



MINISTRY OF EDUCATION
HOME ECONOMICS
TEACHERS ASSOCIATION, GH



Food And Nutrition

for Senior High Schools

Year 3



Abigail Naa Korkoi Palm

Lily-Versta Nyarko

Ama Achiaa - Afriyie



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FOREWORD

Ghana's new Senior High School Curriculum aims to ensure that all learners achieve their potential by equipping them with 21st Century skills, knowledge, character qualities and shared Ghanaian values. This will prepare learners to live a responsible adult life, progress to further studies and enter the world of work. This is the first time that Ghana has developed a Senior High School Curriculum which focuses on national values, attempting to educate a generation of Ghanaian youth who are proud of our country and can contribute effectively to its development.

The Ministry of Education is proud to have overseen the production of these Learner Materials which can be used in class and for self-study and revision. These materials have been developed through a partnership between the Ghana Education Service, teacher unions (Ghana National Association of Teachers- GNAT, National Association of Graduate Teacher -NAGRAT and the Coalition of Concerned Teachers- CCT) and National Subject Associations. These materials are informative and of high quality because they have been written by teachers for teachers with the expert backing of each subject association.

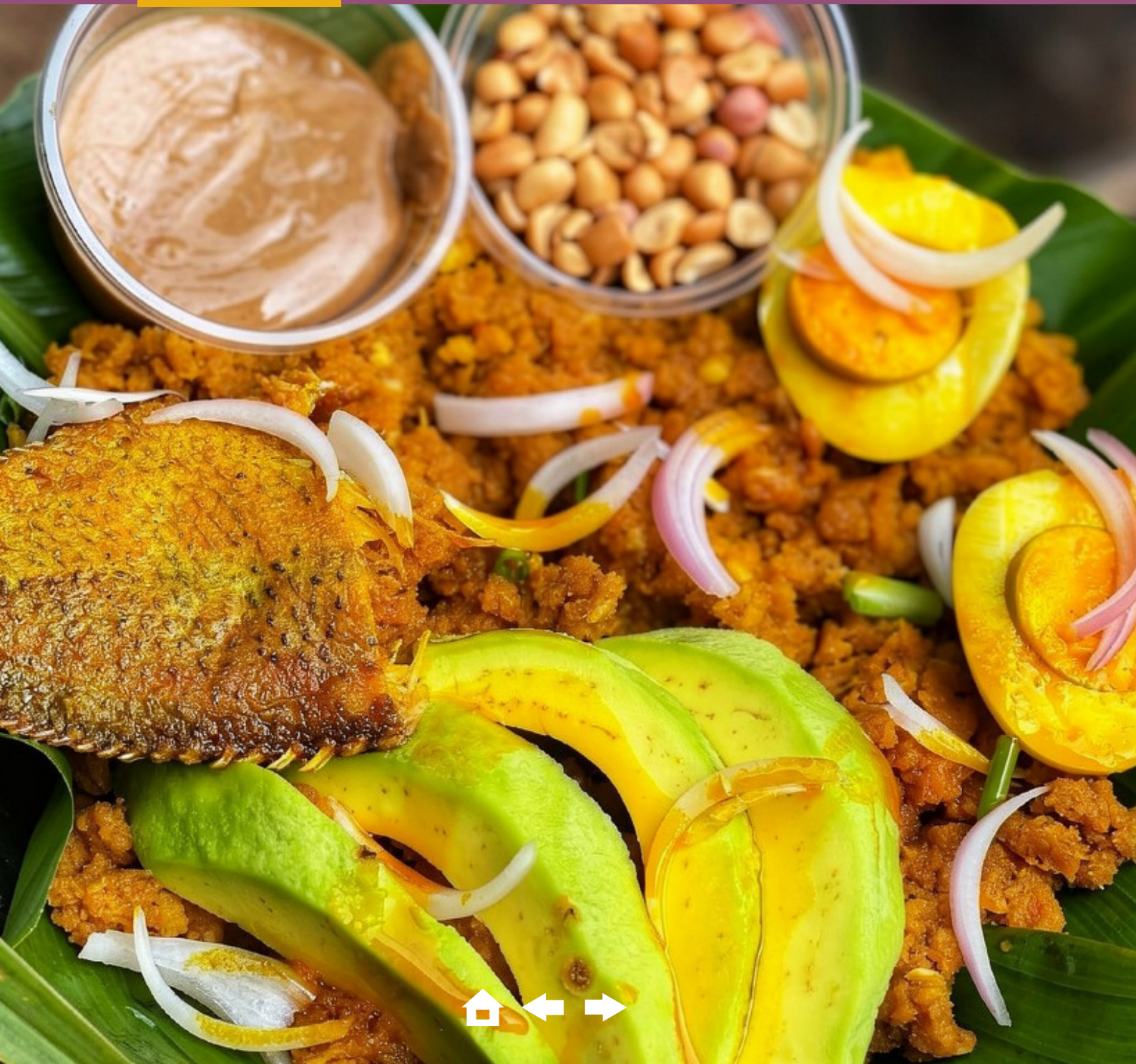
I believe that, if used appropriately, these materials will go a long way to transforming our Senior High Schools and developing Ghana so that we become a proud, prosperous and values-driven nation where our people are our greatest national asset.

Haruna Iddrisu MP
Minister for Education

SECTION

1

FESTIVE AND FESTIVAL DISHES



NUTRITION AND HEALTH

Food for Healthy Living

Introduction

In the previous years, you were introduced to the basic concepts of food and nutrition, the classification of food groups, and how nutrients, food habits, and lifestyles influence health. You also explored meal planning for individuals and families, applying nutritional knowledge to everyday choices and cooking practices. These skills prepared you to appreciate how food affects both health and culture. In this section, you will examine Ghanaian festivals and their traditional foods, analysing their role in promoting sustainable nutrition and healthy living. This will build on your knowledge of nutrition, food habits, and meal planning to explore cultural and festive foods, their social roles, and sustainability. You will also learn how festive dishes can be modified for improved health benefits, while exploring their social and communal importance in strengthening family and community ties. Finally, you will gain practical skills by planning, preparing, and cooking festive meals suitable for different occasions and events.

KEY IDEAS

- **Festivals as cultural celebrations:** Ghanaian festivals are vibrant events that preserve cultural heritage, where food plays a central role in celebration and identity.
- **Nutrition and health focus:** Planning and preparation of nutritious meals linked to Ghanaian festivals.
- **Practical cooking experience:** Practical opportunities to prepare and cook dishes for different festivals and occasions. This hands-on approach allows application of knowledge of nutrition and cultural practices in real-life cooking situations.
- **Social and communal values of food:** Festive dishes in strengthening social bonds, fostering unity, and enhancing well-being during festivals and events.
- **Sustainability** refers to practices that ensure resources such as food, water, and the environment are used wisely so they can continue to support future generations. In food, this means reducing waste, choosing local ingredients, and protecting the environment.

GHANAIAAN FESTIVALS AND THEIR ASSOCIATED TRADITIONAL FOODS

Festivals and Entertainment

Festivals

Festivals are special events or celebrations that help people remember their culture, religion, or history. They bring people together to show love, give thanks, and celebrate important moments in life.



Figure 1.1: Fufu and light soup



Figure 1.2: Chief in state

Entertainment

Entertainment is any activity that makes people happy, relaxed, and excited. During festivals, entertainment makes the celebration more fun and draws in many people.

Types of Festivals

1. **Religious Festivals:** Celebration of beliefs and religious events. Examples: Eid-ul-Fitr, Christmas, Easter, Damba.



Figure 1.3: Religious festivals

2. **Cultural Festivals:** Based on the customs and traditions of a group. Examples: Homowo, Hogbetsotso, Aboakyer, Odwira, Akwasidae.



Figure 1.4: Some Cultural Festivals

3. **Harvest Festivals:** To give thanks for a good farming season. Examples: Yam Festival, Kundum, Kakube, Paragbiele.
4. **National Festivals:** Remember important events in a country's history. Examples: Independence Day, Republic Day, Founders' Day, Farmers' Day



Figure 1.5: National festival

Types of Entertainment at Festivals

1. **Music and Dance** – Drumming and dancing like 'Kete', 'Adowa', 'Agbadza', 'Bawa'





Figure 1.6: Some Cultural Dances

2. Drama and Storytelling – Acting and telling stories to teach and entertain.



Figure 1.7: Drama

3. Games and Competitions – Fun contests like wrestling, racing, or pageants



Figure 1.8: Local wrestling

4. **Feasting** – Sharing food to show love and unity



Figure 1.9: Feasting

Why Entertainment Is Important

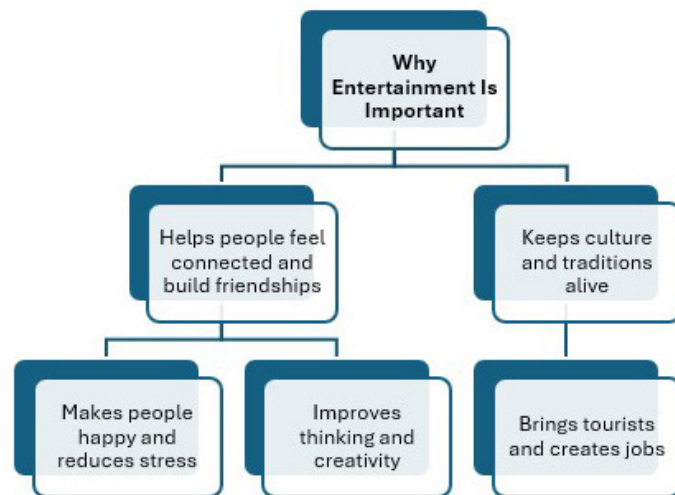


Figure 1.10: Why Entertainment Is Important

Traditional Importance of Festivals

1. Keep culture and history alive
2. Bring people together in peace and love
3. Help trade and tourism grow
4. Promote healthy local foods
5. Allow people to relax and enjoy

Things to Consider When Planning a Festival

1. Who will attend? (Audience)
2. What is the purpose of the event?

3. How much money is available? (Budget)
4. Safety and security of guests
5. How to invite and advertise
6. Environmental care and cleanliness

Major Ghanaian Festivals and Their Foods

Table 1.1: Major Ghanaian Festivals and Their Foods

Festival	People Who Celebrate	Purpose	Traditional Foods
Homowo	Ga people (Accra)	To remember a time of hunger and celebrate the harvest	Kpokpoi with palm nut soup
Fetu Afahye	Fante (Cape Coast)	To honour ancestors and clean the town	Banku with soup, seafood, and fruits
Bakatue	People of Elmina	Start of fishing season	Grilled lobster, crab stew, fried fish
Adae Kese	Ashanti people	To show	Fufu and light soup, rice dishes, and fried plantains
Ohum Festival	Akyem Abuakwa people	To mark the first yam harvest and ask for God's blessings for more harvest	Various Yam Preparations – mashed yam oto, yam porridge, boiled yam, yam fufu.

Activity 1.1 Exploring Festivals and Entertainment

1. Organise yourselves into groups of 4-5 members to discuss how a festival or entertainment event is celebrated in your community.
2. Discuss the meaning of festival and entertainment.
3. Match four different Ghanaian festivals with their traditional foods (e.g., Homowo – kpokpoi, etc.) by using the table below.

Ghanaian festivals	Traditional foods
a.	
b.	

4. Working with your group, design a simple festival menu card that shows the name of the festival, its region, and the main traditional food.
5. For homework, interview a family member, neighbour, or friend who has organised a party.
 - a. Write down at least three factors that contributed to the success of that party (e.g., good food, time management, engaging activities).

- # THE ROLE OF TRADITIONAL FOODS IN PROMOTING SUSTAINABLE NUTRITION

Traditional foods are very important in our lives. They help us stay healthy, protect our culture, and use local ingredients that are good for the body. Festival foods, especially in Ghana, do more than taste good; they help us stay strong, united, and proud of who we are.



Figure 1.11: Festival dish

Cultural Importance of Traditional Foods

1. Keeping Our Culture Alive

Festival foods help us remember our roots. Older people teach the younger ones how to cook these foods, so the tradition continues from generation to generation.

2. Meaning Behind the Meals

Some foods are not just for eating; they have special meanings. For example, some show abundance, peace, or blessings, especially during ceremonies like festivals, weddings, or funerals.

3. Bringing People Together

Festival meals are shared with family, friends, and neighbours. They help build love, unity, and community spirit.

Nutritional Importance of Traditional Foods

1. Healthy and Balanced Meals

Festival foods often include fruits, vegetables, whole grains, and lean meats, all of which give us important nutrients like vitamins, iron, and calcium.

2. Fresh and Local Ingredients

Traditional meals use foods grown locally without harmful chemicals. This keeps our bodies healthy and supports local farmers.

3. Energy for Festival Fun

Foods like banku, kenkey, roasted groundnuts, and fresh fruits give us energy to dance, walk, and celebrate during festivals.

Health Benefits of Traditional Foods

1. Healing Power of Ingredients

Local spices like ginger, turmeric, onions, and garlic help fight sickness, reduce inflammation, and keep the immune system strong.

2. Preventing Diseases

Eating more nuts, seeds, fruits, and vegetables can help prevent diseases such as heart disease, cancer, and digestive issues.

3. Solving Today's Health Problems

Adding more fruits, vegetables, and fibre to festival meals can help prevent obesity, diabetes, and high blood pressure.

4. Healthier Festival Recipes

We can improve our traditional meals by:

- a. Using less sugar and salt
- b. Adding more whole grains and fresh vegetables
- c. Using lean protein like fish or beans

Activity 1.2 Our Healthy Festival Feast

1. Form a group with 4-5 of your classmates. Discuss the cultural importance and nutritional value of traditional foods with your friends. You can research information using recipe books, textbooks or any other source.

2. Compare Traditional and Modern Festive Meals by creating a table showing differences and similarities between traditional festive meals (e.g., fufu, kpokpoi) and modern adaptations (e.g., fried rice, pizza). Highlight the health benefits and sustainability issues of each food.

Traditional Festive Meals	Modern Festive Meals	Differences	Similarities	Health benefit and sustainability

3. In your groups, discuss healthy modifications by choosing one traditional festive dish and suggesting ways to make it healthier (e.g., reducing oil, adding vegetables) while keeping its cultural meaning. You may produce your ideas using concept maps
4. Present your group's ideas to the whole class for discussions and feedback.

MODIFICATION OF TRADITIONAL FESTIVE MEALS TO IMPROVE THEIR HEALTH BENEFITS

Festive and Festival Dishes

Festive Dishes

These are special meals prepared for happy celebrations such as weddings, birthdays, or graduations. Examples: Jollof rice with chicken, Oto with egg, Tuo Zaafi (T.Z) with groundnut soup.



Figure 1.12: Festive Dishes

Festival Dishes

These are cooked during cultural or traditional festivals of different ethnic groups. They often use special ingredients and cooking methods.

Examples: Kpokpoi (Homowo), Tunbani (Damba), rice porridge, and oto with egg.



Figure 1.13: Festival dishes

Why Modify Traditional Meals (Making Festive Meals Healthier)

We can make our festive meals healthier by changing the ingredients and how we cook. Here are some easy ways

1. Use less oil

Instead of deep-frying foods like *kelewele*, try grilling, baking, or air-frying. This helps reduce too much fat but still keeps the tasty flavour.

2. Add more fibre

Use whole grains like brown rice, millet, or wheat instead of white rice. Whole grains help with digestion and keep the heart healthy.

3. Try plant proteins

Add foods like beans, mushrooms, or soy to stews and soups. These are healthy and can replace red meat that has too much fat.

Choosing Ingredients Wisely

To help the environment and stay healthy,

1. Use local ingredients like yams, kontomire, garden eggs, and plantains.
2. Cook with local spices like dawadawa, prekese, and ginger. They are tasty and good for your health.
3. Avoid food waste – reuse leftovers. For example, leftover light soup can be used to make aprapransa, and overripe plantains can be used for akakro.

Eco-Friendly Food Choices for Festivals

We can protect the environment and stay healthy by making smart food choices. Here's how:

1. Use seasonal and local foods

Choose foods like yam, cocoyam, garden eggs, and kontomire when they are in season. They are fresh, cheaper, and good for the environment. You can also use local flours like cassava and sorghum (gluten-free), and healthy seasonings like *prekese*, *ginger*, and *dawadawa* instead of too much salt.

2. Buy local food

Buying from local farmers means the food is fresher, supports Ghanaian farmers, and reduces transport pollution.

3. Avoid food waste

Do not throw away leftovers. Use leftover *light soup* to make *vegetable sauce* or *aprapransa*. Overripe plantains can be used to prepare *akakro* or *kelewele*.

Cooking in a Way That Protects the Environment

Sustainable Cooking Techniques

1. **Use less energy:** Cook with gas stoves or solar cookers instead of using charcoal or firewood. This helps save trees and reduce air pollution.
2. **Save the environment:** Using modern stoves like gas or energy-saving cookers protects the forest and keeps the air clean

Festival Menu (Example)

See **Table 1.2** for what a healthy festival menu can have.

Table 1.2: Festival menu

SN	Course	Examples
1.	Starter	Light soup
2.	Main Dish	Grilled tilapia, garden egg stew
3.	Accompaniment/ One Pot Dish	Aprapransa or Oto (One Pot Dish), Ampesi, Waakye,
4.	Snack	Akara (bean cakes), Bankye akrakro
5.	Beverage	Bisap (hibiscus drink), coconut water, millet drink, ginger drink
6.	Dessert	Nkate cake (groundnut cake), kube cake (coconut cake), groundnut balls

What We Eat on Special Occasions

Table 1.3: Special occasions with common foods

Occasion	Common Foods
Ramadan	Waakye, grilled meat, fruit salad
Christmas	Jollof rice, grilled meat, salad, kelewele
Wedding	Jollof rice, fufu or banku, grilled meat
Graduation	Jollof rice, snacks, grilled meat
Funeral	Fufu or banku with light soup or groundnut soup
Easter	Jollof rice, banku and tilapia
Birthday	Jollof rice, grilled meat, and cake

Stories Behind Some Festival Foods

1. Homowo – Kpokpoi

The Ga people suffered a great famine. When the rains came, and food grew again, they celebrated with Kpokpoi to “hoot at hunger.” It is made with fermented corn dough and served with soup.

2. Damba – Tuo Zaafi

Tuo Zaafi is a meal from northern Ghana. During the Damba Festival, it is shared to show unity and respect for leaders and elders.

3. Adae Kese – Oto and More

Among the Ashanti, Oto (mashed yam or plantains with egg) is offered during the Adae Kese Festival to honour ancestors and show thanks. Foods like fufu and palmnut soup are also enjoyed.

Activity 1.3 My Festival Menu Challenge

1. Organise yourselves into a small group with 4-5 members. Choose a festival (e.g., Homowo). Discuss the following questions.
 - a. What is the story behind your chosen festival?
 - b. What special food is eaten during the festival?
 - c. Why is it that food is important to the people who celebrate?
2. Create a balanced and sustainable menu for your chosen festival.
 - a. Your menu should include Starter, Main dish, Side dish, Snack, Beverage, Dessert.
 - b. Make the menu healthy and eco-friendly
 - c. Use local foods like yams, choose fruits and vegetables in season.
3. In your group, identify and discuss the various special occasions/events that are observed or celebrated among individuals, families and society—E.g, weddings, etc.
4. Share your answers for discussion. Use pictures or drawings to illustrate your discussion if you like.

THE SOCIAL AND COMMUNAL BENEFITS OF FESTIVE AND FESTIVAL DISHES

Food is more than just something we eat - it carries cultural, emotional, and social meaning. In Ghana, festive and festival dishes are very important during celebrations. They are not only delicious meals but also symbols of hospitality, affection, tradition, and unity. These

special foods bring people together, create joy, and help communities live in peace and harmony.

1. Fostering Unity and Social Cohesion

- a. Sharing meals during festivals strengthens relationships among family, friends, neighbours, and even strangers.
- b. It creates an atmosphere of love, peace, and togetherness.

2. Preserving Cultural Identity and Heritage

- a. Traditional dishes help keep our culture alive.
- b. Through preparing and eating them, younger generations learn about their roots and feel proud of their heritage.

3. Enhancing Emotional and Mental Well-being

- a. Eating together during festivals brings happiness, comfort, and joy.
- b. It can also reduce stress and loneliness by making people feel connected.

4. Encouraging Generosity and Hospitality

- a. During festivals, people cook extra food to share with guests, neighbours, and those in need.
- b. This shows kindness, empathy, and care for others, building a spirit of generosity.

5. Promoting Inclusiveness and Respect for Diversity

- a. Festival dishes are often shared across religious, ethnic, and social groups.
- b. This promotes respect, tolerance, and understanding among different people in society.

6. Strengthening Family Bonds

- a. Preparing festival meals is often done as a family activity.
- b. Cooking, serving, and eating together helps family members cooperate, share stories, and express love for one another.

Examples of Festival and Festive Foods and What They Mean

Table 1.4: Festive and festival foods

Dish	When/Where It is Eaten	What It Symbolises
Kpokpoi with palm nut soup	Homowo (Ga people)	Celebration of harvest and overcoming hunger
Rice porridge	Eid (Islamic festival)	Breaking fast and sharing with others

Jollof rice and cake	Birthdays, weddings, Christmas	Joy, celebration, and unity
Akple with okro soup	Volta Region events	Comfort, cultural pride, and hospitality

Reasons Festive Food Is Special

1. Spiritual Meaning

Some foods are connected to religious practices. For example, Muslims eat dates to break their fast during Ramadan just like the Prophet Muhammad did.

2. Bringing Families & Communities Together

Whether it is a Christmas dinner or an Eid feast, these meals help people gather and celebrate as one.

3. Cultural Identity

Every group in Ghana has unique food. Eating these dishes helps us remember who we are.

4. Symbol of Good Things

Many dishes stand for good health, wealth, and happiness.

5. Enjoyment and Nourishment

Festive food tastes great, and it brings smiles, stories, and love to every celebration.

Activity 1.4 Our Festival Food Story

1. Form a group with 3-4 classmates and discuss different festive and festival dishes you know in Ghana (e.g., kpokpoi, etc).
2. Discuss why festive and festival dishes are important in society (e.g., promoting unity, etc.)
3. Explain the history of Festive/Festival Dishes by watching audio-descriptive videos, observing pictures, asking elders in the community or reading books.
4. In your group, produce a short story or poster to share what you have discovered about the history of festivals with the class.

MEAL PLANNING OF FESTIVE AND FESTIVAL MEALS

Festive and Special Occasion Meals

Planning food for any celebration depends on the type of event, the time of day, the guests invited, and the event's formality. Each event is different, so the food and the way it is served should match the occasion's mood.

Dinners

Dinners are usually held in the evening and can be formal or semi-formal. They are organised to celebrate special occasions such as weddings, anniversaries, graduations, awards, and family and business events.

Time: 6:00 p.m. – 9:00 p.m.

Formality: Formal or semi-formal

Guests: Family, friends, important people.

Meals: Starter (soup or salad), main dish (like fufu with soup or rice with stew), dessert (fruit salad, pudding), and drinks (juice, soft drinks, or wine)

Service Style: Plated or buffet

Cocktail

Cocktail events are short and informal gatherings. They usually happen before dinner or during conferences. People come to socialise, stand, and move around freely while talking and enjoying small snacks.



Figure 1.14: Cocktail

Time: 4:00 p.m. – 6:00 p.m.

Formality: Informal or semi-formal

Guests: Business people, conference guests

Meals: Small snacks like spring rolls, meat pies, kebabs, puff-puffs, and fruit cocktails/mocktails.

Service Style: Standing – guests move around and eat from trays

Luncheons

Luncheons are daytime meals that can be formal or semi-formal. They are organised to celebrate success, welcome visitors, or hold community or business meetings.

Time: 12:00 p.m. – 2:00 p.m.

Formality: Formal or semi-formal

Guests: Business partners, guests, leaders

Meals: Jollof rice, grilled chicken, salad, pastries, and fresh drinks

Service Style: Plated or buffet

Tea Parties

Tea parties are small social events held in the afternoon. They are for relaxing, celebrating, or raising funds. The setting is usually simple, neat, and peaceful.

Time: 3:00 p.m. – 4:00 p.m.

Formality: Informal to semi-formal

Guests: Friends, women's groups

Meals: Tea, coffee, biscuits, cupcakes, sandwiches, and juice

Service Style: Self-service or decorated tea tables

Weddings

Weddings are very important family and community events. The food served usually shows the culture and traditions of the bride and groom.

Time: Morning to evening

Formality: Very formal

Guests: Family, friends, dignitaries

Meals: Mix of local and foreign dishes – e.g., fried rice, waakye, fufu with soup, cakes, sobolo, abadu drink, fruit punch

Service Style: Buffet or plated

Birthday Parties

Birthday parties can be held for children or adults. The food served should match the age of the people and the kind of celebration.

Time: Anytime – morning, afternoon, or evening

Formality: Informal or semi-formal

Guests: Family, friends, classmates, colleagues

Meals

- **Children:** Jollof rice, chicken, juice, ice cream, biscuits
- **Adults:** Grilled meat, salads, pastries, soft drinks

Service Style: Self-service or help from servers

Funeral Receptions

These events are usually big gatherings held after a burial or memorial. The type of food served depends on the family's customs and traditions.

Time: Morning to afternoon

Formality: Formal

Guests: Family, friends, community members

Meals: Local dishes like banku with okro stew, yam with kontomire, rice and stew, and soft or local drinks

Service Style: Buffet or take-away

Baby/Bridal Showers

These are small celebrations held for a pregnant woman or a bride-to-be. The event is usually fun, friendly, and not too serious.

Time: Afternoon or early evening

Formality: Informal or semi-formal

Guests: Close friends, women, family

Meals: Finger foods, cakes, salads, fruit, mocktails

Service Style: Buffet or self-service

Activity 1.5 Planning Festive Meals Together

1. Organise yourselves into small groups of 3-4 members. Discuss and share personal or family experiences of festive and festival dishes with peers, including
 - a. how these dishes are prepared
 - b. the occasions/events where they are served (e.g., Christmas – jollof rice, etc).
2. Use concept maps to plan meals for specific occasions (e.g., weddings, etc). Consider the following factors:
 - a. Type of guests
 - b. Cultural background

- c. Nutrition
- d. Availability of ingredients.
- 3. In your groups, discuss the importance of meal planning for specific occasions/events
- 4. Share your concept maps and discussions on the importance of meal planning with the class

PREPARATION OF FESTIVE, FESTIVALS, OCCASIONS OR EVENTS DISHES (1)



Figure 1.15: Festival dishes



Figure 1.16: Festive dishes

Practical Cooking Schedule

1. **Understanding Meal Planning**
 - a. Learn about two types of meals: everyday meals and special occasion meals.
 - b. Talk about how some Ghanaian foods are for certain events. For example, Fufu is for family gatherings, and Jollof rice is for celebrations.
 - c. Choose meals to cook today.
2. **Cooking Session 1 (Starter & Main Dish)**
 - a. Make a traditional Ghanaian starter like kelewele or light soup.
 - b. Cook a main dish like Banku with tilapia or Jollof rice.

- c. Make sure the portions and ingredients are balanced.

3. Cooking Session 2 (Dessert & Drinks)

- a. Prepare a traditional drink such as Sobolo or Asaana.
- b. Learn how to present food nicely on the plate.
- c. Make a Ghanaian dessert called nkate cake (groundnut brittle).

4. Presentation & Reflection

- a. Plate your dishes and set up a complete meal.
- b. Talk about how the different foods fit together for special occasions.
- c. Give and receive ideas to improve meal planning and cooking.

Activity 1.6 Cooking and Sharing Festive Meals

1. Individually, or with a partner, choose a special event like a birthday or a festival.
 - a. Plan, prepare, and cook meals for your special event
2. Produce a menu plan for the event (there are suggested menus below)
3. Prepare and cook dishes on your menu plan
4. After cooking, set up a display of your dishes for a whole-class gallery walk.
5. Discuss with your classmates and give feedback about their dishes. Listen carefully to their feedback, too.

Suggested Menus for Practical Activities

1. Christmas Celebration Menu

- a. **Main Dish:** Chicken stew
- b. **Accompaniment:** Vegetable rice
- c. **Side Dish:** Salad, Fried plantain
- d. **Dessert:** Cream Caramel
- e. **Drinks:** Fruit juice and ginger drink

2. Birthday Party Menu

- a. **Starter:** Fruit and vegetable salad
- b. **Main Dish:** Fried chicken
- c. **Accompaniment:** One pot dish: Jollof Rice
- d. **Side Dish:** Coleslaw
- e. **Dessert:** Ice cream

- f. **Drinks:** Fruit drinks and carrot drinks
- g. **Service:** Buffet style (everyone serves themselves)
- 3. **Traditional Festival (Homowo) Menu**
 - a. **Main Dish:** Palmnut soup with smoked fish
 - b. **Accompaniment:** Kpokpoi (steamed cornmeal)
 - c. **Snacks:** Roasted groundnuts and local biscuits
 - d. **Drinks:** Palm wine and Sobolo
 - e. **Service:** Family-style (shared among everyone)

PREPARATION OF FESTIVE, FESTIVAL, OCCASION, OR EVENT DISHES (2)

Activity 1.7 Cook and Share Festive Meals (Recap Activity)

1. Choose a special event (like a wedding, a tea party, etc).
2. Plan a menu using the assignment plan learnt in year 2. Consider nutrients learnt in year 1 in the planning of the meal.
3. Prepare and cook a meal that matches the event.
4. Make sure your food is clean, tasty, and attractively presented.
5. Set up your table with the meals your group made.
6. Walk around to look at the meals other groups have cooked.
7. Discuss with your classmates and give feedback about their dishes. Listen carefully when they give you feedback, too.

Suggested Menus for Practical Activities

1. Wedding Reception Menu

This menu is for a wedding celebration. The food is well-planned and served nicely.

- a. **Starter:** Stuffed egg
- b. **Main Dish:** Grilled fish or chicken/fish stew
- c. **Accompaniment** Curry vegetable rice
- d. **Dessert:** Baked egg custard
- e. **Drink:** Millet drink

- f. Service Style:** Food can be served on plates (plated), or guests can serve themselves (buffet)

2. Tea Party Menu

This menu is for a tea party, a small, relaxing afternoon gathering.

- a.** Beverages: Tea (black or herbal), Coffee
- b.** Snacks: Scones with jam, sandwiches, cupcakes, mini meat pies
- c.** Dessert: Fresh fruit plate or cut fruits
- d.** Service Style: Served on trays (tray service)

Extended Reading

- Koomson et al. (2019). *Food and Nutrition for Senior High Schools*. Aki-Ola published.
- Noble Amoako Sarkodie (2014). *Food and Nutrition for Schools and Colleges*. Bookworm Publishers: Kumasi.

REVIEW QUESTIONS

1. In your own words, describe three ways that entertainment makes festivals more fun and meaningful.
2. How can traditional festival foods in Ghana be modified to improve health without losing their cultural significance? Give examples to support your answer.
3. How can a traditional festive dish like Jollof rice be modified to make it healthier and more sustainable while keeping its cultural importance?
4. Compare the cultural and nutritional importance of Kpokpoi from the Homowo festival with Tuo Zaafi from the Damba festival. Why are these dishes still important today?
5. Imagine your community is planning to stop preparing traditional festive dishes during celebrations and use only modern fast foods. Write a short argument with three reasons to convince them to keep traditional festive dishes.
6. Compare the social benefits of preparing festive dishes at home with buying fast food for celebrations. Which do you think is better for promoting family and community bonding, and why?
7. Why is it important to plan meals that match the type of event, the time of day, and the guests attending? Give two reasons and explain how this helps make the event successful.
8. Imagine you are planning a meal for a traditional Ghanaian festival at your school. 9. Design a full meal (starter, main dish, side dish, dessert, and drink). Explain why each dish is suitable for the festival and how it fits the occasion.
9. Imagine you are helping to plan a wedding reception and a tea party at your school.
 - a. Using the sample menus, compare the two events and explain how the meals and service styles are different.
 - b. Why is it important to choose the right food and service for each event?

SECTION

2

FOOD PACKAGING, LABELLING, AND BUSINESS OPPORTUNITIES



NUTRITION AND HEALTH

Food Security

Introduction

In this section, you will focus on food packaging, its role in maintaining nutritional quality, hygiene and safety. You will explore eco-friendly packaging methods that support sustainability and reduce waste. Additionally, you will identify business opportunities in food production that promote healthy eating habits and sustainable nutrition. Finally, you will learn to develop, package and market nutritious food products, applying industry standards and addressing consumer health needs.

KEY IDEAS

- **Clear food labelling protects health:** It helps consumers avoid allergens and make informed choices.
- **Sustainable packaging matters:** Eco-friendly materials and minimalist designs reduce waste.
- **Packaging preserves food quality:** It keeps food fresh and safe from contamination.
- **Health-focused products are popular:** People want nutritious snacks and fortified foods.
- **Food businesses boost the economy:** They create jobs and support local communities.
- **Smart business tools help growth:** Break-even analysis and sustainability align with global goals.

THE ROLE OF FOOD PACKAGING IN MAINTAINING NUTRITIONAL QUALITY, HYGIENE AND FOOD SAFETY

Food Packaging

This is the process of enclosing food in materials designed to protect, preserve, and present it for safe transport, storage, and consumption. Food packaging is very important in keeping food safe, clean and nutritious. It does more than store or transport food. Good packaging helps make sure the food stays fresh and safe until it reaches the person who will eat it.



Figure 2.1: Packaging materials and packed items

How Packaging Maintains Nutritional Quality

Food can lose nutrients when exposed to air, light or moisture. Packaging helps stop this from happening by:

1. Blocking harmful elements – Some nutrients like vitamins A, C and E can break down when exposed to light, air or water. Good packaging stops this exposure.
2. Preventing spoilage – Fats and oils can go bad when exposed to air. This is called oxidation. Packaging stops this and helps food stay healthy to eat.
3. Using special techniques – Modified atmosphere packaging (MAP) and vacuum sealing help keep the original taste, texture and nutrients of food by reducing air inside the package
4. Keeping food clean and protected – Packaging stops insects' dirt and germs from damaging food or eating away its nutrients.

Types of Food Packaging Materials

Different types of materials are used to package food. The choice depends on the type of food and how it will be used or stored. The most common packaging materials are plastic, metal and paper or cardboard.

1. Plastic Packaging

Plastic is often used because it is flexible, cheap and can be made into many shapes.

- a. **At Home:** Plastic wraps are used to cover leftovers, zipper bags for snacks and plastic bottles for drinks.
- b. **In the Food Industry:** vacuum-sealed meat packs, disposable food containers, beverage bottles, and pre-packaged snacks.



Figure 2.2: Plastic packages

Advantages

There are several merits of Plastic packaging, some of which are:

- a. They are lightweight and easy to carry
- b. They can be shaped in many ways
- c. They keep food dry and fresh
- d. Plastic works for both hot and cold food
- e. They are cheap to make and use

Disadvantages

Some demerits of plastics include the following.

- a. They can harm the environment if not recycled
- b. Some plastics can leak harmful chemicals if used incorrectly
- c. Most are not biodegradable unless specially made to be

2. Metal Packaging

Metals like aluminium and tin are strong and keep food safe for a long time.

- a. **At Home:** Aluminium foil for cooking and reusable tins to store food.
- b. **In the Food Industry:** Used for canned foods like beans, tomatoes and fish, soft drink cans and foil packaging.



Figure 2.3: Metal packages

Advantages

- a. Block light, air moisture and germs
- b. Are strong and protect food from damage
- c. They help food last longer

Disadvantages

- a. Can rust if not coated properly
- b. May react with acidic foods and change the taste
- c. Heavier and more costly than other materials

3. Paper and Cardboard Packaging

Paper-based packaging is often used for dry foods and takeaway meals. It is seen as more eco-friendly.



Figure 2.4: Paper packages

- a. **At Home:** They are used as grocery bags, baking paper and takeaway boxes.
- b. **In the Food Industry:** They are for cereal boxes, flour bags, fast food packaging and milk cartons (coated for moisture resistance).

Advantages

- a. They can break down naturally and be recycled
- b. They are light and easy to carry
- c. They are better for the environment

Disadvantages

- a. Can get wet easily unless specially coated
- b. Can tear or collapse under weight
- c. Not good for storing fresh food long-term

Food Labelling

Food labelling refers to the information displayed on packaged food (products). It tells people what is in the food, how healthy it is, how to store it, and how to use it. Labels help shoppers choose the right food for their healthy diet or allergy needs.

Labelling also makes food companies honest and builds trust between them and the public. It supports safety and helps prevent people from being misled.



Figure 2.5: Sample of labelled items

Main Parts of a Food Label

Here are the important things found on most food labels:

1. **Product Name:** Tells you what the food is.
2. **Ingredients List:** Shows all ingredients in order from most to least used.
3. **Nutritional Information:** Gives details about calories, fat, sugar, protein, vitamins and more
4. **Allergen Information:** Warns if the food contains things like nuts, milk, gluten or soy
5. **Expiry or Best-Before Date:** Tells you how long the food will stay safe to eat.
6. **Storage Instructions:** Explains how to keep the food fresh and safe.
7. **Manufacturer Details:** Shows who made or packed the food and how to contact them.
8. **Additives and Preservatives:** List extra ingredients used to keep the food fresh or make it taste or look better.

Why Food Labelling is Important

Food labels are not just for information. They are also a key tool to keep food safe and help people make better choices. Here is why they matter:

1. **Protects Health and Safety:** Labels warn about expiry dates and allergies so people can avoid unsafe food.

2. **Promotes Healthy Eating:** Shows nutrition details so people know what they are eating.
3. **Prevents Allergic Reactions:** Helps people avoid foods that can make them sick.
4. **Supports Smart Choices:** Allows people to pick food that fits their diet or beliefs.
5. **Helps with Weight and Health Goals:** Gives calorie and nutrient information for those following a diet or managing a condition.
6. **Follows the Law:** Makes sure companies meet food safety rules.
7. **Builds Trust:** Honest labels make customers feel confident in what they buy.

Activity 2.1 Exploring Food Packaging and Labelling

1. With a partner, observe the picture below and discuss
 - a. The types of food packaging materials are shown.
 - b. Why food packaging is important in food production.



Figure 2.6: Different packages arranged

3. Explore real food packages from your school tuckshop or any nearby shop:
 - a. Examine at least two packages for their materials and labels.
 - b. Use your jotter to record what the packaging is made of.
 - c. In your groups, discuss how each package helps protect the food and keep it safe, nutritious and clean. Share with your friends and receive feedback.
4. With your partner, closely observe food labels on the packages explored:
 - a. List key information found on the labels (e.g. ingredients, etc) and its importance.
 - b. Share any past experiences where food labels helped you or your family.

- c. Create a “Why Labels Matter” poster to show what you have learned, share what you did with your group and review your notes.

ECO-FRIENDLY PACKAGING METHODS



Figure 2.7: Eco-friendly packages

Eco-Friendly Packaging Methods

Eco-friendly food packaging helps keep food safe and fresh while also protecting the environment. It uses materials that do not harm the environment and can be broken down or reused. These methods reduce pollution and help build a greener world.

Here are some common types of eco-friendly food packaging.

1. Biodegradable and Compostable Packaging

These are made from natural materials like cornstarch, sugarcane or bamboo. They break down easily after use and do not leave anything harmful behind. They are much safer for the environment than plastic.

2. Edible Packaging

This type of packaging is made from food ingredients such as seaweed, rice paper, or starch. You can eat it along with the food or throw it away without causing harm to nature. It helps reduce waste.

3. Minimalist Packaging

This method uses very little material to wrap or protect food. It is often made from recycled paper plant fibres or farm waste. It saves resources and cuts down on rubbish.

4. Beeswax Wraps

Beeswax wraps are made from cotton mixed with beeswax, natural oil and tree resin. They can be used again and again. They are good for wrapping fruit, vegetables and bread instead of using plastic.

5. Glass Containers and Jars

Glass is strong, clean and safe for food. It does not leak any chemicals and can be used over and over. It is also fully recyclable.

6. Recyclable and Reusable Packaging

Things like cardboard, metal tins and some plastics can be used again or recycled. This helps reduce waste and save natural resources.

7. Plant-Based Bioplastics

These are made from plants like corn or cassava. They look and feel like normal plastic, but they can break down better in the right conditions. They are a greener choice than traditional plastics.

Why Eco-Friendly Packaging Matters

Eco-friendly packaging is not just good for the environment. It also helps keep food fresh, safe, and healthy.

Here are some reasons why it is important

1. Less Plastic Pollution

Using eco-friendly packaging means using less plastic. This helps prevent rubbish from accumulating in the sea and on land. Plastic takes many years to break down and can harm animals and nature.

2. Keeps Food Fresh for Longer

Some eco-packaging, such as beeswax wraps and glass jars, is great at keeping food fresh. This means less food is wasted.

3. Helps the Environment

Eco-packaging supports good habits like using fewer resources and making less waste. It encourages people to reuse items and care more about the environment.

4. Safer for Health

Many normal packaging materials have chemicals that can get into food. Eco-friendly packaging is usually made without these harmful substances, so it is safer for people.

5. Easy to Reuse or Recycle

Most eco-friendly packages are made to be used more than once or recycled. This saves energy and cuts down the need for new raw materials.

Activity 2.2 Eco-Friendly Food Packaging

1. Organise yourselves into a group with 4 members. Look around your environment (e.g., a school, home, market, or canteen) and identify examples of eco-friendly packaging (e.g., banana leaves or paper bags).
2. Discuss the importance of using eco-friendly packaging materials for food (e.g., keeping food safe, etc).
3. Produce a list of at least five methods of eco-friendly packaging and explain how they help preserve food and reduce waste.
4. Present your findings to the class for feedback

DESIGNING, DEVELOPING AND USING SUITABLE PACKAGING

Testing How Strong and Useful Food Packaging Is

Before using any food packaging, it is important to test its effectiveness. This helps ensure the packaging keeps food safe, fresh, and in good condition.

Ways to Test Food Packaging

1. Drop Test

Drop the package from a set height onto the floor. Check if it breaks or spills. If it stays in one piece, it is likely strong enough for transport.

2. Moisture Resistance Test

Place the package in a humid area or sprinkle a little water on it. Check if the water goes through. Good packaging should keep water out and keep the food dry.

3. Stacking Test

Stack several packages on top of each other. See if the package at the bottom stays strong without bending or breaking. This shows if it can hold weight.

How to Check the Results

Ask the following questions after each test

1. Did the package protect the food from getting damaged? Protection
2. Did the food stay fresh and unchanged? Freshness
3. Did the seal stay closed properly? Seal strength
4. Did the material stay strong even with pressure or water? Material performance
5. Is this package the right choice for the food inside? Suitability

Successes and Problems in Making Eco-Friendly Food Packaging

Many companies are now trying to use packaging that is better for the planet. These green options help reduce waste and pollution.

Still, there are both good results and some problems.

What Has Gone Well

Table 2.1: What Has Gone Well

1.	New Green Materials	Packaging is now made from natural materials such as cornstarch, banana leaves, sugarcane, or seaweed. These break down easily in nature.
2.	Less Plastic	Many companies have stopped using single-use plastic. They now use paper, glass or plant-based materials that are kinder to the earth.
3.	More Awareness	People now understand the need for eco-friendly packaging. More shoppers choose products that are packaged in ways that help the planet.
4.	Edible Packaging	Some packaging is now made from food-safe ingredients and can be eaten. This reduces waste even more. It is often used for snacks and desserts.
5.	Reusable and Recyclable	Designs, Glass jars and cardboard boxes can be reused or recycled. This helps reduce rubbish and saves resources.

Challenges to Overcome

Table 2.2: Challenges to Overcome

1.	High Cost	Eco-friendly materials cost more to make than normal plastic. This can be hard for small businesses or customers who want to save money.
2.	Not Always Strong	Some green packaging does not protect food as well as plastic. It may let in water or air more easily.
3.	Poor Recycling Systems	In some places, there are no good recycling centres. Even if the packaging is recyclable, it may still end up in a landfill.
4.	Short Life of the Package	Some biodegradable materials break down too quickly. This makes them bad for food that needs to stay fresh for a long time.
5.	Consumer Habits	Some people do not know how to properly dispose of eco-friendly packaging. This can lead to recycling problems or more harm to the environment.

Activity 2.3 Eco-Friendly Food Packaging Project

Materials needed: Recycled cardboard, biodegradable wraps, cloth bags, beeswax wraps, twine, glue, scissors and markers.

1. Individually or with a classmate, design and create a prototype package for a selected food product using eco-friendly materials.
2. Decide on a food product to be packaged
3. Design a prototype package using eco-friendly materials
4. Conduct durability tests on your package (drop test, moisture resistance, etc).
5. Design creative labels, considering how fonts and images influence customer choices
6. Include labelling details such as product name, expiry date, storage instructions, and branding elements.
7. Record results, share findings with other groups and use feedback to modify and improve your design.
8. Present your improved package and branding strategies for a class exhibition. Explain your material choices and design features to your peers.

CONCEPT OF FOOD AND NUTRITION BUSINESSES

Food and Nutrition Businesses

A business is an organised activity where people make and sell goods or services to earn money or provide value. In food and nutrition, a business is any organisation that works with food, whether growing, making, selling, or offering food-related services, while ensuring it meets health, safety, and nutrition standards.

A Food and Nutrition Business focus on providing food that is not only safe and tasty but also healthy and good for people's diets. These businesses come in many forms, such as:

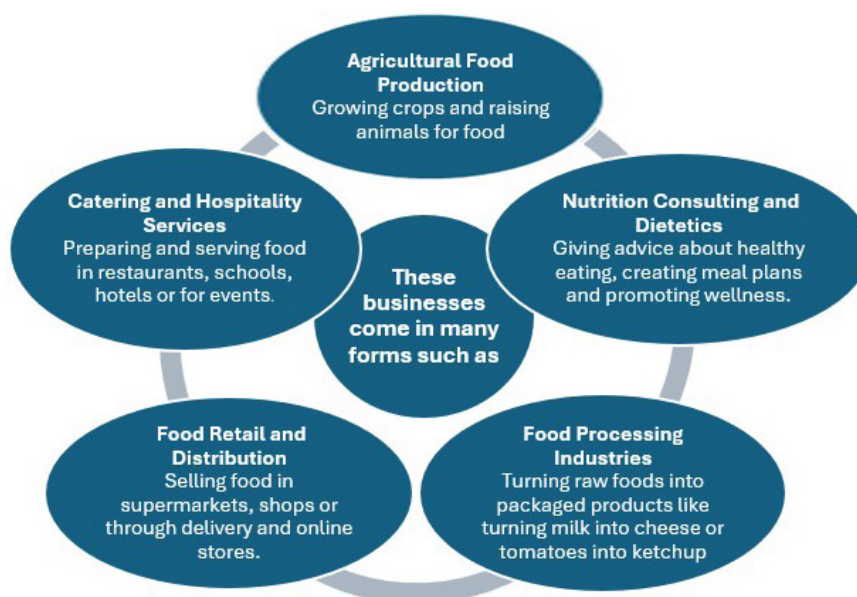


Figure 2.8: Forms of businesses

Importance of Food and Nutrition Businesses

Food and nutrition businesses support sustainable development by helping people, protecting the environment and boosting the economy.

Social Importance

Table 2.3: Social Importance for Sustainable Development

1.	Improved Food Security and Access	These businesses help reduce food waste and make food available all year round, so more people can get the food they need
2.	Better Public Health Outcomes	They promote the consumption of safe, healthy food, which helps reduce illnesses caused by a poor diet or contaminated food.
3.	Nutrition Education and Consumer Awareness	They teach people about healthy eating so consumers can make better food choices
4.	Promotes Health and Well-being	By providing nutritious and balanced meals, they help improve overall health and reduce diet-related diseases
5.	Empowerment of Women and Youth	These businesses create opportunities for women and young people to gain skills, earn income and take on leadership roles.

Environmental Importance

Table 2.4: Environmental Importance for Sustainable Development

1.	Promotion of Sustainable Agriculture	Many food businesses support eco-friendly farming that uses natural resources wisely and supports local farmers.
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2.	Reduction in Food Waste	Through better storage and transport, they help prevent food waste.
3.	Support for Climate Action	They use sustainable packaging, reduce pollution and promote green practices that are good for the planet.

Economic Importance

Table 2.5: Economic Importance of Sustainable Development

1.	Job Creation and Economic Development	Food businesses provide many jobs, from farming and cooking to delivery and marketing.
2.	Promotion of Entrepreneurship	They give people the chance to start their own food businesses, helping local economies grow.
3.	Revenue Generation	The food industry earns money through trade and taxes, supporting national development.
4.	Expansion of International Trade	Local food products can be sold in other countries, bringing in foreign income and opening global markets.

How Food and Nutrition Businesses Support Sustainable Development

Food and nutrition businesses play a big role in tackling global challenges. They improve health, create jobs, protect the environment and boost local and national economies. These businesses work across farming, food making, catering, retail and health services.

How They Help Achieve the UN Sustainable Development Goals (SDGs)

1. SDG 2: Zero Hunger

They help produce and distribute more food, reducing hunger and improving nutrition. They support the development of foods rich in nutrients

2. SDG 3: Good Health and Well-being

By promoting healthy and safe eating, they help prevent illnesses linked to poor diets

3. SDG 8: Decent Work and Economic Growth

The industry offers many job opportunities and supports small businesses, especially for women and youth. It boosts the economy by encouraging local businesses and trade

4. SDG 12: Responsible Consumption and Production

Food businesses promote the use of sustainable materials, reduce waste and encourage responsible sourcing.

In summary, food and nutrition businesses are essential for a better future. They help people eat well, support local farmers and workers, protect the environment and drive

the economy. When run responsibly, these businesses make a real difference in achieving sustainable development goals and improving the lives of everyone.

Activity 2.4 My Mini Business

1. Work in small groups of 2-3 members and discuss the meaning of business. Write down your simple definition of business
2. Explain at least three reasons why food and nutrition businesses are important in society. Write down your ideas
3. Present your definitions and ideas for class discussion and feedback.

BUSINESS OPPORTUNITIES IN FOOD PRODUCTION

As more people around the world learn about the importance of good health, wellness, and protecting the environment, they are seeking better food choices. This creates many new business opportunities for people who want to work in the food industry. These businesses not only give people the food they need but also help care for the planet.

Business Opportunities in the Food Industry

1. Organic and Natural Food Production

People are choosing foods that are grown without harmful chemicals or artificial additives. Businesses can grow and sell fresh, natural, and safe fruits, vegetables, and other foods. These foods are better for our health and the environment.

2. Plant-Based and Alternative Protein Foods

More people are eating less meat or choosing to be vegetarian or vegan. This creates an opportunity to produce foods such as tofu, beans, lentils, or plant-based meat. Some businesses are even using insects as a source of protein. These foods are healthy and better for the planet than meat.

3. Functional and Fortified Foods

Some foods can be made even healthier by adding extra vitamins, minerals or probiotics (good bacteria for the stomach). These foods can help people get the nutrients they need and stay well. Businesses can create items such as fortified cereals, yoghurt, or energy bars.

4. Eco-Friendly Food Packaging

Plastic waste is harming the environment. There is a strong need for packaging that can be reused, recycled, or break down naturally. Businesses can make or

use biodegradable packaging to protect the planet and attract eco-conscious customers.

5. Healthy Snack Production

People still love snacks, but they want healthier options. There are great business opportunities in making snacks from fruits, nuts, seeds or whole grains. These snacks can be low in sugar and fat but high in fibre and energy.

6. Food Waste Reduction

A lot of food gets thrown away. Businesses can find smart ways to use leftover or surplus food, like turning old bread into croutons or fruits into jam. Others can offer composting services or create apps that help restaurants and shops donate extra food to people in need.

7. Sustainable Beverage Production

There is a growing demand for healthy, sustainable drinks. Businesses can produce natural juices, herbal teas, or plant-based milk using sustainably sourced ingredients.

8. Teaching About Healthy Eating and Sustainability

Not everyone knows how to eat well or make eco-friendly choices. Businesses can offer workshops, mobile apps, or online platforms that teach people how to choose better foods while protecting the environment.

There are many smart business ideas in food and nutrition today. These businesses help people stay healthy, protect the environment and meet the changing needs of consumers. Anyone with good ideas who cares for others and the planet can take part in this growing industry.

Example of a Business Plan

Business Idea/Concept

1. **Business Name:** Fresh Sip Smoothies
2. **Nature of Business:** Fresh Sip Smoothies makes and sells healthy fruit smoothies using fresh, local fruits. The drinks are served in eco-friendly cups and are made without added sugar or artificial flavours.
3. **Vision:** To be the top choice for natural and healthy drinks in schools and communities across Ghana.
4. **Mission:** To give people a tasty and healthy drink option while supporting local farmers and reducing plastic waste.
5. **Product Name:** Fresh Sip Natural Smoothies
6. **Unique Selling Point (USP):** Made fresh daily with local fruits and no added sugar. Served in compostable cups.

Target Market

1. Students
2. Office workers
3. Health-conscious people
4. Parents and children
5. Gym users

Product Line

1. Mango Banana Smoothie
2. Pineapple Ginger Smoothie
3. Watermelon Mint Cooler
4. Coconut-Date Energy Shake

Marketing Strategy

1. Posters and flyers at schools, shops and gyms
2. Social media posts on Instagram and WhatsApp
3. Free samples at school events and health clubs

Financial Plan (Overview)

1. Start-up capital: GHS 8,000 (blender, cooler, fruits, cups, banner)
2. Price per cup: GHS 5–8
3. First year target: GHS 36,000 in sales
4. Break-even: In 6–8 months

Sustainability Focus

1. Using cups and straws made from paper or plant-based material
2. Using fruits from local farmers
3. Leftover fruit peels used for compost

Business Plan Outline

1. Executive Summary

Fresh Sip Smoothies is a small business that sells healthy fruit smoothies made with local fruit. It supports wellness and reduces plastic waste.

2. Market Analysis

More people are looking for healthy drinks.

- a. Other smoothie businesses use plastic cups or imported fruit.
 - b. Fresh Sip uses local fruit and eco-friendly packaging.
- 3. Product Description**
- a. Smoothies come in different fruit flavours
 - b. Packed in compostable cups with simple labels
- 4. Marketing Strategy**
- a. Free tasting at schools and gyms
 - b. Posters with health messages
 - c. Social media with photos and promotions
- 5. Operations Plan**
- a. Buy fruit from local markets or farms
 - b. Make smoothies in a small kitchen near the University
 - c. Sell from a smoothie cart or small shop
 - d. Hire 2 helpers for blending and sales
 - e. Sell during school breaks, lunch time and weekends
- 6. Financial Plan**
- a. Start-up capital: GH¢ 8,000
 - b. Expected monthly income: GH¢ 3,000–4,500
 - c. Break-even: In 6 months
- 7. Sustainability Plan**
- a. Use paper cups and plant-based straws
 - b. Give fruit peels to farms for compost
 - c. Teach customers about reducing waste

Activity 2.5 My Healthy Food Idea

1. Form a small group with 3 classmates and identify real food businesses (online, in books, or in your local area) that:
 - a. Use healthy ingredients
 - b. Protect the environment (e.g. reduce waste, use local produce)
2. In your group, choose one food business that inspires you (it can be a real one)
3. Develop a *business concept*
 - a. What the business is about?

- b. Target customers
 - c. Unique features
 3. Draft a *business plan* including;
 - a. Products/services
 - b. Resources and materials needed
 - c. Marketing strategies
 - d. Cost considerations and pricing
 - e. Sustainability practices
 4. Present your business concept and plan in a panel discussion with peers.
 5. Receive feedback and reflect on ways to improve your idea.

DEVELOP, PACKAGE AND MARKET A NUTRITIOUS FOOD PRODUCT

Product Development

1. Create a food recipe using local and healthy ingredients like oats, moringa, millet or groundnuts.
2. Make sure the product has high nutritional value and does not contain harmful additives or chemicals.
3. Share your product with classmates for taste testing and ask for feedback on taste, health value, and texture.

Packaging

1. Choose eco-friendly and safe packaging like paper wrappers, banana leaves or reusable containers.
2. Make your packaging attractive and informative. Include the following information.
 - a. product name
 - b. ingredients
 - c. nutrition facts
 - d. expiry date
 - e. storage advice.
3. Ensure the packaging keeps the food clean and fresh.

Marketing

1. Decide who will be your main customers (e.g. students, workers, health-conscious people)
2. Think of ways to promote your product: Use posters, word-of-mouth, school displays or social media
3. Tell customers what makes your product special. For example: “Made from natural local ingredients – healthy and affordable”
4. Create a brand name logo and slogan to make your product easy to remember

Follow Food Safety Rules and Standards

1. Always keep your hands, tools and work surfaces clean during cooking and packaging
2. Follow local food laws and safety rules from Ghana’s Food and Drugs Authority (FDA)
3. Label your products correctly and keep records like dates of production and batch numbers for traceability.

Understanding Break – Even Analysis

Break-even analysis helps you know how much you must sell to cover your costs. It shows the point at which your business is neither making a profit nor incurring a loss.

Types of Costs

1. **Fixed Costs:** Do not change, no matter how many products you make.
Examples: rent equipment, licences, salary
2. **Variable Costs:** Change depending on how many products you make or sell.
Examples: ingredients, packaging, transport, casual labour

Example: Sobolo Business

Mrs Red sells bottled sobolo (hibiscus drink) in Koforidua. She wants to know how many bottles she needs to sell each month to avoid making a loss.

Fixed Costs per month

1. **Rent of production space:** GH¢ 400
2. **Electricity:** GH¢ 150
3. **Licence and permits:** GH¢ 50
4. **Her basic salary:** GH¢ 500

Total Fixed Costs = GH¢ 1100

Variable Costs per bottle

These costs increase with each bottle of sobolo she makes.

1. **Dried hibiscus:** GH¢ 0.70
2. **Sugar and ginger:** GH¢ 0.30
3. **Bottle and label:** GH¢ 0.50
4. **Transport:** GH¢ 0.20

Total Variable Cost per bottle = GH¢ 1.70

She sells each bottle of sobolo for GH¢ 4.00

Break-Even Point (Units)

Break-even formula:

Break-Even Units = Fixed Costs ÷ (Selling Price – Variable Cost)

Mrs Red's Calculation:

Break-Even Units = GH¢ 1100 ÷ (GH¢ 4.00 – GH¢ 1.70)

Break-Even Units = GH¢ 1100 ÷ GH¢ 2.30

Break-Even Units ≈ 478.3

Mrs Red must sell at least 479 bottles of sobolo each month to cover her costs and avoid a loss.

Break-Even Revenue

Break-Even Revenue = Break-Even Units × Selling Price

Break-Even Revenue = 479 × GH¢ 4.00

Break-Even Revenue = GH¢ 1916

What this means

1. If she sells fewer than 479 bottles, she will lose money
2. If she sells more than 479 bottles, she will make a profit
3. For each extra bottle she sells, she makes GH¢ 2.30 profit (called her contribution margin)

How Break-Even Helps the Business

1. Set clear sales goals
2. Decide on a good price
3. Reduce costs if needed
4. Check if the business idea is workable in the market

Checking Business Performance

Once your business is running, check if it is doing well by looking at:

- a. How many items are sold compared to your break-even number? Total sales compared to your break-even revenue
- b. Profit – is it steady or growing
- c. Costs – are you spending wisely
- d. Customer feedback – do people like your product and keep buying?

Improving the Business

If your business is not doing well, here are some ways to improve:

1. Adjust your price or reduce costs to make it easier to break even
2. Promote your product better using new ideas like discounts or tastings
3. Improve your packaging or add new flavours to attract more buyers
4. Make production faster and cleaner to save time and money

Activity 2.6 From Business Plan to Market

1. Working in pairs, develop a personal business plan for a chosen food product.
2. Prepare a small batch of your chosen food product.
3. Package the product using safe, attractive, and eco-friendly materials that meet quality and safety standards (e.g., proper labelling with name, etc.)
4. Market your chosen food product.
5. Record the following financial information
 - a. Cost of ingredients
 - b. Packaging
 - c. Labour
 - d. Sales revenue from your marketed products
 - e. Any other expenses
6. Use this information to calculate your breakeven point (when total revenue = total costs)
7. Compare performance results and discuss what worked well and what challenges were faced.
 - a. Reflect on how quality, safety, and packaging influenced sales.
 - b. Suggest improvements for future business operations.

Extended Reading

- Adigbo, E. C., & Maddah, C, K.(2011). *Food and Nutrition*. Kwadwoan Publication: Accra.pg. 350-357
- Koomson et al. (2019). *Food and Nutrition for Senior High Schools*. Aki-Ola published: Accra. Pg 650-658
- Noble Amoako Sarkodie (2014). *Food and Nutrition for Schools and Colleges*. Bookworm Publishers: Kumasi. Pg, 292-296

REVIEW QUESTIONS

1. Using your understanding of food packaging and its role, analyse how choosing between plastic, metal or paper/cardboard packaging can affect both the nutritional quality and safety of food. Use at least one example for each packaging type to support your analysis.
2. Why is it important to consider both the durability of packaging and the environmental impact when designing eco-friendly packaging for 'shito' or any food product
3. Explain how food and nutrition businesses can help reduce both diet-related diseases and environmental damage at the same time. Use examples to support your answer.
4. Evaluate how food and nutrition businesses contribute to two Sustainable Development Goals (SDG 2: Zero Hunger and SDG 8: Decent Work and Economic Growth). Use real or imagined examples to support your response.
5. How can traditional Ghanaian foods like baobab or 'dawadawa' be used to create a healthy and sustainable food business in urban areas? Suggest a business idea to support this and explain how your business will help both people and the environment.
6. Design a marketing strategy for a new probiotic yoghurt drink that appeals to both children and parents. Justify your choices in packaging, messaging, and distribution by analysing how each element influences consumer behaviour and supports healthy eating habits.

SECTION

3

CONFECTIONERY PRODUCTS



FOOD PRODUCTION

Food Production Technology

Introduction

In this section, you will deepen your knowledge of food and nutrition, science, preparation, and healthy living by focusing on sugars and sweeteners, their types, properties, and functions in food production and sugar craft. You will also demonstrate creative sugar-craft techniques for designing confectionery products. Finally, you will apply scientific principles of recipe development to develop and modify recipes that improve taste, texture, nutrition, and presentation.

KEY IDEAS

- Heat changes sugar into products like syrups, caramel, or treacle, which add colour and flavour to foods.
- Properties such as solubility, caramelisation, and moisture absorption determine their use in food and sugar craft.
- Sugars and sweeteners add sweetness, improve taste, and help preserve food.
- Sugars are carbohydrates that give the body energy; they may be natural (e.g., glucose, fructose, lactose, sucrose) or refined (e.g., granulated, icing, molasses).
- Sweeteners can be natural (e.g., honey, stevia, maple syrup) or artificial/low-calorie (e.g., aspartame, saccharin, sucralose). They serve many functions in food, including sweetening, improving texture, facilitating fermentation, preserving, and decorating.
- Scientific principles of recipe development to develop and modify recipes

THE TYPES, PROPERTIES AND FUNCTIONS OF SUGARS OR SWEETENER IN FOOD PRODUCTION AND SUGAR CRAFT



Figure 3.1: Icing sugar



Figure 3.2: Granulated sugar



Figure 3.3: Cube sugar



Figure 3.4: liquid sugar (honey)



Figure 3.5: liquid sugar (molasse)

Sugars and Sweeteners

Sugars and sweeteners are substances we use to make food and drinks sweet. They may come from natural sources, such as fruits, or be made artificially in factories. Apart from sweetness, they also help in food preservation, baking, and decoration.

Sugars

Sugars are carbohydrates that give the body energy. They occur naturally in foods like fruits, vegetables, and milk, but are also added to many processed foods.

Types of Sugars

Natural sugars

1. *Glucose*: found in fruits and vegetables
2. *Fructose*: found in fruits and honey
3. *Lactose*: found in milk
4. *Sucrose*: table sugar from sugarcane or sugar beet

Refined sugars

1. Granulated sugar (white or brown)
2. Castor sugar (fine)
3. Icing sugar (powder)
4. Molasses and treacle (thick syrups from refining)

Sweeteners

Sweeteners are sugar alternatives to sweeten foods and beverages. Some are natural, while others are artificial or low-calorie.

Types of Sweeteners

1. **Natural sweeteners**: honey, maple syrup, agave nectar, date syrup/powder, stevia
2. **Artificial sweeteners**: aspartame, saccharin, sucralose, Ace-K

Functions of Sugars and Sweeteners in Food

1. Give sweetness and improve taste
2. Add bulk and texture (e.g., in cakes)
3. Preserve food (e.g., in jams)
4. Feed yeast in bread-making
5. Help browning and caramelisation
6. Provide low-calorie options for weight/diabetes control (sweeteners)

Forms of Sugars and Sweeteners in Food Craft

1. **Granulated sugars:** fine (caster), coarse (demerara), or stevia (natural option)
2. **Cube sugars:** white or brown, used in tea and coffee
3. **Liquid sugars:** honey, molasses, maple syrup, agave nectar, date syrup, glucose syrup
4. **Powdered sugars:** icing sugar, date powder, powdered glucose

Properties

1. **Solubility:** dissolve easily in liquids
2. **Sweetness intensity:** varies; stevia is much sweeter than table sugar
3. **Caramelisation:** turns brown and tasty when heated.
4. **Hygroscopicity:** ability to absorb moisture (keeps cakes soft).
5. **Crystallisation:** affects the texture of sweets.
6. **Preservation:** prevents microbial growth in high amounts.

Functions in Food Production and Sugar Craft

1. **Sweetening:** Enhances the palatability of foods and drinks.
2. **Texture Improvement:** Adds crispness, chewiness or smoothness (e.g., in cakes or candies).
3. **Colour Development:** Through caramelisation or Maillard reactions in baking and roasting.
4. **Fermentation Aid:** Provides food for yeast in bread-making.
5. **Preservation:** Extends shelf life in jams and syrups.
6. **Decoration and Aesthetic Appeal:** In sugar flowers, pastillage, pulled sugar, and fondant.
7. **Moisture Retention:** Maintains softness in cakes and muffins.

Effects of Heat on Sugar

1. Moist heat: dissolves into syrup around, forms golden syrup, caramel, or treacle, burnt sugar.
2. Dry heat: sugar melts at 160°C, becomes caramel at higher heat (above 170°C), and turns into treacle (180°C) or burns (200°C) if overheated, then later turns to carbon-like mass, which is not useful.

Activity 3.1 Sugars and Sweeteners

1. Your teacher will help organise yourselves into 4 groups. In your group, discuss the sugars and sweeteners you use at home or that you see in your community (e.g., white sugar, honey, etc).
 - a. Classify the sugars and sweeteners into their forms: granulated, cube, liquid, powdered.
 - b. Discuss their uses in daily meals and food crafts (e.g., cakes, jams, etc).
 - c. Identify which of them are healthier alternatives and explain why.
 - d. Share your findings with another group.
2. In your groups, explore the effects of heat on sugar. Observe sugar heated by:
 - a. Dry heat (in a pan – melts, caramelises, turns treacle, burns).
 - b. Moist heat (sugar with water – dissolves, becomes syrup, forms thread/ ball stages).
3. Record in a table what you see: colour, texture, and stage reached.

Heating method	Colour change	Texture	Stage reached
Dry heat			
Moist heat			

4. Present your findings to other groups for discussions and feedback.

INNOVATIVE SUGAR CRAFT FOR ARTISTIC CONFECTIONERY DESIGN (1)

Have you ever walked past a bakery and stopped just to admire the beautiful cakes on display? The curls of cream, the smooth, polished wedding cakes, or even the funny cartoon characters made of sugar? That is sugar craft. With the right skills and a little creativity, ordinary cakes and pastries can be transformed into edible works of art.

Sugar Craft

Sugar craft is the art of using sugar and icing to make cakes and pastries look beautiful and taste delicious. It combines creativity and skill, allowing bakers to design flowers, patterns, figures, and shiny finishes on cakes for special occasions. Icing is very important in sugar craft because it:

1. Improves the appearance of cakes.
2. Adds flavour and texture.
3. Helps cakes match the theme of an event (e.g., birthday, wedding, Christmas).



Figure 3.6: A decorated cake



Figure 3.7: artistic confectionery design

Types of Icing and Their Uses

1. Butter Icing (Buttercream)



Figure 3.8: Butter icing on a cake

Made by mixing butter with icing sugar. Flavours and colours can be added.

Uses

- a. Soft and creamy; great for children's cakes.
- b. Used for filling and covering cakes or piping borders and swirls.
- c. Easily piped into different shapes and patterns for borders, flowers, and swirls.

2. Sugar Paste (Fondant)



Figure 3.9: Fondant icing on a cake

Smooth, pliable icing made from sugar, glucose, and gelatin. It can be rolled out and placed over cakes.

Uses

- a. Perfect for wedding and celebration cakes.
- b. Used to model decorations (flowers, bows, figures).
- c. Creates a polished surface that can be painted or dusted.

3. Royal Icing



Figure 3.10: Royal icing on a cake

A hard-drying icing made from egg whites (or meringue powder) and icing sugar.

Uses

- a. Good for fine piping (lace, writing, borders).
- b. Creates 3D decorations like flowers.
- c. Used for Christmas cakes, biscuits, and gingerbread houses.

4. Glacé Icing

Simple icing made by mixing icing sugar with a little water or fruit juice

Uses

- a. Glazes buns, cookies, and simple cakes.
- b. Dries quickly with a shiny finish.
- c. Easy to colour or flavour.



Figure 3.11: Glacé Icing on a cake

5. Whipped Cream Icing



Figure 3.12: Whipped Cream Icing on a cake

Light and airy icing made by whipping cream with sugar and stabilisers.

Uses

- a. Used for fresh cream cakes, trifles, and eclairs.
- b. Gives a soft, light texture.
- c. Needs refrigeration, best for short-term use.

Step-by-Step Process for Decorating a Cake

1. Group Formation & Theme Selection

- a. Form groups.
- b. Choose an occasion (birthday, wedding, festival).
- c. Research decoration ideas for that occasion.

2. Prepare Icing Types

- a. Make buttercream, royal icing, fondant, and glacé icing.
- b. Discuss which type works best for which purpose.

3. Apply Decorating Skills

- a. Practice piping, sugar flowers, hand painting, or adding glitter.
- b. Try different colours and textures.
- c. Add cultural designs (e.g., Kente patterns, Adinkra symbols).

4. Practice Sugar Craft Techniques

- a. Try sugar pulling, gum paste modelling, or tiered cake design.
- b. Work on advanced details for a professional look.

5. Appraisal & Presentation

- a. Present decorated products.

- b. Explain the techniques used.
- c. Get feedback based on creativity, craftsmanship, teamwork, and theme relevance.

Activity 3.2 Sugar Craft and Icing

1. Organise yourselves to work in a group with 5 of your classmates. Research the different types of icing. Make notes of:
 - a. one unique feature of each type of icing
 - b. one example of where each type of icing is best used (e.g., fondant for wedding cakes).
2. In your groups, visit cake decorating shops or explore pictures, videos, or sample products to identify creative ways flour products can be decorated (e.g., piping flowers, lettering, etc).
 - a. Make notes of your research, including illustrations/ photographs if you wish.
 - b. Share your findings in a class discussion.
3. Organise yourselves to work in small groups of 3-4 to prepare different types of icing
4. Practice creative decorating techniques such as piping, spreading, moulding, or layering.
5. Select one type of icing and apply the icing on flour products such as biscuits, cupcakes, or sponge cakes
6. Display your iced product and explain to other groups:
 - a. The icing type used
 - b. Why you chose that design for the product
 - c. The occasion (e.g., birthday, wedding, festival).
7. Groups will give feedback on creativity, neatness, suitability for the occasion, and presentation.

INNOVATIVE SUGAR CRAFT FOR ARTISTIC CONFECTIONERY DESIGN (2)

You have explored how sugar craft combines art and baking to make cakes and pastries both delicious and beautiful. You also discovered that icing is one of the main tools that bakers use to add flavour, colour, and decoration. In this session, you will continue to practice decorating cakes and pastries for special occasions. This will help you to move from just knowing what icing is to understanding how to use each type creatively.

Sugar Craft

One of the most important parts of sugar craft is **icing**, which adds flavour, texture, and decoration. Different icings are used for different purposes. Refer to the previous session on *Innovative Sugar Craft for Artistic Confectionery Design (1)* for descriptions of types of icing and the different purposes that they are used for.

Step-by-Step Process for Decorating Confectionery Products Using any Icing

- 1. Formation of Groups & Theme Selection**
 - a. Work in groups.
 - b. Choose an occasion (birthday, wedding, festival).
 - c. Research trending decoration ideas.
- 2. Preparation of Different Types of Icing**
 - a. Each group prepares fondant, buttercream, royal, and glaze icing.
 - b. Compare their textures and best uses.
- 3. Applying Creative Decorating Skills**
 - a. Practice piping, hand-painting, sugar flower modelling, and glitter effects.
 - b. Try different colour combinations and textures.
 - c. Add cultural designs for uniqueness.
- 4. Sugar Craft Techniques Demonstration**
 - a. Practice sugar pulling, gum paste modelling, and 3D sculpting.
 - b. Experiment with tiered cakes and detailed designs.
- 5. Appraisal & Presentation**
 - a. Present decorated products.
 - b. Explain the techniques used.
 - c. Evaluate based on creativity, neatness, occasion suitability, and teamwork.

Activity 3.3 Icing and Decoration Challenge

1. Organise yourselves into groups of 4–6 members.
2. In your group, list the types of icing that you all know (fondant, buttercream, royal, etc.) (refer to the previous lesson)
3. Discuss what each icing is best used for (e.g., weddings, birthdays, biscuits).

- a. Brainstorm creative ways to decorate cakes, cupcakes, or biscuits using whipped cream icing and glacé icing.
 - b. Make a note of your decoration ideas
 - c. Explain why the type of icing matches your chosen decoration idea
 - d. Link your design to an occasion (birthday, wedding, festival, Christmas, etc.)
4. Prepare the following **two** types of icing: whipped cream icing and glacé icing
 - a. Use them to decorate small flour products (cupcakes, biscuits, or a section of a cake).
 - b. Take into consideration the occasion that you have chosen
 - c. Be creative to achieve your decoration idea, use colours, patterns, and simple piping techniques
5. Presentation & Appraisal
 - a. Each group presents their decorated items.
 - b. Explain the type of icing used, decoration style, and the occasion chosen. Give and receive feedback on creativity, neatness, and teamwork.

SCIENTIFIC PRINCIPLES IN RECIPE DEVELOPMENT

Recipe Development

This means creating meals that are tasty, healthy, and safe to eat. It is like mixing science and creativity; you use knowledge of food, cooking skills, and how ingredients work together to make enjoyable dishes.

Ingredient Interactions in Recipe Development

1. **Proteins** (meat, fish, beans, eggs)

When heated, proteins change structure, making food firm, chewy, or soft. Example: Eggs become solid when boiled.

2. **Carbohydrates** (rice, yam, maize, cassava)

They give energy and affect texture. Example: Starch thickens soup or sauce when cooked (like thick groundnut soup).

3. **Fats** (oil, butter, margarine, shea butter).

Add flavour, tenderness, and moisture. Example: Cakes taste soft and moist because of fat.

4. **Acids and Bases** (lime, lemon, baking soda, potash).

Change flavour, colour, and texture. Example: Baking soda makes cookies light and crunchy.

Cooking Methods and Their Scientific Principles

1. **Moist Heat Cooking**

Uses water or steam. Examples: Boiling yam, steaming kenkey. Helps soften tough foods and keep them juicy.

2. **Dry Heat Cooking**

Uses hot air, fat, or fire. Examples: Frying kelewele, roasting plantain. Creates brown colour and rich flavour.

3. **Combination Cooking**

Mixes both moist and dry methods. Examples: Braising meat for stew, making light soup with fried chicken. Gives food a blend of softness and deep flavour.

Why Recipes are Important

1. Help to balance meals (protein, carbs, fats, vitamins).
2. Meet special needs (like diabetic or vegetarian diets).
3. Preserve traditional cooking methods.
4. Strengthen family bonds (cooking and eating together).
5. Encourage social activities (sharing food at festivals and parties).
6. Reduce food waste (clear steps help measure ingredients well).

Ethnic Recipes from Different Cultures in Ghana

These traditional recipes show how culture and science come together in cooking.

1. **Soups**

- a. Light Soup (Nkrakra) – Akan (Ashanti, Fante, Akuapem, Akyem, Kwahu)
- b. Groundnut Soup (Nkatekwan) – Akan, Ewe, Ga-Dangme, Northern Ghana
- c. Palm Nut Soup (Abenkwan) – Akan, Nzema, Ga-Dangme
- d. Ayoyo Soup – Northern Ghana (Dagombas, Frafras, Gonjas)

Table 3.1: General types of soups

Type	Description
Clear soups	Made with clear stock (e.g., consommé, broth)
Thick soups	Use thickening agents like flour, cream, or pureed veg.
Cream soups	Thickened with béchamel or cream (e.g., cream of mushroom)
Pureed soups	Made by blending cooked ingredients
Bisques	Creamy soups made from shellfish
Chowders	Thick, chunky soups often with milk/cream and seafood

2. Sauces

- a. **Shito (Black Pepper Sauce):** Ga-Dangme, Akan, Ewe
- b. **Tomato Sauce:** Akan, Ga-Dangme, Ewe, Northern Ghana, Fantes etc.
- c. **Green pepper sauce:** for all ethnic groups
- d. **Palava Sauce:** Akan, Ewe, etc.

Table 3.2: General types of Sauces

Type	Description
Béchamel (white sauce)	Made with butter, flour, and milk
Tomato sauce	Made from cooked tomatoes, onions, herbs
Velouté	Stock-based sauce thickened with a roux
Espagnole (brown sauce)	Made with brown stock, tomato paste, roux
Hollandaise	Emulsion of egg yolk, butter, and lemon juice
Mayonnaise-based sauces	Cold sauces like tartar sauce or aioli
Pesto, salsa, chutney	Herb, tomato, or fruit-based condiments

3. Puddings

- a. Abolo (Steamed Corn Pudding) – Akan (Fantes), Ewe,
- b. Rice pudding – Akan, Effutu, Ga etc.
- c. Mashed kenkey (blended kenkey, sugar, milk/peanut) – All ethnic groups

4. Cookies

- a. Atwemo (Traditional Ghanaian Biscuits) – Akan, Ga etc
- b. Ayigbe biscuit (Tapioca cookies) – Ga-Dangme, Ewe
- c. Gari biscuit (Cassava) – Ewe, Akan, Ga, Fantes, Akuapem, etc

Note

Cookies and puddings are not traditional Ghanaian dishes. They are adopted from other cultures. However, they can be made our own by using local ingredients and adjusting recipes to suit Ghanaian tastes and culture.

5. Breakfast cereals

- a. Tom brown (Roasted Cereal Mix) – Akan, Ga-Dangme, Ewe, Northern Ghana
- b. Koko (Fermented Porridge) – Akan, Ewe, Ga-Dangme, Northern Ghana
- c. Rice water (Rice Porridge) – Akan, Ga-Dangme, Ewe, Efutu, etc.

Note

People prefer to take a heavy Ghanaian meal such as banku, tuo zaafi, kenkey, etc, as breakfast, depending on one's taste, geographical location, preference and/or nature of work

Activity 3.4 Exploring Ethnic Recipes

1. Interview members of your family or the community to find out about ethnic recipes
2. Organise yourselves into small groups of 3-4 members. Each member in your group will share one ethnic recipe you know from your home or community (e.g., light soup, tuo zaafi, akple, etc).
 - a. You should describe briefly: the main ingredients, preparation method, and when it is usually eaten (festival, daily, special occasions)
 - b. Make a note of each recipe discussed and link the recipes to food science principles.
 - i. Proteins changing during cooking (e.g., fish in soup).
 - ii. Carbohydrates thickening (e.g., corn dough in tuo zaafi).
 - iii. Fats adding flavour (e.g., palm oil in abenkwan).
3. Groups present findings in a whole-class discussion.
 - a. Discuss similarities and differences among ethnic recipes.
 - b. Highlight how science is at work in each recipe.

APPLICATION OF FOOD SCIENCE IN RECIPE DEVELOPMENT AND MODIFICATION

Recipe Development

Recipe development is the process of creating or improving dishes using knowledge of food science and cooking skills. It helps us make food taste better, look more attractive, and provide good nutrition. By learning how ingredients work together and how different cooking methods affect food, we can:

1. Improve existing dishes.
2. Create new ones.
3. Revive old recipes that are no longer common.

What is an Extinct Recipe?

An extinct recipe is a traditional dish that people no longer prepare regularly. Sometimes, only elders in a community may still remember how to make it.

Why do Recipes Become Extinct?

1. Changes in eating habits – People prefer fast foods or modern dishes.
2. Availability of ingredients – Some local ingredients may be hard to find today.
3. Loss of traditional cooking methods – Younger generations may not learn or practice the old ways of cooking.

Cultural Impact of Extinct Recipes

When old recipes are lost, we also lose part of our cultural identity and heritage. Traditional foods connect us to our past, our families, and our communities. Reviving extinct recipes helps us keep culture alive and teaches us valuable lessons about healthy eating and sustainability.

Ways to Improve Traditional Recipes

Improving recipes means making our traditional dishes healthier, easier, and more attractive while keeping their cultural taste and identity.

1. Methods of Preparation

We can use modern techniques to make cooking faster, safer, and more consistent while keeping traditional flavours.

Key Strategies

- a. Use modern appliances like blenders, pressure cookers, or air fryers to save time and reduce hard labour.
- b. Try steaming instead of heavy boiling or frying to make meals lighter.
- c. Use starter cultures to make fermentation quicker and more reliable.

Example: Instead of pounding cocoyam leaves and melon seeds by hand for Palava Sauce, use a food processor and pre-roasted melon seed powder while still using the original ingredients.

2. Nutritional Value

We can adjust traditional recipes to make them healthier for today's lifestyle while keeping the taste enjoyable.

Key Strategies

- a. Replace white rice with brown rice or millet for more fibre.
- b. Use lean proteins like beans, turkey, fish, or tofu instead of fatty red meat.
- c. Reduce oil by measuring carefully and use healthier oils like sunflower or canola.
- d. Add extra vegetables (e.g., carrots, moringa, spinach) to boost vitamins.
- e. Cut down on salt by using natural herbs and spices for flavour.

Example: Modify Jollof Rice by using brown rice, adding chopped vegetables, using less oil, and serving it with grilled chicken or beans.

3. Time and Energy Use

Cooking can be made quicker, easier, and more eco-friendly by planning well and using efficient methods.

Key Strategies

- a. Soak beans or grains overnight to cook them faster.
- b. Use appliances like pressure cookers or rice cookers to save energy.
- c. Pre-cut or pre-cook ingredients and store them for later use.
- d. Cook one-pot meals to reduce both cooking time and cleanup.

Example: Instead of cooking rice and stew separately, prepare a one-pot vegetable fried rice with parboiled rice and pre-steamed vegetables.

4. Food Presentation

How food looks can make it more appealing and enjoyable. Modern plating styles can make traditional meals look fresh and exciting without changing their cultural identity.

Key Strategies

- a. Arrange food neatly with colour contrast (e.g., vegetables with rice).
- b. Use creative plating like shaping rice into moulds or serving soup in small calabashes.
- c. Garnish with fresh herbs or sliced vegetables.
- d. Emphasise portion balance on the plate.

Example: Instead of scooping *rice balls* onto a plate, shape them nicely.

Réchauffé (Reheated Dishes)

Réchauffé is a French word that means “reheated.” In cooking, it refers to dishes that are made from leftovers but are transformed creatively into new and tasty meals. Réchauffé dishes are a smart way to turn yesterday’s food into today’s exciting meal, but they must be stored, reheated, and prepared safely. This helps to: reduce food waste, save money, add variety to everyday meals, etc.

Rules for Using Réchauffé Dishes

To make leftovers safe, nutritious, and delicious, we must follow some important rules:

1. Store leftovers properly – Keep them in clean, covered containers and refrigerate or freeze to prevent spoilage.
2. Reheat safely – Use methods like steaming, boiling, or oven heating instead of just warming lightly.
3. Add fresh ingredients – Mix in vegetables, herbs, or proteins to improve flavour and nutrition.
4. Use new cooking methods – Try stir-frying, grilling, or baking to make leftovers more appealing.
5. Avoid overheating – Overheating can make food dry, hard, or tasteless.
6. Check storage time – Leftovers should not be kept for too long; use them within 2–3 days if refrigerated.

Example of Modified Recipe

Turmeric Vegetable Jollof Rice with Grilled Chicken and Avocado.



Figure 3.13: Modified rice dish

Adding Turmeric to Jollof Rice

Turmeric is a bright yellow spice commonly used in cooking. It is known for its strong health benefits and natural colouring.

Why Add Turmeric to Jollof Rice?

1. **Health Benefits:** Turmeric has anti-inflammatory and antioxidant properties, which help the body fight sickness and stay healthy.
2. **Flavour:** It gives Jollof rice a mild, earthy taste that blends well with the other ingredients.
3. **Appearance:** Turmeric adds a rich golden colour that makes the dish more attractive and appetising.

Adding turmeric to Jollof rice improves its nutrition, taste, and appearance, making the dish healthier and more appealing.

Ingredients (for 2 people)

- 1 cup parboiled or brown rice (washed)
- 2 large tomatoes (blended)
- 1 medium onion (blended or chopped)
- 1 tbsp tomato paste
- 1 red bell pepper (blended)
- 1 clove of garlic (minced)
- 1 tsp fresh ginger (grated)
- 1 tsp ground turmeric
- 1 cup carrots (diced)
- 1 cup green beans or peas (chopped)
- 1 cup green bell pepper (diced)
- 1 tbsp vegetable oil
- 1 tsp curry powder
- 1 tsp thyme
- ¼ black pepper
- Salt and low-sodium seasoning to taste
- 1½ cups water or low-sodium chicken broth

Preparation – Key Change Highlighted

1. Heat oil in a pan. Sauté onions, garlic, and ginger until fragrant.
2. Add tomato paste, blended tomatoes and pepper. Cook for 10–15 minutes until reduced.

3. Stir in turmeric, curry powder, thyme, salt, and other seasonings. Let simmer for 2–3 minutes to release flavours.
4. Add rice, stir to coat, then pour in broth or water. Cover and simmer on low heat.
5. When rice is almost cooked, stir in carrots, peas/green beans, and bell peppers. Avoid overcooking of the vegetables.

Activity 3.5 Extinctive Recipe

1. Form a group with 4-5 classmates and list at least three traditional dishes from your community that are rarely cooked today.
2. Interview elders (parents, grandparents, or community members) to ask why these dishes are no longer common.
3. In your group, select **one** existing dish (e.g., Jollof rice) and **one** extinct or rare dish (e.g., abeteɛ, apente, wasawasa, mpoto mpoto). Discuss ways to improve:
 - a. the preparation method (use of modern appliances, easier cooking).
 - b. nutritional value (healthier ingredients).
 - c. time and energy use (faster, eco-friendly cooking).
 - d. presentation (creative plating).
4. In your group, following your discussions, experiment on how to improve the selected existing and extinct ethnic recipes
5. Present your dishes for peer appraisal
6. Using your dishes, demonstrate how to use réchauffé/leftover dishes to create new recipes (e.g., rice → fried rice) and present dishes for appraisal
7. Create a “Leftover Safety Rules Poster” showing the do’s and don’ts of reheating food.

Extended Reading

- Adigo, E. C., & Maddah, C.K. (2011). *Food and Nutrition*. Kwadwoan Publication: Accra.
- Ministry of Education (2010). *Teaching Syllabus for Food and Nutrition*. CRDD
- Koomson et al. (2019). *Food and Nutrition for Senior High Schools*. Aki-Ola published.
- Noble Amoako Sarkodie (2014). *Food and Nutrition for Schools and Colleges*. Bookworm Publishers: Kumasi.

REVIEW QUESTIONS

1. Explain four functions of sugars and sweeteners in food. Compare natural sugars and artificial sweeteners by giving two examples each.
2.
 - a. Design a step-by-step plan for decorating a wedding cake using at least two types of icing.
 - b. Justify your choice of icings
 - c. Explain how they will enhance both the appearance and texture of the cake.
3. Which icing choice best suits a child's birthday cake and a cultural festival cake?
 - a. Butter icing / Fondant
 - b. Fondant / Whipped cream
 - c. Glacé / Butter icing
 - d. Whipped cream / Glacé
4. Which of the following answers would best demonstrate deep learning about ethnic recipes?
 - a. Listing cultural recipe ingredients in order
 - b. Explaining links between health and culture
 - c. Naming cultural dishes in detail
 - d. Reading recipe notes word for word
5. When researching extinct recipes, which strategy would best help preserve cultural food knowledge?
 - a. Interviewing elders to record cooking steps
 - b. Listing recipes without testing them
 - c. Avoiding cultural links to modern food
 - d. Using foreign cookbooks as sources
6. Which factor most likely explains why certain indigenous recipes are no longer common?
 - a. Difficulty finding traditional ingredients
 - b. Modern interest in cooking contests
 - c. Shorter preparation time for old dishes
 - d. Stronger taste of ancient flavours

SECTION

4

EXHIBITION & CAREER OPPORTUNITIES



FOOD PRODUCTION

Food Processing Techniques

Introduction

This section introduces you to food exhibitions and bazaars as a way of showcasing newly developed food products to target consumers. You will also explore marketing and promotional strategies to attract customers and build product visibility. Finally, you will examine career opportunities in the food industry while discussing the importance of work ethics for success in professional food careers.

KEY IDEAS

- Food exhibitions and bazaars as platforms provide opportunities for businesses, chefs, and entrepreneurs to showcase food products, innovations, and cultural cuisines while promoting interaction between vendors and consumers.
- Successful exhibitions and bazaars depend on clear objectives, identifying target audiences, budgeting, licensing, marketing, execution, and post-event evaluation.
- Exhibitions may be trade, consumer-focused, product-specific, cultural, or competition-based, while bazaars can include street food, seasonal, charity, themed, and health-oriented events.
- Such events promote business growth, entrepreneurship, food safety awareness, cultural preservation, consumer education, and market expansion.
- Marketing and promotion strategies include pre-event publicity, influencer collaborations, attractive booth designs, free tastings, creative branding, and pricing tactics to maximise consumer engagement.
- Careers and competencies in the food industry span nutrition, food science, culinary arts, agribusiness, research, marketing, regulation, and education. Essential competencies include attention to detail, hygiene, creativity, teamwork, and problem-solving.

FOOD EXHIBITION AND BAZAAR PLANNING



Figure 4.1: Food bazaar

Food exhibition is a planned event where food businesses, chefs, and entrepreneurs show their products and cooking skills. It helps them share new food ideas, promote their brands, test products and get feedback, meet new people and make business connections.

A food bazaar is like a food market. Vendors set up stalls to sell different types of food such as: traditional meals, modern dishes, baked goods and drinks. Food bazaars bring people together to enjoy food, share culture, and encourage entrepreneurship.

Planning a Food Exhibition or Bazaar

To make the event successful, organisers must plan carefully. Some important steps include:

1. Set Objectives (Goals)

- a. Introduce new food products.
- b. Promote businesses and startups.
- c. Share food cultures.
- d. Create space for networking.

2. Know Your Audience

- a. Think about who will attend: consumers, chefs, businesses.
- b. Consider their age, interests, and dietary needs.

3. Choose a Venue

- a. Indoor or outdoor space.
- b. Easy to access with transport and parking.
- c. Has electricity, water, and toilets.

4. Budget and Funding

- a. Calculate costs for equipment, promotion, and permits.
- b. Look for sponsors or partners.
- c. Decide if entry is free, ticketed, or VIP.

5. Licensing and Permits

- a. Follow food safety rules.
- b. Register vendors.
- c. Obey local laws on food handling and sales.

6. Marketing and Promotion

- a. Use posters, flyers, and social media.
- b. Partner with influencers, businesses, or media.
- c. Do pre-event tastings or collaborations.

7. Event Management

- a. Arrange stalls and facilities.
- b. Ensure security and crowd control.
- c. Organise cooking demos, competitions, and tastings.

8. Post-Event Evaluation

- a. Collect feedback.
- b. Review sales and attendance.
- c. Plan improvements for next time.

Types of Food Exhibitions

1. Trade Exhibitions

- a. Connects suppliers, distributors, and food industry professionals
- b. Focused on business networking and B2B interactions. (Business-to-Business).
- c. It refers to transactions, relationships, or dealings that take place between two businesses rather than between a business and individual consumers.

2. Consumer Exhibitions

For the public to try new foods.

- a. Targets the general public
- b. Allows consumers to experience new food products firsthand

3. Product – Specific Exhibitions

Focus on one type of food (e.g., vegan, dairy).

4. Cultural/Ethnic Exhibitions

Showcase traditional foods from different cultures.

5. Culinary Competitions

Live cooking shows and chef challenges.

Types of Food Bazaars

1. Street Food Bazaar – Local - street foods in open areas.
2. Seasonal or Holiday Bazaar – Linked to celebrations like Christmas or Easter.
3. Charity Bazaar – Sales used to support a cause.
4. Themed Bazaar – Focused on a specific food or diet (e.g., vegan).
5. Health & Wellness Bazaar – Promotes nutritious foods.

Why Food Exhibitions and Bazaars are Important

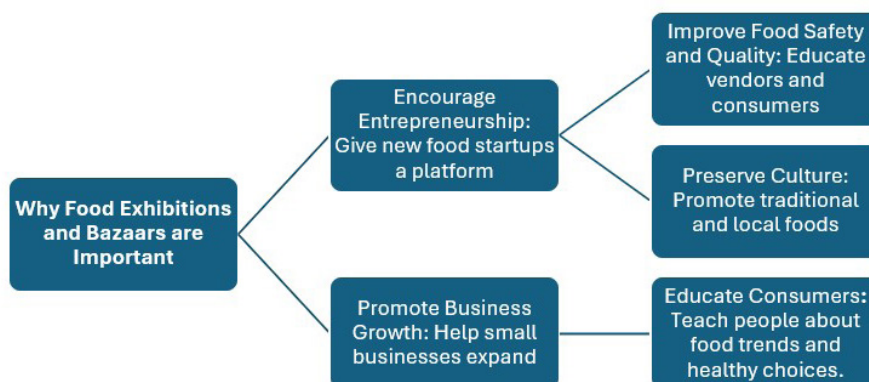


Figure 4.2: Why Food Exhibitions and Bazaars are Important

Activity 4.1 Exploring Exhibitions and Food Bazaars

1. Your teacher will help you organise yourselves in 4 main groups to share what comes to mind when you hear the words “exhibition” and “bazaar” and make notes on the following:
 - a. Two points on what you think they mean
 - b. Two points on why people organise them
2. In your groups, discuss what functions exhibitions and bazaars serve in the food industry? (e.g., marketing, etc).
3. Write at least three functions on paper or in your notebooks.
4. Observe videos or listen to a guest speaker on planning food exhibitions and bazaars
5. Imagine your group is preparing to mount a food exhibition stall at a school bazaar.
 - a. Discuss different types of exhibitions that would be suitable for a school bazaar
 - b. Make a note of **five** factors you must consider before planning to mount the **exhibition. (Examples: venue, etc).**
 - c. Present your group’s response for discussion.

MARKETING AND PROMOTION STRATEGIES

When people organise food exhibitions and bazaars, they want to attract consumers and make their products well-known. To do this, they need good marketing and promotion strategies. These strategies help to create excitement, bring in many people, and encourage them to taste and buy the food.

Key Marketing and Promotional Strategies

Before the Event (bazaar or exhibition) it is essential to create excitement and anticipation among potential attendees.

Strategies:

1. Use social media like Facebook, TikTok, or Instagram to post countdowns, pictures, or short videos.
2. Work with food bloggers or influencers to spread the word.
3. Share information in local newspapers, radio, and posters.
4. Give out free samples in the community to make people curious.

Attractive Stalls/ Booth Design and Product Display

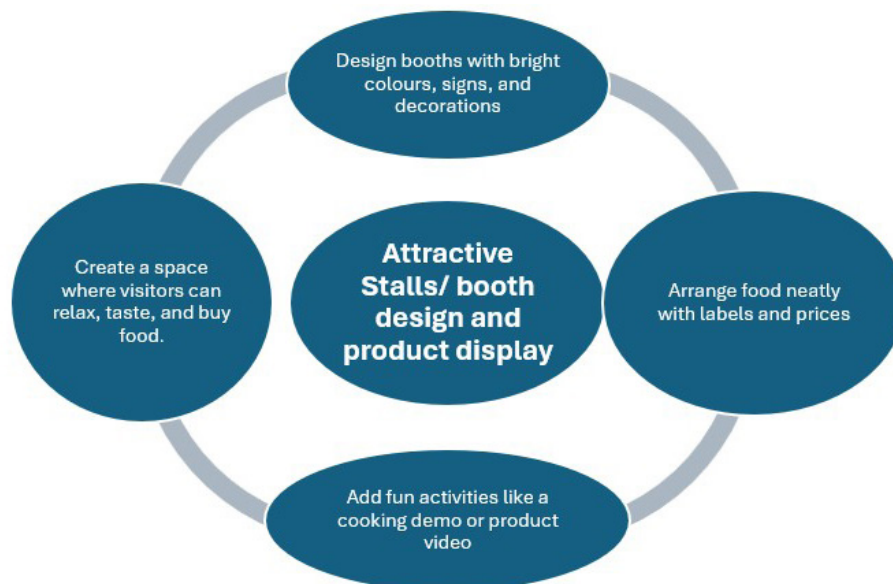


Figure 4.3: Attractive Stalls/ booth design and product display

Free Tasting and Demonstrations

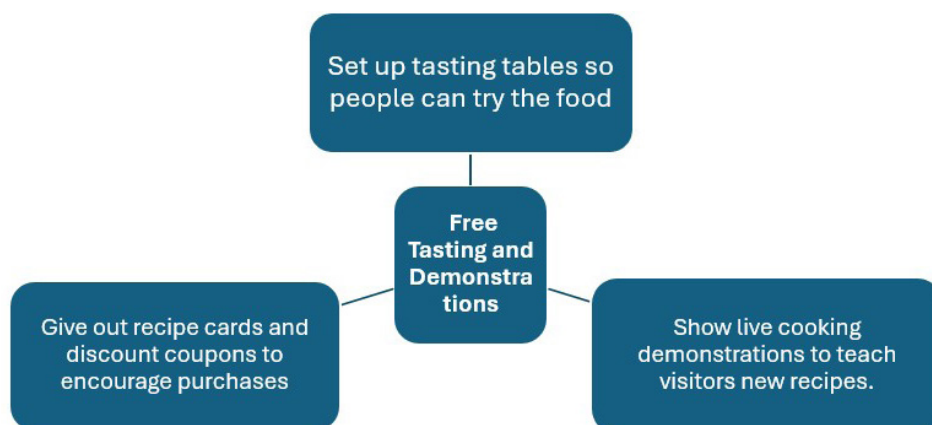


Figure 4.4: Free Tasting and Demonstrations

Pricing and Discounts

1. Offer special discounts only for the event.
2. Create bundle deals (e.g., buy two snacks, get one free).
3. Give time-limited offers to make people buy quickly.
4. Reward loyal customers with future coupons.

Branding and Packaging

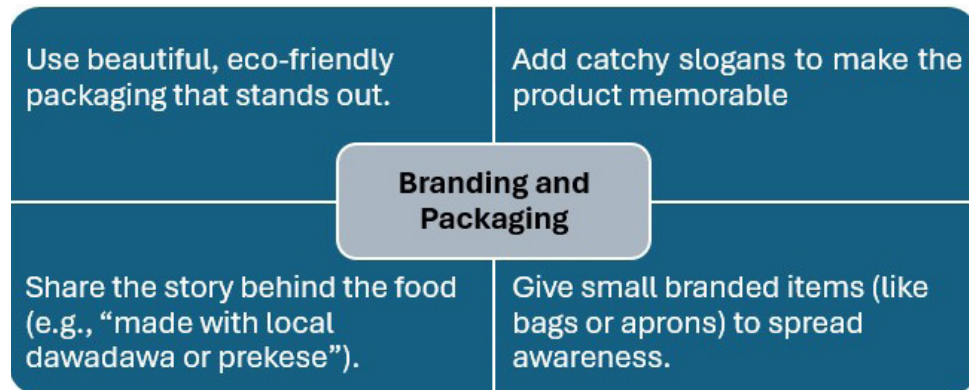


Figure 4.5: Branding and Packaging

Steps in Planning a Food Exhibition

1. Choose a theme (e.g., “Healthy Local Snacks”).
2. Prepare the food products you want to display.
3. Promote the event with posters, invitations, or online posts.
4. Set up the booths with decoration, prices, and displays.
5. Invite school staff, students, and community members to attend.
6. Interact with customers by welcoming them, explaining products, and encouraging feedback.

After the Event – Reflection

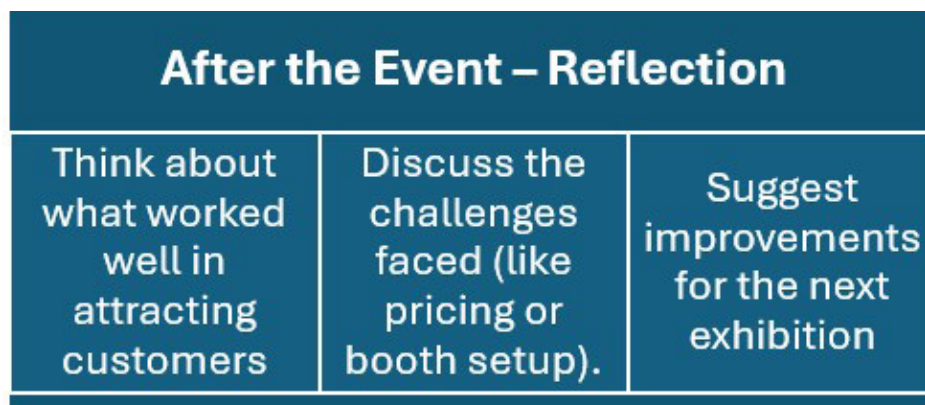


Figure 4.6: After the Event – Reflection

Activity 4.2 Showcasing Food Products in an Exhibition

1. Organise yourselves into groups of 4-5 and consider different ways to attract consumers to a food stand (e.g., posters, social media buzz, etc).
 - a. Write your ideas in your notebook.
 - b. In your group, choose the top three strategies you believe will make your product stand out.
2. In your groups, discuss the factors you need to think about before setting up a food exhibition stand and agree on at least five key factors
4. Select one finished food product your group has prepared before.
 - a. Plan how to package it attractively.
 - b. Using your promotional ideas from (1) create promotional materials (e.g., posters, invitations, social media)
 - c. Arrange an exhibition table using the product, your packaging, and a simple display idea.
 - d. Add a label or card with the product name, one promotional slogan, and a nutritional benefit.
5. Groups visit each other's stands as consumers and give feedback by answering:
 - a. What caught my attention first?
 - b. What marketing strategy was most effective?

CAREER OPPORTUNITIES IN THE FOOD INDUSTRY

The food industry provides many different career paths. These careers combine science, business, entrepreneurship, health, and culinary arts. Exploring these opportunities helps you connect your interests and skills with a career that suits you best. A career is the long-term journey of an individual. It includes your education, work experience, and personal growth in a chosen field.

Major Aspects of a Career

1. Education and Training – Learning the knowledge and skills needed for your profession.
2. Work Experience – Using your skills in real-life job settings.
3. Career Progression – Moving up in your field through promotions, new skills, and specialization.

4. Job Satisfaction and Fulfilment – Enjoying your work and finding motivation in it.
5. Work-Life Balance – Managing work responsibilities alongside your personal life.

Importance of a Career

Having a career brings many benefits to individuals and society:

1. Financial Stability – Regular income to support your lifestyle.
2. Personal Growth – Building knowledge, skills, and self-confidence.
3. Professional Identity – Developing a reputation in your field.
4. Social Contribution – Helping communities through food innovation, production, and sustainability.
5. Networking and Opportunities – Building valuable connections with other professionals.

Career Development Strategies

To succeed in the food industry, it is important to plan and develop your career wisely:

1. Set Clear Career Goals – Decide on short-term and long-term targets.
2. Engage in Lifelong Learning and Skill Development – Keep improving through education and training.
3. Seek Mentorship and Professional Networking – Learn from experienced people and connect with others.
4. Adapt to Industry Changes and Technology – Stay updated on new trends and innovations.
5. Pursue Leadership and Entrepreneurship – Take leadership roles or start your own business in food services.

Careers Within the Food and Nutrition Industry

Nutrition and Dietetics Careers

Dietitian

A Dietitian is a qualified health professional who uses evidence-based nutrition to assess, diagnose, and manage diet problems. They create personalised meal plans, support patients with health conditions such as hypertension, cancers, diabetes, and promote healthy eating.

1. **Roles:** Nutritional planning, managing diets for health conditions, teaching, and teamwork in hospitals.
2. **Work Settings:** Hospitals, schools, private clinics, and the food industry.

3. **Key Skills:** Communication, critical thinking, food science knowledge, and empathy.
4. **Qualification:** Bachelor's degree in Dietetics/Nutrition, supervised practice, and professional registration.

Clinical Nutritionist

A Clinical Nutritionist focuses on how food affects health, especially in chronic or acute illnesses. They assess patients, design care plans, and work with doctors to promote recovery and wellness.

1. **Roles:** Assess nutrition needs, create diet plans, support medical treatment.
2. **Work Settings:** Hospitals, rehabilitation centres, wellness clinics, universities.
3. **Key Skills:** Knowledge of metabolism, data analysis, counselling, and nutrition science.
4. **Qualification:** Degree in Clinical Nutrition/Dietetics, clinical internship, and certification/ licensing where required.

Public Health Nutritionist

Works to improve community health through programs, assessments, and education. Promotes healthy lifestyles and influences health policy.

1. **Roles:** Develop nutrition programs, assess communities, collaborate with organisations, and educate the public.
2. **Work Settings:** Government agencies, NGOs, community groups, universities.
3. **Key Skills:** Program planning, research, communication, cultural awareness.
4. **Qualification:** Bachelor's or Master's degree in Public Health Nutrition, plus field experience.

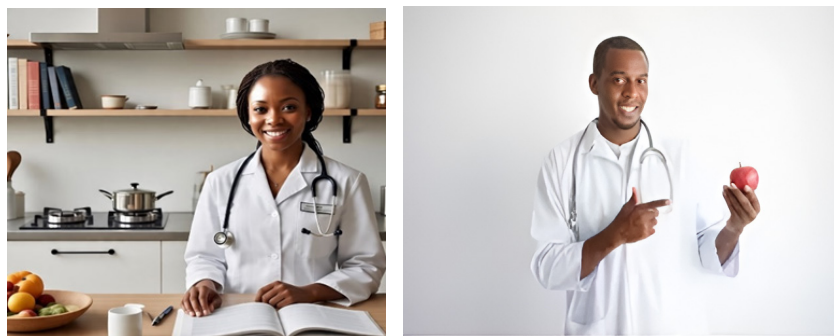


Figure 4.7: Nutritionist / Dietitian

Food Safety Auditor

Ensures that food companies meet safety standards. They inspect facilities, check systems like HACCP, identify hazards, and report findings.

1. **Roles:** Inspect facilities, assess safety processes, recommend improvements, and prepare reports.
2. **Work Settings:** Food industries, regulatory bodies, certification agencies, and consultancy firms.
3. **Key Skills:** Knowledge of food safety standards, attention to detail, integrity, and report writing.
4. **Qualification:** Degree in Food Science or related field, specialised auditor training, and experience in the industry.

Food Science and Technology Careers

Food Science and Technology careers focus on applying science and technology to food. These careers deal with food composition, safety, processing, preservation, and product development. Professionals in this field work to make food safer, healthier, and more appealing.

Food Scientist

A Food Scientist studies food using science to improve how it is processed, preserved, and made safe for people.

1. **Roles:** Analyse food composition, develop new food products, ensure food quality and safety.
2. **Work Settings:** Laboratories, manufacturing companies, research institutes.
3. **Key Skills:** Scientific analysis, innovation, and strong knowledge of food chemistry.
4. **Qualification:** Degree in Food Science, with research and laboratory experience.



Figure 4.8: Food Scientist

Quality Assurance Analyst

A Quality Assurance (QA) Analyst makes sure that food products meet safety and quality standards by carrying out inspections and testing.

1. **Roles:** Monitor food production, test finished products, keep records, and ensure compliance with standards.

2. **Work Settings:** Food manufacturing plants, quality assurance laboratories, and regulatory agencies.
3. **Key Skills:** Attention to detail, knowledge of food safety, and data analysis skills.
4. **Qualification:** Degree in Food Science or Microbiology, plus food safety training.

Product Development Specialist

A Product Development Specialist focuses on creating or improving food products to meet consumer needs and nutrition standards.

1. **Roles:** Develop recipes, test ingredients, and manage product trials.
2. **Work Settings:** Research and Development (R&D) labs, food companies, and startups.
3. **Key Skills:** Creativity, food formulation, and project management.
4. **Qualification:** Degree in Food Science or Culinary Science.

Food Technologist

A Food Technologist applies technology to make sure food is produced safely, efficiently, and with consistent quality.

1. **Roles:** Improve food processing, monitor production systems, and solve technical problems.
2. **Work Settings:** Food manufacturing plants and processing facilities.
3. **Key Skills:** Technical knowledge, problem-solving, and awareness of food laws and regulations.
4. **Qualification:** Degree in Food Technology or Food Engineering, plus industrial training.

Culinary and Food Service Careers

Chef

A Chef prepares meals and manages kitchen operations in restaurants or catering services.

1. **Roles:** Cook dishes, design menus, lead kitchen staff, and maintain hygiene standards.
2. **Work Settings:** Restaurants, hotels, catering companies.
3. **Key Skills:** Culinary creativity, time management, leadership.
4. **Qualifications:** Culinary school training or apprenticeship.



Figure 4.9: Chefs

Catering Manager

A Catering Manager organises food service for events, ensuring quality, service, and efficiency.

1. **Roles:** Plan events, manage catering staff, coordinate menus and logistics.
2. **Work Settings:** Hotels, catering businesses, corporate events.
3. **Key Skills:** Planning, communication, budgeting, leadership.
4. **Qualifications:** Degree/diploma in Hospitality or Catering, plus work experience.

Restaurant Owner

A Restaurant Owner runs a food business, combining culinary skills with entrepreneurship.

1. **Roles:** Oversee operations, manage staff, handle marketing and finances.
2. **Work Settings:** Owned or franchised restaurants and cafés.
3. **Key Skills:** Business management, customer service, marketing.
4. **Qualifications:** Business or hospitality background (optional), plus experience and capital investment.

Food Stylist

A Food Stylist makes food look attractive for photos, advertisements, and media.

1. **Roles:** Arrange and style food, work with photographers and creative teams, select props.
2. **Work Settings:** Advertising agencies, media houses, freelance projects.
3. **Key Skills:** Creativity, attention to detail, and visual storytelling.
4. **Qualifications:** Culinary or art background, styling experience and a strong portfolio.

Food Production and Agribusiness Careers

Agricultural Food Producer

Produces food by growing crops or raising animals, using sustainable techniques.

1. **Roles:** Cultivate crops, manage farm resources, and ensure food quality.
2. **Work Settings:** Farms, cooperatives, agribusiness companies.
3. **Key Skills:** Farming knowledge, resource management, record-keeping.
4. **Qualifications:** Training or experience in agriculture or animal science.

Organic Farming Expert

Promotes eco-friendly farming by avoiding chemicals and using natural processes.

1. **Roles:** Develop organic systems, monitor soil and crop health, and train other farmers.
2. **Work Settings:** Organic farms, NGOs, consultancy firms, training centres.
3. **Key Skills:** Organic farming knowledge, ecological awareness, communication.
4. **Qualifications:** Degree in Agriculture/Environmental Science, plus organic training and experience.

Food Supply Chain Manager

Ensures food moves safely and efficiently from farms to consumers.

1. **Roles:** Plan sourcing, manage transport and delivery, ensure compliance with safety standards.
2. **Work Settings:** Food companies, retail chains, logistics firms.
3. **Key Skills:** Logistics management, data analysis, coordination, food safety knowledge.
4. **Qualifications:** Degree in Supply Chain, Logistics, or Agribusiness.

Research and Development (R&D) Careers



Figure 4.10: Food research scientist

Food Research Scientist

Conducts scientific research to improve food quality, safety, and processing.

1. **Roles:** Study food composition, develop new technologies, enhance food safety systems.
2. **Work Settings:** Research institutes, universities, food laboratories.
3. **Key Skills:** Research, laboratory techniques, data analysis.
4. **Qualifications:** Degree in Food Science or related field; advanced study or research experience.

Flavour Chemist

Designs and develops flavour compounds for food and drinks using chemistry and sensory science.

1. **Roles:** Create flavour formulas, test taste and aroma, support product development.
2. **Work Settings:** Flavour labs, food companies, ingredient manufacturers.
3. **Key Skills:** Chemistry, creativity, sensory evaluation.
4. **Qualifications:** Degree in Chemistry or Food Science; specialized flavour training.



Figure 4.11: Flavour Chemist

Consumer Insights Analyst

Studies consumer behaviour and preferences to guide food product development and marketing.

1. **Roles:** Conduct surveys, analyse market data, advise product development teams.
2. **Work Settings:** Food companies, market research firms, brand management teams.
3. **Key Skills:** Data analysis, communication, market research.
4. **Qualifications:** Degree in Marketing, Data Analytics, or Consumer Behaviour.

Food Marketing and Entrepreneurship Careers

Food Brand Manager

Builds and manages the identity, promotion, and market presence of food products.

1. **Roles:** Develop brand strategies, organise marketing campaigns, study consumer trends.
2. **Work Settings:** Food companies, branding agencies, FMCG companies.
3. **Key Skills:** Marketing, strategic thinking, consumer analysis.
4. **Qualifications:** Degree in Marketing or Business; experience in branding or product management.

Culinary Content Creator

Creates engaging food content—such as recipes, videos, or blogs—for digital platforms.

1. **Roles:** Produce food-related posts, share recipes, build online presence, and collaborate with brands.
2. **Work Settings:** Social media platforms, blogs, freelance projects, brand partnerships.
3. **Key Skills:** Cooking, media production, creativity, and digital marketing.
4. **Qualifications:** Culinary or media background (optional), plus strong online content creation skills.

Food Business Owner



Figure 4.12: Food business owner

A Food Business Owner is an entrepreneur who creates and manages a food-related venture. This could be a restaurant, catering service, food truck, or packaged food brand. They combine knowledge of food with business and management skills to succeed in the industry.

1. **Roles:** Start and run the business, manage daily operations, ensure food quality and compliance with regulations, and handle marketing and finances.

2. **Work Settings:** Restaurants, cafés, food trucks, online food businesses, catering companies.
3. **Key Skills:** Business management, leadership, customer service, food safety, and marketing.
4. **Qualifications:** Experience in the food industry. Education in Business, Hospitality, or Culinary Arts is helpful. Food safety certification and business registration are required.

Government and Regulatory Careers



Figure 4.13: Food safety inspector

Food Policy Advisor

A Food Policy Advisor develops and recommends policies that promote food security, food safety, and nutrition at the national or organisational level.

1. **Roles:** Analyse food systems, draft policies, advise government and NGOs, and evaluate the impact of food programs.
2. **Work Settings:** Government ministries, international agencies (e.g., FAO, WHO), and research institutes.
3. **Key Skills:** Policy analysis, research, communication, and a deep understanding of food systems.
4. **Qualifications:** Degree in Public Policy, Nutrition, Agriculture, or Public Health; experience in policy development or advocacy.

Food Safety Inspector

A Food Safety Inspector ensures that food establishments follow hygiene and safety regulations to protect public health.

1. **Roles:** Inspect food facilities, enforce safety standards, investigate complaints, and prepare inspection reports.

2. **Work Settings:** Government regulatory bodies, health departments, and food companies.
3. **Key Skills:** Attention to detail, knowledge of food laws (e.g., HACCP), investigation skills, and documentation.
4. **Qualifications:** Degree or diploma in Food Safety, Environmental Health, or a related field; certification as a food safety officer.

Health and Agriculture Regulatory Specialist

This specialist ensures compliance with laws and regulations governing agricultural products, food safety, and public health standards.

1. **Roles:** Interpret laws, review applications (e.g., for food imports or pesticide use), and work with producers and government agencies.
2. **Work Settings:** Government ministries, regulatory authorities, food and agricultural agencies.
3. **Key Skills:** Regulatory knowledge, auditing for compliance, interpreting policy, and stakeholder communication.
4. **Qualifications:** Degree in Agriculture, Public Health, or Law; training in regulatory affairs or compliance.

Education and Training Careers

Culinary Instructor

Teaches cooking skills, kitchen safety, and food presentation to students in culinary or vocational programs.

1. **Roles:** Conduct practical cooking classes, assess student performance, and develop lesson plans.
2. **Work Settings:** Culinary schools, hospitality institutes, training centres.
3. **Key Skills:** Culinary expertise, teaching skills, communication, and kitchen management.
4. **Qualifications:** Diploma or degree in Culinary Arts, plus teaching certification.

Nutrition Educator

Promotes healthy eating and nutrition awareness through teaching and community outreach.

1. **Roles:** Teach nutrition lessons, conduct workshops, create learning materials, and support wellness programs.
2. **Work Settings:** Schools, clinics, NGOs, and public health agencies.

3. **Key Skills:** Nutrition knowledge, cultural sensitivity, communication, and teaching skills.
4. **Qualifications:** Degree in Nutrition or Public Health; experience in education or outreach.

University Professor in Food Science

Teaches food science at the tertiary level and conducts research to advance knowledge in food safety, nutrition, and technology.

1. **Roles:** Deliver lectures, supervise student research, and publish academic work.
2. **Work Settings:** Universities and research institutions.
3. **Key Skills:** Food science expertise, research, academic writing, and mentoring.
4. **Qualifications:** Master's or PhD in Food Science; teaching and research experience.

Home Economics Teacher

Educates students on practical life skills such as cooking, nutrition, budgeting, and family care.

1. **Roles:** Teach life skills, organise practical sessions, assess students' performance.
2. **Work Settings:** Junior and senior high schools, vocational schools, community programs.
3. **Key Skills:** Instructional skills, creativity, classroom management, and practical teaching.
4. **Qualifications:** Degree in Home Economics or Education; teaching license or certification.



Figure 4.14: Food and Nutrition teacher

Essential Competencies for Careers in Food Production and Service

To succeed in food production and service, workers need more than just technical skills. They also need personal qualities and professional competencies that help them deliver excellent food and service, satisfy customers, and work effectively with others.

Here are the essential competencies:

1. Attention to Detail

- a. Accuracy is very important in food preparation and service.
- b. Workers must carefully follow recipes, measure ingredients correctly, and check food quality before serving.
- c. Even small mistakes can affect taste, safety, or customer satisfaction.

2. Sense of Hygiene and Cleanliness

- a. Maintaining strict sanitary standards is key to protecting consumer health.
- b. This includes washing hands, using clean equipment, and preventing contamination.
- c. A clean environment also builds customer trust.

3. Pleasant and Friendly Personality

- a. Food service involves working directly with people.
- b. A warm and positive attitude helps build good relationships with customers and colleagues.
- c. Friendliness can improve customer experience and encourage loyalty.

4. Initiative and Problem-Solving

- a. The food industry is full of unexpected challenges (e.g., missing ingredients, equipment breakdowns, customer complaints).
- b. Workers need to think quickly and act responsibly to find solutions.
- c. Initiative shows leadership and reliability.

5. Creativity and Innovation

- a. Creativity allows workers to develop new recipes, menus, and food presentation styles.
- b. Innovation helps businesses stay competitive and exciting to customers.

6. Interest in the Career Path

- a. Passion for food-related work drives motivation and growth.
- b. A genuine interest makes it easier to handle challenges and enjoy the job.

7. Ability to Work Well with Others

- a. Food production and service often require teamwork (e.g., chefs, servers, cleaners, managers all working together).
- b. Good communication and collaboration ensure smooth operations.

Activity 4.3 Exploring Careers in Food and Nutrition

Have you ever thought about what you want to do in the future? A career is not just a job; it is the path you choose for your life's work. In this activity, you will explore what a career is, why it is important, how to build one, the career opportunities in the Food and Nutrition industry, and the key competencies needed to succeed.

1. Organise yourselves into small groups with your peers to discuss:
 - a. What does the word career mean to you?
 - b. Why do you think having a career is important in life?
 - c. Share at least two strategies you can use to prepare for a career (e.g., education, etc).
2. Create a concept map/cartoon to show the various career opportunities in the food and nutrition industry
3. In your groups, visit food and nutrition-related businesses/industries or watch videos/ read books/ search the internet for one career path from the food and nutrition industry (e.g., teacher, etc). Discuss and write down:
 - a. What the professional does (roles).
 - b. Where they work (settings).
 - c. What skills or qualifications they need.
 - d. What competencies are required for that job role
4. Produce a report based on your research to be presented for a class discussion

DISCUSSION OF WORK ETHICS IN THE FOOD INDUSTRY

Work Ethics

Work ethics are the moral values and professional standards that guide how people behave in their jobs. They include honesty, discipline, responsibility, and commitment to doing quality work and keeping high standards. In the food industry, strong work ethics are important because food directly affects people's health, safety, and trust.

Why Work Ethics Matter in the Food Industry

1. Ensures Food Safety and Hygiene

Following ethical practices helps keep food clean and safe from contamination.

Example: Washing hands and using clean tools before preparing food.

2. Builds Consumer Trust and Satisfaction

Customers prefer businesses that are transparent and reliable. **Example:** A vendor who openly shares expiry dates on products.

3. Improves Efficiency and Productivity

Ethical workers do their jobs well and on time. **Example:** Staff preparing ingredients early so service runs smoothly.

4. Enhances Professional Reputation

Businesses with good ethics gain respect and attract more customers.

5. Promotes Workplace Harmony

Respect and fairness at work help employees get along and work as a team.

Key Ethical Qualities in Food Work

1. Punctuality – Arriving on time makes work flow smoothly.
2. Honesty – Always tell the truth in food handling, pricing, and customer service.
3. Reliability and Responsibility – Do your tasks properly and accept accountability.
4. Respect – Be polite to colleagues and customers.
5. Commitment to Quality Standards – Always follow food safety and hygiene rules.
6. Adaptability and Continuous Learning – Learn new skills and stay updated with trends.
7. Teamwork and Cooperation – Work well with others to achieve goals.

Ethical Behaviour in Food Service and Production

1. **Food Safety Compliance:** Workers wear clean uniforms, hairnets, and gloves, and keep the kitchen clean to prevent contamination.
2. **Customer Service Ethics:** Staff handle complaints politely, listen to customers, and solve problems respectfully.
3. **Honesty in Food Business:** Vendors label foods properly, give the right prices, and are transparent about ingredients and quality.

4. **Teamwork in Food Service:** Kitchen staff support each other, communicate well, and cooperate during busy service hours.

Activity 4.4 Work Ethics in the Food Industry

1. Organise yourselves into small groups of 3-4 members to discuss the following questions: What does work ethics mean? Why is it important in the food industry?
 - a. List five qualities that show good work ethics (e.g., punctuality, etc).
 - b. For each quality, write a short example of how it can be practised in a food workplace. *Example:* Punctuality - A baker arriving early to start the oven before baking begins.
2. In your group, create a role play that demonstrates good work ethics in action. You may use one of the example scenarios given below or create your own scenario. Examples:
 - a. **Food Safety:** Workers washing hands and wearing gloves before food prep.
 - b. **Customer Service:** Handling a dissatisfied customer politely and professionally.
 - c. **Honesty:** Vendor giving the correct change and explaining food labels clearly.
 - d. **Teamwork:** Kitchen staff coordinating during a busy lunch rush.
3. Perform your role play for other groups and watch theirs. Be prepared to give and receive feedback on the role plays.

Extended Reading

- Adigo, E.C., & Maddah, C.K. (2011). *Food and Nutrition*. Kwadwoan Publication: Accra.
- Koomson et.al (2019). *Food and Nutrition for Senior High Schools*. Aki-Ola published: Accra.
- Noble Amoako Sarkodie (2014). *Food and Nutrition for Schools and Colleges*. Bookworm Publishers: Kumasi.

REVIEW QUESTIONS

1. You have been invited to plan a food exhibition and bazaar in your community to promote new food products, preserve traditional cuisines, and gain consumer feedback.
2. Explain the key planning strategies you would use to achieve these goals. In your answer, discuss how marketing and post-event evaluation would contribute to the success of the event.
3. As part of a student team, you are planning a food exhibition and bazaar to showcase new products.
4. Explain how you would use marketing strategies such as digital promotion, booth design, sampling, pricing, and branding to attract consumers. Discuss how post-event reflection can improve future exhibitions.
5. Discuss two career opportunities in Food and Nutrition. Explain how education and experience can support success in those fields.
6. As a manager in a food business, how would you promote work ethics among staff? Explain how qualities like honesty, responsibility, and teamwork can improve food safety and customer trust.

REFERENCES

- Adigo, E.C., &Maddah, C, K. (2011). *Food and Nutrition*. Kwadwoan Publication: Accra. Pg. 344-363.
- Koomson et al. (2019). *Food and Nutrition for Senior High Schools*. Aki-Ola published: Accra. Pg. 618-674.
- Noble Amoako Sarkodie (2014). *Food and Nutrition for Schools and Colleges*. Bookworm Publishers: Kumasi. Pg. 275-297.

GLOSSARY

Allergen	A substance in food that can cause an allergic reaction in some people
Artificial/Low-calorie sweeteners	Man-made substances like aspartame and saccharin provide sweetness with fewer or no calories.
Biodegradable	A material that naturally breaks down in the environment without causing harm
Branding	Creating a unique image, packaging, and messaging that distinguishes a food product or company from competitors.
Break-even	The point where a business's income equals its costs, with no profit or loss
Budgeting	The process of estimating and allocating costs for organising events such as exhibitions or bazaars.
Caramelisation	The process where sugar turns brown and develops flavour when heated.
Communal Eating	Sharing meals with family, friends, and community members during festivals to strengthen social bonds.
Compostable	A material that breaks down into natural matter and can be used as compost
Consumer	A person who buys or uses food or other products
Consumer Food Exhibition	A public-focused event allowing consumers to taste and experience food products first-hand.
Culinary Instructor	An educator who teaches cooking, presentation, and kitchen safety in culinary or vocational institutions.
Cultural Exchange	Sharing and appreciating different cultural cuisines and food practices through exhibitions or bazaars.

Cultural Heritage	Traditions, beliefs, and practices passed down through generations, often expressed through food, festivals, and customs.
Eco-friendly	Not harmful to the environment and supports sustainability
Entertainment	Activities such as music, dance, drama, or games that bring joy, relaxation, and excitement during festivals.
Fermentation	The process in which yeast uses sugar to produce gases that help bread rise.
Festival	A cultural, religious, or historical celebration where people gather to remember traditions, give thanks, and enjoy togetherness.
Festival Dishes	Traditional meals prepared for cultural or community festivals, often carrying symbolic meaning.
Festive Dishes	Special meals prepared for personal celebrations like birthdays, weddings, or graduations.
Food Bazaar	A market-like event where vendors sell diverse traditional, modern, or specialty food products to consumers.
Food Exhibition	An organised event where food businesses and professionals display products, innovations, and culinary skills to the public.
Food Safety Auditor	A professional who inspects and ensures that food businesses comply with hygiene and safety standards.
Food Technologist	A specialist who applies technology and science to improve food processing, preservation, and quality.
Fortified	Food that has extra nutrients, such as vitamins or minerals added to it
Fructose	A sugar found in fruits and honey, sweeter than glucose.

Glucose	A natural sugar found in fruits and vegetables; the main energy source for the body.
Hospitality	The act of warmly welcoming and sharing food with others, especially during celebrations.
Hygiene	Clean and safe practices used to prevent illness and contamination
Hygroscopicity	The ability of sugar to absorb and hold moisture.
Ingredient	A single item used to make food or a recipe
Labelling	Information written on food packaging to describe contents and usage
Lactose	A sugar found in milk and dairy products.
Licensing and Permits	Legal authorisations required to operate food stalls, ensuring compliance with food safety and health regulations.
Local Ingredients	Foods grown and produced within a community or country, often fresher, healthier, and more sustainable.
Marketing Strategies	Plans and methods used to attract consumers, such as social media campaigns, discounts, and branding.
Meal Planning	Organising food choices for an event or occasion to ensure balance, nutrition, and suitability for guests.
Modification of Meals	Adjusting traditional recipes to make them healthier, such as reducing oil, adding vegetables, or using whole grains.
Natural sugars	Sugars that occur naturally in foods like fruits, milk, and honey (e.g., glucose, fructose, lactose).
Nutrient	A substance in food that the body needs to grow and stay healthy
Nutrition	The process of providing or obtaining food necessary for health, growth, and energy.

Packaging	Materials used to wrap or protect food products
Preservative	A substance (like sugar in jams) that helps prevent spoilage.
Product Sampling	Offering consumers free tastes of food products to encourage trial and purchase.
Recyclable	A material that can be collected and reused to make something new
Refined sugars	Processed sugars such as granulated, icing, and molasses.
Service Styles	The way meals are offered during occasions, such as buffet, plated service, or family-style sharing.
Shelf life	The length of time food stays safe and good to eat
Solubility	How easily a substance, such as sugar, dissolves in water.
Street Food Bazaar	A community-centred food event showcasing diverse local and global street foods in open spaces.
Sucrose	Common table sugar, usually from sugarcane or sugar beet.
Sugar craft	The art of using sugar and icing to create decorations for cakes and pastries.
Sugars	They are carbohydrates that provide energy and sweetness in food.
Sustainability	Using resources like food, water, and energy wisely to ensure they are available for future generations.
Sustainable	A way of using resources that protects the environment and supports future needs.
Sweeteners	Substances, natural or artificial, used to make food and drinks sweet.

Symbolism in Food	The deeper cultural or spiritual meanings certain foods carry during celebrations (e.g., Kpokpoi symbolises triumph over hunger).
Target Audience	The specific group of people an event or business aims to attract, based on demographics and preferences.
Trade Exhibition	A professional event where suppliers and distributors in the food industry connect for business-to-business (B2B) interactions.
Unity	Togetherness and harmony are promoted when people share meals and celebrate festivals together.

This book is intended to be used for the Year Three Food And Nutrition Senior High School (SHS) Curriculum. It contains information and activities to support teachers to deliver the curriculum in the classroom as well as additional exercises to support learners' self-study and revision. Learners can use the review questions to assess their understanding and explore concepts and additional content in their own time using the extended reading list provided.

All materials can be accessed electronically from the Ministry of Education's Curriculum Microsite.



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