GRADE 10 NOTES

HOME-SCIENCE

COMPREHENSIVE HANDBOOK NOTES

Well-organized, simplified learning notes that provide clear, concise information in a logical sequence, making key concepts easily accessible and memorable, enhancing understanding and retention while fostering engagement and facilitating effective study. By providing a clear focus on key ideas, these Mwalimu Consultancy Ltd Notes foster better retention and comprehension, making learning more accessible and enjoyable.

MWALIMU VERSION

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MWALIMU CONSULTANCY

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STRAND 1.0: FOODS AND NUTRITION

SUB-STRAND 1.1: OVERVIEW OF FOODS AND NUTRITION

1. Importance of Foods and Nutrition as an Area of Study in Home Science:

Home Science is a field of study that equips individuals with knowledge and skills related to managing homes and families effectively. Foods and nutrition form a crucial pillar of Home Science because:

a) **Promoting Health and Well-being:** Understanding nutrition enables individuals and families to make informed food choices that support optimal health, prevent nutrient deficiencies, and reduce the risk of diet-related diseases like obesity, diabetes, and heart disease.

b) **Resource Management:** Studying foods and nutrition involves learning about planning, purchasing, preparing, and storing food efficiently, minimizing waste and maximizing household resources.

c) **Family and Community Health:** The nutritional status of family members directly impacts their overall well-being and productivity. Knowledge of foods and nutrition empowers individuals to nourish their families adequately and contribute to healthier communities.

d) **Consumer Awareness:** This area of study helps individuals become informed consumers, able to understand food labels, evaluate nutritional claims, and make wise purchasing decisions.

e) **Cultural Understanding:** Food is deeply intertwined with culture and traditions. Studying foods and nutrition provides insights into different food customs and dietary practices.

f) **Developing Practical Skills:** It equips learners with essential life skills in food preparation, cooking techniques, and meal planning, fostering independence and self-sufficiency.

g) **Foundation for Further Studies and Careers:** A strong foundation in foods and nutrition can open doors to various career paths and further studies in related fields.

2. Careers Related to Foods and Nutrition:

The field of foods and nutrition offers a diverse range of exciting career opportunities. Here are some examples:



a) **Dietitian/Nutritionist:** Provides expert advice on diet and nutrition to individuals and groups, helping them manage health conditions, achieve fitness goals, and promote overall well-being. They may work in hospitals, clinics, schools, sports organizations, or private practice.

b) **Food Scientist/Technologist:** Applies scientific principles to study the composition, properties, and processing of food. They are involved in developing new food products, improving food safety, and ensuring quality control in the food industry.

c) **Chef/Cook:** Plans, prepares, and cooks food in various settings such as restaurants, hotels, catering companies, and institutions. A strong understanding of nutrition can help chefs create healthier and more appealing menus.

d) **Food Stylist:** Arranges food attractively for photography, film, and other media. They need to understand how different foods look and how to present them in an appealing way.

e) **Food Journalist/Writer:** Researches and writes about food-related topics for newspapers, magazines, websites, and blogs. They may cover food trends, recipes, nutrition information, and food policy.

f) **Food Photographer:** Captures visually appealing images of food for various purposes, including advertising, cookbooks, and editorial features.

g) **Food Inspector/Safety Officer:** Ensures that food production and handling processes meet safety and hygiene standards to protect public health. They work for government agencies or food companies.

h) **Catering Manager:** Oversees the planning, preparation, and delivery of food services for events and functions. They need strong organizational and management skills, as well as knowledge of food and nutrition.

i) **Agricultural Scientist (specializing in food crops):** Conducts research to improve the yield, nutritional value, and sustainability of food crops.

j) **Food Marketing/Sales:** Promotes and sells food products to consumers and businesses. Understanding nutritional aspects can be a valuable asset in this field.

k) **Home Economics Teacher:** Educates learners on various aspects of home management, including foods and nutrition.

3. Role of Foods and Nutrition in Our Day-to-Day Life:

Foods and nutrition play a fundamental role in almost every aspect of our daily lives:

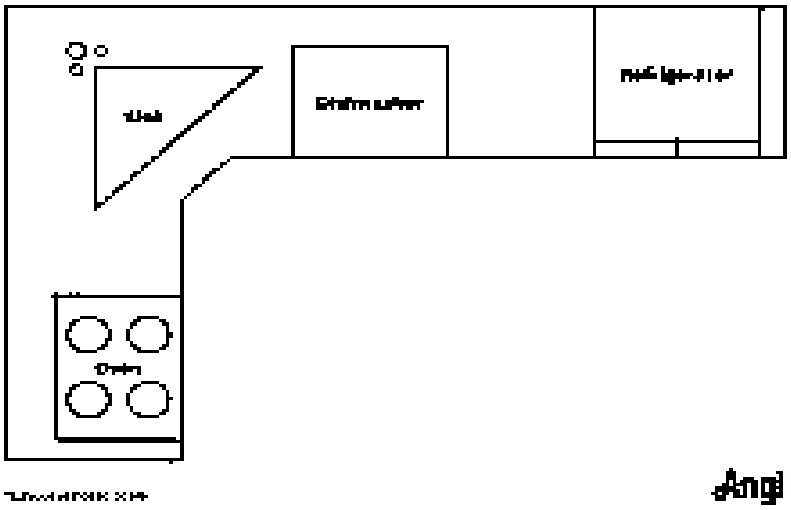
- ✓ **Providing Energy:** Food is our primary source of energy, fueling our physical activities, bodily functions, and mental processes. The nutrients we obtain from food, particularly carbohydrates, fats, and proteins, are broken down to release energy.
- ✓ **Supporting Growth and Development:** Nutrients like proteins, vitamins, and minerals are essential for the growth and repair of tissues, especially during childhood and adolescence.
- ✓ **Maintaining Body Functions:** Vitamins, minerals, and water are crucial for regulating various bodily processes, including metabolism, nerve function, and immune response.
- ✓ **Preventing Diseases:** A balanced and nutritious diet can help strengthen the immune system and reduce the risk of developing chronic diseases such as heart disease, stroke, certain types of cancer, and type 2 diabetes.
- ✓ **Enhancing Mental Well-being:** Research suggests a strong link between diet and mental health. Certain nutrients can affect mood, concentration, and cognitive function.
- ✓ **Social and Cultural Significance:** Food plays a vital role in social gatherings, celebrations, and cultural traditions. Sharing meals brings people together and strengthens social bonds.
- ✓ **Economic Importance:** The food industry, from agriculture to retail, is a significant sector of the economy, providing employment and contributing to national development.

SUB-STRAND 1.2: KITCHEN LAYOUTS AND EQUIPMENT

1. Analysing Kitchen Layouts in the Home:

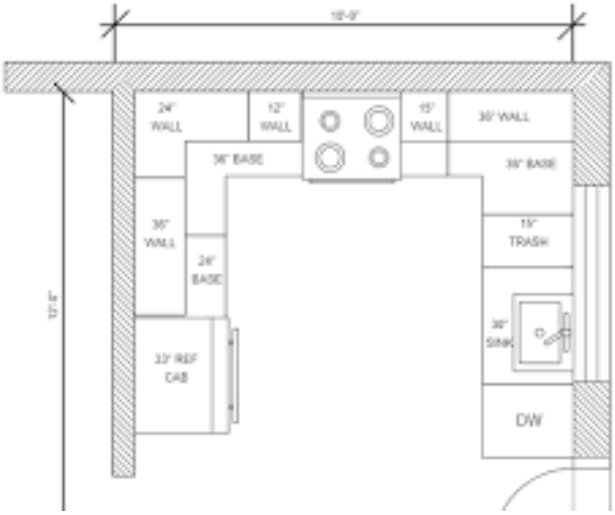
The layout of a kitchen refers to the arrangement of countertops, cabinets, appliances (like the cooker, refrigerator, and sink), and walkways within the kitchen space. A well-planned layout can significantly improve efficiency and safety. Here are common kitchen layouts found in homes:

- **L-Shaped Kitchen:**



- ✓ **Description:** Features countertops and cabinets along two adjacent walls, forming an "L" shape. This design often has an open end that can flow into a dining area.
- ✓ **Advantages:** Efficient workflow, good for small to medium-sized kitchens, allows for an open feel.
- ✓ **Considerations:** Corner cabinets can sometimes be hard to access; the length of each arm of the "L" needs careful planning for optimal workflow.

- **U-Shaped Kitchen:**



- ✓ **Description:** Consists of countertops and cabinets along three adjacent walls, creating a "U" shape. This layout typically provides ample workspace and storage.
- ✓ **Advantages:** Excellent workflow with easy access to all areas, plenty of countertop space and storage.
- ✓ **Considerations:** Requires a larger space, can feel enclosed if not designed well.

❖ **Corridor (Galley) Kitchen:**



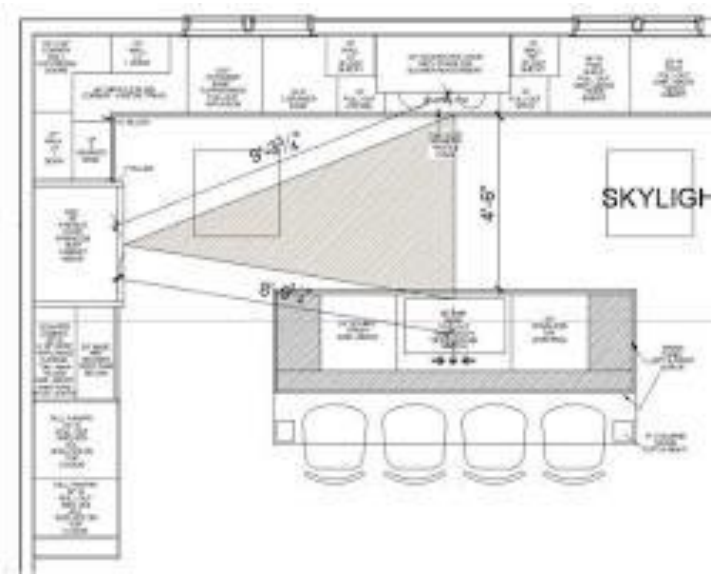
- ✓ **Description:** Features two parallel walls with countertops and cabinets on either side, creating a walkway or "corridor" in between. This layout is often found in smaller homes or apartments.
- ✓ **Advantages:** Very efficient for cooking as everything is within easy reach, maximizes space in narrow rooms.
- ✓ **Considerations:** Can feel cramped if too narrow or long, limited counter space if not planned carefully, may become a bottleneck if multiple people are working in the kitchen.

❖ **One-Wall Kitchen:**



- ✓ **Description:** All countertops, cabinets, and appliances are located along a single wall. This layout is common in studio apartments or very small homes.
- ✓ **Advantages:** Space-saving, simple and cost-effective.
- ✓ **Considerations:** Limited counter space and storage, workflow can be less efficient as all tasks are performed in a line.

❖ **Island Kitchen:**



- ✓ **Description:** Incorporates a freestanding countertop unit (the "island") in addition to one of the other basic layouts (usually L-shaped or U-shaped). The island can provide additional workspace, storage, seating, or even house appliances like a sink or cooktop.
- ✓ **Advantages:** Increased workspace and storage, can create a focal point, provides a social hub if it includes seating.
- ✓ **Considerations:** Requires a larger kitchen space to accommodate the island and walkways around it, can increase the overall cost.

2. Factors to Consider When Choosing Kitchen Layouts, Tools, and Equipment:

Several factors should be considered when planning a kitchen layout and selecting tools and equipment:

- ✓ **Available Space:** The size and shape of the kitchen area will largely determine the most suitable layout.
- ✓ **Budget:** The cost of renovations, cabinets, appliances, and tools can vary significantly.
- ✓ **Lifestyle and Needs:** Consider how you use your kitchen. Do you cook frequently? Do you entertain often? How many people typically use the kitchen?

- ✓ **Workflow and Efficiency:** The layout should facilitate a smooth and logical flow of tasks (preparation, cooking, serving, cleaning). The "work triangle" is a key concept here.
- ✓ **Storage Requirements:** Adequate storage for food, cookware, and utensils is essential to keep the kitchen organized and clutter-free.
- ✓ **Safety:** The layout should allow for safe movement and prevent accidents. Appliances should be placed away from walkways, and there should be sufficient ventilation.
- ✓ **Accessibility:** Consider the needs of all users, including children, the elderly, or individuals with disabilities.
- ✓ **Personal Preferences and Aesthetics:** While functionality is crucial, the layout and equipment should also align with your personal style and preferences.

3. Identifying and Classifying Kitchen Tools and Equipment:

Kitchen tools and equipment are essential for preparing and cooking food. They can be classified based on their function, size, or the materials they are made from.

- ❖ **Classification by Function:**
- ✓ **Preparation Tools:** Used for tasks like measuring (measuring cups, spoons, weighing scales), cutting (knives, peelers, scissors), mixing (bowls, whisks, spoons), and shaping (rolling pins, molds).

i. Measuring tools

			
Measuring cups	Spoons	Measuring scales	

ii. Cutting tools

		
Knives	Scissors	Peelers

iii. Mixing tools

		
Bowls	Whisks	Spoons

iv.Shaping tools

	
Rolling pin	Molds

- ✓ **Cooking Equipment:** Used for applying heat to food, such as cookers (gas, electric, induction), ovens, microwaves, pots, pans, and pressure cookers.

			
Cooker	Oven	Pans and pots	Pressure cooker

- ✓ **Serving Utensils:** Used for serving food, including spoons, forks, serving dishes, and ladles.

			
Spoons	Forks	Dishes	Ladles

✓ **Cleaning Tools:** Used for maintaining hygiene in the kitchen, such as brushes, sponges, dishcloths, and mops.

			
Brushes	Sponges	Dishcloths	Mops

✓ **Storage Containers:** Used for keeping food fresh and organized, like airtight containers, jars, and cling film.

❖ **Classification by Size:**

✓ **Small Utensils:** Handheld tools like knives, spoons, whisks, and graters.

✓ **Small Appliances:** Portable electric devices like blenders, toasters, and food processors.

✓ **Large Appliances:** Major kitchen units like refrigerators, cookers, ovens, and dishwashers.

❖ **Classification by Material:**

✓ **Glass:** Baking dishes, measuring cups, storage containers.



✓ **Wood:** Cutting boards, spoons, rolling pins.



✓ **Plastic:** Mixing bowls, storage containers, some utensils.



✓ **Melamine:** Plates, bowls, serving platters (not suitable for microwave or oven use).



✓ **Metals (Stainless Steel, Aluminum, Cast Iron):** Pots, pans, knives, some utensils.



✓ **Earthenware (Ceramics):** Baking dishes, serving ware.



4. Caring for Tools and Equipment Used in the Kitchen:

Proper care of kitchen tools and equipment is essential for their longevity, safety, and hygiene. The method of care depends on the material of the item.

- **General Guidelines:**

✓ Always read and follow the manufacturer's instructions for use and care.

✓ Clean tools and equipment immediately after use to prevent food from drying and becoming difficult to remove.

✓ Use appropriate cleaning agents and methods for each material.

✓ Dry items thoroughly before storing to prevent rust, corrosion, or mildew.

✓ Store tools and equipment safely and in an organized manner to prevent damage and accidents.

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- **Care Based on Material:**

✓ **Glass:** Wash with warm soapy water or in a dishwasher. Avoid sudden temperature changes to prevent cracking. Store carefully to prevent breakage.

✓ **Wood:** Handwash with mild soapy water and dry immediately. Avoid soaking in water. Season wooden items like cutting boards with food-grade mineral oil to prevent drying and cracking. Store in a dry place.

✓ **Plastic:** Most can be washed in warm soapy water or a dishwasher. Avoid using abrasive cleaners that can scratch the surface. Check if plastic containers are microwave-safe before using them in a microwave.

✓ **Melamine:** Wash with warm soapy water. Do not use in a microwave or oven as it can release harmful chemicals. Avoid abrasive cleaners that can scratch the surface.

✓ **Metals:**

- **Stainless Steel:** Generally dishwasher safe. For stubborn stains, use a non-abrasive cleaner. Dry thoroughly to prevent water spots.
- **Aluminum:** Handwash with warm soapy water. Avoid using harsh alkaline detergents that can cause discoloration. Do not put aluminum in contact with acidic foods for extended periods.
- **Cast Iron:** Wash by hand with hot water and a non-abrasive sponge or brush. Dry immediately and season with oil to prevent rust. Avoid dishwashers and soaking in water.

✓ **Earthenware (Ceramics):** Most can be washed in warm soapy water or a dishwasher. Handle with care to avoid chipping or breaking. Avoid sudden temperature changes for some types of ceramics.

5. Improvising Kitchen Tools and Equipment Using Safe and Locally Available Materials:

In situations where standard kitchen tools or equipment are not available, it's possible to improvise using safe and locally available materials. This requires creativity and an understanding of the basic functions of the missing item.

- **Examples of Improvisation:**

✓ Using a strong, clean bottle or a smooth stone to pound or crush ingredients.

✓ Using a clean, sturdy leaf or a piece of banana stalk as a temporary plate or serving surface.

✓ Using a sharpened stick or a strong piece of wire as a skewer.

✓ Using a clean, tightly woven cloth bag to strain liquids.

✓ Using a calabash or a hollowed-out gourd as a bowl or container.

✓ Creating a makeshift grill using stones and metal rods.

Important Considerations for Improvisation:

- ✓ **Safety First:** Ensure that the materials used are clean, non-toxic, and will not contaminate the food. Avoid using materials that could splinter, melt, or release harmful substances when in contact with food or heat.
- ✓ **Functionality:** The improvised tool or equipment should be able to perform the basic function of the original item, even if not as efficiently.
- ✓ **Hygiene:** Clean the improvised items thoroughly before and after use.

SUB-STRAND 1.3: FOOD HYGIENE AND SAFETY

1. Importance of Hygiene and Safety When Handling Food:

Maintaining high standards of hygiene and safety when handling food is paramount for several reasons:

- ✓ **Preventing Foodborne Illnesses:** Food can become contaminated with harmful microorganisms (bacteria, viruses, parasites) or toxins, leading to foodborne illnesses (food poisoning). Good hygiene practices minimize this risk.
- ✓ **Protecting Public Health:** In food businesses and even at home, improper food handling can affect many people. Maintaining hygiene prevents the spread of illness to a wider population.
- ✓ **Ensuring Food Quality:** Proper handling and storage prevent food from spoiling, retaining its nutritional value, flavor, and texture for longer.
- ✓ **Reducing Food Waste:** When food is handled and stored correctly, it lasts longer, reducing unnecessary waste and saving resources.
- ✓ **Maintaining a Clean and Safe Kitchen Environment:** Good hygiene practices contribute to a clean and organized kitchen, reducing the risk of accidents and pest infestations.
- ✓ **Legal and Ethical Responsibilities:** In food businesses, there are legal requirements regarding food hygiene and safety. Ethically, anyone handling food has a responsibility to ensure it is safe for consumption.
- ✓ **Building Consumer Confidence:** For food businesses, adhering to high hygiene standards builds trust and confidence among customers.

2. Differentiating Between Food Spoilage and Poisoning:

- (Food spoilage)



Food that has mold growing on it

It's important to understand the difference between food spoilage and food poisoning, although both can make food unsafe to eat.

Feature	Food Spoilage	Food Poisoning
Definition	Deterioration in the quality of food, making it undesirable for consumption due to changes in taste, smell, texture, or appearance.	Illness caused by consuming food contaminated with harmful microorganisms or their toxins, or by naturally occurring poisons in food.
Causes	Enzymes within the food, reactions with oxygen, moisture loss or gain, physical damage, and the growth of some microorganisms (yeasts, molds, some bacteria).	Primarily caused by pathogenic (disease-causing) bacteria, viruses, parasites, or the toxins they produce. Can also be caused by chemical contamination or naturally poisonous foods.
Signs in Food	Change in color (e.g., mold growth), change in texture (e.g., slimy, mushy), unpleasant or "off" smell, undesirable taste.	Often, the food may look, smell, and taste normal, making it difficult to detect contamination. In some cases, there might be subtle changes.

Signs in Humans	Generally, spoiled food will taste unpleasant, and you are unlikely to eat much of it. If consumed, it might cause mild digestive upset in some cases.	Symptoms can range from mild (nausea, vomiting, diarrhea, abdominal cramps) to severe (dehydration, fever, neurological symptoms, even death), depending on the type and amount of contaminant. Symptoms can appear within minutes to several days after consumption.
Prevention	Proper storage (temperature control, humidity), protecting from physical damage, using food within its shelf life, and good hygiene during handling.	Thorough cooking of food, proper chilling of perishable foods, preventing cross-contamination, using clean water and raw materials, and good personal hygiene of food handlers.

3. Applying Hygiene Practices When Handling Food:

Good hygiene practices are essential at every stage of food handling, from purchasing to serving. Here are key practices to follow:

- **Personal Hygiene:**

✓ **Wash hands thoroughly:** Wash hands with soap and running water for at least 20 seconds before handling food, after using the toilet, after touching pets, after coughing or sneezing, and after handling raw meat, poultry, or fish.

✓ **Wear clean clothing and protective gear:** Aprons, hairnets, and gloves (when appropriate) can help prevent contamination.

✓ **Avoid touching ready-to-eat foods with bare hands:** Use utensils, tongs, or disposable gloves.

✓ **Cover cuts and wounds:** Use waterproof bandages to prevent bacteria from entering food.

✓ **Avoid eating, drinking, or smoking in food preparation areas.**

✓ **If you are sick (especially with vomiting or diarrhea), avoid handling food.**

- **Kitchen Hygiene:**

✓ **Keep surfaces clean and sanitized:** Regularly clean and disinfect countertops, cutting boards, and other surfaces that come into contact with food. Use appropriate cleaning and sanitizing agents.

- ✓ **Wash utensils and equipment thoroughly:** Wash all utensils, cutting boards, and equipment with hot, soapy water after each use. Sanitize them if necessary.
- ✓ **Use separate cutting boards and utensils for raw and cooked foods:** This prevents cross-contamination.
- ✓ **Control pests:** Take measures to prevent pests like flies, cockroaches, and rodents from accessing food preparation and storage areas.
- ✓ **Dispose of waste properly:** Use covered bins and empty them regularly.
- **Food Storage Hygiene:**
- ✓ **Store food at safe temperatures:** Refrigerate perishable foods promptly (within 2 hours, or 1 hour if the temperature is above 32°C). Ensure your refrigerator is at the correct temperature (4°C or below). Store frozen foods at -18°C or below.
- ✓ **Separate raw and cooked foods in the refrigerator:** Store raw meat, poultry, and fish on the bottom shelves to prevent their juices from dripping onto other foods.
- ✓ **Use airtight containers for storing food:** This helps prevent contamination and keeps food fresh.
- ✓ **Follow the "first in, first out" (FIFO) rule:** Use older food items before newer ones.
- ✓ **Check expiry dates and "best before" dates:** Discard food that has expired.
- **Food Preparation and Cooking Hygiene:**
- ✓ **Wash raw fruits and vegetables thoroughly under running water before use.**
- ✓ **Cook food thoroughly to the correct internal temperatures:** Use a food thermometer to ensure that meat, poultry, eggs, and seafood reach safe internal temperatures to kill harmful bacteria.
- ✓ **Avoid cross-contamination during preparation:** Keep raw and cooked foods separate. Wash hands and utensils after handling raw food.
- ✓ **Reheat food thoroughly:** Ensure reheated food reaches a temperature of at least 75°C.
- ✓ **Do not refreeze thawed food:** Refreezing can increase the risk of bacterial growth.

4. Adopting High Hygiene Standards When Handling Food:

Adopting high hygiene standards is not just about following rules; it's about developing a mindset and habits that prioritize food safety. This involves:

- ✓ **Awareness and Understanding:** Recognizing the potential risks associated with poor food hygiene and understanding the principles behind safe food handling practices.

- ✓ **Responsibility:** Taking personal responsibility for ensuring that the food you handle is safe for consumption.
- ✓ **Consistency:** Practicing good hygiene habits consistently, every time you handle food.
- ✓ **Continuous Learning:** Staying informed about best practices in food hygiene and safety.
- ✓ **Leading by Example:** If you are in a position to influence others (e.g., at home or in a food business), promoting and demonstrating high hygiene standards.

SUB-STRAND 1.4: METHODS OF COOKING

1. Reasons for Cooking Food:

Cooking food is a fundamental human activity with several important purposes:

- ✓ **Improving Digestibility:** Cooking breaks down complex carbohydrates, proteins, and fats, making them easier for our bodies to digest and absorb nutrients.
- ✓ **Enhancing Flavor and Aroma:** Heat can transform the flavor and aroma of food, making it more palatable and appealing. Chemical reactions during cooking create new and desirable tastes and smells.
- ✓ **Destroying Harmful Microorganisms:** Cooking food to the correct temperature kills bacteria, viruses, parasites, and other pathogens that can cause foodborne illnesses, making it safe to eat.
- ✓ **Changing Texture:** Cooking can soften tough tissues in meat and vegetables, making them more pleasant to eat. It can also create crispy or tender textures.
- ✓ **Increasing Shelf Life:** Cooking and then properly preserving food (e.g., canning, pickling) can extend its shelf life by destroying spoilage-causing microorganisms and enzymes.
- ✓ **Developing Culinary Skills and Creativity:** Understanding different cooking methods allows for greater creativity in the kitchen and the development of valuable culinary skills.
- ✓ **Cultural and Social Significance:** Cooking and sharing food is often a central part of cultural traditions and social gatherings, fostering a sense of community and belonging.

2. Categories of Methods of Cooking:

Methods of cooking are broadly categorized based on how heat is transferred to the food. The main categories are:

- **Moist Heat Cooking:** This involves using water, steam, or other liquids to transfer heat to the food.

- ✓ **Boiling:** Cooking food in water or another liquid that is heated to its boiling point (around 100°C at sea level). Examples: boiling potatoes, eggs, pasta.





- ❖ **General Rules:** Ensure enough liquid to cover the food, bring liquid to a boil before adding food (unless starting with cold water is desired), control the heat to maintain a gentle boil, and cook until the food is tender.
- ❖ **Advantages:** Relatively simple, can cook large quantities of food at once, helps to tenderize some foods.
- ❖ **Disadvantages:** Can lead to loss of water-soluble vitamins and minerals, may make some foods mushy if overcooked.
- ✓ **Stewing:** Cooking food slowly in a small amount of liquid (stock, sauce, or water) in a covered pot. The food is often cut into small pieces. Examples: beef stew, vegetable stew.



- **General Rules:** Brown the meat (if using) for added flavor, add enough liquid to just cover the food, bring to a simmer and then cook gently over low heat for a longer period, allowing flavors to meld.
- **Advantages:** Tenderizes tougher cuts of meat, develops rich flavors as ingredients cook together, retains moisture.
- **Disadvantages:** Takes a longer time to cook.

✓ **Steaming:** Cooking food over boiling water, allowing the steam to transfer heat. The food does not come into direct contact with the liquid. Examples: steaming vegetables, fish, dumplings.





- **General Rules:** Use a steamer basket or rack placed above boiling water, ensure the water level is below the basket, cover the food to trap the steam, and cook until tender.
- **Advantages:** Retains nutrients, color, and flavor of food better than boiling, requires little or no added fat.
- **Disadvantages:** Can be slower than boiling for some foods, may require specialized equipment.

✓ **Poaching:** Cooking delicate foods in a liquid (water, stock, milk, or wine) that is heated to a temperature just below boiling (around 70-85°C). Examples: poaching eggs, fish fillets, fruits.



- **General Rules:** Use enough liquid to cover the food, maintain a gentle simmer (small bubbles forming but not rapidly boiling), cook until just cooked through.
- **Advantages:** Gentle cooking method that preserves the delicate texture and flavor of food.
- **Disadvantages:** Requires careful temperature control, not suitable for all types of food.

- **Dry Heat Cooking:** This involves using hot air, direct flame, or hot surfaces to transfer heat to the food.

✓ **Roasting:** Cooking food in an oven using hot, dry air circulating around it. Often used for larger pieces of meat, poultry, and vegetables. Examples: roasting chicken, potatoes, a leg of lamb.




❖ **General Rules:** Preheat the oven to the desired temperature, place food on a roasting pan or rack, baste occasionally to keep moist (if needed), and cook until the internal temperature is reached.

❖ **Advantages:** Develops rich flavors and crispy exteriors, can cook large pieces of food evenly.

❖ **Disadvantages:** Can dry out food if not done properly, takes a longer time.

✓ **Grilling:** Cooking food over direct heat from a heat source below (e.g., charcoal, gas grill, electric grill). Examples: grilling meat, fish, vegetables, kebabs.




❖ **General Rules:** Preheat the grill, oil the grates to prevent sticking, cook food over medium to high heat, turning as needed to ensure even cooking and prevent burning.

- **Advantages:** Imparts a smoky flavor, creates attractive grill marks, relatively fast cooking method for smaller pieces of food.
- **Disadvantages:** Requires careful attention to prevent burning, can produce smoke.

✓ **Baking:** Cooking food in an oven using hot, dry air, similar to roasting, but often used for foods with a more delicate structure, like bread, cakes, pastries, and casseroles. Examples: baking bread, cakes, cookies, lasagna.





- **General Rules:** Preheat the oven to the correct temperature, follow specific recipes for mixing ingredients and baking times, use appropriate baking dishes or trays.
- **Advantages:** Can create a wide variety of textures and flavors, allows for complex recipes.
- **Disadvantages:** Requires precise measurements and temperature control, can be time-consuming.

✓ **Frying:** Cooking food by immersing it in hot oil or fat.



- **Shallow Frying (Sautéing/Pan-frying):** Cooking small pieces of food in a small amount of hot oil in a pan. Examples: frying eggs, sautéing vegetables, pan-frying fish fillets.

✓ **General Rules:** Heat the oil to the correct temperature before adding food, avoid overcrowding the pan, cook until golden brown and cooked through, turning as needed.

✓ **Advantages:** Relatively fast, creates a crispy exterior and tender interior.

✓ **Disadvantages:** Adds fat to the food, can be messy if not done carefully.

❖ **Deep Frying:** Cooking food completely submerged in hot oil. Examples: French fries, fried chicken, doughnuts.

✓ **General Rules:** Heat a sufficient amount of oil to the correct temperature, use a deep fryer or a deep pot with a thermometer, carefully add food in batches, and cook until golden brown and cooked through. Drain excess oil after frying.

✓ **Advantages:** Cooks food quickly and evenly, creates a crispy exterior.

✓ **Disadvantages:** Adds a significant amount of fat to the food, requires careful temperature control for safety and best results, can be messy.

3. Preparing and Cooking Food Using Different Methods:

This section involves practical application of the knowledge gained. You will learn to prepare ingredients and then cook them using various methods.

- **Food Preparation (Mise en Place):** Before cooking, it's essential to prepare the ingredients. This includes:

✓ **Cleaning:** Washing fruits, vegetables, and sometimes rinsing meats (follow food safety guidelines).

✓ **Blending:** Combining ingredients to create a smooth mixture (e.g., for sauces or smoothies).

✓ **Kneading:** Working dough with your hands to develop gluten (important for bread making).

✓ **Mixing:** Combining different ingredients together (e.g., for batters or salads).

✓ **Cutting:** Preparing ingredients into appropriate sizes and shapes:

✓ **Chopping:** Cutting into roughly equal, bite-sized pieces.

✓ **Slicing:** Cutting into thin, flat pieces.

✓ **Peeling:** Removing the outer skin or rind.

✓ **Grating:** Shredding food into small pieces using a grater.

✓ **Dicing:** Cutting into small, even cubes.

4. Observing Safety While Preparing and Cooking Food:

Safety is paramount in the kitchen. When preparing and cooking food using different methods, always observe the following safety precautions:

- **Preventing Burns and Scalds:**

✓ Use oven mitts or pot holders when handling hot pots, pans, and baking dishes.

✓ Turn pot handles inward on the stove to prevent them from being accidentally knocked over.

✓ Be careful when lifting lids from hot pots, as steam can cause burns.

✓ Use caution when working with hot oil; avoid splattering.

- **Preventing Cuts:**

✓ Use sharp knives carefully and cut away from your body.

✓ Always use a cutting board.

✓ Store knives safely in a knife block or rack.

✓ Sweep up any broken glass immediately and carefully.

- **Preventing Electrical Shocks:**

✓ Keep electrical appliances away from water.

✓ Ensure your hands are dry when using electrical appliances.

✓ Check that electrical cords are in good condition.

✓ Do not overload electrical outlets.

- **Preventing Fires:**

✓ Never leave cooking unattended, especially when using oil or high heat.

✓ Keep flammable materials (e.g., towels, paper) away from the stove and oven.

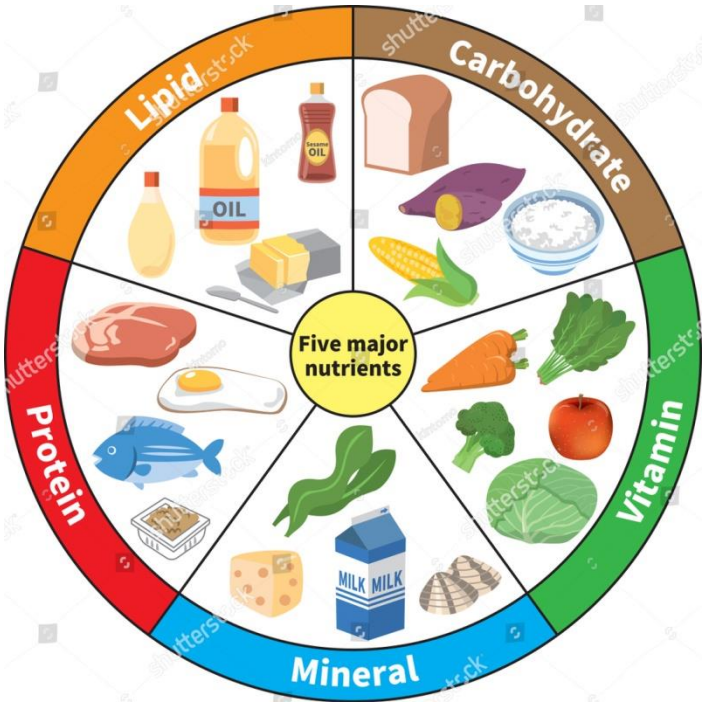
✓ Know how to use a fire extinguisher and have one readily accessible in the kitchen.

- **Maintaining a Clean and Organized Workspace:**

✓ Keep countertops and floors clean and free of clutter to prevent trips and falls.

✓ Wipe up spills immediately.

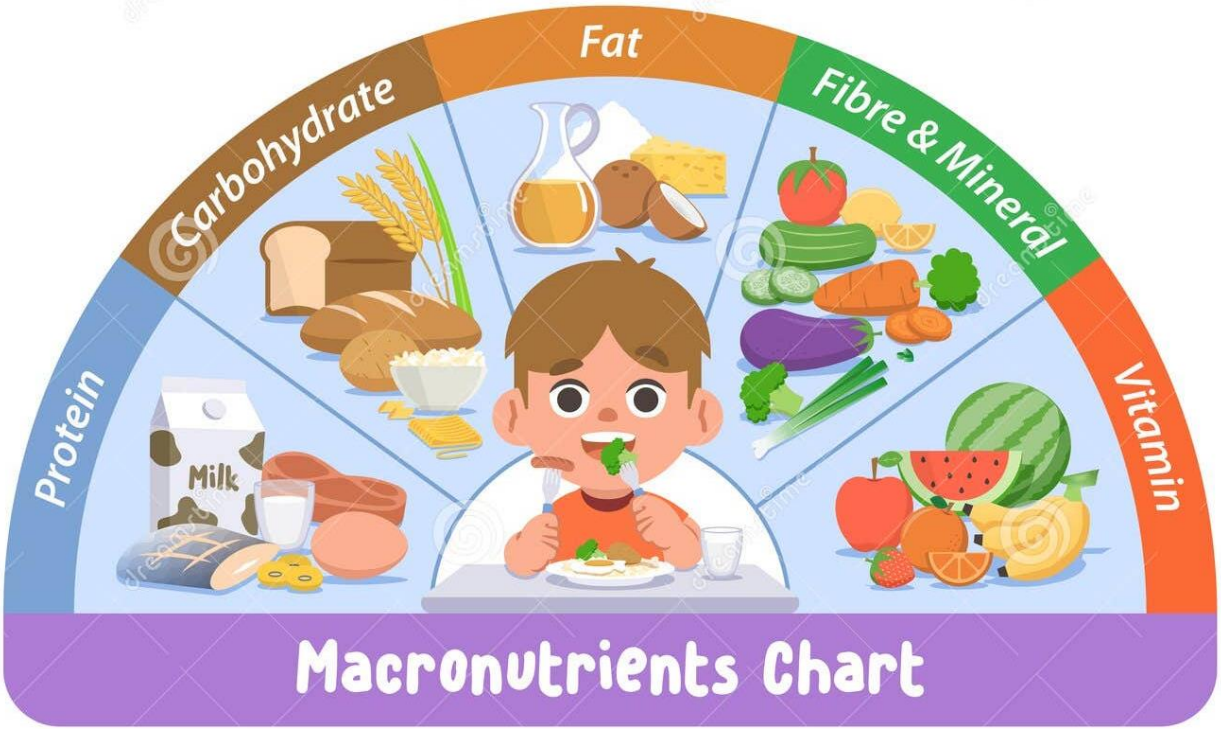
SUB-STRAND 1.5: NUTRITIVE VALUE OF FOODS



1. Classification of Food Nutrients:

Food contains various nutrients that are essential for the body to function properly. These nutrients can be classified into the following categories:

- **Macronutrients:** These are needed in larger amounts and provide the body with energy.



✓ **Carbohydrates:** The body's primary source of energy. They are found in foods like grains (rice, maize, wheat), starchy vegetables (potatoes, cassava), fruits, and sugars.

- ✓ **Functions:** Provide energy for daily activities, brain function, and body processes. Dietary fiber, a type of carbohydrate, aids in digestion.
- ✓ **Proteins:** Essential for building and repairing body tissues (muscles, organs, skin, hair, nails). They are found in foods like meat, poultry, fish, eggs, dairy products, beans, lentils, and nuts.
- ✓ **Functions:** Growth and repair of tissues, production of enzymes and hormones, component of the immune system, can provide energy when carbohydrates and fats are insufficient.
- ✓ **Fats (Lipids):** Another source of energy and important for various bodily functions. They are found in oils, butter, avocados, nuts, seeds, and fatty meats.
- ✓ **Functions:** Provide energy, insulate the body, protect organs, help absorb fat-soluble vitamins (A, D, E, K), essential for cell structure and hormone production.
- **Micronutrients:** These are needed in smaller amounts but are vital for health.
- ✓ **Vitamins:** Organic compounds that regulate various body processes. They are found in a wide variety of fruits, vegetables, and animal products. Examples include Vitamin A, Vitamin C, Vitamin D, Vitamin E, Vitamin K, and B vitamins.
- ✓ **Functions:** Involved in energy production, immune function, vision, bone health, blood clotting, and many other processes.
- ✓ **Mineral Salts (Minerals):** Inorganic elements that the body needs for structural support and to regulate various functions. They are found in a wide range of foods. Examples include calcium, iron, potassium, sodium, iodine, and zinc.
- ✓ **Functions:** Bone and teeth formation, nerve and muscle function, fluid balance, oxygen transport, enzyme activity, and many other processes.

- **<u>Other Important Components:</u>**
- ✓ **Dietary Fiber:** A type of carbohydrate that the body cannot digest. Found in fruits, vegetables, whole grains, and legumes.
- ✓ **Functions:** Aids digestion, promotes bowel regularity, helps control blood sugar levels, may lower cholesterol levels, and contributes to a feeling of fullness.
- ✓ **Water:** Essential for all bodily functions. It makes up a large percentage of our body weight and is involved in transportation of nutrients, waste removal, temperature regulation, and many chemical reactions. Found in beverages and many foods, especially fruits and vegetables.
- ✓ **Functions:** Transports nutrients and waste, regulates body temperature, lubricates joints and tissues, involved in metabolic reactions.

Grouping Nutrients by Function:

- **Energy-Giving Foods:** Primarily carbohydrates and fats. These provide the fuel our bodies need to function.
- **Body-Building Foods:** Primarily proteins. These are essential for growth, repair, and maintenance of body tissues.
- **Protective Foods:** Primarily vitamins and minerals. These help regulate body processes and protect against diseases. Dietary fiber and water also play protective roles.

2. Fortification and Enrichment of Foods:

- **Fortification:** The process of adding nutrients to foods that were not originally present in significant amounts.
- **Enrichment:** The process of adding nutrients back to foods that were lost during processing.

Reasons for Fortification and Enrichment:

- ✓ **Improving Nutritional Value:** To increase the intake of essential nutrients in the population.
- ✓ **Preventing Nutrient Deficiencies:** To address common nutritional deficiencies and related health problems.
- ✓ **Public Health Initiatives:** Often implemented as part of public health programs to improve the overall health of a population.
- ✓ **Restoring Nutrients Lost During Processing:** Enrichment aims to bring the nutrient content of processed foods closer to their original state.

Relevant Examples:

- ✓ **Iodized Salt:** Iodine is added to table salt to prevent iodine deficiency disorders like goiter and cretinism.
- ✓ **Fortified Milk and Margarine:** Often fortified with Vitamin D to improve calcium absorption and bone health.
- ✓ **Enriched Wheat Flour:** B vitamins (thiamin, riboflavin, niacin) and iron are often added back to wheat flour after processing.
- ✓ **Fortified Cereals:** Breakfast cereals are often fortified with various vitamins and minerals.
- ✓ **Vitamin A fortified sugar and cooking oil:** In some regions where Vitamin A deficiency is prevalent, these staples are fortified.

3. Nutritional Deficiencies and Disorders:

A balanced diet provides all the necessary nutrients in the right amounts. When the intake of one or more essential nutrients is consistently inadequate, it can lead to nutritional deficiencies and various health disorders.

- **Causes of Nutritional Deficiencies:**

✓ **Inadequate Dietary Intake:** Not consuming enough of nutrient-rich foods.

✓ **Poor Absorption:** Certain medical conditions can interfere with the body's ability to absorb nutrients from food.

✓ **Increased Nutrient Requirements:** During periods of rapid growth (e.g., childhood, adolescence, pregnancy), or due to certain illnesses, the body may require more of specific nutrients.

✓ **Food Insecurity:** Lack of access to sufficient, safe, and nutritious food.

✓ **Unbalanced Diets:** Diets that are high in processed foods and low in fruits, vegetables, and whole grains.

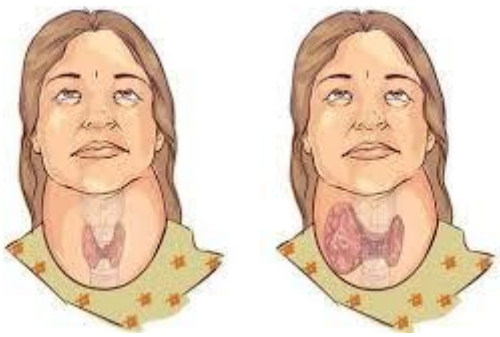
- **Examples of Nutritional Deficiencies and Disorders:**

✓ **Iron Deficiency Anemia:** Caused by a lack of iron, leading to fatigue, weakness, and pale skin.

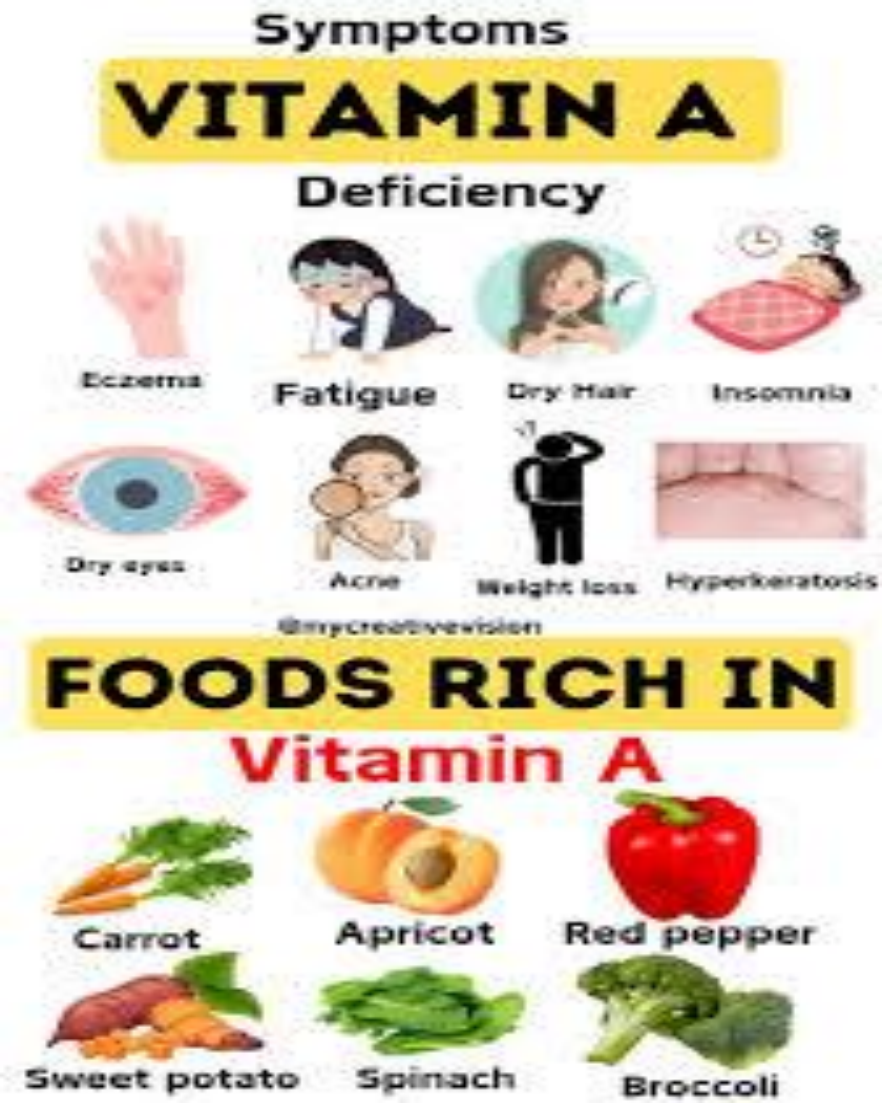
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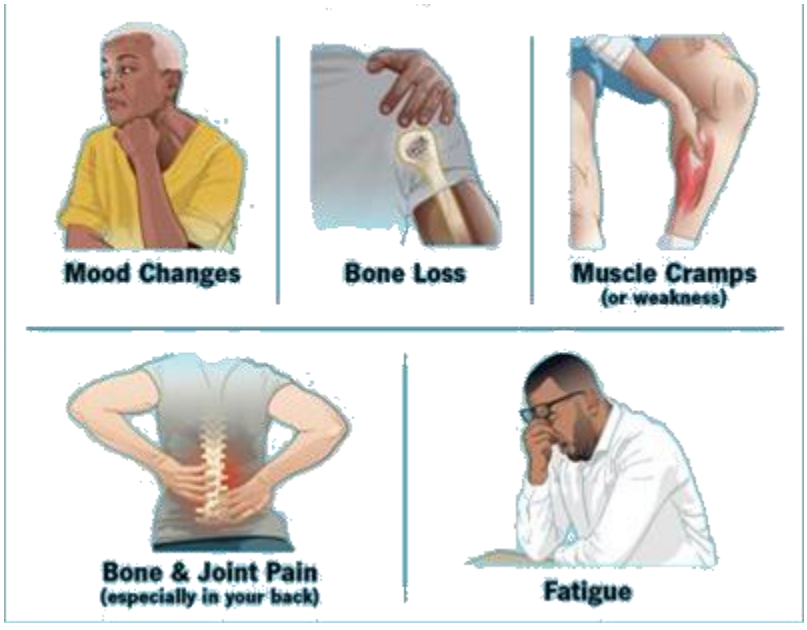
- ✓ **Iodine Deficiency Disorders (IDD):** Can result in goiter, hypothyroidism, and developmental problems.



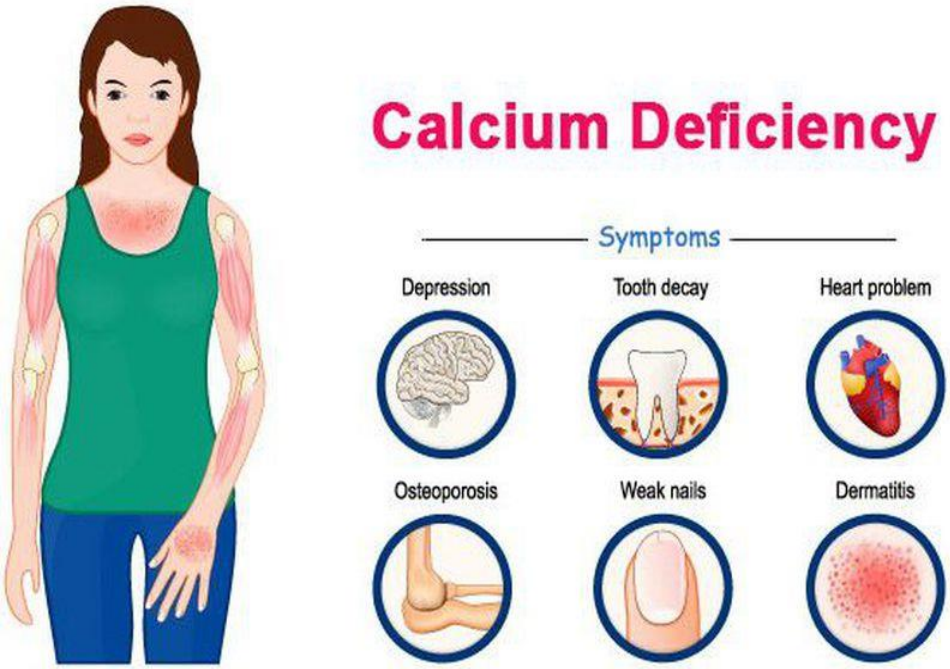
- ✓ **Vitamin A Deficiency:** Can cause night blindness, increased risk of infections, and impaired growth.



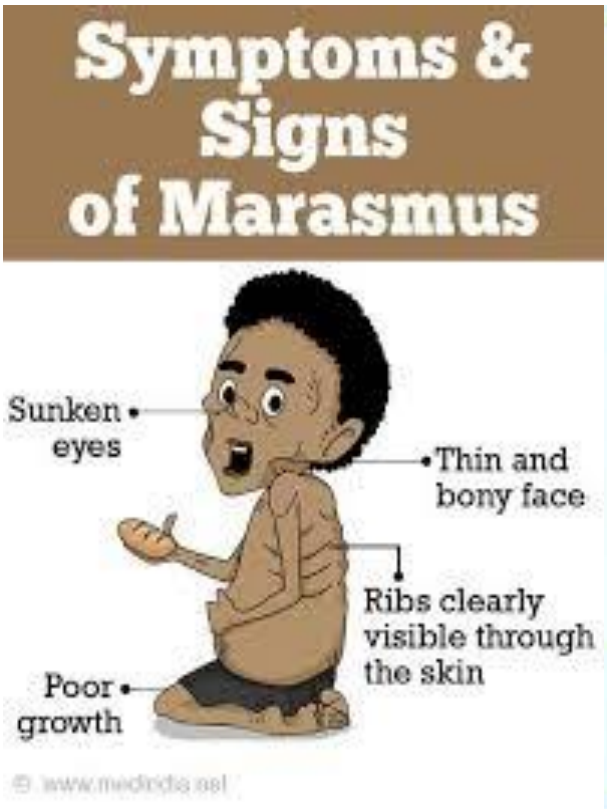
- ✓ **Vitamin D Deficiency:** Can lead to rickets (in children) and osteomalacia (in adults), affecting bone health.



- ✓ **Calcium Deficiency:** Can contribute to weak bones and teeth (osteoporosis).

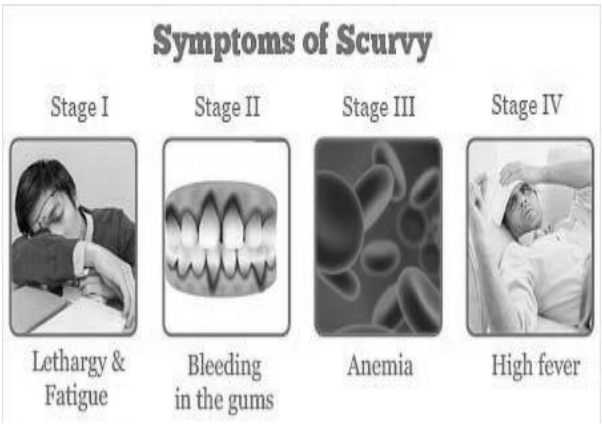


- ✓ **Protein-Energy Malnutrition (PEM):** A broad term for conditions resulting from inadequate intake of protein and calories, such as kwashiorkor and marasmus.



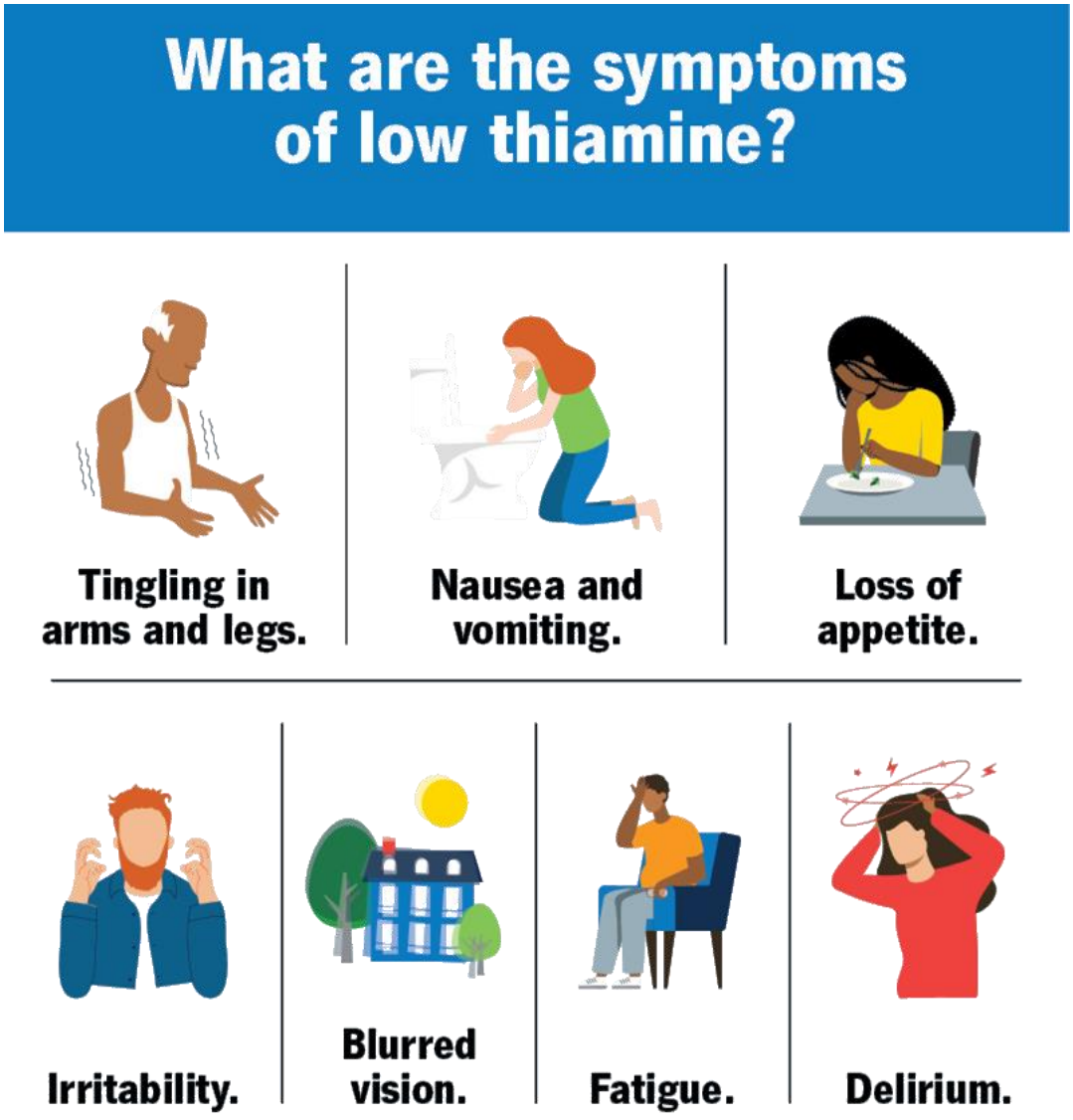


- ✓ **Scurvy:** Caused by Vitamin C deficiency, leading to weakness, bleeding gums, and skin problems.

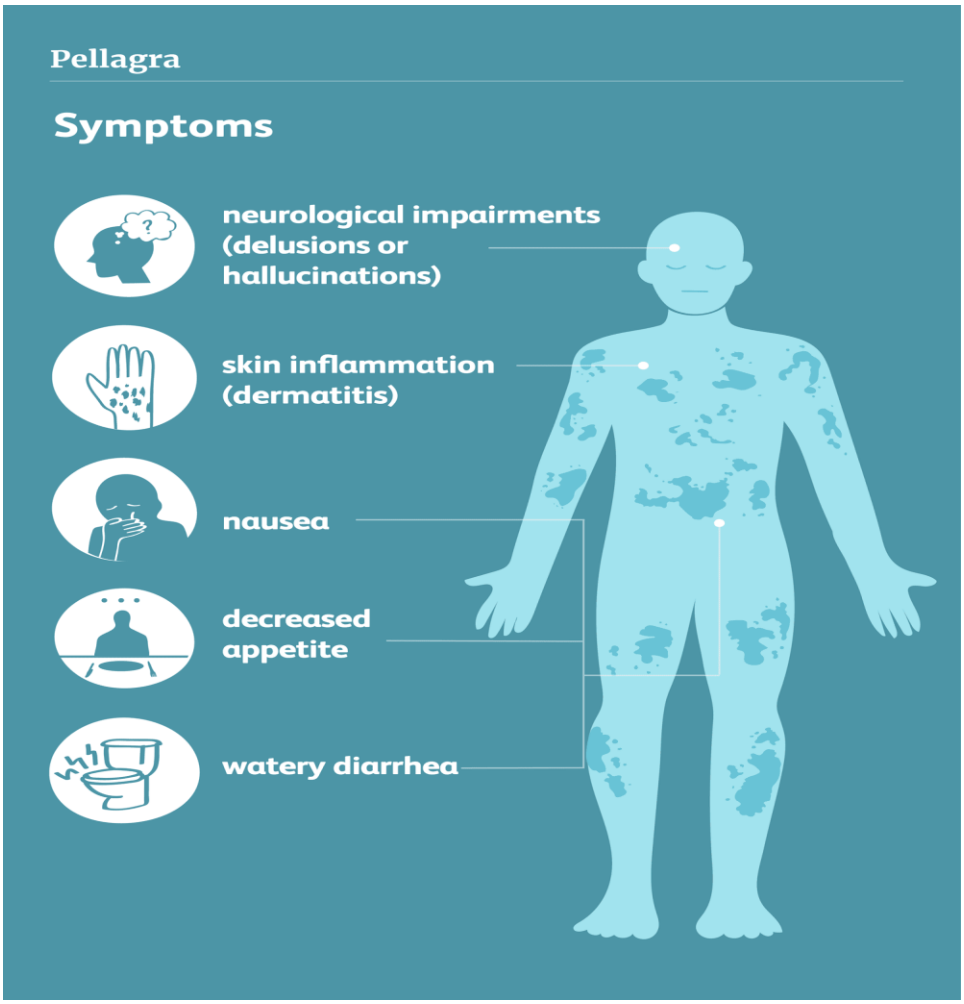




✓ **Beriberi:** Caused by thiamin (Vitamin B1) deficiency, affecting the nervous and cardiovascular systems.



✓ **Pellagra:** Caused by niacin (Vitamin B3) deficiency, characterized by dermatitis, diarrhea, and dementia.



- **Prevention and Management of Nutritional Deficiencies:**

✓ Consuming a balanced and varied diet rich in fruits, vegetables, whole grains, lean proteins, and healthy fats.

✓ Ensuring adequate intake of micronutrient-rich foods.

✓ Considering fortified foods when dietary intake is insufficient.

✓ In some cases, supplementation with vitamins or minerals under the guidance of a healthcare professional.

✓ Addressing underlying medical conditions that may affect nutrient absorption.

✓ Promoting food security and access to nutritious foods.

✓ Nutrition education to encourage healthy eating habits.

4. Formulating Meal Plans to Address Nutritional Needs:

Understanding food groups and nutrient content allows you to plan balanced meals that meet the body's nutritional requirements and can help address or prevent nutritional deficiencies.

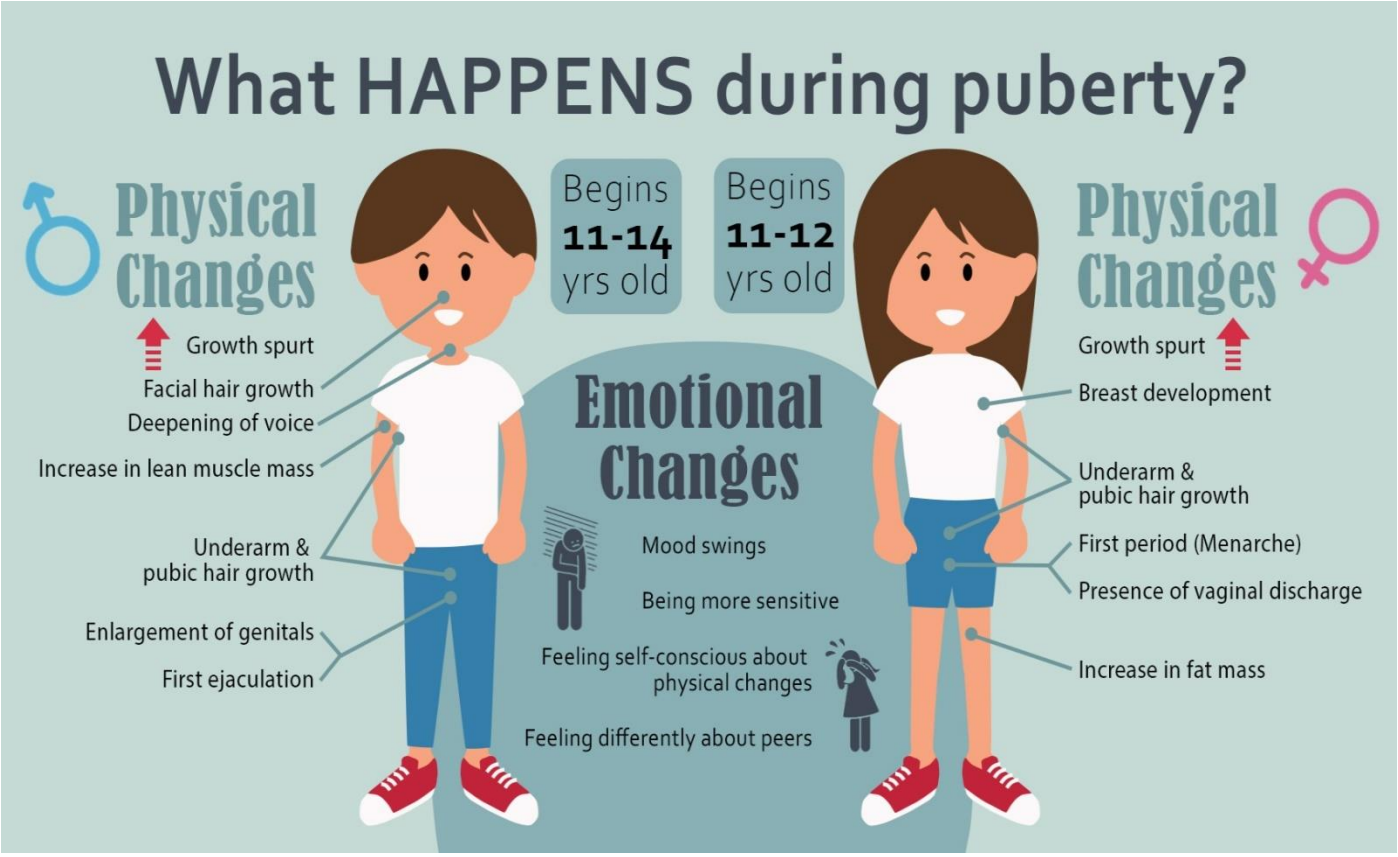
- **Key Principles of Meal Planning:**

- ✓ **Variety:** Include foods from all food groups (carbohydrates, proteins, fats, fruits, vegetables, dairy or alternatives) to ensure a wide range of nutrients.
- ✓ **Balance:** Consume appropriate proportions of each food group.
- ✓ **Moderation:** Avoid excessive intake of fats, sugars, and salt.
- ✓ **Adequacy:** Ensure that the meal plan provides enough calories and essential nutrients to meet individual needs based on age, sex, activity level, and health status.
- ✓ **Consideration of Local Availability and Affordability:** Plan meals using foods that are accessible and affordable in your community.
- ✓ **Addressing Specific Nutritional Needs:** If planning meals to address a deficiency or disorder, focus on including foods rich in the deficient nutrient.

STRAND 2.0: HOME MANAGEMENT

SUB-STRAND 2.1: HYGIENE DURING PUBERTY (4 Lessons)

1. Review of Changes during Puberty:



Puberty is a period of significant physical, hormonal, and emotional changes as a child transitions into adolescence. Understanding these changes is essential for appreciating the need for specific hygiene practices.

POLITE NOTE!

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- ✓ TOP SCHOOLS MOCKS
- ✓ KPLEA JOINT MOCKS
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END OF NOTES!