
- Never leave cooking unattended, especially when using oil.
- Cool hot liquids before disposing of them.
- Treat burns immediately with cool running water.

**Cuts Safety:**

**Title:** "Knife Safety: Cut with Caution!"

**Slogan:** "Sharp knives are safer knives."

**Content:**

- Use sharp knives – they are less likely to slip.
- Always use a cutting board.
- Cut away from your body, not towards it.
- Keep your fingers away from the blade.
- Store knives in a knife block or sheath.
- Never run with a knife.

**Slip, Trip, and Fall Prevention:**

**Title:** "Slip, Trip, and Fall Prevention: Watch Your Step!"

**Slogan:** "Don't slip up on safety."

**Content:**

- Wipe up spills immediately.
- Keep floors clean and free of clutter.
- Use non-slip mats in high-traffic areas.
- Secure loose rugs or carpets.
- Wear shoes with good traction.

**Food Safety:**

**Title:** "Food Safety: Keep it Clean!"

**Slogan:** "Safe food, healthy you!"

**Content:**

- Wash your hands thoroughly before and after handling food.
- Keep raw and cooked foods separate.

- Cook food to the proper temperature.
- Refrigerate perishable foods promptly.
- Use clean utensils and cutting boards.

**Fire Safety:**

**Title:** "Fire Safety: Be Prepared!"

**Slogan:** "Prevention is better than a fire."

**Content:**

- Never leave cooking unattended.
- Keep flammable materials away from the stovetop and oven.
- Have a fire extinguisher readily available and know how to use it.
- Install smoke detectors and test them regularly.
- In case of a fire, evacuate immediately and call for help.

**General Tips for Poster Design:**

- **Keep it concise:** Use short, easy-to-read sentences.
- **Use visuals:** Images and illustrations can make your posters more engaging.
- **Bright colors:** Use eye-catching colors to attract attention.
- **Clear font:** Choose a font that is easy to read from a distance.
- **Strategic placement:** Place posters in high-traffic areas of the kitchen.
- **Regular updates:** Review and update your posters periodically.
- **Expected standard** - Safety precautions practiced appropriately



**Assessment**

**Sample Questions**

1. You notice a small grease fire has started on the stovetop while cooking.

Describe the steps you would take to safely extinguish the fire.

**Sample Answer:** immediately turn off the burner. Then, attempt to smother the flames using a lid if available, or baking soda if readily accessible. *never* use water on a grease fire. If the fire is large or uncontrollable, use the fire extinguisher, aiming at the base of the flames, or evacuate the area and call emergency services.

2. You are preparing a meal that requires using both raw chicken and fresh vegetables.

Explain the procedures you would follow to prevent cross-contamination and ensure food safety.

**Sample Answer**

Start by thoroughly washing my hands before and after handling raw chicken. use separate cutting boards and utensils for the chicken and vegetables. The chicken would be prepared first, and all surfaces and utensils that came into contact with it would be washed with hot, soapy water. The vegetables would then be prepared. ensure the chicken is cooked to the proper internal temperature to eliminate any harmful bacteria,

3. While rushing to complete a recipe, you accidentally cut your finger.

Describe the steps you would take to treat the cut and prevent further injury.

**Sample Answer**

Immediately stop what you doing and wash the cut thoroughly with soap and water. apply pressure to the wound using a clean cloth to stop the bleeding. If the bleeding is severe or doesn't stop, seek medical attention. Once the bleeding is controlled, apply a bandage to protect the wound. Finally, reassess my cutting technique to prevent future incidents, ensuring using a sharp knife, a cutting board, and cutting away from my body.

**NOTE:** Consider adding more questions



## Key Points Recap:

- Maintain a clean and clutter-free kitchen.
- Address spills immediately to prevent slips and falls.
- Store knives and sharp objects safely.
- Always use oven mitts and pot holders when handling hot items.
- Never leave cooking unattended.
- Keep a fire extinguisher readily accessible and know how to use it.
- Know the location of the first aid kit.
- Use sharp knives with caution, cutting away from the body.
- Practice safe food handling by washing hands and separating raw/cooked foods.
- Install and regularly test smoke detectors

## Sub-Topic 6: First Aid

### Introduction

First aid is the immediate help or care given to someone who has been injured or is suddenly ill. It is essential for saving lives, reducing the severity of injuries, and promoting recovery. By applying first aid principles such as prompt response, effective care, and risk reduction, learners will be able to respond effectively to common accidents in the kitchen and laboratory, and promote a safe and healthy environment.

**Specific Competence:** Apply first aid on common accidents



**Learning Activity1:** Analysing common accidents in the kitchen and food laboratory

### Learning Environment

#### Natural:

- i. Physical

Learners to be aware of the kitchen or food lab hazards.

Learner to use available resources (first aid kit and fire extinguishers).

Learners to practice safety protocols (proper knife handling and electrical safety).

### **Artificial**

i. Physical

Learners to enhance decision-making skills in emergency situations through simulation-based training.

Learners to reduce risk of injury or harm in real-life emergency situations.

ii. Virtual

Learners to use virtual reality simulations: Immersive, interactive simulations that mimic real-life scenarios.

Learners to watch interactive video simulations: Video-based simulations that allow them to interact and make decisions.

### **Technological:**

i. Physical

Learners to use virtual reality headsets to create immersive simulations

Learners to use online platforms to provide access to simulation-based training and assessment.

ii. Virtual

Learners to use mobile apps to provide access to first aid training and resources.

Learners to use interactive screens/projectors to provide real-time feedback and assessment.



### **Activity process**

- Introduce the topic of kitchen and food lab safety.
- Prepare accident scenario cards with different scenarios (e.g., cuts, burns, slips, trips, and falls) according to groups.

- Demonstrate basic first aid techniques for common accidents (e.g., cuts, burns, slips, trips, and falls).
- Discuss the safe use of kitchen and food lab equipment (e.g., knives, cutting boards, pots, pans).
- Review the common accidents that occur in the kitchen and food lab.



### Content Tips

First aid is the initial care and assistance provided to a person who has been injured or suddenly taken ill. It is the temporary and immediate treatment given to a person until medical help arrives or the person can receive proper medical attention. The main purpose of first aid is to provide immediate care and stabilize the person's condition until medical professionals can take over.

First aid is designed to:

- Preserve life
- Prevent further harm or injury
- Promote recovery
- Provide comfort and reassurance

Below is a description of first aid on common accidents.

#### **Burns/ scalds:**

- **Cool the burn:** Run cool tap water over the burn for 10 – 15 minutes.
- **Remove clothing and jewelry:** gently remove any clothing or jewelry near the burned area.
- **Apply topical ointment:** apply a topical antibiotic ointment to prevent infection.
- **Cover burn:** cover the burn with a non – stick, sterile bandage.

**Tip:** Never use ice or ice water to cool a burn, as it can cause further damage.

## Cuts and lacerations

- **Stop the bleeding:** Apply gentle pressure to the cut using a clean cloth or bandage.
- **Clean the wound:** Rinse the wound with cool or lukewarm water and mild soap.
- **Apply antibiotic ointment:** apply a thin layer of antibiotic ointment to the wound.
- **Cover the wound:** Cover the wound with a sterile bandage.

**TIP:** Apply pressure to the cut for at least 5 minutes to ensure the bleeding has stopped.

## Fractures and sprains

- **Stop activity:** stop any activity that may have caused the injury.
- **Apply ice:** Apply an ice pack wrapped in a cloth to the affected area.
- **Immobilize the affected area:** use a splint or sling to immobilize the affected area.
- **Seek medical attention:** seek medical attention if the pain persists or worsens.

**TIP:** Never attempt to move or straighten a fractured limb, as it can cause further damage.



**Learning activity 2** Discussing the content of the first aid box and their uses (pain killer, cotton wool, bandages...)

## Learning Environment

### Natural:

- i. Physical

Learner to practice using the first aid box contents.

Learners to participate in real-life scenarios that require the use of first aid box contents.

Learners to engage in group discussions on the importance of first aid and how to use the first aid box contents.

### Artificial

- i. Physical



-Learners to participate in simulated scenarios that require the use of first aid box contents.

-Learners to use games that require to use first aid box content to solve problems.

ii. Virtual

-Learner to participate in online simulations that require them to use first aid box contents to solve problems.

-Learners to participate in virtual labs that simulate real-life scenarios that require the use of first aid box contents.

**Technological:**

i. Physical

-Learners to participate in interactive video training that requires them to make decisions on how to use first aid box contents.

-Learners to participate in simulated scenarios that require the use of first aid box contents.

ii. Virtual

-Learners to participate in interactive video training that requires them to make decisions on how to use first aid box contents.

-Learners to use virtual reality headsets to practice using first aid box contents in immersive scenarios.



**Activity process**

- Introduce the concept of first aid and the importance of having a first aid box.
- Show the students the first aid box and its contents.
- Ask each group to identify the items in the first aid box that would be needed to respond to the situation.
- Demonstrate the proper use of selected first aid box items (e.g., bandages, antiseptic wipes).
- Review the contents of the first aid box and their uses.



## Content Tips

### First Aid Box Content and Their Uses

- Bandages and wound dressings: for wrapping injuries, securing dressings, and applying pressure
- Gauze pads and rolls: for dressing wounds, applying pressure, and absorbing blood
- Medical tape: for securing bandages and dressings
- Antiseptic wipes and spray: for cleaning and disinfecting wounds
- Antibiotic ointment: for preventing infection in minor cuts and scrapes
- Pain relievers: for relieving headaches, fever, and pain
- Antihistamines: for relieving allergic reactions, itching, and hives
- Burn cream: for treating minor burns
- Eye wash solution: for flushing out foreign objects or chemicals from the eyes
- First aid manual: for providing guidance on basic first aid techniques



## Learning Activity

3: Role playing first aid on common accidents: (*Cuts, burns, fracture...*)

### Learning Environment

#### Natural:

- i. **Physical:** indoor activity
  - Learners in groups to select one as a victim and others playing as the first aider.
  - Learners in groups to role play the following:
    - A learner experiences a nose bleed while cooking in the kitchen.
    - A learner suffers a laceration while handling broken glass.
    - A learner suffers a burn while handling hot liquid
    - A learner slips and falls on a wet floor.
    - A learner trips and falls over an obstacle.

## Artificial

- i. Physical
  - Learners to create a virtual kitchen scenario where a learner accidentally cuts themselves while chopping vegetables.
  - Learners to role play how to apply first aid
- ii. Virtual
  - Learners apply any available local materials which is not harmful to the skin to represent blood to fake a wound.
  - Learners to role play how to apply first aid techniques, such as cleaning and dressing the wound

## Technological:

- i. Physical
  - Learners to use models or dummies to practice first aid techniques, such as CPR, splints, insect bites, burns and scalds.
- ii. **Virtual**
  - Learners to create video – based scenarios that simulate role playing on common accidents.
  - Learners to practice on how to respond to emergencies in a virtual environment.



- Learners to role play different activities in relation to the introduced first aid accidents assigned to them specifically, (cuts, lacerations, burns, falls and trips).
- Learners to create a virtual kitchen scenario where a learner accidentally cuts themselves while chopping vegetables. The learner's role play how to apply first aid.
- Learners to apply fake wound application to wounds using available local materials that are not harmful to their skins.
- Learners to use models or dummies to practice first aid techniques, such as CPR, splints, insect bites, burns and scalds.

-Learners to create video – based scenarios that simulate role playing on first aid on common accidents. Learners to practice responding to emergencies in a virtual environment.



## Content tips

### Roles of role playing

- Role playing is acting out real – life situations to learn how to respond. It helps the learners to practice first aid skills in a fun and interactive way.
- Roleplaying helps the learners to understand first aid procedures for common accidents. It encourages practical problem solving and team work. It identifies causes and prevention of cuts, burns and fractures. It demonstrates basic first aid steps for each type of accident. It builds confidence in handling emergencies.
- During acting out, learners need to work in groups and act out different scenarios showing how to give first aid correctly. They need to learn from each other's demonstrations.
- **Expected Standard**- State the expected standard as it appears in the syllabus.



## Assessment

### Sample Questions

#### Multiple Choice Questions

1. Identify the first step in responding to a medical emergency?
  - a) Call for medical help
  - b) Provide care
  - c) Assess the situation
  - d) Use personal protective equipment

**Answer:** c) Assess the situation
2. Describe the first aid you would give to someone is bleeding heavily?
  - a) Apply a tourniquet

- b) Apply pressure to the wound
- c) Elevate the injured area
- d) Apply ice to the wound

**Answer:** b) Apply pressure to the wound

3. Explain how to treat a burn?
- a) Apply ice to the burn
  - b) Apply cool water to the burn
  - c) Apply antibiotic ointment to the burn
  - d) Cover the burn with a bandage

**Answer:** b) Apply cool water to the burn

### **Short Answer Questions**

1. Identify steps to follow when responding to a cardiac arrest?

**Sample Answer:** Call for medical help, start CPR (30 chest compressions followed by two breaths), and continue until medical help arrives.

2. Demonstrate how to treat a broken bone.

**Sample Answer:** Immobilize the injured area with a splint or sling, apply ice to reduce swelling, elevate the injured area above heart level, and seek medical attention.

1. A colleague slips and falls in the kitchen, hitting his head on the counter. He is unconscious but breathing. What do you do?

**Sample Answer:** Call for medical help, check the airway, breathing, and circulation (ABCs), and provide care until medical help arrives.

2. A learner is stung by a bee and is experiencing severe allergic reaction symptoms (hives, difficulty breathing, rapid heartbeat). What do you do?

**Sample Answer:** Call for medical help, administer epinephrine (if trained), and provide care until medical help arrives.

### **Essay Questions**

1. Analyse the steps to follow when responding to a medical emergency, including assessing the situation, calling for medical help, and providing care.

**Sample Answer:** (Student should provide a detailed description of the steps to follow when responding to a medical emergency)

**NOTE:** Consider adding more questions



### **Key Points Recap:**

- First Aid Basics  
Assess the situation: Ensure the scene is safe before approaching the casualty.  
Call for help: Call emergency services if necessary.  
Provide care: Follow basic first aid principles to treat the casualty.
- Common Accidents in the Kitchen and Food Lab  
Cuts and Lacerations: From knives, broken glass, or sharp objects.  
Burns: From hot surfaces, liquids, or electrical appliances.  
Slips, Trips, and Falls: From wet floors, uneven surfaces, or obstacles.  
Chemical Burns: From cleaning agents, pesticides, or other chemicals.  
Electrical Shock: From faulty appliances, wiring, or electrical outlets.
- First Aid for Common Accidents  
Cuts and Lacerations
  - Stop bleeding with pressure.
  - Clean with soap and water.
  - Apply antibiotic ointment and cover with a bandage.
- Burns
  - Cool with cool water for 10-15 minutes.
  - Remove clothing and jewelry near the burned area.
  - Apply topical antibiotic ointment and cover with a non-stick dressing.

- First Aid Kit Essentials
  - Bandages and wound dressings
  - Gauze pads and rolls
  - Pain relievers