

LifeTek-TLE 9

Practical Skills for Home and Livelihood

EDITION 1



LifeTek-TLE 9

Practical Skills for Home and Livelihood

Sherry Suico-Shinyo
Author



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FOREWORD

A livelihood is a necessity in life for adults anywhere in the world. While most people are content to earn a living as an employee, there are those who want to be self-reliant where their livelihood is concerned. Hence, the reason for the creation of the LifeTek-HELE and LifeTek-TLE courseware series by TechFactors Inc. (TFI)

TechFactors understands that it takes both knowledge and skill—applied knowledge—to be able to earn a living on one’s own efforts. Without these, it won’t be easy to make products or provide services for potential customers and clients. The LifeTek-HELE and LifeTek-TLE courseware teach livelihood education in a way that enhances both; adding information to knowledge that students may already know by way of discussion and using performance-based lessons to develop skills that students can employ later on in their work.

With the use of the Techfactors LifeTek-HELE and LifeTek-TLE courseware, livelihood educators would be able to focus on their ultimate goal for every Filipino student—to make them productive and contributing members of Filipino society





About the Author

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Sherry Suico-Shinyo has a Diploma in Professional Culinary Arts from the Global Culinary and Hospitality Academy (Global Academy) and a Bachelor of Arts in Philosophy from the University of the Philippines Diliman. She has years of experience as a sales professional and marketing officer in pharmaceutical and technology education companies before working in the food-service industry. She professionally trained under an international hotel chain and several casual dining restaurants before she opened her own restaurant that specialized in charcuterie, along with her husband David. She loves coffee and desserts and finds particular joy in baking cheesecakes.





About this Resource

The LifeTek-TLE 9 module teaches the skills needed for specific industries that can make students more proficient in these areas helping them acquire 21st century skills. This will enable the learners to be productive in daily aspects of life and work and improve their chances of succeeding in the future. Subjects include Home Economics-Cookery and Food Processing / Food Preservation

Learning Outcomes

At the end of the course, the learners will be able to:

1. Acquire knowledge that provides opportunities to explore different livelihood fields.
 2. Practice ways to acquiring 21st century skills.
 3. Improve the chances of livelihood success by developing self-help habits.
 4. Demonstrate the ability to produce products by providing learners a meaningful and productive learning experience.
- 

HOW TO USE THIS RESOURCE



Learning Outcomes

Each lesson has its own set of learning goals. This informs the readers on what is expected to be learned by the end of the lesson.



Engage

This is a brief and fun activity that is related to the topic that can help in attracting the attention of the students.



Explore

This is an assessment tool that is administered before the discussion and is used to determine the student's prior knowledge on the subject matter.



Research

This is an activity for the student's additional knowledge and information before the lesson discussion.



Explain

This is where the main content of the lesson is found.



Exercise

This contains exercises after the discussion.



Summary

This is a synopsis of the lesson.



Lesson Output

This is an individual or group project to determine the student's practical mastery of the subject matter.

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LifeTek-TLE

Home Economics



LESSON 1

Sanitation and Safety in the Kitchen



Learning Outcomes

At the end of the lesson, you are expected to be able to:

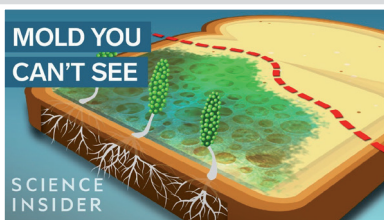
1. Identify the food hazards which can cause foodborne illnesses.
2. List steps on how to avoid foodborne illnesses by establishing good personal hygiene, proper food handling and storage, cleaning and sanitation, and pest prevention.
3. Establish habits that promote safety to avoid illnesses, accidents, and injuries.

For a lot of people, cooking is not only a means to get food on the table. Cooking is fun. It can be a way to relax or to de-stress. Cooking for other people can even be an expression of love. This being said, cooking in the kitchen can present dangers or hazards. That is why it is important to keep the kitchen not only clean, but also sanitized and a safe place to work in. This is true for professional kitchens but is also certainly applicable in the home kitchen. Keeping our kitchen clean, sanitized and safe protects us and our loved ones from foodborne illnesses, accidents and injuries.



Engage

YouTube Video "Never Eat The 'Clean' Part of Moldy Bread" by Science Insider



<https://www.youtube.com/watch?v=4ro8sPOgCBg>



Explore

See how much you know about foodborne illnesses. Write "Fact" or "Myth" in the space provided.

- _____ 1. If a food is spoiled it will look, smell, and taste bad.
- _____ 2. "Food poisoning can't happen to me. I have a strong stomach."
- _____ 3. Food that is properly cooked cannot cause foodborne illnesses.
- _____ 4. The mayonnaise in the food caused the spoilage.
- _____ 5. Even fruits with rinds may not be safe to eat.



Research

Search for news reports about food poisoning or foodborne illnesses. How many people got sick? What made them sick?



Explain

Sanitation

It is easy to just create a list of rules for personal hygiene and proper food handling. But following these rules will be so much easier when we know why we should follow them in the first place. When we understand the causes of foodborne illnesses, we can take proper steps to prevent them.

Most foodborne illnesses are caused by eating **contaminated food**. This means that the food has been exposed to a bad or harmful substance that is not originally in that food. A substance in the food that can make a person sick is called a **hazard**. There are four types of food hazards:

1. Biological
2. Chemical
3. Physical
4. Allergens

Biological Hazards

Microorganisms or **microbes** are organisms that are so small they can only be visible using a microscope. A microbe that can cause an illness is called a **pathogen**. One of the reasons why pathogens can be dangerous is because we cannot see them with the naked eye. A food that looks good or smells good does not necessarily mean it is safe to eat.

These four kinds of microbes can contaminate food and cause a person to get sick:

fungi	bacteria
parasites	viruses

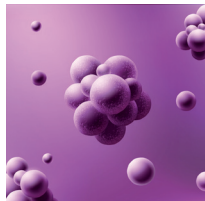
Bacteria

Bacteria exist everywhere, even in our own bodies. Some are harmless and some are even beneficial. Certain bacteria are useful in the production of cheese, yogurt and meat products like sausages.

There are bacteria that cause food spoilage. They usually make their presence known by making the contaminated food smell sour, look slimy or sticky. These bacteria may or may not make you sick, but it is always wise to follow the rule “when in doubt, throw it out”.

Pathogens are disease-causing bacteria. Their presence in food is not normally obvious by way of sour smell or foul appearance. The only way to keep food from contamination is to practice good personal hygiene and, cooking and handling food properly.

Examples of diseases caused by bacteria:

Staphylococcal Food Poisoning – caused by toxins produced by the bacterium <i>Staphylococcus aureus</i> that multiplies in food left at room temperature for a long time. Staph poisoning may be the most common type of food poisoning. Symptoms may include nausea, vomiting and diarrhea. Wash hands regularly to prevent contaminating food. Avoid handling or cooking food if you are sick.	 <i>Staphylococcus aureus</i>
Escherichia coli Infection – caused by harmful strains of the bacterium <i>Escherichia coli</i> or <i>E. coli</i>. This bacterium normally lives in intestinal tracts of humans and some animals. We can get sick when we ingest food or drink fluids that have been contaminated by <i>E. coli</i>. Regular hand washing helps prevent <i>E. coli</i> infection. We need to cook food thoroughly, especially red meats, to avoid <i>E. coli</i> infection.	 <i>Escherichia coli</i>
Salmonellosis – caused by the bacteria of the <i>Salmonella</i> type. Symptoms may include diarrhea, severe abdominal cramps, fever and vomiting. <i>Salmonella</i> can usually be found in contaminated meats and poultry, raw eggs and shellfish caught in polluted waters. To avoid <i>Salmonella</i> infection, buy your meats, poultry and shellfish only from certified or reliable food suppliers. Practice good personal hygiene and proper handling of food to avoid contamination.	 <i>Salmonella</i>
Botulism – caused by the toxin produced by the bacterium <i>Clostridium botulinum</i>. Botulism attacks the nervous system and in advanced cases can cause respiratory failure. It is generally caused by incorrect canning or preservation of food (usually at home). To prevent botulism, throw away damaged or bulging canned foods.	 <i>Clostridium botulinum</i>

Viruses

Viruses are infectious agents that can only multiply when they are inside a living cell. They can cause foodborne illnesses when food comes in contact with an infected person, contaminated surfaces or contaminated water.

Common Foodborne illnesses caused by viruses:

Hepatitis A – is a contagious liver infection caused by the virus hepatitis A. Symptoms may appear after a few weeks of being infected. Infected person may have abdominal pain, fatigue, yellow eyes, dark urine, nausea and vomiting. The virus is usually spread by drinking contaminated water or ice, eating food handled by an infected person who did not wash their hands thoroughly, especially after going to the toilet, or coming into close contact with a person with Hepatitis A.

Norovirus or **Norwalk virus gastroenteritis** – a very contagious virus affecting the digestive tract. Common symptoms are diarrhea, vomiting, stomach pains and nausea. You can get infected by ingesting contaminated food or water, being in close contact with an infected person, putting your hands in your mouth after you have touched a contaminated object or surface.

Fungi

Fungi grow abundantly worldwide. They can grow even in extreme environments. Molds, yeasts and mushrooms are examples of fungi.

Some fungi are beneficial. They are widely used in food production specifically in the fermentation of different products such as bread doughs, cheese, beer and others.

Molds that grow in spoiled food can be harmful. Scraping or cutting off the part that has mold is not enough since some parts of the mold not visible to the naked eye (including its spores) can remain in the food.

Parasites

A **parasite** is an organism that needs a host or another organism to survive. It lives and takes its nourishment from its host organism. Animals carry parasites and can then transfer these to humans. Most parasites can be killed by correct cooking and by freezing.

Trichinosis or **Trichinellosis** – caused by the parasite *Trichinella* embedded in the muscles of pigs that are fed leftover scraps or slop. Cases of Trichinosis have decreased over the years due to modern farming practices. To prevent Trichinosis, avoid eating raw or undercooked pork products.

Chemical Hazards

Chemical contaminants can be cleaning compounds or insecticides. They can also be chemicals in the kitchen equipment or cookware that react to food being cooked. To prevent food contamination:

- Do not use cleaning agents and insecticides around food.
- Rinse your equipment and utensils thoroughly to rid them of chemical residue.
- Label these chemicals clearly and properly.
- Store the chemicals apart from food items.
- Use kitchen equipment or cookware properly. Be aware of certain metals used in the production of the equipment that can react to food (e.g. acidic foods can react to copper pots and pans, causing some of the copper to dissolve into the food).



Physical Hazards

Physical contaminants can be hair, broken glass, metal pieces from cans opened improperly, soil from fruits and vegetables and others. Handle food and food packaging properly to prevent contaminating food with physical hazards.

Allergens

An **allergen** is any substance that can trigger an allergic reaction to an individual. Allergic reactions to food may happen when the food is eaten. In some cases, merely touching the food will cause an allergic reaction.

Some people can be allergic to peanuts, nuts, eggs, milk, dairy products, shellfish, soy and wheat. Some allergic reactions may cause slight discomfort in some people, but in other cases they can be severe. Allergic reactions may include itching, sneezing, rashes and swelling. A severe allergic reaction called anaphylaxis, if not treated properly, may even cause death.

If you have food allergies, make sure you inform people you are eating with. When dining out, it will be helpful if you have an “allergy card”—a small, printed card to inform the restaurant of your food allergy or allergies. This will minimize the cases of them serving you with dishes you are allergic with.



Safety in the Kitchen

Bacterial Growth

If conditions are favorable, pathogens that cause foodborne illnesses will multiply rapidly. These are the factors affecting bacterial growth:

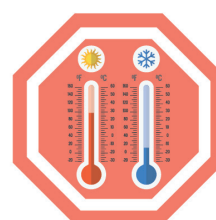
1. **Food** – bacteria need food to grow. Foods that are rich in protein such as meats, eggs and dairy are breeding grounds for bacteria.
2. **Acidity or Alkalinity** – the acidity or alkalinity of a substance is designated using a measurement called pH. Pathogens generally like neutral environments, neither too acidic nor too alkaline. Acids such as vinegar or lemon juice can be used to preserve foods.
3. **Temperature** – although there are bacteria that like cold temperatures, most foodborne pathogens thrive at moderate temperatures. There is rapid bacterial growth between the temperatures 5°C and 57°C (41°F and 135°F). This is called the **Food Danger Zone**. This is why it is never good to leave food, especially cooked food, at room temperature for a long time. After cooling cooked food properly, it is always best to refrigerate or freeze them.
4. **Time** – bacteria need time to grow. When they are introduced into a new environment, they need time to adjust. This is called **lag phase**. Given the right conditions, they will then rapidly multiply.
5. **Oxygen** – **aerobic bacteria** need oxygen to grow. **Anaerobic bacteria** will only grow in oxygen-free environments. **Facultative bacteria** can grow with or without oxygen. Most foodborne illnesses are caused by facultative bacteria such as **Staphylococcus spp.**, **E. coli** and **Salmonella**.
6. **Moisture** – bacteria need water to grow. Dry and salted foods do not support bacterial growth.



FOOD



ACIDITY/
ALKALINITY



TEMPERATURE



TIME



OXYGEN



MOISTURE

Understanding how bacteria grow can help us prevent them from multiplying. We should also know that bacteria can be transferred to our food by the following means: hands, coughs and sneezes, when our food touch other contaminated foods or equipment and utensils, or by rodents and other pests.

To prevent foodborne illnesses caused by bacteria we must:

1. **Stop the spread of bacteria.** Do not let the food come in contact with any pathogen. Wash hands properly and regularly. Maintain a clean and sanitized kitchen.
2. **Stop the growth of bacteria.** Do not let food stay too long within the Food Danger Zone. Cool foods properly (See [Proper Food Cooling Procedure](#)). When storing foods, be aware that refrigerating foods can only delay bacterial growth for a short period of time. If it is possible, cook only what can be consumed immediately. Freeze food when applicable. Freezing food will not kill most bacteria but it will inhibit growth.
3. **Kill bacteria.** Most pathogens can be killed when subjected to high temperatures (77°C/170°F or higher). Cooking at these temperatures can kill bacteria. Be aware that each food product has its own **minimum internal cooking temperature**. This is the internal temperature that a food product being cooked must reach and hold for a specific amount of time in order to kill the bacteria that may be present in it. (See [Minimum Internal Cooking Temperature for Different Food Products](#)).

Sanitizing kitchen equipment and utensils with heat or the use of an appropriate cleaning agent can also kill bacteria therefore preventing foodborne illnesses.

Proper Food Cooling Procedure

Remember that bacteria grow rapidly within the temperatures 5°C and 57°C (41°F and 135°F). It is therefore important that cooked food must be cooled quickly so as not to stay too long in the Food Danger Zone.

Cooked food must be cooled from 57°C to 21°C (135°F to 70°F) in two hours or less, and then cooled down furthermore from 21°C to below 5°C (70°F to below 41°F) in four hours or less. The total cooling time should not exceed six hours.

Cooling cooked foods quickly can be accomplished by:

- a) frequently stirring the food
- b) placing the food in shallow pans
- c) placing the container of the food you are cooling in an ice-water bath
- d) putting ice as an ingredient (ex. soups or stews)

When cooling cooked food, it is important not to cover them. Dividing a large batch of cooked food into small portions can help it cool quickly.

Minimum Internal Cooking Temperature for Different Food Products

Reaching and holding the temperature for the specified time will most likely kill the pathogens that may be present in the following food products. Remember to use sanitary kitchen thermometers. Make sure to measure the internal temperature at least two or three times, inserting the kitchen thermometer in the thickest part of the food.

Product	Temperature and Time
Ground meat and fish	71.1°C (160°F) for 15 seconds
Any fish and shellfish	63°C (145°F) for 15 seconds
Poultry, stuffed meats, any previously cooked food	74°C (165°F) for 15 seconds
Pork, beef, lamb	Steaks: 63°C (145°F) for 15 seconds Roasts: 63°C (145°F) for 4 minutes

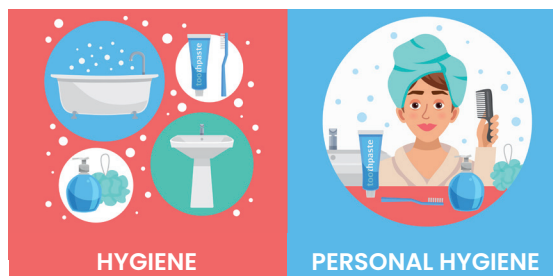
Personal Hygiene

We have learned that different pathogens can cause foodborne illnesses. **Food contamination** happens when pathogens come in contact with food, usually carried or spread by those who handle food. **Cross-contamination** happens when pathogens are transferred to food from another food source, from a work surface such as plates or cutting boards, or from human hands or skin. Examples of these are:

- Mixing leftovers (possibly contaminated food) with newly cooked food
- Cutting fresh produce or vegetables on the same cutting board used to cut raw chicken
- Handling food with unclean hands

Personal hygiene plays a critical role in minimizing the chance of food contamination. Here are some reminders on how to minimize the contamination of food by practicing good personal hygiene:

- Do not handle food or prepare food for others when you are sick or have an infection.
- Take a bath or shower daily.
- Wash hands thoroughly with soap and water. This should be regularly done after using the toilet, when you sneeze or touch your face, when handling raw meat, or whenever you handle anything that may be contaminated with bacteria or any other pathogen.
- Keep fingernails clean and trimmed.



- e) When handling food, avoid touching parts of your body including your face, eyes, nose, mouth, arms or even your hair.
- f) Wear clean clothing when handling food or cooking for others. Clothes worn outside should be replaced (preferably after bathing) before one proceeds to the kitchen.

Proper Handwashing

Keeping hands clean is essential in personal hygiene and is part of ensuring food safety by avoiding contamination of food by dirty hands. Wash and scrub your hands with soap and water for at least 20 seconds while following these steps to ensure that the parts of each hand get cleaned:

HOW TO WASH YOUR HANDS



WET HANDS



USE SOAP



**RUB HANDS
PALM TO PALM**



**LATHER THE BACKS
OF YOUR HANDS**



**SCRUB BETWEEN
YOUR FINGERS**



**RUB THE BACKS OF FINGERS
ON THE OPPOSING PALMS**



CLEAN THUMBS



**WASH FINGERNAILS
AND FINGERTIPS**



RINSE HANDS



**DRY WITH A
SINGLE USE TOWEL**



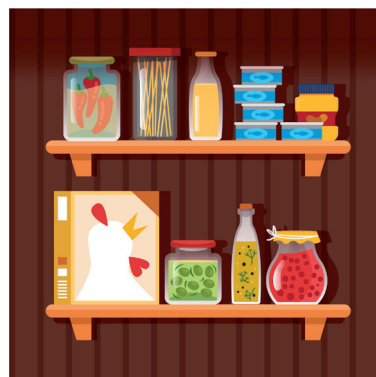
YOUR HANDS ARE CLEAN

Food Storage

Storing food properly is part of ensuring food safety. We can avoid food contamination by practicing the following:

Dry Food Storage

- Your storage area for dry food (e.g. canned goods, cereals, grains, oils etc.) must be cool and dry. The storage rack or cabinets must be at least six inches higher than the floor and should be easy to keep clean.
- Keep the containers tightly closed to prevent insects and rodents from getting into the food items.
- Keep food items away from heat and light sources as these will decrease their shelf life.
- Practice **FIFO**. This means “first in, first out”. It is a principle of stock rotation. Make sure that the items first received or bought will be used first. This will prevent you from having expired goods and minimizes food wastage.



Refrigerated Storage

- Keep the refrigerator clean. Establish a regular clean up schedule.
- Do not put too much food items in the refrigerator. Allow enough space for air circulation.
- Keep food items properly wrapped or covered in clean containers.
- Store cooked foods away from raw foods. If you are storing cooked food and raw food in the same refrigerator, make sure to always place the cooked food above the raw food. This will prevent drippings of raw food from getting to your cooked food.
- Keep the refrigerator door closed as much as possible. Make sure that the refrigerator door closes tightly.



Freezer Storage

- Keep freezer storage at -18°C (0°F) or lower.
- Do not overload the freezer. Allow enough space for air circulation.
- Keep frozen foods properly wrapped to avoid developing freezer burn.
- Put labels and dates on all items. This can help you keep track of the items in your freezer. Apply **FIFO**.
- Make sure that the freezer door closes tightly.

Cleaning and Sanitizing Equipment

We must understand that cleaning and sanitizing are two different things. When we clean kitchen equipment and utensils, we wash away the visible dirt or stains on them. When we sanitize, we kill the bacteria or pathogens that may cause foodborne illnesses. We sanitize by either 1) applying heat or 2) using chemical sanitizers or disinfectants.

Pest Control

Pest control is important not only in food establishments but also at home. Keeping rats, mice and cockroaches out and away will prevent them contaminating our food and food contact surfaces.

- Close any possible entry points for rodents. Keep doors closed as much as possible. Put screens on windows and doors.
- Make sure there are no holes in your walls and floors, especially in the food storage area. Seal or repair holes immediately if there are any.
- Keep kitchen and food storage area clean. Keep food items properly covered in containers.
- Close the lids of garbage cans. Regularly throw out garbage as this attracts cockroaches and rodents.
- Hire a qualified and licensed exterminator or pest control services if needed.

Avoiding Accidents

It is said that *"an ounce of prevention is worth a pound of cure"*. Here is a list of general rules to avoid accidents and injuries in the kitchen:

- ✓ Keep floors clean and dry to avoid slips or falls. Invest on good, nonslip matting if necessary.
- ✓ Keep your knives sharp. Dull knives are much more dangerous because they are more likely to slip during cutting. Store them properly when not in use. When washing knives, do not put them where they cannot be seen, such as in the sink, under water.
- ✓ Put a damp towel under the cutting board you are using. This will prevent the board from sliding.
- ✓ Do not pick up broken glass. Sweep them up.
- ✓ Always use pot holders when handling or transferring pots. It is safer to always assume they are hot.
- ✓ Make sure you understand how a kitchen equipment works before using it.



Summary

Every year, hundreds of thousands of foodborne illnesses and food poisoning cases are reported worldwide. These range from the very mild to very severe cases that can result in hospitalizations or even deaths. Foodborne illnesses are very common and yet they are preventable. Understanding the causes of foodborne illnesses should help us grasp the importance of practicing good personal hygiene and applying the kitchen safety habits that we have learned.

In this day and age of pandemics, sanitation and safety should be top of mind. Proper handwashing, which is taught to us at a very early age, can considerably decrease the probability of us being infected or spreading infection to others. It has been said that *"safety doesn't happen by accident"*. It surely does not. Safety happens to people who are prepared for it.



Exercises



Exercise 1

How much have you learned?

Instructions: Choose the letter of the correct answer.

- Food that has been exposed to a bad or harmful substance that is not originally in that food is said to be ____.
a. contaminated b. fresh c. spicy
- A microbe that can cause an illness is called a ____.
a. fungi b. acids c. pathogen
- There is rapid bacterial growth in the Food Danger Zone. These temperatures are between ____.
a. 5°C and 57°C (41°F and 135°F)
b. 0°C and 4°C (32°F and 40°F)
c. 74°C to 100°C (165°F to 212°F)
- _____ is the period of time when bacteria introduced into a new environment is still adjusting.
a. FIFO
b. lag phase
c. cross-contamination
- The minimum internal cooking temperature when cooking poultry is ____.
a. 63°C (145°F) b. 71.1°C (160°F) c. 74°C (165°F)
- Cleaning agents and insecticides are examples of ____ hazards.
a. biological b. chemical c. physical
- Hepatitis A is a kind of ____ disease.
a. bacterial b. parasitic c. viral
- _____ is a kind of parasite that embeds in the muscles of pigs.
a. Trichinella
b. Staphylococcus aureus
c. Clostridium botulinum



9. Cross-contamination can happen when ____.
- a. you cover your mouth and nose when coughing or sneezing
 - b. you cut vegetables on the same cutting board you use to cut raw chicken
 - c. you don't handle other people's food when you are sick
10. ____ can prevent pests from contaminating food.
- a. Throwing garbage out once a month
 - b. Keeping food items on the floor
 - c. Keeping food items properly covered in containers

Exercise 2

Instructions: Enumerate the following:

1. Four kinds of food hazards
 - a. _____
 - b. _____
 - c. _____
 - d. _____
2. Four kinds of microorganisms that can cause foodborne illnesses
 - a. _____
 - b. _____
 - c. _____
 - d. _____
3. Six factors affecting bacterial growth
 - a. _____
 - b. _____
 - c. _____
 - d. _____
 - e. _____
 - f. _____
4. Two examples of proper food storage
 - a. _____
 - b. _____
5. Two ways to sanitize kitchen equipment and utensils
 - a. _____
 - b. _____
6. Two ways to avoid accidents or injuries in the kitchen
 - a. _____
 - b. _____





Lesson Output

Individual Work – Using any word processing or presentation tool, create a list of best practices on how to avoid foodborne illnesses.

Rubrics on How to Avoid Foodborne Illnesses

Criteria	5	4	3	2	1	Points
Tools and materials	The student demonstrated excellent proficiency with the word processing or presentation tool used.	The student demonstrated working knowledge with the word processing or presentation tool used.	The student demonstrated basic knowledge with the word processing or presentation tool used.	The student lacks familiarity with the word processing or presentation tool used. He/She lacks understanding on how to use these tools to create the output.	The student is unfamiliar with the word processing or presentation tool used. He/She does not know how to use these tools to create the output.	
Time Management	The student was able to submit the output before the given deadline.	The student was able to submit the output on time.	The student was late in submitting the output but was able to do so within the same day.	The student submitted the output 1 day after the deadline.	The student submitted the output more than 2 days after the deadline.	
Creativity in the Presentation	The work shows creativity of the student and the design has high visual appeal.	The work shows creativity of the student and the design has some visual appeal.	The work shows some creativity but most of the design is simple.	The work lacks creativity and most of the design is simple.	The work lacks creativity and shows minimal to no effort in design.	
Steps or Procedures/ Content	The student is able to completely identify and describe ALL safety practices for avoiding foodborne illnesses.	The student is able to identify MOST of the safety practices for avoiding foodborne illnesses and describe each one satisfactorily.	The student is able to identify MOST of the safety practices for avoiding foodborne illnesses but some descriptions are not complete.	The student is able to identify SOME of the safety practices for avoiding foodborne illnesses and some descriptions are not complete.	The student is able to identify SOME of the safety practices for avoiding foodborne illnesses but some descriptions are incorrect.	

Total

LESSON 2

Nutrition



Learning Outcomes

At the end of the lesson, you are expected to be able to:

1. Identify the sources of nutrients that the body needs.
2. Evaluate food based on nutritional value.
3. Describe the ways to achieve a healthy, balanced diet.

Food is essential to all human beings. Food supplies our body's needs—the energy to do our day-to-day activities and the nutrients needed for all the systems of the body to function properly. We need nourishing food to maintain good health and help the body fight diseases or infections. A good understanding of nutrition can help us identify the right kinds of food that we should be eating. It will help us make smart food choices. The right kind of nutrition can contribute to the overall wellbeing of an individual.



Engage

Find and circle the words associated with nutrition.

thiamine	vitamins	fats
folate	biotin	calcium
selenium	iron	sodium
water	zinc	niacin

Word Search Puzzle

G	A	B	V	P	C	B	T	S	M
E	T	H	I	A	M	I	N	E	C
N	W	A	T	E	R	O	I	L	A
F	O	L	A	T	E	T	A	E	L
A	G	R	M	D	S	I	C	N	C
T	D	D	I	R	O	N	I	I	I
S	Z	I	N	C	S	S	N	U	U
D	A	N	S	O	D	I	U	M	M



Explore

What does a healthy meal look like? Draw a picture or make a collage of what you think a nutritious meal should consist of. Label each component of your picture or collage.



Research

Choose a diet plan and research about it (e.g. Mediterranean diet). Is it a good diet plan that promotes healthy eating? Does it include all the essential nutrients that the body needs? Is it sustainable—meaning can you follow the diet for a long time? Write a report about your chosen diet plan.



Explain

Nutrients

Essential nutrients are chemical compounds that are found in foods. Our body needs them not only to survive but also to work properly. These nutrients perform different functions such as:

- ✓ supplying energy
- ✓ building and repairing body tissues, and
- ✓ regulating the chemical processes of our body.

There are six types of essential nutrients:

Carbohydrates

Proteins

Fats

Vitamins

Minerals

Water

These nutrients can further be divided into two categories—macronutrients and micronutrients. **Macronutrients**—carbohydrates, protein and fats—are nutrients that should be eaten in relatively large quantities. Vitamins and minerals are **micronutrients**. They are crucial in regulating certain body processes but they should be taken in small amounts.

Carbohydrates

Carbohydrates are the body's primary source of energy. These provide the necessary calories or food energy that the body needs to fuel its daily activities. Some organs, like the brain, need glucose, a simple sugar, as its fuel to perform at its best. The body makes use of energy even while resting (e.g. digesting food). Protein and fat can be used as energy sources, but our body prefers to utilize carbohydrates first.

There are two types of carbohydrates, 1) sugars or simple carbohydrates and 2) complex carbohydrates.

Simple carbohydrates, or **simple sugars**, are short-chain carbohydrates that contain one or two sugar molecules. They can be found naturally in foods (e.g. fructose in fruits and lactose in milk). Refined sugars are added in foods such as white bread, sweets and desserts.

Complex carbohydrates consist of three or more sugar molecules bound together in a long chain. Starches and fiber are examples of complex carbohydrates. They can be found in foods such as whole wheat breads and pasta, brown rice, potatoes, oats, corn and beans.



CARBOHYDRATES

Most studies show that complex carbohydrates are better than simple carbohydrates. Although both simple carbohydrates and complex carbohydrates break down into glucose to be used by the body for energy, complex carbohydrates take longer to break down and are digested more slowly. As a result, people who eat complex carbohydrates feel fuller faster and for a longer time. Most starchy foods are also **nutrient-dense**, meaning they are foods that pack more nutrients per calorie. Whereas simple sugars provide **empty calories** or have fewer nutrients per calorie.



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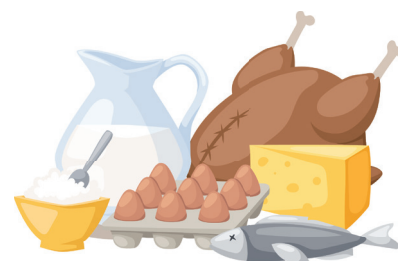
Fiber which is a unique type of complex carbohydrate is not digested by the body. Dietary fiber acts like a scrub that cleans the intestinal tract and helps in the proper elimination of body waste. The eating of fiber-rich foods helps prevent constipation and may even aid in decreasing cholesterol in the blood. Fiber can be found in prunes, green peas, chia seeds, pumpkin seeds, fruits and vegetables.

Carbohydrates are a necessary nutrient. Eliminating it in your diet, as some popular diets suggest, is not advisable. It can actually be dangerous as it may lead to nutritional imbalances. However, be mindful of the kind of carbohydrates you usually eat. It is all right to indulge in simple sugars once in a while but do not let it be your regular source of energy.

Protein

Our body is made up of more protein than any other substance excluding water. Protein is important for growth. It supports the body's structure and is used to repair damaged tissues. It also supports antibodies and other immune cells necessary to fight infection.

Amino acids are the building blocks of protein. The human body can manufacture amino acids except nine essential amino acids which we must get from food. These essential amino acids are histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan and valine. A food protein that contains all nine essential amino acids is called a **complete protein**. Examples of complete proteins are meats, chicken and other poultry, eggs and dairy products. Food proteins that do not have one or more of these essential amino acids are called **incomplete proteins**. Examples of incomplete proteins are grains, nuts, seeds, beans and legumes. Foods, that if eaten together, provide all the essential amino acids are called **complementary proteins**. For example: grains do not have the amino acid lysine but have methionine in abundance while legumes do not have methionine but have lysine. Thus, a combination of grains and legumes will provide all the essential amino acids (e.g. a typical Filipino meal consisting of steamed rice and *ginisang monggo*).



PROTEIN

Complementary proteins are a special concern to people who subscribe to a vegan diet. Most plant-based foods do not have all the essential amino acids. Vegetarians, especially vegans, must have a good understanding of the nature and challenges of this kind of diet to prevent malnutrition.

Fats

Fats, along with carbohydrates, supply energy to the body. They aid in regulating certain body processes, protect our internal organs from damage, keep us warm and help in the body's absorption of fat-soluble vitamins. These important functions make it necessary for us to include fats in our diet.

Fats can be **saturated**, **monounsaturated** or **polyunsaturated**. Saturated fats remain solid at room temperature (e.g. shortening used to make baked goods). Monounsaturated and polyunsaturated fats are liquid at room temperature. Monounsaturated fats are abundant in olive oil, canola oil and avocados. Sunflower oil, corn oil, walnuts and flaxseed are sources of polyunsaturated fats. The kind and the amount of fat that we eat significantly impacts our overall health. It is preferable that we eat foods that have more monounsaturated and polyunsaturated fats. Studies show that these fats help lower cholesterol and may reduce the risk of heart diseases.



FATS

Our body needs a type of fatty acid called **essential fatty acids (EFAs)**. They are termed essential because our body cannot produce them. We have to get them from the food we eat. These EFAs are **linoleic acid** (an omega-6 fatty acid) and **alpha-linoleic acid** (an omega-3 fatty acid). Omega-6 fatty acids can be found in palm oil, canola oil and nuts. Omega-3 fatty acids are abundant in fish like salmon, tuna, sardines, mackerel and anchovies. Consumption of foods rich in omega-3 fatty acids helps reduce the risk of heart disease, Alzheimer's Disease and inflammation like arthritis.

Fat is a type of **lipid**. Lipids are a group of organic compounds that are insoluble in water. **Cholesterol** is a lipid that is present in all the cells of our body. It can also be found in foods such as egg yolk, shellfish and organ meats like heart, liver and intestines. Cholesterol serves many functions. It aids in the creation of hormones. It also helps produce bile acids to break down fats during digestion and it needs to be present for the skin to manufacture Vitamin D.

Since cholesterol is a lipid, it is therefore insoluble in water. It must combine with a protein to form lipoproteins. **Lipoproteins** are molecule combinations of fat and protein that transport cholesterol through the bloodstream. **Low-density lipoproteins** (LDLs) are the most important carriers of cholesterol. But high levels of LDLs in the body is dangerous because they deposit excess cholesterol in the blood vessels. Cholesterol then accumulates in the walls of arteries and eventually blocks the flow of blood from the heart to the vital organs of the body. Conversely, **high-density lipoproteins** (HDLs) help remove excessive levels of cholesterol from the blood and carry them back to the liver to be eliminated. Low-density lipoproteins (LDLs) are sometimes called “bad” cholesterol while high-density lipoproteins (HDLs) are called “good” cholesterol.

There is an increased awareness that we must avoid foods that have trans fats. Trans fats have natural and artificial forms. Natural trans fat that can be found in the meat and dairy of livestock such as cows, sheep and goats, if taken moderately, do not pose health problems. **Artificial trans fats** are fats that go through a process called hydrogenation. **Hydrogenated fats** are liquid vegetable oils that have been converted into semi-solid form by adding hydrogen atoms to the fat molecules. Hydrogenated fats are used in food production because they are inexpensive and have a longer shelf-life.

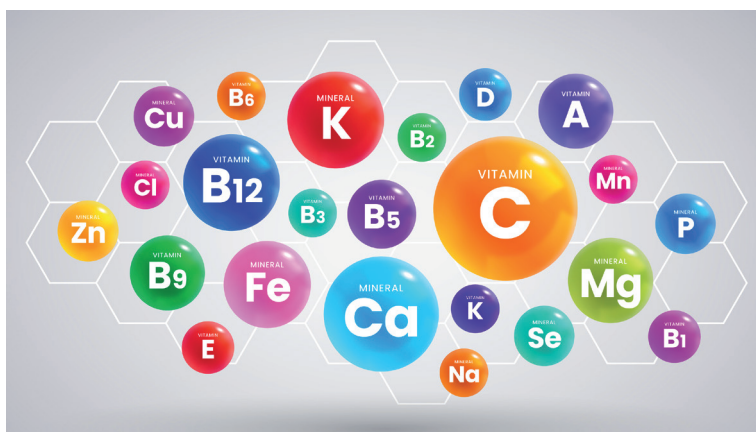
Regular consumption of foods with artificial trans fats or hydrogenated fats is unhealthy. Trans fats hinder the action of HDLs. As a result, there’s an increase in the level of cholesterol in the body which can then lead to heart disease.

Many countries around the world have already set policies to restrict or ban the use of trans fats in food production and food-service establishments.

Vitamins

Vitamins are essential nutrients that the body needs in small amounts. Each vitamin has a specific function or functions that contributes to the overall wellness of the body. Not having enough supply of any vitamin can lead to the development of diseases.

Vitamins can be classified into **water-soluble vitamins** and **fat-soluble vitamins**. There are 13 essential vitamins (9 water-soluble and 4 fat-soluble).



Water-Soluble Vitamins (Vitamin C and B Vitamins)

Water-soluble vitamins are not stored in the body and must be consumed everyday (except Vitamin B12 which can be stored in the liver for years). Any unused vitamins are excreted through urine. All the B vitamins help in the utilization of carbohydrates, protein and fats for energy.

Vitamin	Function	Dietary Sources
Vitamin C (ascorbic acid)	aids in wound healing, fights infection; helps the body absorb iron, promotes healthy gums and teeth	citrus fruits, berries, tomatoes, green and red peppers, broccoli, dark green leafy vegetables
Vitamin B1 (Thiamine)	the first vitamin to be discovered; important for healthy nerve cells, helps prevent memory loss	pork, beef, eggs, nuts, beans, legumes, green vegetables, oranges
Vitamin B2 (Riboflavin)	helps produce red blood cells; promotes healthy skin and eyes	dairy products, eggs, organ meats, fortified grains and cereals
Vitamin B3 (Niacin)	promotes healthy skin and nerves; has cholesterol-lowering effects	meat, poultry, fish, milk, eggs, mushrooms, green and leafy vegetables
Vitamin B5 (Pantothenic acid)	needed to produce blood cells; promotes healthy skin	meat, whole grains, eggs, milk
Vitamin B6 (Pyridoxine)	aids in the production of red blood cells	pork, poultry, bananas, nuts, oats
Vitamin B7 (Biotin)	helps in producing fatty acids; promotes healthy hair and nails	eggs, milk, nuts, seeds
Vitamin B9 (Folates, Folic acid)	needed for the production of DNA and new cells; necessary vitamin especially for pregnant women; low levels of folate are closely linked to birth defects	green and leafy vegetables, legumes, peas, beans
Vitamin B12 (Cyanocobalamin)	promotes healthy nerves	meat, poultry, fish, seafood, eggs, dairy products

Fat-Soluble Vitamins

Fat-soluble vitamins are absorbed by the body with the help of dietary fat. They are stored in fatty tissue and the liver.

Vitamin	Function	Dietary Sources
Vitamin A	helps maintain healthy eyes, bones and skin	dark orange fruits and vegetables (e.g., carrot, squash, sweet potato, melon, cantaloupe), eggs, milk
Vitamin D	also known as the “sunshine vitamin”, it is manufactured by the skin through exposure to the sun; helps the body absorb calcium	eggs, fatty fish, beef, liver
Vitamin E	an antioxidant; aids the body to produce red blood cells	corn oil, safflower oil, soybean, eggs, green and leafy vegetables
Vitamin K	needed for proper blood coagulation	green and leafy vegetables

Minerals

Minerals, similar to vitamins, are essential nutrients that are taken in small quantities. They serve a variety of functions for the body's processes to work properly. Some minerals called major minerals need to be taken in larger amounts than other minerals (more than 100 milligrams daily). Minerals that are to be taken in smaller amounts are called trace minerals.

Major Minerals

Vitamin	Function	Dietary Sources
Calcium	needed for healthy bones and teeth; plays an important role in blood clotting	milk and dairy products, green and leafy vegetables, fish with bones that can be eaten like canned sardines and salmon
Chloride	one of the components of salt; helps maintain fluid balance inside and outside of cells	olives, tomatoes, seaweed
Magnesium	aids in muscle and nerve functions; helps to regulate blood pressure	almonds, peanuts, cashews, pumpkin seeds, spinach
Phosphorus	helps to keep bones healthy; helps lessen muscle pain after exercise	meats, milk and dairy products, eggs, whole grains
Sulfur	helps to build and repair DNA,	meats, fish, eggs, nuts, grains, onion, garlic

Sodium	one of the components of salt; helps maintain fluid balance inside and outside of cells; needed by the muscles and nerves to function properly	Most whole foods have sodium content so getting this mineral is not a problem. It is advisable to consume as little sodium as possible
Potassium	helps regulate body fluids; helps regulate muscle contractions	banana, grapes, citrus fruits, green and leafy vegetables

Trace Minerals

Vitamin	Function	Dietary Sources
Chromium	helps metabolize the macronutrients; helps to absorb and store glucose	broccoli, green beans, banana, grapes
Copper	helps form red blood cells; helps the body absorb iron	seafood, nuts, whole grains
Fluoride	found mostly in our bones and teeth; small amounts help reduce tooth decay	found in some toothpastes and mouth rinses; practice good dental hygiene by brushing your teeth regularly
Iodine	helps make thyroid hormones; aids in bone and brain development during pregnancy and early childhood	iodized salt, tuna, shrimp, dairy products
Iron	important for blood production; helps in forming hemoglobin (a protein found in red blood cells needed to transport oxygen in the blood)	red meat, liver, beans, nuts, green vegetables
Manganese	helps metabolize the macronutrients; helps in bone formation; helps reduce inflammation	pineapple, sweet potato, peanuts, almonds, brown rice, clams, oysters
Molybdenum	needed for digestion and excretion; helps prevent toxin build up	legumes, cereals, organ meats, leafy vegetables
Selenium	prevents cell damage by aiding in the production of antioxidant enzymes	meat, chicken, fish and shellfish, eggs
Zinc	helps boost immune health; needed for growth and development in children	shellfish like oysters and crabs, meat, chicken, mushrooms

Water

Water is essential to all life forms. We can live for weeks without food, but we will only last a few days without water. Water does not provide calories, but it is absolutely needed in all the processes in our body. It helps in digestion, regulates temperature, carries nutrients and aids in the elimination of wastes.

We are made up of about 50–80% water that even a slight **dehydration**, when the body loses more water or fluids than it takes in, can impair our body's performance. Dehydration can make you lose concentration, give you headaches, and make you feel tired and weak. Severe dehydration can have serious health complications.

The required daily intake of water depends on the person's age and body size, health condition, activities the person engages in (e.g., sports or exercise) and even environmental factors (e.g., it is a very hot day). Our body is very good at giving feedback that we need water by making us feel thirsty.

It is important that we drink plenty of water and other fluids all throughout the day. Here are some suggestions that will encourage and remind us to drink up:

- ✓ Always carry a water bottle with you. Refill your bottle all throughout the day.
- ✓ Add a slice of lemon or some fruits to your water for variety.
- ✓ Choose to drink water instead of flavored drinks. This is less expensive and you will not take in empty calories.
- This will help you form the habit of drinking water:
 - ◇ Drink a glass of water before each meal.
 - ◇ Drink water before, during and after exercising.
 - ◇ Drink water after you wake up and before sleeping.
- ✓ Eat foods that are rich in water (e.g. watermelon, cucumber, soup etc.).

Balanced Diet

In order to stay healthy, we must eat a variety of foods that will supply all the nutrients our body needs. It is also important that we eat the right proportions. There is still much to learn about health and nutrition but healthy eating generally follows these principles:

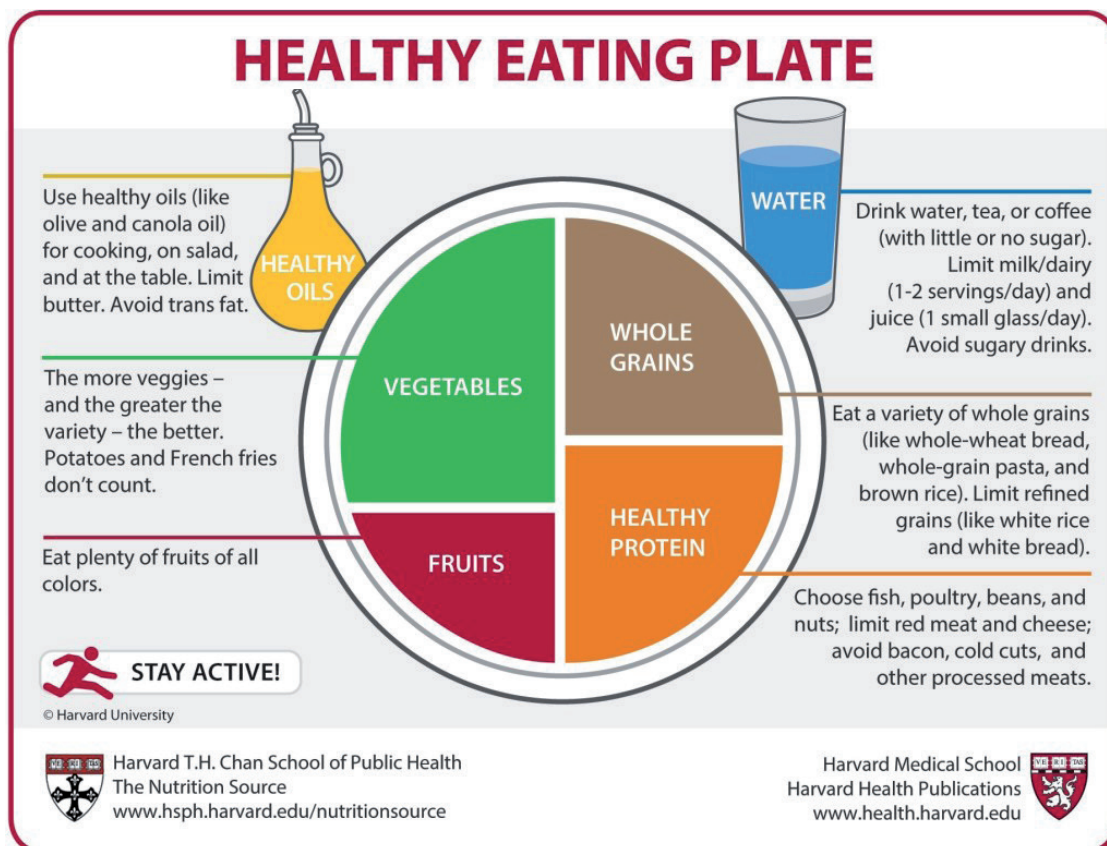
- **Choose foods that are nutrient-dense.**
Eat more vegetables, fruits and whole grains. They not only have more fiber which will make you feel fuller longer but they also contain more nutrients. Eat moderate amounts of meats like beef, pork and chicken.
- **Eat healthy fats.**
Include fish in your weekly meals. Use monounsaturated and polyunsaturated fats when cooking or preparing food. Limit eating foods with trans fats.



- **Reduce salt in your diet.**
You do not need a lot of salt to make a flavorful dish. Make use of herbs and spices to bring out the natural flavor of meats, fish or vegetables. When buying food products, choose those that are labeled “low sodium”.
- **Cut back on junk foods.**
You can still enjoy these foods occasionally. When you do eat them, try to eat smaller amounts than what you’re used to.
- **Drink up!**
Remember to drink plenty of water (6-8 glasses) all throughout the day. Drink more, especially when you are physically active or when it is a really hot day.
- **Exercise.**
Regular exercise has so many benefits. It promotes good health, both physical and psychological. It can even be a means to spend time with family and loved ones.

Through the years, government agencies and health organizations worldwide have developed **nutrition guides** to help educate people on how to eat healthy. These guidelines usually classify food into food groups and recommend the right proportions for each food group that a person should take based on different factors such as age, gender, level of activity etc.

The Harvard School of Public Health developed the **Healthy Eating Plate**, a model for creating nutritious and balanced meals. The guide uses a drawing of a divided plate showing the different food groups and recommends the healthy kinds of foods we must be eating. The guide also includes a running stick figure reminding people to stay active.



Source: <https://www.hsph.harvard.edu/nutritionsource/healthy-eating-plate/>

One of the best ways to ensure healthy eating is to cook or prepare your own meals instead of buying commercially prepared foods. Cooking at home has a lot of advantages.

- When you cook or prepare your own meal, you know exactly what goes in your food. You can make healthier choices in the foods you eat. You can take charge and adjust the flavor of your dish and limit the use of unhealthy ingredients.
- You can adjust the amount of food you eat based on the appropriate portion size for you. Because eating out is expensive, we tend to overeat or eat everything that we have ordered even though we are already full. Cooking your own meal will help you prepare the right amount of food for you.
- You can opt to cook using healthier methods such as grilling, baking or roasting, steaming and simmering. These cooking methods make use of less fats or oils. Remember to use healthy fats at the right amounts, when cooking.
- You can prevent exposure to foodborne illnesses when you properly handle your own prepared meal.
- Cooking at home is less expensive compared to dining out.
- Cooking can boost self-esteem. Accomplishing something gives a person joy.
- Cooking can be a stress reliever. When you've had a difficult day in school, preparing even a very simple meal can relax you.
- Cooking can educate you. It can open your mind to different ways of thinking. It can introduce you to different world cultures. It can also teach you practical things like eating healthy, meal planning, budgeting and cleaning.
- Cooking can also be a way to bond with family. Cooking with loved ones can be an avenue to spend time together and create cherished memories. Sharing food that you've prepared encourages a giving and loving relationship.

Cooking does not have to be complicated. You don't have to be a professional cook to be able to prepare a healthy and tasty dish. In time, as you practice more and more, you will be able to prepare quick and healthy meals.



Summary

According to the World Health Organization (WHO), fighting malnutrition is one of the greatest health challenges in the world today. All countries, without exception, is affected by a form of malnutrition. Efforts have been made by different organizations to address this issue. Educating people about proper nutrition is an important step to solving this problem. People are empowered to make the right choices when they understand the different nutrients needed by the body, and the variety of food sources they can get these nutrients from. To eat a healthy meal does not mean it has to be expensive. When people understand proper nutrition, they can take charge of their own health and in the process improve their quality of life.



Exercises



Exercise 1

How much have you learned?

Instructions: Choose your answer from the following:

HDLs	fiber	trace	macronutrients	amino acids
vitamin D	essential nutrients	lipoproteins	dehydration	water-soluble

- _____ are chemical compounds that are found in foods that our body needs to work properly.
- _____ are nutrients that should be eaten in relatively large quantities.
- _____ is a unique type of complex carbohydrate which is not digested by the body.
- _____ are the building blocks of protein.
- _____ are molecule combinations of fat and protein that transport cholesterol through the bloodstream.
- _____ help remove excessive levels of cholesterol from the blood and carry them back to the liver to be eliminated.
- _____ vitamins are not stored in the body and must be consumed everyday.
- _____ also known as the "sunshine vitamin" and is manufactured by the skin through exposure to the sun.
- _____ minerals are minerals that are to be taken in smaller amounts.
- _____ is a condition when the body loses more water or fluids than it takes in.

Exercise 2

Instructions: Enumerate the following:

- Six types of essential nutrients
 - _____
 - _____
 - _____
 - _____



e. _____

f. _____

2. Two types of essential fatty acids our body needs

a. _____

b. _____

3. Two kinds of water-soluble vitamins, their function, and 1 example of a dietary source

a. _____

b. _____

4. Two kinds of fat-soluble vitamins, their function, and 1 example of a dietary source

a. _____

b. _____

5. Two kinds of major minerals, their function, and 1 example of a dietary source

a. _____

b. _____

6. Two kinds of trace minerals, their function, and 1 example of a dietary source

a. _____

b. _____

7. Two ways to avoid dehydration

a. _____

b. _____

8. Two ways to achieve a healthy, balanced diet

a. _____

b. _____





Lesson Output

Individual Work – Using any word processing, spreadsheet or presentation tool (or combination of 2 productivity tools), create a nutritious 1-week meal plan.

Rubrics for Creating a Nutritious 1-Week Meal Plan

Criteria	5	4	3	2	1	Points
Content/ Functionality	The student is able to completely list the six types of essential nutrients in each meal including specific examples of the dietary sources of each type and their quantities.	The student is able to list the six types of essential nutrients in each meal but lacks 1 or 2 specific examples of the dietary sources of some types or was not able to include the quantities of 1 or 2 sources.	The student is able to list the 4 to 5 types of essential nutrients in each meal and lacks 2 or 3 specific examples of the dietary sources or was not able to include the quantities of 2 or 3 sources.	The student is able to list the 4 to 5 types of essential nutrients in each meal and lacks 3 or more specific examples of the dietary sources or was not able to include the quantities of 3 or more sources.	The student is only able to list 2 to 3 types of essential nutrients in each meal and was not able to give specific examples of the dietary sources or was not able to include their quantities.	
Creativity	The work shows creativity of the student and the design has high visual appeal.	The work shows creativity of the student. The design took one or two elements from several existing sources, such as that from other people or the Internet, and built on these.	The project's requirements are met. The design took 3 or more elements from several existing sources, such as that from other people or the Internet, and built on these.	The work lacks creativity and the design took most of its elements from several existing sources, such as that from other people or the Internet and didn't change or add to them.	The work lacks creativity and shows minimal to no effort in design. The student directly copied (plagiarized) their project from another source, such as from a person or from the Internet.	
Promptness	The student was able to submit the output before the given deadline.	The student was able to submit the output on time.	The student was late in submitting the output but was able to do so within the same day.	The student submitted the output 1 day after the deadline.	The student submitted the output more than 2 days after the deadline.	

Total

LESSON 3

Mise en Place (Preparatory Work in the Kitchen)



Learning Outcomes

At the end of the lesson, you are expected to be able to:

1. Define mise en place and demonstrate its application in the home kitchen.
2. Describe preliminary cooking and flavoring.
3. Describe the steps for Standard Breading Procedure.

What were the things that you had to prepare before attending your class today? Did you take a bath? Did you brush your teeth? Did you eat your breakfast? Did you finish your assignments the night before? Did you make ready the clothes you were going to wear?

If you said yes to all or most of the questions above, then you are doing **mise en place**. That is, you are getting yourself ready. You understand that there are preparations to be made before you finally sit down on your chair and start your class.

The smooth flow of work in a professional kitchen depends largely on mise en place. This principle is something that we can apply to our home kitchens. Mise en place will empower us to work effectively and efficiently.



Engage

YouTube Video "Mise En Place Your Kitchen In IKEA Style" by IKEA UAE



<https://www.youtube.com/watch?v=jD8mneBwOHk&t=19s>



Explore

How does an organized kitchen look like? Draw a picture or make a collage of a clean and organized kitchen.



Research

Research on different kinds of marinades. Choose two marinade recipes. What ingredients are used to make them? What food items can you marinate them with? Write a 1-page report on your research.



Explain

Mise en Place

Mise en place (meez-on-plas) is a French culinary phrase that means “everything put in place”. It refers to the preparatory work done in professional kitchens before starting a work shift. It means making ready or assembling everything that is needed before doing the actual cooking. Mise en place is a very important principle adhered to and practiced by food-service professionals all over the world. Working in a commercial kitchen, especially a big one, involves numerous tasks. The complexity of a commercial kitchen operation necessitates mise en place. It makes kitchen work organized and efficient.

Have you watched a cooking show before? Have you noticed how all the ingredients are prepared even before the chef starts cooking? All the ingredients are assembled, washed, peeled, cut, and measured to the right portion according to the recipe. All the tools and equipment needed are assembled and prepared. The ingredients and tools are lined up or are near the stove or oven. This arrangement is done so that cooking can be executed smoothly. This setup is called mise en place. The process of assembling and preparing all the things that are needed is called mise en place.



The ingredients and tools are lined up or are near the stove or oven. This arrangement is done so that cooking can be executed smoothly. This setup is called mise en place. The process of assembling and preparing all the things that are needed is called mise en place.

Mise en place is fundamental in the food-service industry. But does it have a place in the home kitchen? Are there benefits to doing mise en place at home?

Mise en Place at Home

If you have ever cooked or prepared a dish at home, or have watched someone do so, you will recognize the presence or absence of mise en place. People who are organized in the kitchen tend to exhibit the following behavior:

- ✓ they make a list or assess the steps they will take before springing into action
- ✓ they check if all the ingredients that they need are available
- ✓ they assemble all the tools they need
- ✓ they are generally clean and orderly when they cook or prepare a dish

In short, they do mise en place.

Imagine that you are going to cook Cream of Mushroom Soup. Given below is the recipe for the dish. Carefully examine the recipe and then mentally list all the things that you need to do or prepare to be able to cook it:

Cream of Mushroom Soup

Ingredients:	Procedure:
1 cup mushroom, sliced 4 tablespoons onion, diced 1 tablespoon garlic, minced 2 tablespoons butter Salt and pepper, to taste	1. In a heavy saucepot, sauté the mushroom, onion, and garlic in the butter until soft. Do not let them brown. 2. Season with salt and pepper.
2 tablespoons flour	3. Add the flour. Mix well and cook for about two minutes.
2 cups chicken broth	4. Add the chicken broth. Stir frequently. Cook until the soup is slightly thickened.
1 cup cream ¼ teaspoon nutmeg	5. Add the cream slowly while stirring the soup. 6. Add the nutmeg. 7. Adjust salt and pepper, if needed. 8. Cook until proper consistency is reached.
Chopped parsley (optional)	9. Garnish with chopped parsley. Serve hot.

Using the principle of mise en place, we should do the following:

- Study the recipe and check if we have all the ingredients and tools needed to cook the dish.
- Make a market list. This will ensure we do not forget any ingredient or tool that we need.
- Shop for the ingredients or tools needed.
- Assemble all the tools needed to cook.

- Prepare in advance the ingredients that require pre-cooking. For example, chicken broth is an ingredient in the recipe. We can choose to buy ready-made chicken broth. We can also choose to make our own, in which case we would need to boil and simmer chicken.
- Assemble all the ingredients needed to cook. Wash, peel, cut, portion the raw ingredients.



Visualize yourself cooking this dish without mise en place or preparatory work. You might already be sautéing your mushroom, onion, and garlic. And then you remembered that you need cream and you do not have it on hand. These things can happen:

1. You stop cooking to buy cream. Result: you delay your cooking time.
2. You continue cooking your vegetables while you make a quick dash to buy cream. Result: you may overcook or burn the dish because you are not focused on it. **(Note: Never leave your stove unattended when cooking as this can cause kitchen fires.)**
3. You choose not to add the cream in the dish. Result: the taste of the soup will significantly change.

Other delays or mistakes can happen when you do not prepare ahead. Instead of enjoying the cooking process, you may feel panicked or flustered. Mise en place needs to be done for the actual cooking to run smoothly and quickly.

Benefits of Mise en Place

1. **It makes cooking efficient.**
 - ✓ Everything that is needed are available during cooking time.
 - ✓ Cooking time will be quicker with less mistakes and delays.
 - ✓ Mise en place will minimize clutter in the kitchen.
2. **It makes cooking fun.**
 - ✓ Because everything is in their proper place, you can relax and enjoy the cooking process.

One of the most basic skills required to do mise en place is knife skills. Knife skills will be covered substantially in the next lesson. For this lesson, we will focus on preparatory cooking and flavoring.

Preparatory Cooking and Flavoring

A recipe of potato salad states that cooked, diced potatoes are needed to make the dish. If we are going to prepare it, we can naturally assume that we need to cook the potato first before we can assemble the whole dish. We would need to do advance cooking.

Mise en place sometimes mean that we need to cook or flavor in advance some ingredients required for a dish.

The following are examples of preparatory cooking and flavoring:

Blanching and Partial Cooking

To blanch means to cook food partially within a short period of time. Blanching or partially cooking food items are at times necessary tasks before further processing or cooking a dish. Given below are instances when blanching and partial cooking makes a difference in the completed dish.

Blanching can help vegetables retain their bright color thus making them appetizing components of a dish. Blanching also loosens the skin of some vegetables and fruits for easier peeling (e.g., tomatoes). Organ meats such as liver, tripe, and intestines need to be blanched to remove their undesirable flavors and smell.



Partial cooking can improve the quality of a stir-fried dish. When stir-frying a dish that has both meat and vegetables as ingredients, you can opt not to cook everything all at once in one pan. Different ingredients cook at different times. If you try to cook everything at once, some ingredients like tough vegetables might be undercooked while the meat components might be overcooked. It is a good technique to cook the meat and vegetables separately. After partially cooking these ingredients, you can then start the actual stir-frying.

Marinating

To marinate a food item means to soak it in a seasoned liquid, called a **marinade**, before cooking it.

Marinating aims to:

1. make the food more flavorful and,
2. tenderize the food.



Ingredients for Marinades

Marinades have three Ingredients: oil, a kind of acid, and the flavorings.

1. **Oil** – helps to keep the moisture of the marinating item.
 - Flavorless vegetable oils are used if a neutral taste is what is desired in the final product.
 - Special oils, like olive oil, is used to add flavor.
 - Oil is sometimes not added if the marination will be done for a long time and will be refrigerated. This is because the oil will just float on top and thus will not be useful as a marinating ingredient.
2. **Acid** – helps tenderize and flavor marinating items.
 - Acids can be lemon or calamansi juice, vinegar, and wine.

- Be careful when adding acid on your marinating products. Very strong acids can make the proteins of meats coagulate. When this happens, the meat can appear partly cooked. Its texture may not be good after cooking.
- Use strong acids in very small quantities and only for short periods of marination.
- Buttermilk and yogurt, which are mildly acidic, can also be used for marinating. The calcium in these products have a tenderizing effect on the proteins of meat.

3. **Flavorings** – help to add desired flavors on marinating items.

- Spices and herbs are used for flavoring.
- Aromatic vegetables such as garlic, onion and chili peppers can also be used.

The marinated item can be cooked with the marinade. The cooked marinade can be used as part of the sauce for the marinated food item.

Dry Rub

A dry marinade is called a **dry rub** or a **spice rub**. It is a mixture of salt, herbs and spices rubbed or spread over the surface of meats, poultry, or fish. Sometimes a small portion of a wet ingredient is added to the blend to make a paste (e.g., mustard or garlic). The marinated item should be refrigerated and allowed time for the flavors to be absorbed. The use of a dry rub is popular for meats to be grilled or barbecued.



Brines

A brine is a concentrated solution of salt and water. It is used primarily for curing, a type of food processing that preserves and enhances the flavor of poultry, pork, and fish. It can also be used as a form of marination because it has great tenderizing and moisturizing effects. Sugar is sometimes added to a brine to counteract the very strong taste of salt. Other flavorings such as herbs and spices may be added.

When using a brine to marinate, the food product should be immersed in the brine solution for a time. The time it takes to marinate depends on the size of the product. Larger cuts of meats are brined longer than smaller cuts. Fish is normally brined for a short amount of time.

Brines tenderize meats by 1) dissolving some of the protein structure of the meat, 2) relaxing the meat proteins and, 3) making the meat absorb more liquid.



At the start of the brining process, the salt in the brine draws out the meat's moisture. But as the brine is also absorbed in the meat's tissues, the salt dissolves some of the meat's muscle fibers reducing its toughness. It also makes the meat proteins relax or denature. The relaxed meat proteins can hold more water or moisture. Thus, a brined meat weighs more than its original weight. Even though cooking causes meat to lose water or moisture, brined meat comes out juicier after cooking. This is because the brined meat holds more moisture to begin with.

Marinating Safely

Raw poultry, meat and seafood may contain pathogens or disease-causing microorganisms. It is important to practice proper food handling and storage to prevent foodborne illnesses.

1. **Always store your marinating items in the refrigerator.**
Refrigerating food items delays bacterial growth. Put your marinating food items in a tightly covered container. Place it in the bottom shelf of the refrigerator, beneath the other food items.
2. **Use food-safe containers to store your marinating items.**
Use glass or food-safe plastic containers when marinating. Do not use metal containers as some metals react to the acid in the marinade.
3. **Make sure to boil or cook the marinade if you want to reuse it for basting or as a sauce for your marinating items.**
Cross-contamination can lead to foodborne illnesses. If you are going to reuse the marinade, **make sure to boil it first** to destroy any harmful bacteria that may be in it. Another option is to make extra marinade that you will store in a different container, separate from the raw food items.
4. **Cook your marinated items to the right minimum internal temperature.**
Cooking food at the right minimum internal temperature kills disease-causing bacteria. Follow the guidelines on Minimum Internal Cooking Temperature (see Lesson 1).

Preparation for Frying

In preparation for deep-frying, most food items, except for potatoes, are coated first with breading or batter. Coating foods before frying serves to:

1. keep the food moist and flavorful
2. help the food cook evenly
3. create deep-fried food with an attractive golden color and a crisp coating
4. prevent the deep-fried food from absorbing too much fat
5. preserve the quality of the deep-frying oil

Breading

Breading means to coat or cover food items with breadcrumbs or other crumbs before cooking. Breaded items are usually deep-fried, pan-fried, baked, or sautéed. The **Standard Breading Procedure** is the method generally used to bread or coat food items.

Breading can be made from a variety of ingredients. Choosing the kind of breading you want to use depends on the texture and flavor that you want to impart on the items you want to cook. Some of the items used for breading are breadcrumbs, Panko (Japanese breadcrumbs), crackers, cornmeal, cereals, nuts, and seeds. You can also make your own breadcrumbs (see procedure **Make Your Own Breadcrumbs**).

Standard Breading Procedure

1. **Flour** – helps the egg wash stick to the food product.
2. **Egg wash** – a mixture of egg and a liquid, which is usually water or milk.
3. **Crumbs** – combined with the egg wash, the crumbs make the final product crispy and golden brown

The Breading Process



The Standard Breading Procedure Setup

1. **Setup the Breading Station.**
 - a. Prepare three containers that will hold the ingredients for breading: 1) flour, 2) egg wash and, 3) crumbs. Make sure the containers are big enough to hold the right amount of ingredients needed to bread all the food items.
 - b. Prepare two additional containers. 1) to hold the food items to be breaded and, 2) to hold the finished breaded products. Make sure to pat dry the items you are going to bread. This will ensure they will get a proper coating of flour. Properly season the food items with salt and pepper so they will come out flavorful.
 - c. Arrange the containers according to the Standard Breading Procedure Setup (see illustration above. You can reverse the setup if you are left-handed).

2. **Use the dry hand-wet hand technique.**

Use your right hand for holding dry items. Use your left hand for holding wet items. (You can reverse the procedure if you are left-handed). This will ensure you will always have one hand dry and will minimize mess during the breading process.

- a. Using your dry hand dredge the food item in flour. Shake off excess flour.
- b. Dip the food item in egg wash. Drain off excess egg wash. Pick up the item using your wet hand and place in the container of breadcrumbs.
- c. Coat the food items in breadcrumbs. To make sure your dry hand will remain dry, push breadcrumbs over the egg-washed items before holding them. Make sure the products are coated entirely and evenly. Carefully shake off excess breadcrumbs.



Refrigerate the breaded items if they will be cooked at a later time. Make sure the items are arranged in a single layer before storing them or they might become soggy.

Make Your Own Breadcrumbs

1. Use one-day or two-day old bread. Very fresh bread can get lumpy when processed since it has more moisture content. You can opt to lightly toast the bread first for drier breadcrumbs. Do not use stale breads as they may have an off-flavor and smell.
2. Trim off the brown crust if you want a uniform light color in your breadcrumbs.
3. Tear the bread into smaller pieces.
4. Put the small pieces of bread in a food processor. Process to the desired fineness.
5. Use as soon as possible.

Dredging with Flour

Dredging food items with flour provides even coating to the products. It gives a light golden color to the food and prevents the food items from sticking.

Pieces of chicken, meat or fish can be tossed in flour before frying or sautéing. Vegetables such as eggplants and sweet potato can also be dredged with flour before deep-frying to make them crispy and golden in color.

Flour can be seasoned with salt and pepper. Remember to shake off excess flour after dredging food items in it.

Batters

Batters are mixtures of liquid and flour, or other similar starch, used to coat food before deep-frying. The batter makes the final product crispy and golden brown in color. Water, milk, or beer can be used as the liquid component of the batter. A binding ingredient like egg or baking powder may be added to the mix. Thick batters make thick coatings.



Summary

Mise en place or preparing in advance makes the operation of a food-service establishment move like clockwork. Food-service professionals regard it not only as a setup or a process of assembling everything. Mise en place is a way of life for most of them. It is the mental preparation needed to start the day's work and finish it well.

Mise en place has practical application not only in the kitchen but also in different aspects of our lives. You can arrange your study space in a way that is more conducive to learning. When doing projects, it can help you become more organized and in control. Mise en place can help you become a more productive person.



Exercises



Exercise 1

How much have you learned?

Instructions: Answer the following items on the space provided.

1. What is mise en place?

2. What is a dry rub?

3. Give 2 examples of preparatory cooking or flavoring in the kitchen?

a. _____

b. _____

4. What are the components of the Standard Breading Procedure?

a. _____

b. _____

c. _____

5. Give 3 reasons for coating food items with breading or batter.

a. _____

b. _____

c. _____

Exercise 2



Applying Mise en Place

Instructions: You are assigned to make Chicken Croquettes for your family's Sunday brunch. After reading the recipe below, list the things that you think you will have to prepare to be able to cook it:

Chicken Croquettes

Ingredients:	Procedure:
1 cup chicken, cooked	1. Grind the chicken in a food processor.
2 tbsp butter 2 tbsp all-purpose flour ½ cup milk	2. Melt butter in a saucepan. Add 2 tbsp of all-purpose flour and cook for 2 minutes. Add milk gradually. Stir the mixture until it thickens. Remove from heat.
1 tsp calamansi juice ½ tsp salt ¼ tsp ground pepper 1 tbsp onion, minced 2 tbsp parsley, chopped	3. Add calamansi juice, salt, pepper, onion, parsley and ground chicken to the flour and milk mixture. Mix everything.
	4. Shape mixture into 8 croquettes. Refrigerate for 15 minutes.
½ cup all purpose-flour 2 eggs, beaten ½ cup breadcrumbs Oil for frying Ketchup, to be served as dip	5. Set-up your breading station. Dredge the croquettes with flour. Dip them in the beaten eggs and coat with breadcrumbs. 6. Deep-fry the breaded croquettes until golden brown. Drain well. 7. Serve the croquettes with ketchup.





Lesson Output

Individual Work – Applying Mise en Place Principles

List the things that you would have to do or prepare if you are going to serve Club Sandwich for 10 people. Use any word processing, spreadsheet, or presentation tool (or combination of 2 productivity tools) to present your plan.

Rubrics for Mise En Place for Preparing Club Sandwich

Criteria	5	4	3	2	1	Points
Content / Functionality	The student is able to completely identify and describe ALL ingredients, kitchen tools and preparatory work (based on a recipe) needed for the task.	The student is able to identify MOST of the ingredients, kitchen tools and preparatory work (based on a recipe) needed for the task and describe each one satisfactorily.	The student is able to identify MOST of the ingredients, kitchen tools and preparatory work (based on a recipe) needed for the task but some descriptions are incomplete.	The student is able to identify SOME of the ingredients, kitchen tools and preparatory work (based on a recipe) needed for the task. Some of the descriptions are incomplete.	The student is not able to identify MOST of the ingredients, kitchen tools and preparatory work needed. Some descriptions are incorrect.	
Creativity	The work shows creativity of the student and the design has high visual appeal.	The work shows creativity of the student. The design took one or two elements from several existing sources, such as that from other people or the Internet, and built on these.	The project's requirements are met. The design took 3 or more elements from several existing sources, such as that from other people or the Internet, and built on these.	The work lacks creativity, and the design took most of its elements from several existing sources, such as that from other people or the Internet and didn't change or add to them.	The work lacks creativity and shows minimal to no effort in design. The student directly copied (plagiarized) their project from another source, such as from a person or from the Internet.	
Promptness	The student was able to submit the output before the given deadline.	The student was able to submit the output on time.	The student was late in submitting the output but was able to do so within the same day.	The student submitted the output 1 day after the deadline.	The student submitted the output more than 2 days of the deadline.	

Total

LESSON 4

Basic Knife Skills



Learning Outcomes

At the end of the lesson, you are expected to be able to:

1. Identify the parts of a chef's knife.
2. Identify basic cutting techniques.
3. Enumerate other common kitchen tools and equipment.

Assembling and cutting ingredients are basic tasks for mise en place or preparatory work. As such, knowing how to use a knife is a major skill when doing kitchen work.

Numerous kitchen equipment has been invented to tackle different tasks, but the chef's knife remains to be the primary tool in the kitchen. It is a tool designed to do most of the cutting and slicing work needed to prepare ingredients for a dish.

In this lesson, we will familiarize ourselves with the chef's knife, know how to use it and care for it.



Explore

See how much you know. Identify the kinds of knives illustrated below. Write your answer in the space provided under each picture.



Engage

YouTube Video "Basic Knife Skills" by Allrecipes



https://www.youtube.com/watch?v=Ydc_SaQ_eRQ

 1. _____	 2. _____
 3. _____	 4. _____
 5. _____	 6. _____



Research

Research the different materials used to make the blade and the handle of a chef's knife. What are the advantages or benefits of each material? Write a 1-page report.

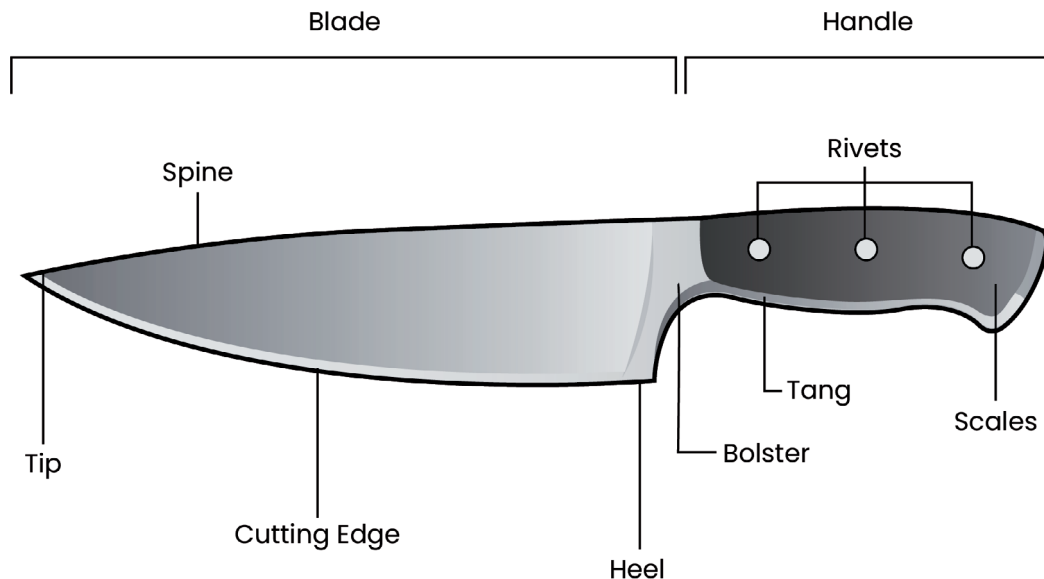


Explain

The Chef's Knife

The chef's knife, also known as the French knife, is the most essential cutting tool in the kitchen. The blade of a chef's knife ranges from six to fourteen inches. Most chefs find the eight- or ten-inches long chef's knife suitable for general work. It is a versatile tool that will let you perform a great many tasks such as slicing, chopping, mincing and others. As it is the tool that you will use the most, it is important that you know its parts, how to use it in the most efficient way, and how to take care of it.

Parts of the Chef's Knife



The knife has two sections: the **blade** and the **handle**.

- The **spine** is the thick, dull, back portion of the blade.
- The **cutting edge** is the portion opposite the spine. It is the sharp part of the knife starting from the tip to the heel. Most of the cutting techniques make use of the center of the cutting edge.
- The **tip** is the narrow, pointed end of the blade. It is used for cutting small or delicate items.
- The **heel** is the rear part of the blade that is closest to the handle. It is used for heavy cutting work, such as chopping a particularly tough cut of meat or vegetable.
- The **bolster** is the thick metal portion in the middle of the knife, joining the blade and the handle. It helps keep the knife balanced. It also protects the hand from sliding.
- The **tang** is the length of the blade that forms part of the handle. Well-made knives usually have a full tang, that is, it extends to the length of the handle. Full-tang knives are sturdy and long-lasting.
- The handle of the knife is sometimes called **scales** if they are made of two pieces. Scales hold the tang on both sides. They can be made of wood, plastic, or a composite material.
- The **rivets** are the metal pins that hold the scales to the tang. Knives with composite molded handles usually do not have rivets and are instead bonded to the tang.

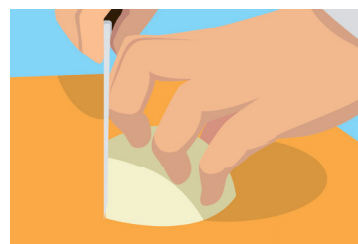
Handling the Knife

Learning to hold the knife properly offers a lot of benefits. It will help you work faster in the kitchen. It will make your cutting technique more precise. Working in the kitchen will also be a lot safer.

Both your hands will play important parts to properly cut a food item.



The **grip** – hold the knife by pinching the base of the spine and handle with your thumb and forefinger. The rest of your fingers should be wrapped around the handle. This kind of grasp offers the most stability and control when cutting.



The **guiding hand** – your other hand controls the food item to be cut. Holding the item firmly will prevent it from slipping or sliding. Curl your fingertips inwards, out of the blade's way. Guide the knife by using your knuckles, with the blade of the knife sliding against the sides of your fingers.

How to Keep a Sharp Edge

"A sharp knife is safer than a dull knife". This seems counterintuitive or goes against common sense. But when you have worked long enough in the kitchen, you will see that many accidents involving a knife actually involved dull knives. Dull knives need more force to cut through food items and they can easily slip or slide in the process. Dull knives also bruise or damage food items more than cut them.

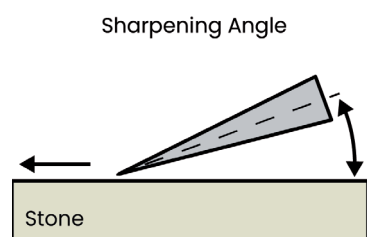
A sharp knife combined with the proper cutting techniques will effectively and safely cut food items.

Knives can be sharpened by the following tools:

1. **Sharpening stone** – also called a whetstone or water-stone, it is used for sharpening knives and other steel tools. Whetstones come in different grit levels (how abrasive the stone is) from very coarse to very fine. A very fine grit will produce a smoother surface. Coarser grits will take away more metal from your blade but are usually needed for initial sharpening, especially of very dull knives.



Using a whetstone takes some getting used to. You need to practice so you can be good at it. However, knowing how to use it is a very practical skill. Remember these guidelines when sharpening your knife using a whetstone:



- Soak your whetstone in water before each use. Keep it moist all throughout the time you are sharpening your knife.
- Maintain a 20-degree angle when sharpening your knife (see illustration).
- Using light, even pressure, draw the blade of the knife from the heel to the tip, along the length of the whetstone. Make the same number of strokes for each side of the blade.
- Hone your sharpened blade a few times using a steel then wipe it clean.

2. **Other knife sharpeners** – these sharpeners come in manual and electric models. The sharpener is constructed in such a way that two stones are already set down in the correct 20-degree angle. You only need to drag the blade of your knife in between the two stones. Some kitchen professionals do not recommend the use of manual or electric sharpeners. They believe that these devices strip away or shave more metal from the knife's blade thereby degrading the knife faster.
3. **The steel** – a long, rod of steel with a handle. It does not actually sharpen knives. Rather, it hones or smooths out the irregularities or very tiny dents that develop when using the knife. The steel also helps in maintaining the sharp edge of the knife.

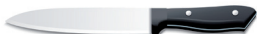


To demonstrate how to properly sharpen knives, watch the following video:

How To Sharpen Dull Knives by Tasty

<https://www.youtube.com/watch?v=Wk3scs5FqCY>

Other Knives and Their Uses

1. Santoku knife – also known as the Japanese cook’s knife. It has a wide blade that is typically five to seven inches long. The Santoku knife is increasingly becoming popular as a replacement for the chef’s knife.	 Santoku knife
2. Paring knife – a small knife with a blade about two to four inches long. It is use for peeling or trimming fruits and vegetables, deveining shrimps, and other delicate work.	 Paring knife
3. Serrated slicer – a knife with a jagged edge or “teeth”. It is used for slicing bread, cakes, tomatoes and other similar items.	 Serrated slicer
4. Utility knife – has a narrow blade that is six to eight inches long. It is shorter than a chef’s knife but longer than a paring knife. It is useful for carving roasted meats.	 Utility knife
5. Boning knife – has a thin, flexible, pointed blade designed to separate raw meat from the bones	 Boning knife
6. Cleaver – a heavy knife with a wide blade. It is used for cutting through bones and thick pieces of meat.	 Cleaver
7. Chinese cook’s knife – is almost similar in shape with the cleaver but is lighter and has a square tip. It is a multi-purpose knife that can do the general slicing and cutting of food items.	 Chinese cook’s knife
8. Vegetable peeler – a tool with slotted, swiveling metal blade used for peeling fruits and vegetables.	 Vegetable peeler

9. **Cutting board** – not a knife, but an essential kitchen tool that works together with the knife. It is a sturdy piece of board where food items to be cut are placed. Cutting boards can be made of wood or plastic.

- Place a towel underneath a cutting board when using it. The towel will prevent the cutting board from slipping or sliding.
- Use separate boards for cutting raw meat, vegetables and fruits, and breads to prevent cross-contamination. Color-coded cutting boards are available in the market.
- Make sure to keep the cutting board clean and sanitized.



Cutting board

Basic Cutting Techniques

When we cook, we want the dish not only to taste great but also to cook evenly. We want all the ingredients cooked at the proper doneness, with no ingredient still tough or already mushy. We also want the dish to look good. When we achieve these things, we feel rewarded for our efforts.

Cooking evenly and making the dish look good are also the reasons why we cut our ingredients in similar shapes and sizes. When ingredients are uniformly cut, the finished dish looks more appetizing.

Learning different cutting techniques provide the benefits mentioned above. As an added benefit, learning cutting techniques will enable you to work faster in the kitchen.

Cutting Terms to Remember

Chop – to cut food items in irregular shapes.

Concasser (cone-cas-say) – to cut food items coarsely, a rough chop. This term is popularly used for chopping tomato, particularly Tomato Concasse, which is peeled, seeded, and then diced.

Mince – to cut food items in very small or very fine pieces

Emincer (em-man-say) – to cut food items thinly or slice thinly. It is not similar with the term “mince”.

Shred – to cut food items into thin strips

Stick and Cube Cuts and Shapes

Name	Description	Dimension
Bâtonnet (bah-ton-nay)	It is the French word for "little stick". It is the starting cut for many other cuts, particularly small dice.	$\frac{1}{4} \times \frac{1}{4} \times 2-2\frac{1}{2}$ inches
Julienne (zhoo-li-en)	Also known as allumette (ah-lyoo-met) or french cut, it is cutting food item into thin long strips that look like matchsticks. It is the starting cut for brunoise. Carrots and potatoes are usually julienned.	$\frac{1}{8} \times \frac{1}{8} \times 1-2$ inches
Fine Julienne	Shaped like a stick, it is the starting cut for fine brunoise.	$\frac{1}{16} \times \frac{1}{16} \times 1-2$ inches
Large Dice	A cube cut; it is the general cut for roasted vegetables and stews.	$\frac{3}{4} \times \frac{3}{4} \times \frac{3}{4}$ inch
Medium Dice	A cube cut; it is the general cut for vegetables to be used for soups.	$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}$ inch
Small Dice	Bâtonnet sticks will yield small dice when cut into cubes.	$\frac{1}{4} \times \frac{1}{4} \times \frac{1}{4}$ inch
Brunoise (brun-wahz)	Julienne sticks will yield brunoise when cut into cubes. Brunoise cut vegetables are used as garnish for a variety of dishes.	$\frac{1}{8} \times \frac{1}{8} \times \frac{1}{8}$ inch
Fine Brunoise	A cube cut; vegetables like carrots, celery, onion, and potatoes can be cut into fine brunoise.	$\frac{1}{16} \times \frac{1}{16} \times \frac{1}{16}$ inch

Other Cuts and Shapes

Name	Description	Dimension
Rondelle	Round cuts; assorted sizes and thickness.	Cut according to required size or thickness
Paysanne	Thin square cuts: start by cutting medium dice then cut the cube into thin slices.	$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}$ inch, then cut into thin slices.
Lozenge	Diamond shaped cut	$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{8}$ inch
Fermière	Irregular slice: the shape of the food item may vary but the size and thickness should be the same	Cut according to required size or thickness; shapes of food items may vary
Tourné (toor-nay)	Oval shape with seven sides. The ends should be flat. Root vegetables, like potatoes, carrots and turnips are sometimes tournéed for an appealing presentation.	2 inches in length
Chiffonade	It is the French word for "little ribbons". Thin, long strips; leafy vegetables (e.g., lettuce, basil) are stacked together, rolled into a tight cylinder, and then sliced into thin shreds.	Strips, length may vary



Fine Brunoise
 $\frac{1}{16} \times \frac{1}{16} \times \frac{1}{16}$ Inch



Brunoise
 $\frac{1}{8} \times \frac{1}{8} \times \frac{1}{8}$ Inch



Small dice
 $\frac{1}{4} \times \frac{1}{4} \times \frac{1}{4}$ Inch



Medium dice
 $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}$ Inch



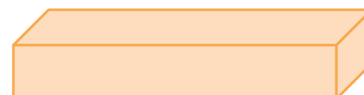
Large dice
 $\frac{3}{4} \times \frac{3}{4} \times \frac{3}{4}$ Inch



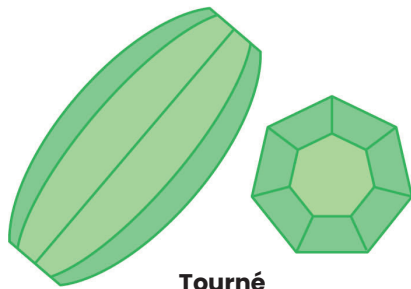
Fine Julienne
 $\frac{1}{16} \times \frac{1}{16} \times 1-2$ Inches



Julienne
 $\frac{1}{8} \times \frac{1}{8} \times 1-2$ Inches



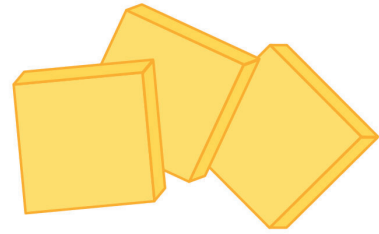
Bâtonnet
 $\frac{1}{4} \times \frac{1}{4} \times 2-2\frac{1}{2}$ Inches



Tourné
oval shape with
seven sides



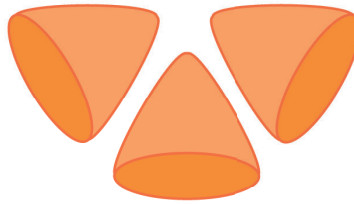
Rondelle
round cuts



Paysanne
 $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}$ inch



Lozenge
 $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{8}$ inch



Fermière
irregular slice



Chiffonade
thin, long strips

Other Common Kitchen Tools and Equipment

1. **Kitchen Stove** – is the workhorse of the kitchen, the one equipment that can do most of the cooking that needs to be done. Even though other kitchen equipment can do some of its functions (e.g., steamers, pressure cookers, and microwave ovens), the kitchen stove remains the most widely used cooking equipment.



2. **Oven** – is a cooking equipment that has an enclosed chamber where food is heated by means of hot air.

- **Conventional ovens** cook food by heating air in its enclosed space.
- **Convection ovens** have fans that help circulate the heat all throughout the enclosed space. Because of the added feature of fans, convection ovens cook food more quickly than conventional ovens.
- Newer models of ovens heat food by means of microwaves (e.g., **microwave oven**) or infrared radiation (e.g., **broiler** or **salamander**).
- A **range** is a cooking equipment that has both a stove and an oven.



3. **Food Processors** – are kitchen equipment used to chop or puree raw or cooked foods.

- **Blender** – consists of a base with a motor and a tall container with a blade. It is generally used to mix liquids or blend drinks like milkshakes and smoothies.
- **Immersion blender** – a handheld blender. This blender is especially useful when puréeing soups and sauces. You can process the soup or sauce directly in the pot as there is no need to transfer the hot liquid.



4. **Cold Food Storage Equipment** – examples of these are refrigerators and freezers. Keeping food cold using these equipment prevents spoilage and bacterial growth.



5. **Pots and Pans** – good quality pots and pans helps in cooking food evenly.

- **Stockpot** – a large pot with straight sides, a flat bottom and two handles on the sides. It is generally used to simmer large amounts of liquids such as stocks and broths.
- **Saucepot** – a medium-sized pot similar to the stockpot. Its medium depth makes stirring soups and sauces easier.
- **Saucepan** – a pan similar to the saucepot but has only one long handle. Its sides can be straight or slanted.
- **Sauté pan** – a shallow pan with one handle and a wide surface area. It is used for sautéing, frying, and browning of meats, fish, and vegetables.
 - A slope – sided sauté pan is also called a **santeuse**. The sloping sides of the pan is ideal for tossing and flipping food items without the use of a spatula.
 - A straight – sided sauté pan is also called a **sautoir**. Its base is heavier which is helpful when quickly reducing sauces and other liquids.
- **Double boiler** – consists of two pots. The lower pot holds the boiling water. The upper pot holds the food that needs to be cooked gently and cannot be heated directly. The double boiler is used for delicate tasks such as melting chocolate.
- **Sheet pan, bake pan and roasting pan** – are rectangular pans used for baking and roasting. Their sizes vary.
- **Stainless-steel bowls** – are bowls with round bottoms. They are used for mixing and are available in different sizes.



Stockpot



Saucepot



Bake pan



Saucepan



Sauté pan



Stainless-steel bowl

6. **Measuring Devices** – tools used to measure or portion ingredients.

- **Scales** – measure the weight of ingredients. Traditional scales are spring-operated while newer digital scales are electronically operated.
- **Volume measures** – used to measure liquids. They look like pitchers and have lips so that the ingredient can easily be poured. The sides are usually marked in cups and fractions of a cup to indicate the volume of the ingredient being measured.
- **Measuring cups** – can be used to measure dry and liquid ingredients. They come in 1 cup, 1/2, 1/3 and 1/4 cups.
- **Measuring spoons** – used to measure small volumes such as herbs, spices, and other seasonings. They come in 1 tablespoon, 1 teaspoon, 1/2 teaspoon and 1/4 teaspoon.
- **Thermometers** – used to measure temperature.
 - **Oven thermometers** – used to measure the temperature inside an oven.
 - **Meat thermometers** – used to measure the internal temperature of cooking meats.
 - **Fat thermometers and candy thermometers** – used to measure temperature of frying fats and sugar syrups.



Scale



Measuring cups



Measuring spoons



Meat thermometer



Volume measure

7. **Hand tools** – are small kitchen equipment.

- **Spoon** – a utensil with a bowl-shaped head and a long handle, used generally for mixing, stirring, and serving. Spoons can be solid, slotted or perforated. Slotted or perforated spoons are used if the solid components of a dish must be removed from the liquid.
- **Spatula** – a flat blade utensil with a long handle that can be used to mix, turn, or lift food items. Spatulas can be made of metal, plastic, or silicone.
 - **Offset spatula** – a spatula with a wide, bended blade designed to keep the hand away from hot surfaces. It can be used to turn and lift pancakes, eggs and meat products from grills and griddles.
 - **Rubber spatula** – a spatula with a wide, flexible blade used for mixing, blending and gently folding mixtures like batters and whipped cream. It can also be used to scrape bowls and pans.
 - **Straight spatula** – also called a palette knife. It is mostly used to spread icing on cakes.
 - **Sandwich spreader** – a short spatula designed for spreading sandwich spreads and fillings.
- **Skimmer** – a utensil with a long handle and a wide head with holes. It is used for skimming or taking out froths or impurities from liquids like broths. It can also be used to remove solid pieces from soups and stocks.
- **Tongs** – are pincer-shaped tools used to pick up and hold food items.
- **Strainer** – is a bowl-shaped tool made of mesh screen. The mesh screen can be fabricated using stainless steel, aluminum, nylon, or some similar material. The holes of a strainer vary from very fine to very coarse. It is used to strain food items like pasta, vegetables, and others.
- **Colanders** – are used to drain water from cooked food like pasta or washed food items like lettuce and other salad greens.
- **Grater** – a box-shaped tool used to grate or shred food items like cheese, vegetables, and citrus fruits.
- **Can openers** – are tools used for opening metal cans.
- **Wire whips** – also called whisks, they have wire loops that are joined in the handle. They are used for mixing, beating, whisking, or whipping liquids. Wire whips come in different shapes and sizes.
- **Melon ball scoop** – also known as ball cutter or parisienne knife. It is used to cut fruits and vegetables into small balls.



Skimmer



Tongs



Strainer



Grater



Can opener



Colander



Wire whip or Whisk



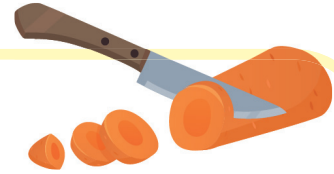
Summary

The chef's knife is one of the most essential tools in the kitchen. Learn to use it correctly and safely. Learn how to take care of it. Keeping your knife sharp is part of taking care of this tool. When your knife is sharp, you get the best use out of it. When your knife is sharp, you treat it with respect. You handle it with care. You store it properly. You do not leave it lying around.

Knowing how to execute proper cutting techniques is a prized skill in the professional kitchen. Being able to do it at home leads to so many advantages. First, it will allow you to work faster in the kitchen, giving you more time to do other important tasks. Secondly, the dishes you will be preparing will look more appetizing, more Instagram-ready. Lastly, being competent on knife skills will make you more confident to learn new things in the kitchen. Hopefully this confidence will extend to learning other things that will improve the quality of your life.



Exercises



Exercise 1

How much have you learned?

Basic Cuts and Shapes

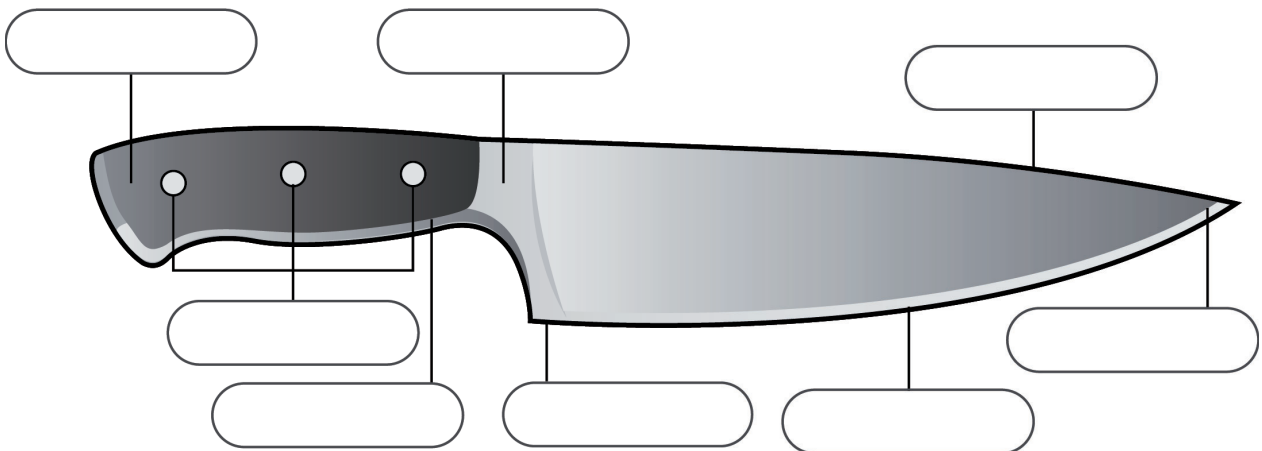
Instructions: Match Column A with Column B. Write the LETTER of the correct answer on the space provided before each number.

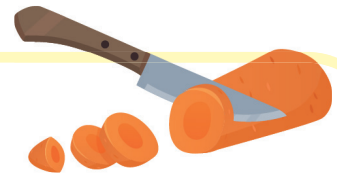
Column A	Column B
_____ 1. to cut food items coarsely	A. paysanne
_____ 2. a stick cut with a $\frac{1}{4} \times \frac{1}{4} \times 2-2\frac{1}{2}$ inches dimension	B. julienne
_____ 3. cutting leaves into thin, long strips	C. chiffonade
_____ 4. round cuts	D. large dice
_____ 5. a cube cut with a $\frac{1}{8} \times \frac{1}{8} \times \frac{1}{8}$ -inch dimension	E. tourné
_____ 6. a matchstick cut with a $\frac{1}{8} \times \frac{1}{8} \times 1-2$ inches dimension	F. brunoise
_____ 7. diamond-shaped cut	G. rondelle
_____ 8. thin, square cuts	H. concasser
_____ 9. a cube cut with a $\frac{3}{4} \times \frac{3}{4} \times \frac{3}{4}$ inch dimension	I. bâtonnet
_____ 10. oval shape with seven sides	J. lozenge

Exercise 2

The Anatomy of a Chef's Knife.

Instructions: Identify the parts of a Chef's Knife. Write your answer inside the boxes provided.





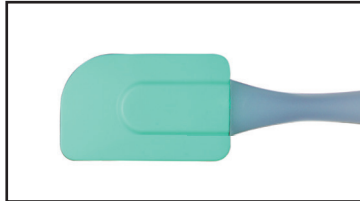
Common Kitchen Tools and Equipment.

Instructions: Identify the following. Write your answer in the space provided under each picture.

tongs	whisk	spoon	rubber spatula	strainer
measuring spoons	scales	grater	stockpot	blender



1. _____



2. _____



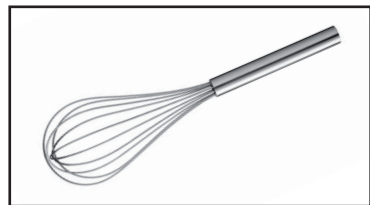
3. _____



4. _____



5. _____



6. _____



7. _____



8. _____

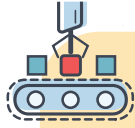


9. _____



10. _____





Lesson Output

Individual Work – Make a presentation of the cutting techniques and basic cuts and shapes you have learned in this lesson. Use any word processing, spreadsheet, or presentation tool (or combination of 2 productivity tools).

Rubrics for Cutting Techniques/Basic Cuts and Shapes

Criteria	5	4	3	2	1	Points
Content/ Functionality	The student is able to completely identify and describe ALL the cutting techniques and basic cuts and shapes based on the lesson.	The student is able to identify MOST of the cutting techniques and basic cuts and shapes. Descriptions made for each one is satisfactory.	The student is able to identify MOST of the cutting techniques and basic cuts and shapes but some descriptions are not complete.	The student is able to identify SOME of the cutting techniques and basic cuts and shapes. Some descriptions are not complete.	The student is able to identify SOME of the cutting techniques and basic cuts and shapes but some descriptions are incorrect.	
Creativity	The work shows creativity of the student and the design has high visual appeal and is original. The student used correct visuals for each technique, cut or shaped being described. One or two of these visual elements were from existing sources, such as that from other people or the Internet.	The work shows creativity of the student and the design of the project is original. Correct visuals were used. Three or more of these visual elements were from existing sources, such as that from other people or the Internet.	The project's requirements are met. Correct visuals were used. Three or more of the visual elements and the design of the project were from existing sources, such as that from other people or the Internet but the student made some design changes.	The work lacks creativity. The design and visual elements used were all from existing sources. The student did not change or add to the overall design.	The work lacks creativity and shows minimal to no effort in design. The student directly copied (plagiarized) their project from another source.	
Promptness	The student was able to submit the output before the given deadline..	The student was able to submit the output on time.	The student was late in submitting the output but was able to do so within the same day.	The student submitted the output 1 day after the deadline.	The student submitted the output more than 2 days of the deadline.	

Total

LESSON 5

Basic Cooking Principles



Learning Outcomes

At the end of the lesson, you are expected to be able to:

1. Describe how heat is transferred to food.
2. Enumerate moist-heat and dry-heat cooking methods.
3. List the commonly used seasoning and flavoring ingredients.

Learning to cook is an essential life skill. It is a skill that will benefit you for the rest of your life. It will enable you to choose a healthy way of eating. It can teach you resourcefulness. It can give you the means to connect with people.

Like any other skill, being good at cooking takes time. When we are trying to learn how to play a new sport or a musical instrument, it is reasonable to expect that we are not immediately excellent in it. We need to practice. We need to put in the effort. We need to understand the principles behind playing an instrument or a sport.

The same goes with cooking. Understanding the principles and applying them, not just one time but on a regular basis, will improve our skills in cooking.



Explore

The Spice Rack. Identify the following seasonings and flavorings. Write your answer on the space provided under each picture.



1. _____



2. _____



3. _____



4. _____



5. _____



6. _____



Engage

YouTube Video "The science of spiciness - Rose Eveleth" by TED-Ed



https://www.youtube.com/watch?v=qD0_yWgifDM



Research

Take a look at your pantry or the cupboard in your kitchen. What seasoning and flavoring ingredients do you have? How do you use these seasonings and flavorings? What dishes do you usually cook them with? Write a 1-page report.



Explain

The Food and Heat Connection

Cooking is an age-old activity and is unique to humans. Scientific evidence suggests that humans have been cooking food as early as 500,000 years ago. Cooking has been a part of our daily lives since man discovered fire and has learned to use and manipulate it.

Cooking is done for a variety of reasons such as:

- **make foods chewable or ingestible**
Cooking can soften tough cuts of meats and break down the coarse fiber of some vegetables.
- **change food's appearance**
Cooking can make food look more appetizing.
- **enhance the flavor of foods**
Cooking can greatly improve food's taste. Browning a piece of meat by searing makes it more flavorful compared to just boiling it.
- **provide variety in the diet**
The same kind of food can be cooked in different ways by using different methods of cooking. Different cooking methods impart different flavors and texture in foods.
- **kill harmful organisms in foods**
Cooking, at the right temperatures and with proper handling, makes food safe to eat.
- **preserve food**
Several cooking techniques can lengthen the shelf life of food.

The Effects of Heat on Foods

Heat is a form of energy that can be transferred from one object to another. When we apply heat to foods or liquids, their molecules will start to vibrate, move faster and then bounce off each other more frequently. As they collide, the fast-moving molecules will come into contact with the slower ones, transferring heat energy. This activity warms and cooks our food.

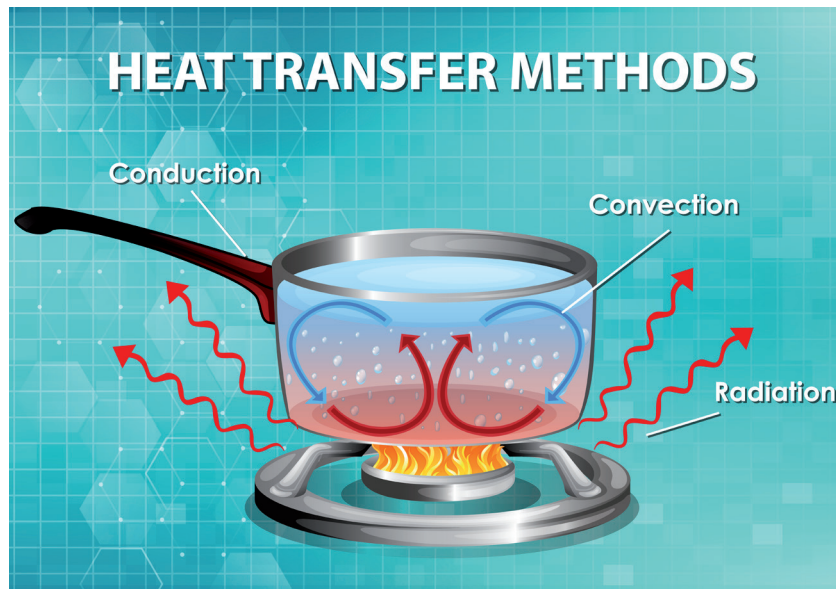
Applying heat can alter the structure of food. For example, egg turns solid or **coagulates** when we cook it. The protein chains in an uncooked egg normally form tight coils. These coils start to relax when heated. The relaxed or **denatured** protein coils become attracted to each other, form bonds and then become firm. This is called the process of **coagulation**. The protein molecules in the egg break apart and form a different structure after heat is applied. Bringing about these molecular changes is called cooking.

Cooking means applying heat to food in order to bring about desired changes in the food. Foods are made up of carbohydrates, proteins, and fats. Other compounds such as vitamins and minerals, pigments and flavors are also present in food. In order to improve one's skill in cooking, one must have a good understanding of how these components in foods react to heat. These are some of the physical or chemical reactions of food components when heat is applied:

- **Caramelization** – is the browning of sugars. Heating sugar breaks it down to form new compounds. This results to a sweet, nutty flavor in food. An example of caramelization is the golden-brown color of bread crusts and biscuits.
- **Gelatinization** – happens when starch absorbs water and swells. This is an important process in the thickening of sauces, pasta preparations and baking breads and pastries.
- **Maillard Reaction** – is the browning of meats. Meats contain small amounts of carbohydrates. The protein chains in meats react with the carbohydrate molecules when meats are heated at a high temperature (about 310°F or 154°C). Through this complex chemical reaction, meats turn brown and develop richer flavors.
- **Smoke Point** – the temperature at which fats or oils get hot enough that they start to smoke. The smoke points of different fats or oils vary. Choosing the kind of fat or oil with a high smoke point is an important concern when deep-frying.
- **Evaporation** – the process of water turning to gas at any temperature. Evaporation leads to the drying of foods. **Reduction**, a common term in cooking, happens through evaporation. When the cooking liquid of a dish evaporates, the remaining sauce thickens and concentrates in flavor.

Heat Transfer

Heat must be transferred from a heat source to the food and through the food in order to cook it. Understanding how heat is transferred from a heat source (e.g., a gas or electric stove) to the food we are cooking, will help us control the heat and consequently the cooking process.



Heat is transferred through the following means:

- **Conduction** – happens in two ways.
 1. **Heat is transferred between objects by means of direct contact.**
For example, when we cook using a stove, the burners of the stove will conduct heat to the bottom of the pot, the pot will then conduct heat to the food or liquid inside the pot.
 2. **Heat moves from one part of an object to another part of the same object.**
For example, the handle of a pan will also get hot when the same pan is on top of a burning or heated stove. (Note: stainless steel is a poor conductor of heat. Thus, cooking pans with stainless steel handles stay cool for a longer period of time).
- **Convection** – heat transfer happens through the movement of air, steam, or liquid. There are two types of convection:
 1. **Natural** – warm molecules rise while cool molecules sink creating a natural circulation that distributes heat.
For example, when boiling water, the stove conducts heat to the pot. The bottom of the pot conducts heat to the water molecules touching the interior of the pot. As these water molecules heat up, the process of convection makes them move away from the interior of the pot. They are then replaced by cooler water molecules. This circulating current continues, distributing heat all throughout the water being boiled.
 2. **Mechanical** – heat transfer happens using fans such as in convection ovens. Stirring is also a form of mechanical convection.
- **Radiation** – occurs when waves from a heat source turn into heat energy when they strike and penetrate the food being cooked. Two kinds of radiation are used in cooking:
 1. **Infrared** – radiant heat from an electric or ceramic heating element cooks the food. Examples of objects or equipment that generate infrared radiation are burning charcoals when grilling, oven toaster, broiler, and salamander grill.

2. **Microwave** – the radiation created by the oven agitates the water molecules of the food. This agitation creates friction which then transfer heat and cook the food. It is important to note that microwave radiation only works on water molecules so a totally waterless material will not heat up. A plate inside a microwave oven gets hot because the hot food conducts heat to the plate.

Cooking Methods

There are two types of cooking methods: moist heat and dry heat.

Moist-heat methods are cooking methods that conduct heat to the food by using water or cooking liquids like stock or sauce, or by steam.

Dry-heat methods are cooking methods that conduct heat to the food without the use of moisture. Instead, heat is conducted through hot air, hot metal, or radiation. Dry-heat methods are further divided into two kinds: with fat and without fat.

Moist-Heat Methods

Poaching

To poach means to cook in a small amount of liquid at a temperature of about 71–82°C (160–180°F). The water or liquid should be hot but not bubbling. The poaching method is used to cook delicate foods such as eggs out of the shell and fish. These items and other similar ones might break apart or dry out easily using other cooking methods.

Lean and delicate white fish such as tilapia, sole, cod and halibut can be cooked using shallow poaching. The flavorful poaching liquid, called a **cuison**, can be reduced and used as a base for the sauce. This sauce is to be served with the fish.



Simmering

To simmer means to cook a food item in a gently bubbling liquid. The temperature when simmering falls at about 85–96°C (185–205°F), higher than the poaching temperatures but just below the boiling point of water. Most foods that are cooked in a liquid use the simmering method. Simmering concentrates the flavor of stocks, broths, and soups.



Boiling

To boil means to cook a food item by immersing it in a liquid that is very agitated and bubbling rapidly. Water typically boils at 100°C (212°F). Boiling is normally used to cook vegetables and starches. Its high temperature hardens the proteins of meats, fish, and eggs. The water agitation breaks up delicate foods. Cooking at a full, rolling boil is important when cooking pasta.



Poaching, simmering, and boiling are methods that use water or a seasoned or flavored liquid to cook food. They are basically the same cooking process in different stages. The temperature of the cooking liquid indicates the method being used.

It is important to note that adding food items or ingredients to the cooking liquid will lower the liquid's temperature. Therefore, when boiling or simmering, bring the water or cooking liquid to a full boil first. Then adjust the heat to maintain the right temperature.

Blanching

To blanch means to cook a food item partially within a short period of time. Water is used as a cooking liquid when blanching. There are two ways to blanch in water:

1. Put the food items in cold water, bring the water to a boil and simmer briefly. Then take out the food items and plunge them in cold water.

This technique will take out the blood and other impurities from meats and bones.

2. Put the food items into rapidly boiling water while maintaining the boiling temperature. Then take out the food items and plunge them in cold water.

This technique will brighten the color of the items blanched. It will loosen the skins of tomatoes and similar items, so they can be peeled off easily. It will also destroy the toxic enzymes in vegetables.



Fats or oils can also be used, as in the case of blanching French fries in deep fat.

Steaming

To steam means to cook a food item by subjecting it directly to steam. Steam has the temperature of 100°C (212°F), the same as that of boiling water. But it has much more heat than boiling water, so it cooks food very quickly. Steaming is done using a kitchen appliance called a food steamer or steam cooker. It can also be done using a rack or a steamer basket held above boiling water inside a pot. The food items to be steamed are put on top of the rack or basket and the pot is then covered.

Cooking a food item in a tightly covered pan so it cooks in the steam formed by its own moisture is also steaming. This way of steaming is used when cooking food items **en papillote** which is French for “enveloped in paper”. Foil is also sometimes used. Cooked potatoes wrapped in foil called “baked potatoes” are actually steamed.

Steaming is considered a healthier way of cooking vegetables than boiling. Studies show that, compared to boiling, less nutrients are dissolved in the process of steaming.



Braising

To braise means to cook a food item covered in some amount of liquid after browning the food item first. The liquid is generally served as sauce to the braised item or items.

Braising is sometimes called a combination cooking method. That is, the food item (e.g., meat) is first browned using a dry cooking method, either searing or sautéing, and then finished by cooking with a liquid that partially covers the food. However, the browning step is more of a preliminary technique done to develop the color and flavor of the food item. Moist heat is what thoroughly cook the dish. Braising is especially suited for cooking tough cuts of meats. The slow cooking tenderizes the meat by breaking down the meat's connective tissues. Heat, time, and moisture help in dissolving the meat's collagen resulting in a thicker and flavorful dish.



Braising and stewing are sometimes treated as different cooking methods but the procedure for both braising and stewing are essentially the same:

1. brown the food item using a dry heat method, and;
2. finish cooking with a moist heat method.

The term **braising** is used if large pieces of food are being cooked. The term **stewing** is used if the food items are smaller or bite-size. (Take note that the term stewing can also be used to call cooking by simmering in some amount of liquid without the browning of food items).

Dry-Heat Methods Without Fat

Roasting and Baking

To roast and to bake means to cook by covering the food with hot, dry air, normally in an oven. The roasting temperature should be at least 150°C (about 300°F). Cooking on a spit by an open fire is also called roasting.

The term roasting is more often used for meats and poultry. The term baking, which is a more general term, is used for breads and pastries, vegetables, and fish. Except for breads and pastries, the terms roasting and baking can be used interchangeably since the procedure is basically the same.



When roasting in an oven, the food item is placed on a rack, inside a roasting pan. Placing the food item on a rack will ensure that the food will not simmer in its own juices. It will also ensure that air will circulate around it. The position of the food item may be changed from time to time to account for the uneven temperatures inside the oven. The juices collected in the roasting pan may be used as a base for the sauce or gravy of the item being roasted.

Barbecuing

To barbecue means to cook a food item using dry heat from the burning of hardwood or coals. Barbecuing simply means that it is a roasting or grilling cooking method that calls for a wood fire. This method is usually done outdoors.



Searing

To sear means to cook a food item at a very high temperature until a brown crusted surface forms. The browning, which happens through the Maillard Reaction, helps develop the flavor and color of the food. Searing can be a preliminary technique for braising. It is important to dry the food item thoroughly before searing it. Wet foods will not sear, thus it will not develop the desired brown crust.



Contrary to common belief, searing does not “seal in the juices” of meats. In fact, due to the very high temperatures the meat is exposed to, more cells are destroyed releasing more liquid.

Broiling

To broil means to cook a food item with very high radiant heat (often exceeding 260°C or 500°F) coming from above. Broiling is done on broilers, but they are sometimes called overhead broilers so as not to confuse them with grills. The food item to be broiled is placed on the grate beneath the heat source. Food is turned over once to cook both sides. This cooking method is best suited for tender meats, poultry, and fish.

A low-intensity broiler called a salamander can be used to broil small quantities of food. It is normally used for browning, toasting, or glazing the top of small items right before serving them.

Grilling

Grilling is done on a grill, an open wire grid often called a gridiron, placed over a heat source. The heat source can be an electric or a gas-heated element, or charcoals. To manage the temperature, grilled food items are moved from the hotter parts to the cooler parts of the grill. It is important to turn the food to get the desired grill marks.



Griddling

Griddling is done on a griddle, a solid cooking surface. Cooking with a small amount of fat is optional. Pancakes and eggs can be cooked on a griddle.



Pan-Broiling

To pan-broil means to cook food similar to griddling but with the use of a sauté pan or skillet. Fats that collect on the pan must be removed or the cooking method will be more like pan-frying. The pan must not be covered.



Dry-Heat Methods Using Fat

Sautéing

To sauté means to cook the food items quickly in a small amount of fat. The term comes from the French word “sauter” which means “to jump”. It describes how the pieces of food move when tossed in a sauté pan.

It is important to start cooking at high heat when sautéing. This will prevent the food from simmering in its own juices. Do not overcrowd the sauté pan. Doing so will lower the temperature of the pan causing the food to again simmer in its own juices. **Deglazing** is usually done after sautéing. Liquid, which can be stock or wine, is swirled on the sauté pan to dissolve the cooked particles of food stuck on the bottom of the pan. This liquid can form part of the sauce to be served with the sautéed food items.



Stir-frying is another form of sautéing. The difference is when we sauté, we flip the pan. In stir-frying, the pan is stationary, and the food items are tossed or stirred using a spatula or another similar tool. This Chinese technique is widely used for cooking vegetables. A **wok**, which is a round-bottomed pan, is traditionally used to stir-fry, although a regular sauté pan will do.

Pan-Frying

To pan-fry means to cook the food items in a moderate amount of fat. Pan-frying is done over moderate heat, and the cooking time is longer than that of sautéing. It is used for larger pieces of food items such as chops or chicken pieces. The food items are usually turned at least once to ensure even cooking.

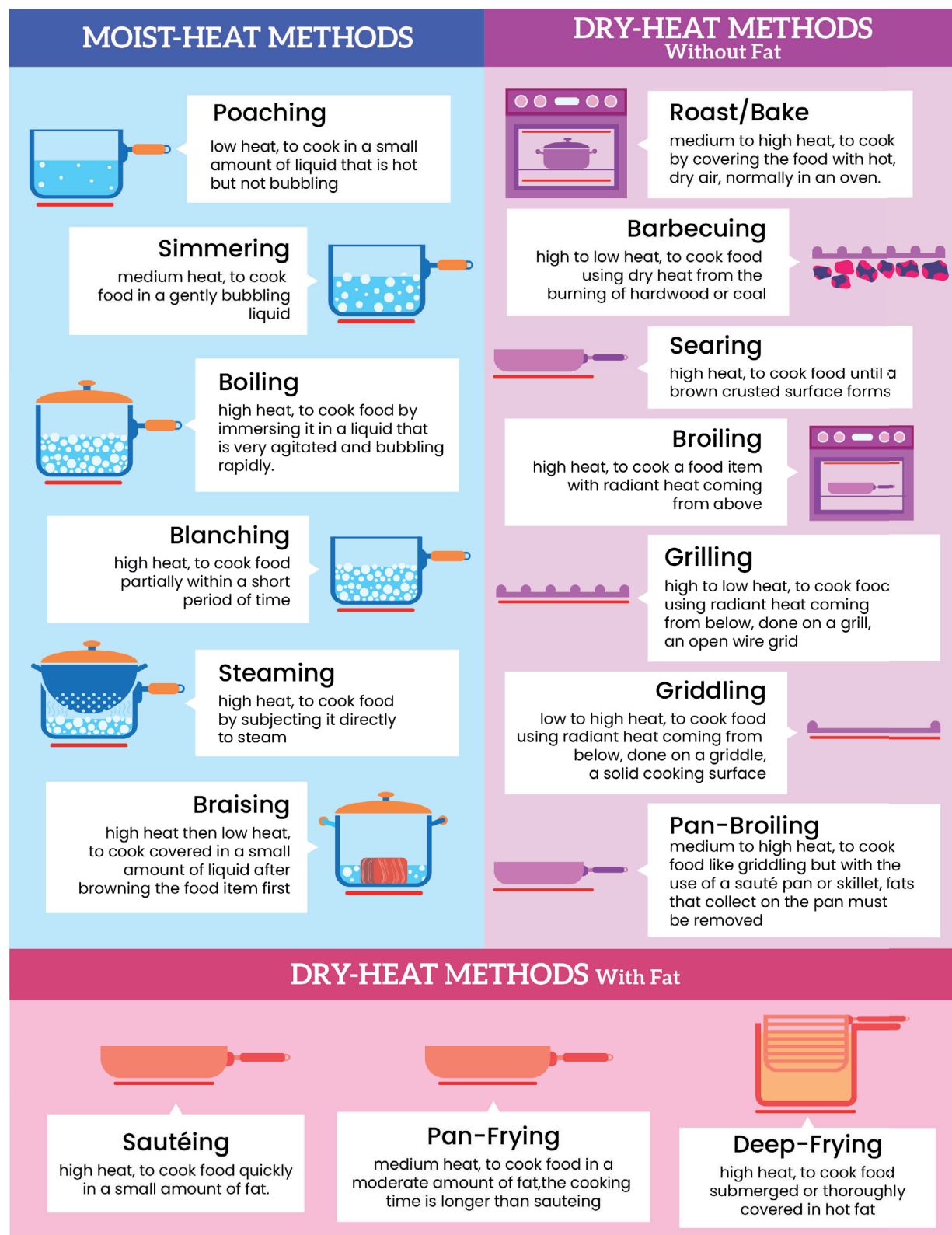


Deep-Frying

To deep-fry means to cook the food items submerged or thoroughly covered in hot fat. Temperatures for deep-frying can be between 175–190°C (350–375°F). Deep-frying at lower temperatures can result in a very greasy fried product. It is important to use fats or oils with a high smoke point. As much as possible, do not fry mild-flavored foods together with strong-flavored ones. You do not want your French fries tasting like fried fish. Also, discard old fats and oils. Old fats and oils degrade in quality resulting in undesirable brownness and off-flavors in deep-fried food items.



Summary of Cooking Methods



Molecular Gastronomy

The term “molecular gastronomy” was created by Oxford physicist Nicholas Kurti and French chemist Hervé This. The term pertains to the approach used to study the science behind traditional cooking methods. It is also a style of cooking that makes use of technology to find new ways of presenting familiar foods to unfamiliar or nonstandard forms. Examples include: the use of liquid nitrogen for flash freezing, spherification which is a process of creating squishy spheres of liquid that look like roe, edible paper using soybeans or potato starch, and unexpected food pairings.

The term molecular gastronomy is associated with new styles of cooking like experimental cuisine, avant-garde cuisine, kitchen science, modernist cuisine, among others.

Molecular gastronomy is a vast topic and there are opposing opinions of what it is and what it is not. Embracing new technologies to advance the science and art of cooking is commendable. But ultimately, the one who is cooking must trust his or her judgment and skill to produce quality food on the table.

Flavor Building

There are times on very busy days when we eat just to fill our stomachs so we do not feel hungry. But most of the time, we want to sit back and enjoy our food. When we eat to enjoy, we take in the qualities of the food:

- Appearance (Does it look good?)
- Aroma (Does it smell good?)
- Taste (Does it taste good?)
- Mouthfeel (How does the food feel in your mouth? Is the texture good?)
- Temperature (Is the food at the right serving temperature?)

An appetizing food will stimulate the senses. Our senses of sight, smell, taste, touch, even hearing will all contribute to our enjoyment of food.

The human tongue has about 2,000 to 8,000 tastebuds on it. These tastebuds have taste receptors cells or gustatory cells that perceive the **basic taste or flavor of foods** namely: **sweet, sour, salty, bitter, and savory (also known as umami)**. The taste receptor cells send information to the brain ranging from “I don’t like this”, “This is just ok” to “I can eat this every day for the rest of my life”.

When we talk of flavor, we actually mean a combination of taste and aroma. Our sense of smell plays a great part in how we taste food. When food smells good, we tend to appreciate more how tasteful it is. This is why when our sense of smell is impaired (like when we have a cold), food tastes bland or dull.

How Do We Build Flavor?

Building flavor can be likened to painting. When we paint, we put layers and layers of colors on a canvass. When these colors blend well or contrast in a way that they still work together perfectly, then you have a great piece of art.

Cooking is much the same way. A well-cooked dish is a harmony of flavors.

The flavors of a dish can be divided into:

Primary flavors – the flavor of the main ingredients and,

Secondary flavors – the flavors of the other ingredients in the dish that enhance the flavor of the main ingredients

A dish takes on a distinct **flavor profile** when the primary flavors and secondary flavors combine well to create a balance of taste and aroma.

Seasoning and flavoring are important parts of the cooking process. **Seasoning** means to bring out the natural flavors of a food without changing its flavor. **Flavoring** means adding a new flavor which results in the changing of the original flavor of the food.

There are many seasoning and flavoring ingredients. Salt is the most important seasoning. Herbs and spices are used to flavor dishes. **Herbs** are the leaves, flowers or stems of plants that have aromatic properties. **Spices** are the seeds, fruits, bark and roots of plants and trees. Herbs and spices are used not only to flavor and garnish dishes. They can also be used to make medicines, cosmetics, and fragrances. Spices and herbs are available in several market forms. They can be fresh, whole dried or pre-ground dried.

Common Seasoning and Flavoring Ingredients

1. **Salt** – the most important seasoning ingredient. Seasoning with salt at the early stages of cooking gives it enough time to penetrate and disperse flavor all throughout the dish. Be careful though when adding salt. It is easier to add more if needed than putting too much and making the dish very salty.
2. **Pepper** – also known as peppercorns. They come in black, white, and green forms. Pepper adds a sensation of warmth in the mouth that opens the palate.
3. **Onions, garlic, and other aromatic vegetables** – contribute rich flavor and aroma to dishes. Using fresh aromatics is always preferable to using dried ones. Fresh aromatics, especially onions and garlic, are usually available all year round.
4. **Lemon or calamansi juice** – perks up a dish. They create a nice balance with fats and creams.
5. **Wine, whisky, beer, and other alcoholic beverages** – used to flavor soups, sauces, and main dishes. Some wines require cooking or reduction to bring out the desired flavors.

6. Herbs and spices

- a) **Basil** – It is an herb widely used in cuisines all over the world. Its leaves have a strong, sweet smell. The leaves are generally added at the last stage of cooking. Basil is the main ingredient in **pesto**, an Italian sauce consisting of crushed garlic, pine nuts, coarse salt, and a hard cheese like Parmigiano-Reggiano – all blended in olive oil.



- b) **Oregano** – the leaves are aromatic and have a warm and slightly bitter taste. It is known as the “pizza herb” and is very popular in Italian cuisine. It works well with tomato dishes. Dried oregano leaves can be more flavorful than fresh ones.
- c) **Rosemary** – the needle-like, light green leaves have a bitter slightly sour taste. Its aroma complements most cooked foods. Rosemary is commonly used in stuffing and roast meats.
- d) **Thyme** – has tiny, brownish-green leaves. It is a common component of **bouquet garni**, a bundle of different herbs used to flavor stocks, soups, and stews.
- e) **Bay leaves** – are stiff, dark green, oval leaves. Because they are highly aromatic, bay leaves are widely used in making stocks, sauces, stewed and braised meats.
- f) **Parsley** – curly leaf or flat leaf, the leaves have a delicate and sweet flavor. Parsley is often used as a garnish.
- g) **Cilantro** – the plant that produces coriander seeds, the leaves look like flat parsley. It is widely used in Asian cuisine.
- h) **Mint** – the leaves are aromatic, have a sweet flavor and a cool aftertaste. Spearmint and peppermint are varieties of mint. It is popularly used to flavor teas, fruit beverages, candies, and ice cream.
- i) **Cayenne or Red Pepper** – the ground form of hot red chile. Small amounts can give a pleasant spiciness to soups and sauces.
- j) **Paprika** – the ground form of sweet red chile. The Spanish Paprika variety is mild in flavor but bright in color. Paprika is used to season and color rice, stews, and soups.
- k) **Cinnamon** – aromatic bark of the cinnamon or cassia tree used as a flavoring ingredient and a condiment. It is widely used in cooking savory and sweet foods. A mixture of cinnamon and sugar are popularly used to flavor breads, pastries, and cereals.

An Example of Flavor Building

As an example of flavor building, let us look at the ingredients of a very common Filipino dish: Chicken Tinola.

Chicken Tinola

1 whole chicken, cut into serving pieces
1 small piece of green papaya or chayote, cut into wedges
1 tablespoon of garlic, minced
1 medium-sized onion, diced
1 thumb-sized ginger, cut into strips
1 cup malunggay leaves or chili leaves
Salt or Fish sauce and ground black pepper, to taste

Chicken Tinola should primarily taste of chicken since it is the main ingredient of the dish. The supporting flavors of onion, ginger and garlic serve to enhance the flavor of the chicken. Salt or fish sauce and ground black pepper are used to season the dish. The malunggay or chili leaves add depth of flavor while the green papaya or chayote wedges provide texture that complements the chicken.

If the first thing that we taste is ginger, then too much of it has been used in the cooking. The soup or broth of Chicken Tinola should have a hint of ginger, not an overpowering taste of ginger. Browning the chicken pieces before adding any liquid will enhance the flavor of the chicken. Letting the soup or broth simmer will concentrate the flavors and produce a very tasty dish. Adding the green papaya, chayote wedges, malunggay or chili leaves at the end of the cooking process is important, as these will turn mushy if simmered for too long.

A Guide in Building Flavor

- **Choose quality ingredients.** Having good ingredients helps in ensuring the good flavor of the dish. Adding seasonings and flavorings at the end of the cooking process will do little to help improve a dish that has substandard ingredients.
- **There should be a balance of flavors.** A dish that is perfectly balanced will taste delicious. The ingredients should complement or contrast well with each other (e.g., adding acid such as calamansi juice when baking chicken will brighten the flavor of the meat). The flavors of the secondary ingredients should support the flavor of the main ingredient and not overpower it. Every ingredient that you add to a dish should serve a purpose.
- **As much as possible, make the individual ingredients of your dish flavorful.** Remember Maillard Reaction and caramelization? Browning intensifies the flavor of ingredients. Searing meat or roasting vegetables before incorporating them into the dish will enhance its flavor.
- **Season properly.** Season with salt and pepper early in the cooking process. Continuously taste the food you are cooking. This is the only way you can be sure that the taste is right or if the seasoning needs to be adjusted. (Food Safety: To avoid cross-contamination, remember to use a tasting spoon that you do not dip again in the dish you are cooking).

- **Use good-quality spices and herbs.** A small amount of the appropriate herbs or spices will go a long way in enhancing the flavor of the dish.
- **Consider food pairings.** When cooking a dish, consider the other dishes or food items that you will serve the dish with. Think of Chicken Tinola in our flavor building example. What are the dishes or food that will pair well with it? Steamed white rice? Fried fish? When cooking a dish, you do not only plan for the dish itself but also for the other dishes you can pair it with.
- **Patience.** Good things come to those who wait. This is especially true in cooking. Some dishes cannot be rushed. You have to give them time to cook properly. You have to allow time for braised meat to tenderize and concentrate in flavor. Marinating for at least thirty minutes can tenderize, flavor, and prevent dryness in meat. Browning meats or caramelizing vegetables before putting them in the dish is an additional step to the cooking process, but it is worth it. Sometimes the extra step spells the difference between a satisfactory meal and an excellent one.



Summary

There are many cooking methods and maybe you have already used some of them. Boiling or frying an egg are some of the simple cooking methods that one can try doing to start building one's cooking skill.

Understanding how heat is transferred and learning to control heat are important in cooking. Applying too little heat may result in a dish lacking in flavor. Applying too much heat can make a food product overcooked, dry, burnt, or mushy.

One should have a good understanding of the different cooking methods and how ingredients react to each method. The key is pairing the cooking method best suited to the food you want to cook. As we have learned, some meats are tough because they have high connective tissues. These connective tissues break down if you cook them slowly with moisture or liquid. Therefore, braising is one of the best methods to use on tough meats. In addition, choosing the appropriate seasoning and flavoring ingredients completes the dish.

Cooking is something to be enjoyed. Understanding these principles will make you an insightful cook. Performing cooking tasks repeatedly can only make you an excellent one.



Exercises

Exercise 1

How much have you learned?

Instructions: Identify the following cooking methods.

poaching	deep-frying	barbecuing	blanching	braising
searing	grilling	sautéing	baking	pan-broiling

- _____ 1. To cook a food item on a grill using radiant heat coming from below.
- _____ 2. To cook a food item partially within a short period of time.
- _____ 3. To cook in a small amount of liquid that is hot but not bubbling.
- _____ 4. To cook the food items quickly with high heat in a small amount of fat.
- _____ 5. To cook food similar to griddling but with the use of a sauté pan or skillet.
- _____ 6. To cook a food item using dry heat from the burning of hardwood or coals.
- _____ 7. To cook a food item covered in some amount of liquid after browning the food item first.
- _____ 8. To cook a food item at a very high temperature until a brown crusted surface forms.
- _____ 9. To cook by covering the food with hot, dry air, normally in an oven.
- _____ 10. To cook the food items submerged in hot fat.

Exercise 2

Instruction: Describe the following:

1. Describe how heat is transferred through conduction (2 points)





2. Describe how heat is transferred through convection (2 points)

3. Describe how heat is transferred through radiation (2 points)

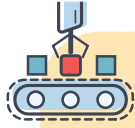
4. Describe smoke point

5. Describe Maillard Reaction

6. Describe caramelization

7. Describe gelatinization





Lesson Output

Individual work – Make a presentation of the commonly used seasoning and flavoring ingredients. Use any word processing, spreadsheet, or presentation tool (or combination of 2 productivity tools).

Rubrics for Commonly Used Seasoning and Flavoring Ingredients

Criteria	5	4	3	2	1	Points
Content/ Functionality	The student is able to list or identify at least 15 of the commonly used seasoning and flavoring ingredients. A proper description of each ingredient is also given.	The student is able to list or identify less than 15 but at least 12 of the commonly used seasoning and flavoring ingredients. A proper description of each ingredient is also given.	The student is able to list or identify less than 12 but at least 10 of the commonly used seasoning and flavoring ingredients. A proper description of each ingredient is also given.	The student is able to list or identify at least 10 of the commonly used seasoning and flavoring ingredients. Some of the ingredients (2 or 3) were not described correctly.	The student is able to list or identify less than 10 of the commonly used seasoning and flavoring ingredients. Some of the ingredients (2 or 3) were not described correctly.	
Creativity	The work shows creativity of the student and the design has high visual appeal.	The work shows creativity of the student. The design took one or two elements from several existing sources, such as that from other people or the Internet, and built on these.	The project's requirements are met. The design took 3 or more elements from several existing sources, such as that from other people or the Internet, and built on these.	The work lacks creativity and the design took most of its elements from several existing sources, such as that from other people or the Internet and didn't change or add to them.	The work lacks creativity and shows minimal to no effort in design. The student directly copied (plagiarized) their project from another source, such as from a person or from the Internet.	
Promptness	The student was able to submit the output before the given deadline.	The student was able to submit the output on time.	The student was late in submitting the output but was able to do so within the same day.	The student submitted the output 1 day after the deadline.	The student submitted the output more than 2 days of the deadline.	

Total

LESSON 6

Stocks and Sauces



Learning Outcomes

At the end of the lesson, you are expected to be able to:

1. Identify different kinds of stocks.
2. Identify different kinds of sauces.
3. Learn the procedure for making Tomato Sauce

Stock-making and sauce-making are foundational skills in cooking. Learning how to make them will equip you to build flavor in the dishes you are preparing. When you make your own stocks and sauces, you can choose to use good quality food items. Stocks and sauces made from wholesome ingredients are not only tasty but also nourishing.



Engage

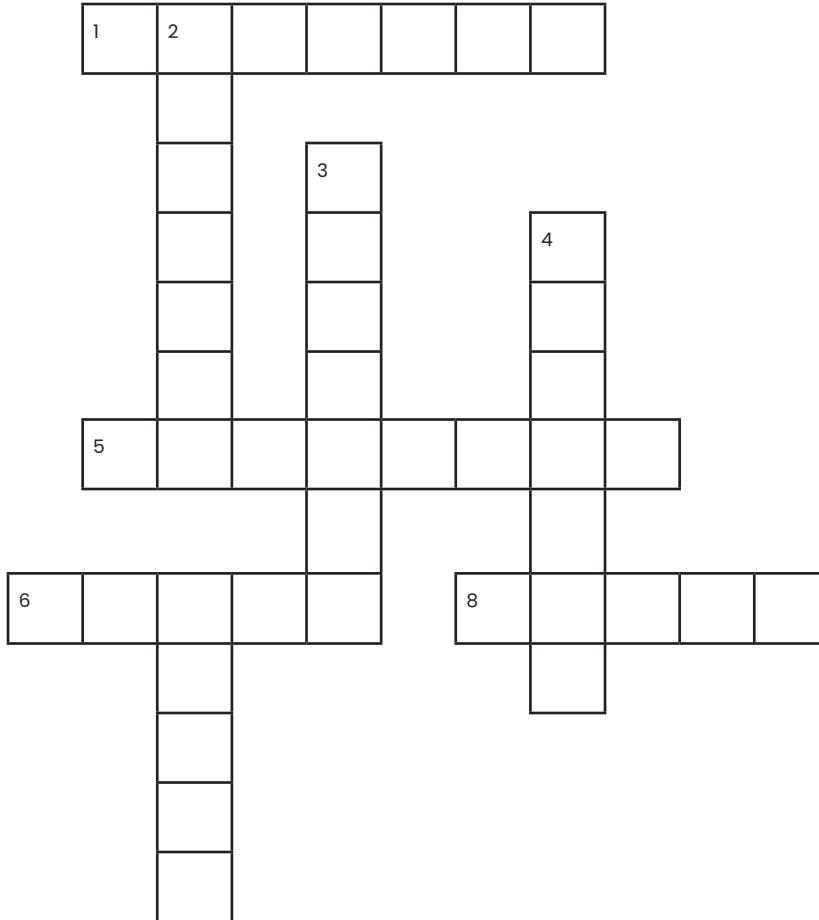
YouTube Video "Sauces | Basics with Babish" by Babish Culinary Universe



<https://www.youtube.com/watch?v=Upqp21Dm5vg>



Crossword Puzzle: What's That Sauce?



CLUES:

ACROSS:

1. Filipino condiment made from fermented fish or shrimp
5. A liquid condiment mainly made from soybeans
6. An Italian sauce made from basil
8. A popular Indian mixture of herbs and spices

DOWN:

2. White pasta sauce made with cream, cheese, and parsley
3. An extremely hot sauce
4. A red, sweet-tangy condiment that you love to dip your fries with
7. A Mexican mixture of chopped tomatoes, onions, and other herbs



Research

Research on different kinds of sauces. Choose 1 particular sauce. What country did it originate from? How do you make the sauce? What kinds of food can you pair the sauce with? Write a 1-page report.



Explain

Stocks

A **stock** is a highly flavorful liquid derived from simmering the bones of beef, veal, chicken, and fish, with the addition of aromatic vegetables and other flavorings and seasonings. Simmering the bones for a long time allows for full extraction of flavors. The length of time for simmering the stock depends on the kind of bones used. Beef and veal bones are cooked or simmered for a longer time than chicken. Fish bones are simmered no more than an hour.

The French word for stock is *fond*. It means “base” or “foundation”. This is very appropriate given that stocks form the base of many sauces, stews, and soups. A well-made stock can greatly enhance the flavor of dishes.



Ingredients for Making Stocks

Stocks are made from the following ingredients:

1. **Bones** – are the primary ingredient of stocks aside from water. Bones of chicken, beef, veal, and fish are simmered to extract flavor. Simmering also helps to break down connective tissues or collagen. The breaking down of collagen is important when making stocks because this produces gelatin. Gelatin makes stocks thicken.
2. **Mirepoix** (*meer-pwaa*) – a mixture of aromatic vegetables used to flavor not only stocks but also sauces, soups, stews, and a wide array of dishes. Onion, carrot, and celery are typically used for mirepoix. The commonly used ratio for mirepoix is 50% onion, 25% carrot and 25% celery.



3. **Acids** – acids can help to break down connective tissues. This is why they are sometimes added when making stocks. Tomato products such as tomato paste are added to brown stock to help break down collagen as well as enhance its flavor. White wine is sometimes added to fish stock.
4. **Herbs and spices** – are used to flavor stocks.

A **sachet d'épices** (*sa-shay-day-peace*), also called a spice bag or simply sachet, is a mix of herbs and spices inside a cheesecloth bag tied with a string. The string is then fastened to the handle of the stockpot so it can easily be taken out at any time.



sachet d'épices

A **bouquet garni** is a bundle of aromatic ingredients and herbs tied with a string. A bouquet garni may include leeks, thyme, parsley, and bay leaf.

Oignon brûlé (*onion-broo-lay*) or "burnt onion" is an onion cut crosswise. The cut surface is then browned on a skillet.

Oignon piqué (*onion-pee-kay*) is a whole-peeled onion with a bay leaf pinned to it with a whole clove. Attaching the bay leaf and clove to the onion makes it easy to remove the three flavorings all at once. Onion pique is also used to flavor sauces and soups.



Oignon piqué

5. **Trimnings and other Scraps** – adding meat and vegetable trimmings to the stock you are simmering is a good way to utilize them. This lessens wastage in the kitchen. Just remember to **use clean and wholesome meat and vegetable trimmings**. The meat and vegetable trimmings should also complement the flavor of the stock you are making.

Kinds of Stocks

The kind of bones used in the making of a stock tells us what kind of stock it is.

1. **Chicken Stock** – is made from chicken bones.
2. **White Stock** – is made from beef or veal bones. Chicken bones can be added in small quantities.
3. **Brown Stock** – is made from beef or veal bones that are first browned in the oven.
4. **Fish Stock** – made from fish bones and trimmings. Lean white fish is normally used to make fish stock. A **fumet** (*fyoo-may*) is a flavorful fish stock that is made by adding white wine.
5. **Vegetable Stock** – can be made from a variety of vegetables. Vegetable stocks if used for vegetarian cooking are generally made without any animal products.



Fish Stock

Procedure for Making Stocks

To make 4 liters of Chicken stock you will need the following:

4 kilos	chicken bones
500g	mirepoix
6 liters	Water (add as needed)
1	sachet d'épices

- 1. Cut the bones into small pieces.**
 - Cutting the bones into small pieces, preferably 3-4 inches long, will expose more surface area. This will help in bringing out more flavors from the bones.
- 2. Wash the bones using cold water.**
 - Washing the bones will remove impurities that can make the stock cloudy.
 - Note: Do not wash bones if you are making brown stock. The moisture will inhibit the browning of the bones in the oven.
- 3. Put the bones in a stockpot and add enough cold water to fully submerged them.**
 - Always start with cold water when making stocks.
 - If you are making brown stock, you must first brown the bones before placing them in a stockpot for simmering. The following should be done:
 - If browning in the oven:
 - ◇ Put the bones in a roasting pan and brown them at 375°F or higher for at least an hour.
 - If browning in a pan or skillet over stovetop:
 - ◇ Heat a small amount of oil in a pan or skillet.
 - ◇ Brown the bones similar to the way you would sauté meat.
 - ◇ Be careful not to burn the bones or this will affect the taste of your stock.
 - Remove the browned bones from the pan and simmer in the stockpot.
 - If there is fat that remains in the pan, reserve it for later use. Deglaze the pan by adding water to dissolve the brown bits at the bottom of the pan. Add the deglazed liquid to the stockpot.
 - While simmering the bones in the stockpot, put the mirepoix in the roasting pan or skillet. Add the reserved fat. Mix well and then brown the mirepoix.
 - Add tomato paste or diced tomatoes in the mirepoix. Continue browning until the tomato paste or diced tomatoes darken in color.
 - Add the browned mirepoix and tomatoes in the stockpot.
- 4. Bring water to a boil, then simmer. Add the mirepoix and other flavorings.**
 - Do not let the water boil again once you start simmering.



- Make sure that the bones are always submerged in water throughout the simmering process. Bones exposed to the air will darken and then discolor the stock. Additionally, flavors will not be extracted from bones not submerged in water.
- Skim the scum that comes to the surface of the stock as often as needed. Skimming will prevent the stock from becoming cloudy.
- Simmer the stock according to these recommended length of time:
 - Beef bones – at least 8 hours
 - Veal bones – at least 6 hours
 - Chicken bones – 3 to 4 hours
 - Fish bones – 30 minutes to no more than an hour

5. **Strain the stock.**

- Strain the stock using a kitchen strainer or any similar tool.

6. **Let the stock cool down as quickly as possible.**

- Use the Proper Food Cooling Procedure we have learned in Lesson 1 so that the stock will not stay too long in the Food Danger Zone.

7. **Portion the stock in covered containers and store by refrigerating or freezing.**

- If properly refrigerated, stock will keep in 2 to 3 days. Frozen stock will keep for many months.

Sauces

A **sauce** is a flavorful liquid, thickened to the desired consistency, and is used to accent the flavor of foods. Sauces can be cooked with the food or cooked separately. Served with food, they add moistness and flavor. They make food look more interesting and appetizing.

The sauce is an important part of a dish. It is not the main component but if prepared properly, it can surely enhance the over-all quality of a meal.

What are the qualities we are looking for in a good sauce?

A well-made is sauce is:

- ✓ Smooth. It does not have lumps.
- ✓ Thick enough to cling to the food it is served with. It is not gluey.
- ✓ It has the appropriate color. For example, it is white in color, not gray, if it is a cream sauce.
- ✓ It has a balanced flavor that complements the food it is served with.
- ✓ It does not have a starchy taste.
- ✓ It is properly seasoned. It is not too salty.



Sauces can be finished by:

Reduction – simmering the sauce for a long time will make the water evaporate. This will result in a sauce that is concentrated and more flavorful.

Deglazing – some bits of food get stuck in the pan after sautéing, frying or roasting meat, poultry, or fish. Swirling liquid, preferably stock, to break down these bits of food is called deglazing. Incorporating this deglazed liquid to the sauce you are making will add flavor to it.

Ingredients for Making Sauces

Sauces are commonly made with the following ingredients:

1. **A liquid**

A flavorful liquid is the main ingredient or the base of a sauce. Some of the French classic sauces or leading sauces are made from the liquids or stocks that we have learned early in this lesson.

2. **A thickening agent**

Thickening agents (e.g., starches) are used to achieve the desired thickness in sauces. A sauce must be thick enough to cling to food. It should not be gelatinous, nor should it lie like a puddle in the plate. A good quality sauce can coat the back of a spoon without it running off. Chefs call this perfect consistency **nappé** (*nap-pay*).

Roux (*roo*) is a thickening agent made from fat and flour. Equal parts of fat and flour are cooked together to make different kinds of roux.

The kinds of fats used to make roux are the following:

- Butter – the preferred kind of cooking fat to make roux. Roux made with butter makes very fine, flavorful sauces.
- Margarine – widely used because it is less expensive than butter. However, the resulting sauce is not as fine as the ones made with butter.
- Animal fats – lard, chicken fats and beef drippings can be used if their flavor matches the flavor you want to develop in your sauce.
- Vegetable oil – can be used but are not preferred because they add no flavor in the resulting sauce.

Other ingredients can be used as thickening agents for sauces:

A **beurre manié** (*burr-man-yay*) is a mixture of soft, raw butter and flour used as a quick thickener at the end of cooking a sauce. This French term means “kneaded butter”. A smooth paste is created when the butter and flour are kneaded. It is similar to roux where equal parts of butter and flour are mixed together. But unlike roux, the beurre manié is not cooked. Adding beurre manié gives the resulting sauce a shiny finish.



beurre manié

beurre manié by Alec Vuijsteke
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A **slurry** is a mixture of a kind of starch and cold water.

The following are some of the starches that can be used as thickeners:

- | | |
|--------------------|------------------|
| • Cornstarch | • Potato starch |
| • Arrowroot powder | • Tapioca starch |

A **liaison** is a mixture of egg yolks and cream. The mixture is slowly added to the sauce to prevent curdling. A liaison can only slightly thicken a sauce. It is used more as a finishing technique because it adds richness and smoothness to the sauce.

3. Seasoning and flavoring ingredients

Different flavoring ingredients can be added to the basic sauces to make a variety of other sauces. These flavoring ingredients can be herbs and spices. Adding two or three flavoring ingredients in a basic sauce can alter its character or flavor profile all together.

Kinds of Roux

A roux must be cooked properly so it does not taste raw or starchy. It must be stiff or firm and not runny. The length of time to cook a roux determines what kind it is.

1. **White roux** – roux that is cooked for a short time just enough to cook off the starchy taste of flour. It should have a pale-yellow color derived from the butter in the roux. White roux is used on white sauces based on milk like béchamel.
2. **Blond roux** – roux that is cooked for a longer time than white roux. Cooking is immediately stopped after the roux turned slightly darker. Blond roux is used for sauces based on white stocks like velouté.
3. **Brown roux** – roux that is cooked until it takes in a light brown color. Brown roux has a nutty aroma. It is important to cook brown roux using very low heat. This will prevent the roux from burning while making sure it cooks evenly.



White roux

white roux by Roger469 licensed
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How to make roux:

1. Melt butter in a sauté pan.
2. Add an equal amount of flour.
3. Mix the fat and flour thoroughly.
4. Cook the roux according to the length of time needed to make white, blond, or brown roux. Carefully observe its color because it will help indicate the cooking stage of the roux.

(Note: use moderate heat when cooking white and blond roux. Use low heat when cooking brown roux.)

Kinds of Leading Sauces

In French cooking, leading sauces refers to a primary class of sauces. They are also called grand sauces or mother sauces because other small sauces are developed or built from them by the addition of other flavorings. The five leading sauces are the following:

1. **Béchamel** (*bey-sha-mel*) – made from milk and white roux

2. **Velouté** (*ve-loo-tey*) – made from white stock and white or blond roux
3. **Brown sauce or espagnole** (*eh-spae-nyowl*) – made from brown stock and brown roux
4. **Tomato sauce** – made from stock and tomato (roux is optional because tomato sauces are naturally thick)
5. **Hollandaise** – made from butter and egg yolks



Hollandaise

The above description is of course a simplified version to help us understand the composition of the five leading sauces. Other ingredients are added in the process of cooking them.

Below is a sample recipe to make Béchamel sauce. Béchamel is a creamy white sauce. It is used for dishes like lasagna, moussaka and macaroni and cheese. It can also be used as a base to make creamy soups and other white sauces.

Béchamel Sauce

Yield: 1 liter	
Ingredients:	Procedure:
For the roux: 60g clarified butter 60g flour	1. Using a saucepot, make a white roux by heating the butter over low heat and then adding the flour. Mix together. Let it cool slightly once properly cooked. (Note: To make clarified butter follow these steps: a. In a saucepan, melt the butter over moderate heat. b. Skim the froth that comes to the surface. c. When the butter becomes clear, pour or ladle it in another container. Leave the milky liquid in the saucepan.)
1 liter milk	2. Incorporate the milk slowly. Stir constantly so that all ingredients will mix well. 3. Bring the sauce to a boil and then simmer.
1 small white onion, peeled 1 bay leaf 1 whole clove	4. Make an oignon piqué by attaching the bay leaf to the onion using the whole clove. 5. Add the oignon piqué to the sauce. 6. Simmer for at least 30 minutes. Stir the sauce from time to time. Note: You can add milk if needed.
Salt and white pepper, to taste Nutmeg, to taste	7. Lightly season with nutmeg, salt, and pepper.
	8. Strain the sauce so that the finished sauce will be smooth.



Ingredients for Béchamel Sauce: nutmeg, butter, flour, milk

Small Sauces

Small sauces are derived from the leading sauces. When you add different flavorings in each of the five leading sauces, you can create small sauces. Some of the classical small sauces are the following:



1. **Mornay Sauce** – is a white sauce made by adding cheese to béchamel. Different kinds of cheeses are used like Gruyère, Emmenthal or cheddar cheese. Mornay sauce can be used to make macaroni and cheese or mac n' cheese.
2. **Mustard Sauce** – is a white sauce made by adding prepared mustard to béchamel. It is a versatile sauce that can be paired with chicken, beef, salmon, and vegetable dishes.
3. **Mushroom Sauce** – mushrooms can be added to velouté or espagnole to make mushroom sauce. It is a popular sauce that pairs well with a variety of dishes.
4. **Herb Sauce** – is a white sauce made by adding chopped herbs like parsley, tarragon and chives to a fish velouté. This sauce complements fish and seafood dishes.
5. **Aurora Sauce** – is a white sauce made by adding tomato purée to a veal or chicken velouté. This sauce pairs well with eggs and pasta dishes.

6. **Bordelaise Sauce** – is a brown sauce made by adding dry red wine to espagnole. The sauce is named after the Bordeaux region in France which is famous for its wines. Bordelaise Sauce is traditionally served with steak or grilled beef and garnished with poached beef marrow.
7. **Madeira** (*muh-dee-ruh*) **Sauce** – is a brown sauce made by adding Madeira wine to espagnole. Madeira wine has a sweet and nutty flavor. The sauce pairs well with steaks and roasts.
8. **Sauce Poivrade** (*pwa-vrahd*) – is a brown sauce made by adding peppercorns to espagnole. Poivre is the French word for pepper. The sauce is generously seasoned with crushed black peppercorns.
9. **Creole Sauce** – is a spicy sauce made by adding onion, celery, bell peppers and cayenne to the classic tomato sauce. Creole cuisine refers to a style of cooking that developed in the southern states of America. It has French, Spanish, and African influences.
10. **Maltaise** (*mahl-tehz*) **Sauce** – is a sweet-tangy sauce made by adding orange juice and grated orange rinds to hollandaise. Blood oranges, which is a variety of oranges with dark red flesh, are the preferred kind of orange to use in this sauce. Maltaise sauce goes well with broccoli and asparagus.

Other Sauces

Other sauces do not follow the method of preparation of the five leading sauces. Some of these sauces are the following:

1. Butter Sauces

The following are examples of butter used as sauce:

- Simple **melted butter** added to cooked vegetables before serving creates a big difference on the dish in terms of flavor and visual appeal. Melted butter makes the dish creamier and gives it a glossy finish.
- **Clarified butter** is also called purified butter. The water and milk solid components of the butter are removed. Clarified butter is generally used in sautéing because it does not easily burn in high cooking temperatures.
- **Compound butters** are a mixture of butter and other flavoring ingredients like herbs, spices, and other aromatics. To make a compound butter, the raw butter is first softened and then the chosen flavoring is thoroughly mixed with it. The mixture is rolled in waxed paper and is ready for use.



Clarified butter



Compound butter

2. Integral Sauces

Integral sauces are sauces made from the juices or drippings released from the meat during the cooking process. Deglazing is important when making integral sauces. Some of the juices released from the meat during cooking solidify and caramelize at the bottom of the pan. These flavorful bits of food should be deglazed to form part of the integral sauce. Examples of integral sauces are:

- **Pan gravies** – sauce that is made from the drippings of meat or poultry. The pan drippings are mixed with roux and stock. Milk or cream are sometimes added to make a creamier sauce.
- **Jus** (*zhoo*) – is the juice or liquid released when cooking roasted meats. A roasted meat served with its natural juice is said to be served **au jus** which means “with juice”.



Roasted Duck au jus

3. Salsas and Relishes

- **Salsa** refers to the Mexican blend of chopped tomatoes, chiles, onions, herbs and other seasonings. Originally salsa is the Spanish and Italian word for “sauce”.
- **Relish** is a mixture of chopped vegetables that are pickled in a vinegar or salt solution. Fruits are sometimes added to the mixture.



Salsa

4. Flavored Oils

Flavored oils are light sauces or dressings suitable for salads and sautéed or grilled meats and vegetables. They are easy to make. Simply incorporate flavoring ingredients like herbs and spices to your chosen oil (e.g., garlic plus a flavorless oil like corn oil). Let the mixture stand for at least one hour at room temperature. Store the flavored oil in the refrigerator.



Flavored oils

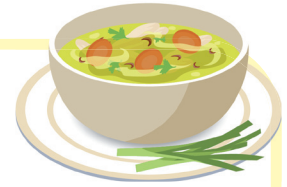


Summary

Making stocks and sauces can be time-consuming. With the busyness of modern life, it can be so easy to use convenience bases or packs of ready-to-use flavorings that we can just add water to. But truthfully, these flavoring packs are mainly made of salt. If we are to decide that the kind of food we want to consume is flavorful and healthy, then it would be good to invest time in making stocks and sauces. In a way, making sauces and making stocks especially, signifies a commitment to serve good and healthy food. The time and effort we put in making them will be rewarded by dishes that are packed with flavors and good nutrition.



Exercises

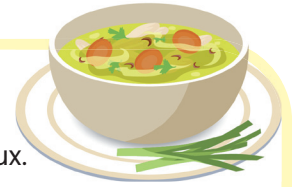


Exercise 1

How much have you learned?

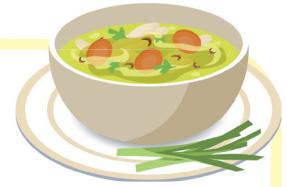
Instructions: Choose the letter of the correct answer.

- _____ 1. A preparation of butter in which the water and milk solid components are removed.
 - a. compound butter
 - b. clarified butter
 - c. roux
- _____ 2. A brown sauce made by adding dry red wine to espagnole.
 - a. Maitaise sauce
 - b. Creole sauce
 - c. Bordelaise sauce
- _____ 3. A kind of leading sauce made from milk and white roux.
 - a. béchamel
 - b. hollandaise
 - c. velouté
- _____ 4. A flavorful fish stock that is made by adding white wine.
 - a. nappé
 - b. liaison
 - c. fumet
- _____ 5. A white sauce made by adding chopped herbs to a fish velouté.
 - a. Mornay sauce
 - b. Herb sauce
 - c. Bouquet Garni
- _____ 6. A mixture of chopped vegetables that are pickled in a vinegar or salt solution.
 - a. salsa
 - b. relish
 - c. oignon piqué
- _____ 7. A mix of herbs and spices inside a cheesecloth bag tied with a string.
 - a. jus
 - b. beurre manié
 - c. sachet d'épices



- _____ 8. A leading sauce made from white stock and white or blond roux.
- a. espagnole
 - b. tomato sauce
 - c. velouté
- _____ 9. A mixture of aromatic vegetables used to flavor not only stocks but also sauces, soups, and stews.
- a. arrowroot
 - b. mirepoix
 - c. slurry
- _____ 10. A sweet-tangy sauce made by adding orange juice and grated orange rinds to hollandaise.
- a. Madeira sauce
 - b. Maltaise sauce
 - c. Aurora sauce





Exercise 2

Instruction: Define or describe the following:

1. What is a stock?

2. What is a sauce?

3. Give at least five characteristics of a well-made sauce.

- a.

- b.

- c.

- d.

- e.

4. What are the five kinds of stocks?

- a.

- b.

- c.

- d.

- e.

5. What are the three kinds of roux? Describe each.

- a.

- b.

- c.





6. What is a beurre manié?

7. What is a liaison?

8. What is a mirepoix?

9. What is an integral sauce?

10. What is a sachet d'épices?





Lesson Output

Individual/Group Work – Prepare Tomato Sauce using the recipe below as guide. Make a video presentation of yourself preparing/cooking the Tomato Sauce.

Tomato Sauce

Yield: 1 liter	
Ingredients:	Procedure:
30g bacon	1. In a saucepot, render the bacon. Be careful not to brown it.
60g onion, medium dice 60g carrots, medium dice	2. Add onion and carrots. Sauté until slightly tender.
1 liter tomatoes, canned or freshly chopped 500 ml tomato purée, canned 500g ham bones or browned pork bones 1 sachet containing: 2 cloves of crushed garlic 1 bay leaf 1 ml dried thyme 1 ml dried rosemary 1 ml crushed peppercorns	3. Add the tomatoes, tomato purée, ham bones or browned bones, and sachet. 4. Bring to a boil, then simmer. 5. Continue simmering for at least 1 ½ hours or until desired thickness of the sauce is reached. 6. Remove the bones and sachet. Using a blender or a handheld mixer, process the sauce for a smooth texture.
Salt and sugar, to taste	7. Season the sauce with salt and sugar.

Rubrics for Preparing Tomato Sauce

Criteria	5	4	3	2	1	Points
Content/ Functionality	The student is able to completely identify ALL ingredients based on the recipe. The procedure and proper sequence were followed. EXCELLENT product quality and presentation in terms of final output.	The student is able to identify MOST of the ingredients based on the recipe. The procedure and proper sequence were followed. Product quality and presentation in terms of final output is GOOD.	The student is able to identify MOST of the ingredients based on the recipe. The procedure and proper sequence were followed. Product quality and presentation in terms of final output is SATISFACTORY.	The student is able to identify MOST of the ingredients based on the recipe. Some procedures and instructions were NOT followed. Product quality and presentation in terms of final output is SATISFACTORY.	The student is NOT able to identify MOST of the ingredients. Procedures and instructions were NOT followed. Product quality and presentation in terms of final output is NOT SATISFACTORY.	
Creativity	The work shows creativity of the student and the design has high visual appeal.	The work shows creativity of the student. The design took one or two elements from several existing sources, such as that from other people or the Internet, and built on these.	The project's requirements are met. The design took 3 or more elements from several existing sources, such as that from other people or the Internet, and built on these.	The work lacks creativity, and the design took most of its elements from several existing sources, such as that from other people or the Internet and didn't change or add to them.	The work The work lacks creativity and shows minimal to no effort in design. The student directly copied (plagiarized) their project from another source, such as from a person or from the Internet.	
Promptness	The student was able to submit the output before the given deadline.	The student was able to submit the output on time.	The student was late in submitting the output but was able to do so within the same day.	The student submitted the output 1 day after the deadline.	The student submitted the output more than 2 days of the deadline.	
Total						

LESSON 7

Soups



Learning Outcomes

At the end of the lesson, you are expected to be able to:

1. Enumerate the basic categories of soups.
2. Describe the different kinds of soups.
3. Learn the basic method for making cream soups.

Humans have been consuming soup for thousands of years. The invention of waterproof containers like clay pots helped in expanding the diet of the early humans. Instead of just roasting, having clay pots enable them to boil their food and cook a variety of ingredients that would otherwise be inedible.

Soups are very versatile dishes. They can be eaten as a starter, a snack or even as a complete meal by themselves. They are quick to cook. And they can be made from a wide array of ingredients.

It's no wonder, a lot of people love soups.



Engage

YouTube Video "5 Soups To Warm The Soul" by Tasty



<https://www.youtube.com/watch?v=nZ8RGWo0wwQ>



Explore

Word Search Puzzle

Find and circle the words associated with soups.

BISQUE

BROTH

CHOWDER

CONSOMME

CORNSOUP

GUMBO

MISOSOUP

ONIONSOUP

PUREE

SINIGANG

O	C	C	S	I	N	I	G	A	N	G	H
O	B	O	I	L	A	L	G	H	P	S	A
N	R	R	A	S	B	I	S	Q	U	E	T
I	I	N	O	C	H	A	W	T	R	E	S
O	L	S	X	T	W	C	H	E	E	D	R
N	L	O	I	C	H	O	W	D	E	R	O
S	I	U	P	B	I	N	O	C	Y	R	P
O	U	P	N	O	O	S	D	L	I	S	L
U	M	I	S	O	S	O	U	P	G	U	A
P	E	E	T	H	I	M	Y	R	E	E	N
U	V	G	E	G	U	M	B	O	Y	L	E
Z	O	E	R	O	O	E	L	Y	N	E	D



Research

Research on the different kinds of soups. Choose a national or regional soup. What makes it special in its place of origin? What are the ingredients to make the soup? How is it prepared or cooked? Write a 1-page report.



Explain

Soups

Soup is usually defined as a liquid food cooked by simmering meat, fish, poultry and/or vegetables. It is typically served hot or warm.

When we look at different recipes of soups made in different parts of the world, we will see that the above definition of soup is a very limited one. Soups defy one simple definition. There are soups that are made from fruits, not vegetables. Some soups are served cold. There are soups made only from a handful of ingredients. But there are also those cooked with several components that they are a meal by themselves.

In this chapter, we will learn different kinds of soups and how some of them are made.

Classification of Soups

Soups can be classified into the following categories:

1. **Clear soups** – are soups that are made from broth or stock that is clear and light. Clear soups can be consumed as they are or they can be garnished first with meat or vegetables.
2. **Thick soups** – are soups that are made from thickened broth or stock. Thickening agents such as starch or cream can be used to achieve the desired thickness of the soup.
3. **National or Special soups** – are soups that do not fall into the two categories above. The methods used to cook them may be different from the methods used to cook clear soups and thick soups. They may also be cooked using unique or uncommon ingredients. National Soups are soups that are famous in a particular country or region and are closely identified with their place of origin.

Clear Soups

1. **Broth** – is a flavorful liquid that is cooked by simmering meat. Vegetables can be added when cooking broth. A broth can be consumed as it is, or it can be used as a base to make other soups.
2. **Consommé** (*con-suh-mei*) – is a very concentrated soup that is prized for its clarity. Consommé is a French word that means “concentrated” or “completed”. This soup is a classic starter for an elegant dinner.

Consommé is made by simmering a strong, flavorful stock or broth with lean ground meat, mirepoix, and egg whites. The lean ground meat, mirepoix and egg whites make up what is called the **clearmeat** or the clarification. Simmering the consommé for a significant amount of time will make the proteins in the clearmeat, particularly the lean ground meat and egg whites, to coagulate. When these proteins coagulate or solidify, they rise to the surface of the consommé and carry with them other particles that can cloud the soup. The coagulated or solidified clearmeat is called the **raft**.

A well-made consommé is sparklingly clear and has a full flavor and aroma. It can be served hot or cold. It can also be garnished with vegetables, vermicelli, thinly sliced meats, or bone marrow.



Broth



Consommé

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3. **Vegetable Soup** – is a soup made from seasoned broth and vegetables. Starches like pasta or grains can also be added to the soup. Vegetarian soup is made of vegetable stock or water and will not have meat or chicken as additional ingredients in the soup.



Vegetable Soup

Thick Soups

1. **Cream Soup** – is a soup thickened with any of the following thickening agents: roux, liaison, beurre manié, or other starches. Cream or milk is added in the cooking process. The name of the soup takes after the main ingredient used to cook the soup. For example, a cream soup using mushrooms as its main flavoring ingredient is usually called Cream of Mushroom Soup.



Cream Soup

Curdling is a common problem when cooking cream soups because the proteins in the milk or cream coagulate when overheated or when an acidic ingredient is added. **Tempering** prevents curdling. To temper, do the following:

- In a separate container, gradually add simmering soup to the cream.
- When the cream has significantly warmed or has achieved the same temperature as the soup, you can then add the rest of the cream to the simmering soup.

It is important to never let soup that has milk or cream to boil again.

2. **Purée (pyu-rei)** – is a soup made by puréeing or crushing one or more of its ingredients. Purées are usually made from starchy foods like potatoes, beans or peas which thicken the soup. Unlike cream soups, purée soups do not have a smooth consistency.
3. **Bisque (bisk)** – is a soup made from shellfish like shrimp and lobster. In the past, rice was used to thicken this soup. Nowadays, it is thickened with roux and finished with cream. The word bisque is thought to come either from 1) Biscay, the name of the coast bordering France and Spain or 2) the word biscuit because there was a time when this soup is thickened using dried bread.



Purée



Bisque

4. **Chowder** – is a hearty soup usually made from fish, shellfish, and vegetables. The ingredients are chunky, and the liquid part of the soup is on the thick side, very much like a stew. Most chowders contain diced potatoes. Chowders are very filling and nourishing soups.



Clam Chowder

National and other Special Soups

There are several soups that are well-known not only because they are delicious but also because they are:

- ✓ made from unique ingredients
- ✓ cooked using an uncommon method
- ✓ served in a unique way or,
- ✓ they are closely identified with their country or place of origin

Examples of national and special soups are the following:

1. **Miso Soup** – is a Japanese soup made with miso and dashi. **Miso** is a fermented soybean paste which comes in two varieties; 1) white miso has a sweet, mild taste while 2) red or dark miso is saltier. **Dashi** is a basic Japanese stock made from *katsuobushi* or dried bonito fish and *kombu*, a kind of seaweed. Miso soup can be garnished with a variety of ingredients, some of which are small cubes of tofu, thinly sliced white or shitake mushrooms, watercress leaves or bamboo shoots.



Miso Soup

2. **Sinigang** – a Filipino soup consisting of meat, fish or shrimp and a variety of vegetables, traditionally soured with tamarind. Other fruits and vegetables can be used to sour a sinigang dish such as guava, santol, kamias or unripe mango. Sinigang is commonly enjoyed with a bowl of steamed rice.



sinigang na baboy

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3. **Pho (fuh)** – is a Vietnamese soup made from beef or chicken broth, rice noodles and thin slices of beef. A variety of spices are used to flavor the broth such as cinnamon, ginger, star anise, cardamom, and onion. Pho is Vietnam's national dish.



Pho

4. **Minestrone** (*min-es-tron-ee*) – is a hearty Italian vegetable soup that usually contains pasta. The recipe for this soup varies from region to region. Locals use ingredients that are available to them depending on the season's harvest. Minestrone is considered to be fare of the common folk. Its rustic roots are very much treasured in Italy.



Minestrone

5. **Borscht** – is a Ukrainian soup that is made from white or brown stock and a variety of vegetables. Its classic red or purplish color comes from the use of beets which is its main ingredient. Borscht is typically garnished with *smetana*, a kind of European sour cream. It can be served hot or cold.



Borscht

6. **Bird's Nest Soup** – is a soup made from the edible nest of swiftlets, small birds of the swift family that is native to Asia. Bird's nests are made from the solidified saliva of swiftlets. They have a pleasant gelatinous texture when cooked and are known to be high in protein and other nutrients. Bird's nest soup is a delicacy in Chinese cooking and is very expensive.



Bird's Nest Soup

7. **Gumbo** – is a Creole soup made from stock (typically fish stock), shrimp, crabmeat, onions, celery, bell peppers, and then thickened by okra. It is the official cuisine in the state of Louisiana and is very popular in the American South. Gumbo is said to come from the African word "gombo" which means okra. Gumbo is typically served ladled on steamed rice.



Gumbo

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8. **Matzah Ball Soup** – is a Jewish soup traditionally eaten during the Passover holiday. It consists of matzo balls simmered in water or chicken soup. Also known as knaidel or kneidel, matzo balls are a kind of Jewish dumpling made from matzah meal or unleavened flatbread, egg, water and fat.



Matzah Ball Soup

9. **Mulligatawny** (*mah-li-ga-taw-ny*) – is an Indian soup made from a variety of spices like cumin, coriander, turmeric, cayenne, and pepper. Meat like chicken and lamb were added as ingredients when this soup became popular in Britain in the 1800s. Its name is derived from a Tamil phrase, a dialect in south India, which means “pepper water”.



Mulligatawny

10. **Gazpacho** – is a Spanish soup of blended vegetables that is served cold. The ingredients commonly used to make gazpacho are tomatoes, cucumbers, bell peppers, bread, wine, vinegar, and olive oil.



Gazpacho

Serving Soups

Portion Sizes

Soups can be served as an appetizer, something to start a meal with. It can also be served as a main course, a complete meal by itself. When serving soups, you can use this guide for the portion size:

- ✓ Soup served as an appetizer should be about 200–250ml.
- ✓ Soup served as a main course should be about 300–350ml.

Temperature

Always be aware of the correct temperature when serving soups. Hot soups should be served hot. Cold soups should be served cold. Serving or consuming soups at their correct temperature will maximize our enjoyment of them.

Garnish

Soups can be garnished in different ways:

- **The main ingredient or ingredients of a soup can be used as its own garnish.** For example, a light chicken noodle soup can be served by carefully putting or plating the noodles first, along with the other ingredients like chicken and vegetables, before ladling the broth. This will make the bowl of soup much more presentable.

- **Thick soups are usually garnished with toppings.** The following toppings can be used:
 - fresh chopped herbs (e.g., parsley or chives)
 - crumbled bacon
 - whipped cream
 - croutons
 - julienned vegetables
 - grated cheese
- **Soups can be served with the following accompaniments:**
 - breadsticks
 - corn chips
 - crackers



Summary

However way we define soup, these things are certain. Well-made soups are very satisfying, they can be a comfort after a hard day's work. They can also be restorative that a sick person can feel much better after consuming a bowl of soup. Soup recipes may vary from region to region or from country to country but it will always be an all-time favorite.



Lesson Output

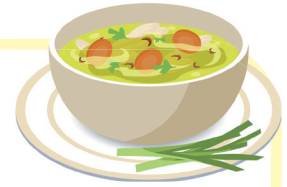
Individual/Group Work – Prepare Cream of Corn Soup using the recipe below as guide. Make a video presentation of yourself preparing/cooking the Cream of Corn Soup.

Cream of Corn Soup

Yield: 1 liter	
Ingredients:	Procedure:
60g onion, small dice 15g butter	1. Using a saucepot, sweat the onions in the butter.
1 tablespoon flour	2. Add the flour. Mix well to make a roux. Cook for about two minutes. Do not let it brown.
750ml chicken stock 250g whole kernel corn	3. Add the chicken stock and whole kernel corn. Let it simmer. Stir regularly. 4. Skim any scum on the surface of the soup. 5. Using a blender or a handheld mixer, purée the soup.
250ml hot milk	6. Add hot milk. Continue simmering until desired thickness of the soup is achieved. Do not let it boil.
Salt and pepper, to taste	7. Season with salt and pepper.
125 ml heavy cream Corn kernels (optional)	8. Add cream just before serving. Garnish with corn kernels.
(Note: Fresh, frozen or canned whole kernel corn may be used for the recipe)	



Exercises



Exercise 1

How much have you learned?

Instructions: Choose your answer from the following:

gumbo	clear soup	300–350ml	gazpacho	purée
consommé	200–250ml	bird's nest soup	raft	borscht

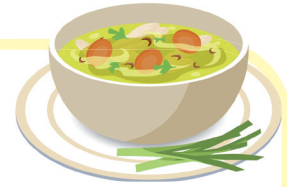
- _____ is the portion size for a soup served as appetizer.
- _____ is a Spanish soup of blended vegetables that is served cold.
- _____ is coagulated or solidified clearmeat.
- _____ is Ukrainian soup with a reddish or purplish color.
- _____ is the portion size for a soup served as main course.
- _____ is a soup made from broth or stock that is clear and light.
- _____ is a very concentrated soup prized for its clarity.
- _____ is a soup usually made from starchy foods like potatoes which thicken the soup.
- _____ is a popular Creole soup thickened by okra.
- _____ is a soup made from the solidified saliva of swiftlets.

Exercise 2

Enumerate the following:

- Give 4 kinds of thick soups and describe each one.

- _____
- _____
- _____
- _____



2. Give 3 kinds of clear soup and describe each one.

- a. _____
- b. _____
- c. _____

3. Give the 2 portion sizes for soups.

- a. _____
- b. _____

4. Give 5 kinds of national or special soups and describe each one.

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____

5. At what temperature do you serve soups?



Rubrics for Preparing Cream of Corn Soup

Criteria	5	4	3	2	1	Points
Content/ Functionality	The student is able to completely identify ALL ingredients based on the recipe. The procedure and proper sequence were followed. EXCELLENT product quality and presentation in terms of final output.	The student is able to identify MOST of the ingredients based on the recipe. The procedure and proper sequence were followed. Product quality and presentation in terms of final output is GOOD.	The student is able to identify MOST of the ingredients based on the recipe. The procedure and proper sequence were followed. Product quality and presentation in terms of final output is SATISFACTORY.	The student is able to identify MOST of the ingredients based on the recipe. Some procedures and instructions were NOT followed. Product quality and presentation in terms of final output is SATISFACTORY.	The student is NOT able to identify MOST of the ingredients. Procedures and instructions were NOT followed. Product quality and presentation in terms of final output is NOT SATISFACTORY.	
Creativity	The work shows creativity of the student and the design has high visual appeal.	The work shows creativity of the student. The design took one or two elements from several existing sources, such as that from other people or the Internet, and built on these.	The project's requirements are met. The design took 3 or more elements from several existing sources, such as that from other people or the Internet, and built on these.	The work lacks creativity, and the design took most of its elements from several existing sources, such as that from other people or the Internet and didn't change or add to them.	The work lacks creativity and shows minimal to no effort in design. The student directly copied (plagiarized) their project from another source, such as from a person or from the Internet.	
Promptness	The student was able to submit the output before the given deadline.	The student was able to submit the output on time.	The student was late in submitting the output but was able to do so within the same day.	The student submitted the output 1 day after the deadline.	The student submitted the output more than 2 days of the deadline.	

Total

LifeTek-TLE

Home Economics

Meat Processing and Preservation

Introduction to
Charcuterie

1



Basics of Curing and
Smoking

2



Basics of Sausage
Making

3



LESSON 1

Introduction to Charcuterie (Meat Processing and Preservation)



Learning Outcomes

At the end of the lesson, you are expected to be able to:

1. Define charcuterie and its types.
2. Identify the basic equipment and ingredients used in charcuterie.
3. Describe the safety and sanitation practices when handling processed meat.

History shows that people have been making charcuterie products since the age of antiquity. Because food may not be readily available, people have learned to preserve the meat of animals they've hunted or caught to last them through times when food is in short supply. Charcuterie or the processing of food by salting, drying, smoking and other means, is a way to preserve food before refrigeration was invented. Today, people around the world still make charcuterie products not only to preserve food but also to enjoy the rich flavors that develop in these products through the processes they undergo.



Explore

What's for Breakfast?

Identify the following charcuterie products, Filipino-style. Write your answer on the space provided under each picture.



Engage

YouTube Video "A Short Lesson in Italian Salami & Sausage Making (Le Marche, Italy)" by La Tavola Marche



https://www.youtube.com/watch?v=FbXCoP_wxsU



1. _____



2. _____



3. _____



4. _____



5. _____



6. _____



Research

Research on the different kinds of charcuterie products. Choose one that is famous in any particular province or country. What makes it famous in that place? What are the ingredients used to make it? How is it made? Write a 1-page report.



Explain

Charcuterie



Charcuterie (shar-koo-tuh-ree) is a French word defined as the process of preserving and flavoring meats such as pork, beef, game, poultry, fish, and seafood by means of curing, smoking and other preservation techniques. It also refers to the actual products of these processes such as sausages, hams, and other smoked and cured food items. A **charcutier** (shar-koo-tyay) is a person who makes these products and sells them.

Charcuterie has been around for a long time. Different cultures around the world have a way of preserving food, especially meats, to make sure there is food for the community during the times when food was scarce. Charcuterie products continue to be popular even after the advent of refrigeration. More than preservation, these products are enjoyed for their distinct flavor.

Countries around the world have their own tradition of making charcuterie products. The methods of processing and preserving food have been

passed down through the generations. We Filipinos are no different. We love our longganisa, tocino, embutido, tapa, and others. Recipes of these dishes have been passed down in the family, with a great-great grandmother credited as the author of the ancient recipe.

In the Philippines, the industry of processing meat is a thriving industry. We have many successful meat product companies that started as small businesses operating at home.

Forcemeats

Forcemeats are seasoned mixtures of ground meats and fats that are used as stuffing or filling for sausages, pâtés, and other charcuterie products. The term is derived from the French word *farce* which means “stuffing”. Different herbs and spices are mixed in the forcemeat not only to flavor it but also to add texture and visual appeal.

The following are types of forcemeats:

1. **Country-style** – a type of forcemeat that has a coarse grind or texture.
2. **Straight** – a type of forcemeat that has a smoother or finer texture than country-style forcemeat. Straight forcemeat is generally used when making pâtés and terrines.
3. **Gratin** – a type of forcemeat that is partially cooked. The meat to be used is seared first before grinding it.
4. **Mousseline** – a lighter type of forcemeat made from white meat such as poultry, fish or seafood combined with cream and eggs. Mousseline forcemeats are very creamy and delicate.

Examples of Charcuterie Products

The following are examples of charcuterie products:

- **Sausages** – are mixtures of ground meats that are stuffed in a casing usually made of animal intestines. Regions around the world have their own way of preparing sausages using different flavoring ingredients. Lesson 10 of this book is all about sausages.
- **Bacon and Hams** – are cuts of meat, usually pork, that are preserved by means of curing, smoking or other types of meat preservation techniques. Bacon is typically made from pork belly and are sliced or cut into strips. Hams are made from the leg part of the hog. Curing and smoking will be discussed in detail in the next lesson.



Sausage



Ham

- **Pâté (pah-ty)** – is a forcemeat baked in a crust. It is a spreadable paste made using a variety of meats, poultry or seafood. The most popular ones are made from chicken or goose liver.



Chicken Liver Pate

- **Terrine** – is a forcemeat baked using a mold that is also called a terrine. Traditionally the molds are made of earthenware. Nowadays, these molds can be made from different materials like stainless steel, ceramics, aluminum and ovenproof plastic.



Terrine

- **Galantine (gal-an-tin)** – is traditionally made from the de-boned meat of chicken, duck and other game birds. The meat is minced, mixed with seasonings and then stuffed or wrapped in the skin of the bird it is made from. The term comes from the Old French word galin which means “chicken”. Today, galantines can be made using other ingredients such as fish and shellfish. Galantines are usually poached.



Galantine

- **Rillettes (ree-yet)** – is meat that is slow-cooked until very tender, shredded, seasoned and then packed in containers with its own fat. Rillettes are best spread on a piece of toasted bread.



Rillettes

rillettes by Vincnet.
photo is considered Public

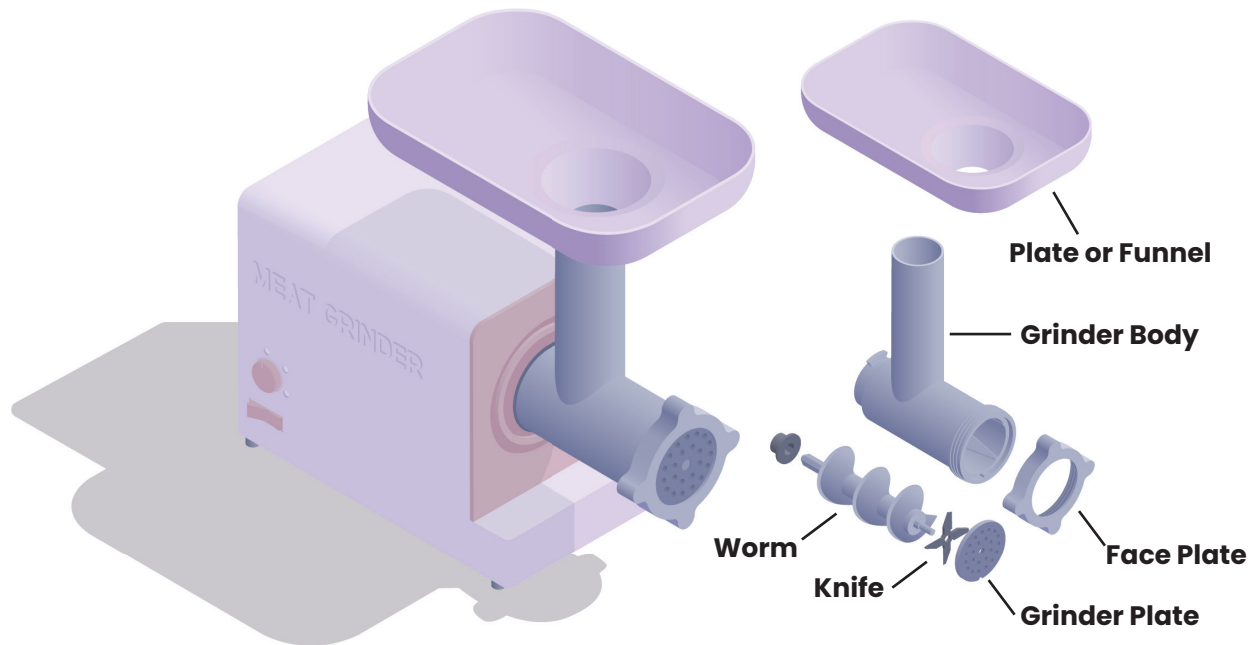
Equipment and Tools Used in Charcuterie

- **Meat Grinder** – a kitchen equipment used to mince or grind meat (e.g., to make ground pork or ground beef). Grinders can be electrically powered or has a handle or crank that can be manually turned.

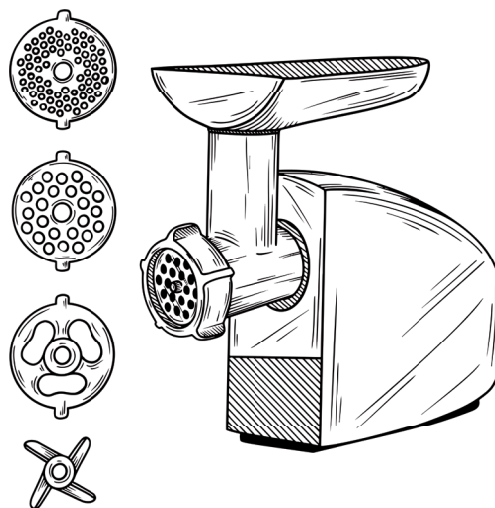
A grinder has the following parts:

- A **plate** or **funnel** is positioned on top of the grinder body. This is where you put the cubes of meat to be minced.

- The **grinder body** contains the **worm** which will push the meat towards the **knife** or **cutting blade**.
- Cut meat is then extruded or pushed out through the **grinder plate**. The coarseness or smoothness of the ground meat depends on the size of the holes of the grinder plate.
- The **face plate** holds the meat grinder assembly in place.
- For electrically powered meat grinders, the body of the equipment holds the motor inside and the power switch or On/Off button. The machine may also have a power indicator light.



A grinder can also have different grinder plates to create different textures of meat.



- **Food Processor** – is an electrical appliance used for food preparation. It can chop, dice or blend a variety of ingredients. Using a food processor is helpful when producing large volumes or batches of charcuterie products.
- **Sausage Stuffer** – is an equipment used to stuff sausage meat into casings. A manual sausage stuffer has a cylinder where sausage meat is placed. It has a crank that is turned to push the sausage meat into a funnel attachment. The funnel attachment then feeds the meat into casings. Sausage stuffers come in different sizes. Manual ones range from 3 to 20 liters capacity.
- **Brine Pump** – a tool that is used to inject brine or a salt-water solution in curing meats. Brine pumps have different volume sizes.
- **Hog Rings and Casing Clips/ Twines** – used for closing the ends of sausages or sausage links.
- **Teasing Needle** – is a needle used to let air out of the sausage casing. Air pockets sometimes appear when filling or stuffing casings with sausage meat. A properly stuffed sausage should have no air pockets.



Food Processor



Sausage Stuffer

- **Scales** – are kitchen equipment used to weigh ingredients. They are important to accurately portion each component of the charcuterie product you are making.
- **Cutting board** – is a sturdy piece of board where food items to be cut are placed. It is important to have a separate cutting board for raw meat ingredients. As discussed in Lesson 1, this will help prevent cross-contamination.
- **Stainless-steel Ware** – kitchen tools such as mixing bowls made from stainless steel are ideal to use in the charcuterie kitchen. Some ingredients used in processing can react adversely to some metals like aluminum. Stainless steel tools are generally easy to clean, resist corrosion and are non-porous.

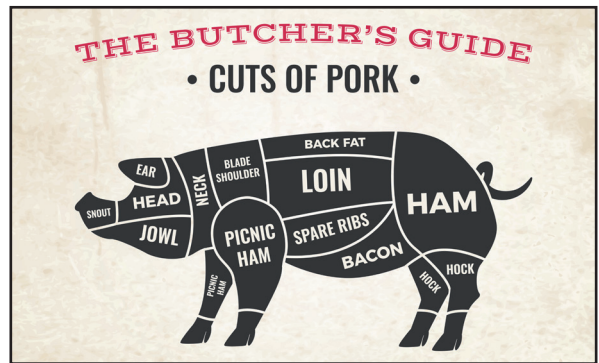
Common Ingredients Used in Charcuterie

There was a time when charcuterie products, particularly sausages, are called “little bags of mystery”. This is because some manufacturers have used inferior ingredients when making their products. Although it is true that charcuterie is a great way of utilizing meat trimmings in the kitchen, it is important to emphasize that these meat trimmings must still be of good, wholesome quality. You cannot mask bad meat ingredients with seasonings and flavorings. The quality of the meat will always be evident.

Fortunately, there are standards set in place to ensure good quality of meat products sold in the market. More importantly, today’s consumers are more mindful of the products they buy. They want to be informed of the quality of ingredients used in the products they are consuming.

1. **Meats** – a variety of meat cuts or parts can be used to make charcuterie products. Below are examples of meats that can be used in meat processing:

- **Pork** – “From the snout to the tail—everything but the squeal!”. The whole animal can be used for meat processing. Nothing goes to waste. Almost all the pork cuts can be used to make sausages and *tocino*. The intestines are used as casings for sausage meat. Pork can also be made into slabs of bacon and hams.



Pork Cuts

- **Beef** – meat of cattle or cows. Different beef cuts can be used to make hamburgers, sausages, corned beef, aged steaks and others.
- **Goat, Lamb, Mutton** – goat meat is simply called goat. The meat of adult goats is also referred to as **chevon**, while the young goat's meat is called **kid**. Goat meat can be processed to make sausages and **jerky**—a kind of meat that's been trimmed of fat, cured with salt, and then dehydrated or dried to preserve it.

A young sheep's meat is called **lamb** while **mutton** pertains to the meat of older sheep. Mutton can be used to make sausages and the trimmings can be used to make pâtés and terrines.

- **Poultry** – refers to chicken and other domesticated birds like goose, duck, and turkey. Their meat can be used to make sausages, galantines and other charcuterie products.
 - **Fish and Seafood** – although the flesh of fish and other seafood are very delicate, there are still known recipes for sausages that make use of them. Oily fish like salmon, tuna, mackerel, bass and eels can be cured and smoked. They are also excellent ingredients to make mousses, pâtés and terrines.
 - **Game Meats and Fowl** – refer to the meat of wild animals or birds that are hunted for food. Since these animals roam freely in the wild, game meats are usually leaner or has less fat than farm-raised animals. They also tend to be more flavorful because of their varied diet. It is important to follow the regulations on hunting wild animals or to buy only from certified suppliers of game meats. Doing so will prevent the spread of diseases and will protect these animals from over-hunting. Examples of game meats are venison or deer meat, rabbit, boar and alligators. They can all be made into sausages, pâtés and terrines.
 - **Offal** – also called variety meats, these are the internal organs of slaughtered animals. Examples of offals are brain, heart, tongue, kidneys and sweetbreads which are the thymus or pancreas of cow or sheep. Liver is the most widely used offal in cooking. Blood is the main component when making black pudding and blood sausages.
2. **Fats** – are important ingredients when making charcuterie products because they add flavor and moisture. Care should be taken when cooking products that have less fat. They should not be overcooked or they will turn out dry.

3. **Seasonings** – are blends of herbs and spices used to flavor charcuterie products.
4. **Curing Agents** – are ingredients used to preserve meats. Sodium chloride or table salt is used to flavor and preserve meats. Other types of curing agents are sodium nitrite and sodium nitrate. These will be discussed in detail when we get into the lesson on curing.
5. **Binding Agents** – are used to bind all the ingredients together and help in achieving the desired texture of the charcuterie product. Examples of binding agents are breadcrumbs, nonfat dry milk solids, and starches.
6. **Sweeteners** – are sometimes added in meats being processed to cut the harshness of salt, add flavor and promote browning when the product is cooked. Examples of sweeteners used in meat processing are sugar, brown sugar and honey.
7. **Sausage Casings** – used to stuff sausage meat, they can be natural casings or manufactured casings. Discussion on the different types of casings is covered on the lesson on sausage-making.

Sanitation and Safety Practices in Charcuterie

Charcuterie products are heavily processed and handled meats. It is, therefore, very important to follow good sanitation and safety practices when making them. This will prevent contamination or cross-contamination which can lead to foodborne illnesses.



✓ **Review Lesson 1 Sanitation and Safety in the Kitchen**

Review Lesson 1 for the kinds of hazards that can contaminate food and how to avoid the contamination. Most of the pathogens discussed in Lesson 1 are the same pathogens that we wish to avoid in the charcuterie kitchen.

- Wash hands thoroughly before handling any equipment or ingredient.
- Clean and sanitize all surfaces that will come in contact with the ingredients you are processing.
- Store the processed food properly, refrigerate if needed.

✓ **Keep the ingredients (e.g., meat mixture) cool the whole time you are processing it.**

Bacteria grow fast in a warm environment. It is vital that the meat or meat mixture you are processing remain cool. All meat to be processed must first be chilled or must have temperature below 5°C (41°F).

This also means that any part of your equipment that comes in contact with the meat mixture must also be cool. For example, before using the meat grinder, chill the parts that will touch the meat mixture first (e.g., the meat grinder assembly). You can do this by:

- chilling the parts inside the refrigerator or freezer or,
- placing the parts in a container or basin containing ice water.

✓ **Be very careful when using the equipment in the charcuterie kitchen.**

The equipment used in the charcuterie kitchen can be dangerous (e.g. meat grinder and food processor). Operate or use them only after carefully studying the operating manual of said equipment or have someone who is thoroughly familiar with the machine and has operated it already teach you.



- Check to see if all parts of an equipment are in good condition before using it.
- Make sure you have assembled the equipment properly before using it.
- Do not overload the equipment.
- Remember to ALWAYS TURN OFF THE POWER of the machine before assembling, disassembling or cleaning it.
- The meat grinder equipment has a provided meat pusher or meat tamper to feed the meat into the machine. Always use the meat pusher tool, never your hands.
- Cleaning and sanitizing equipment are very important. When choosing equipment or tools to use, look for those that have parts that can be easily disassembled and cleaned.

A blue icon consisting of three interconnected cubes or hexagons.

Summary

There is a reason why charcuterie products are still very popular food items. People in different parts of the world enjoy them for their rich flavors and aroma. The smell of frying bacon, for instance, is a delight to the senses. It is of course important to note that these foods, like so many other foods, should be enjoyed in moderation. Over-all healthy eating should be top of mind.

For the people who make charcuterie, the versatility of these products encourage creativity. Different blends of herbs and spices can produce an infinite number of products. Classic ones like salami, Frankfurters and garlic sausages are all-time favorites. But every year, there are new flavor combinations that give birth to new charcuterie products.



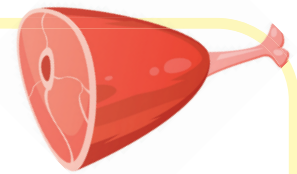
Exercises

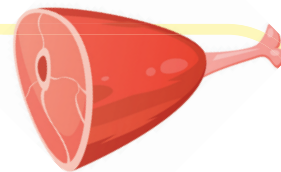
Exercise 1

How much have you learned?

Instructions: Match Column A with Column B. Write the LETTER of the correct answer on the space provided before each number.

Column A	Column B
_____ 1. an electrical appliance used for food preparation that can chop, dice, or blend a variety of ingredients	a. sweetener
_____ 2. the meat of wild animals that are hunted for food	b. pâté
_____ 3. the process of preserving and flavoring meats such as pork, beef, game, poultry, fish	c. game meats
_____ 4. ingredient used to cut the harshness of salt and promote browning when the product is cooked	d. country-style
_____ 5. chicken and other domesticated birds like duck and goose	e. variety meats
_____ 6. internal organs of slaughtered animals that can be used for food processing and preservation	f. mutton
_____ 7. a forcemeat baked in a crust	g. forcemeat
_____ 8. a type of forcemeat that has a coarse texture	h. poultry
_____ 9. a seasoned mixture of ground meats and fats that are used as stuffing or filling	i. charcuterie
_____ 10. the meat of an older sheep	j. food processor





Exercise 2

Instructions: Identify and describe the following:

1. Identify and describe 5 kinds of ingredients used in charcuterie.

#	Ingredient	Description
1.		
2.		
3.		
4.		
5.		

6. Identify and describe 5 kinds of equipment or tools used in charcuterie.

#	Equipment/Tool	Description
1.		
2.		
3.		
4.		
5.		





Lesson Output

Individual Work – Create a list of sanitation and safety practices when handling equipment and processed meats. Make a presentation using any word processing, spreadsheet, or presentation tool (or combination of 2 productivity tools).

Rubrics for List of Sanitation and Safety Practices When Handling Equipment and Processed Meats

Criteria	5	4	3	2	1	Points
Content/ Functionality	The student is able to completely identify and describe ALL guidelines for sanitation and safety practices when handling equipment and processed meats.	The student is able to identify MOST of the guidelines for sanitation and safety practices when handling equipment and processed meats and describe each one satisfactorily.	The student is able to identify MOST of the guidelines for sanitation and safety practices when handling equipment and processed meats but some descriptions are not complete.	The student is able to identify SOME of the guidelines for sanitation and safety practices when handling equipment and processed meats and some descriptions are not complete.	The student is able to identify SOME of the guidelines for sanitation and safety practices when handling equipment and processed meats but some descriptions are incorrect.	
Creativity	The work shows creativity of the student and the design has high visual appeal.	The work shows creativity of the student. The design took one or two elements from several existing sources, such as that from other people or the Internet, and built on these.	The project's requirements are met. The design took 3 or more elements from several existing sources, such as that from other people or the Internet, and built on these.	The work lacks creativity, and the design took most of its elements from several existing sources, such as that from other people or the Internet and didn't change or add to them.	The work lacks creativity and shows minimal to no effort in design. The student directly copied (plagiarized) their project from another source, such as from a person or from the Internet.	
Promptness	The student was able to submit the output before the given deadline.	The student was able to submit the output on time.	The student was late in submitting the output but was able to do so within the same day.	The student submitted the output 1 day after the deadline.	The student submitted the output more than 2 days of the deadline.	

Total

LESSON 2

Basics of Curing and Smoking



Learning Outcomes

At the end of the lesson, you are expected to be able to:

1. Enumerate the common ingredients used in curing.
2. Identify the basic kinds of curing and smoking.
3. Describe the procedure for making pork tocino.

Curing and smoking are two of the oldest methods of food preservation. Historical texts show that many ancient cultures have been salting their meats to preserve them. Early American Indians are known to smoke their meats by hanging them at the top of their dwelling where smoke comes out.

The practice of curing and smoking endure up to this day. Their role in food safety and food flavoring is still very much relevant in this day and age.



Engage

YouTube Video
"Why Spanish Iberian Ham Is the World's Most Expensive Cured Meat | Regional Eats" by Food Insider



<https://www.youtube.com/watch?v=1xcqXBGv5DM>



Explore

Word Search Puzzle

What can you buy in a food deli? Find the following meat products in the puzzle:

SALAMI

PASTRAMI

BACON

HAM

CHORIZO

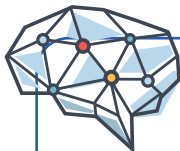
PEPPERONI

O	C	I	S	I	N	I	T	O	N	G	H
A	B	O	M	L	A	L	G	H	T	P	A
N	R	I	M	A	L	A	S	Q	U	E	T
I	I	N	O	C	R	A	W	T	R	P	S
O	L	B	X	T	W	T	H	E	E	P	R
N	L	A	I	C	N	O	S	D	T	E	O
C	I	C	P	B	I	N	O	A	Y	R	P
A	U	O	N	O	O	M	D	L	P	O	L
U	M	N	S	O	A	O	U	P	G	N	A
P	E	E	T	H	I	M	Y	R	E	I	N
U	C	H	O	R	I	Z	O	O	Y	L	E
Z	O	E	R	O	O	E	L	Y	N	E	D



Research

Research on the different kinds of cured meats. Choose one (1) example and describe how it is made. Write a 1-page report.



Explain

Curing

Before the advent of refrigeration, curing is a way for people to keep food, particularly meat, safe to eat. It is also a means to ensure that there is food even during times of scarcity. Meat spoils easily when left at room temperature. Curing meat serves to save food that would otherwise be wasted if not cooked and eaten immediately.

Curing is the process of preserving meats and other food items through the use of salt which dehydrates the food and makes it less hospitable for bacterial growth. As we have learned in Lesson 1, bacteria need moisture to grow. Salt draws out the moisture in meat, drying it and lengthening its shelf-life.

Today, curing is also done for the pleasant flavor, color and texture that the process does to food. A reddish color on meats is a typical characteristic of cured meat products.

Ingredients for Curing

The following are common ingredients used for curing:

1. **Salt** – is the most important food preservative known to man. Also known as sodium chloride, salt preserves meat by drawing out moisture from the meat, thereby dehydrating it. At the same time, salt is dissolved and is absorbed inside the cell walls of the meat. This results in a meat that is drier and saltier which is not an ideal environment for bacteria to grow. **Kosher salt**, a kind of salt that has bigger crystals than regular salt, is typically used for curing meats.
2. **Nitrites and Nitrates** – are used to preserve meat. They protect the meat from the growth of organisms that cause food spoilage and the growth of bacteria that can cause food poisoning, especially *Clostridium botulinum* that causes botulism.

Although there are now very rare cases of Trichinosis, caused by *Trichinella* parasites embedded in the muscle of pigs, this foodborne illness can still occur. Nitrites and nitrates correctly applied to a charcuterie product can terminate any larva that is lodged in the meat.

Nitrites and nitrates also give the reddish or pinkish color of cured meats.

3. **Sugars** – are used to counter the harsh taste of salt in cured meats. It is also used to add flavor and moisture to the product. Different kinds of sugars can be used in meat processing such as white sugar, brown sugar, honey, corn syrup and others.



Salt



Curing Salt

a combination of salt and sodium nitrite
curing salt by thebittenword.com
licensed under Creative Commons
Attribution 2.0 Generic license



Various Types of Sugars

4. **Seasonings and Flavorings** – different combinations of herbs and spices are used in making charcuterie or processed meats. Common flavorings are garlic, pepper, nutmeg, paprika, sage, thyme and others.
5. **Water** – is an important ingredient when wet curing or brining. Flavorings, along with the other ingredients, are dissolved in water so they are easily absorbed by the meats being processed.



different herbs and spices
(pepper, garlic, star anise, turmeric)

Concern on Nitrites and Nitrates

Sodium nitrite (NaNO_2) and sodium nitrate (NaNO_3) are types of salt that are used for preserving meats. They remove moisture from the meat, making it drier and less ideal for bacteria to grow. Nitrites and nitrates break down into nitric oxide (NO) after some time. This chemical slows down the process of food spoilage that makes meat rancid and sour. Nitrates break down much longer than nitrites which is why it is used on meats that are to be cured and dried for a longer time.

Concern over the use of nitrites and nitrates relate primarily to the potential formation of nitrosamines. **Nitrosamines** are organic compounds that are highly associated with the development of cancer. A 1970 study showed that laboratory rats which have been fed large quantities of nitrosamines developed malignant tumors. Meat cured with nitrites or nitrates when cooked with high temperatures can produce nitrosamines.

Because of this, the United States Department of Agriculture (USDA) and Food and Drug Administration (FDA) regulated the use of nitrites and nitrates. They limit the use of these curing agents to very small amounts, 200 parts per million (0.02 percent) or below. To ease the use of the curing agents and minimize mistakes, mixtures called **Insta Cure No. 1** and **Insta Cure No. 2** are made available.

Insta Cure No. 1, also known as Tinted Cure Mix (TCM), is a mixture of 94% sodium chloride (table salt) and 6% sodium nitrite. It is pink in color so it will not be mistaken for table salt. Insta Cure No. 2 is made with 90% sodium chloride (table salt), 6% sodium nitrite and 4% sodium nitrate. It must be pointed out that the use of Insta Cure No.1 and Insta cure No. 2 is **NOT** interchangeable.

The FDA also mandates that Vitamin C or ascorbic acid is added in the making of cured meats to further prevent the development of nitrosamines in these products.

Curing Methods

Dry Curing

Dry curing is the preservation and flavoring of food, particularly meats or fish, by adding a certain amount of salt. Salt alone can be used for curing but sometimes a combination of salt and other curing ingredients are used such as nitrites or nitrates and sugar. A dry cure is used when a drier texture or lower moisture content is desired in a preserved product.

Salt or the curing mixture is applied directly on the meat to be processed. It is important that all exposed parts of the meat are covered with the curing mixture to ensure even curing. The curing meats go through the process of **overhauling**. Meats are stacked or packed in bins and are turned periodically. Salt or the curing mixture is applied to the product repeatedly over the period of time needed to cure the meat.

The amount of time to cure a product depends on the kind of meat and the size or thickness of the product. Fish usually takes a shorter time to cure (e.g. about 6 hours to cure a kilo of filleted fish) compared to meat or a leg of ham which can take days, even weeks.



Dry Curing
sea salt being applied to prosciutto
cut legs

Wet Curing

Wet curing is the preservation and flavoring of food using a salt-water solution or a brine. Thus wet curing can also be called brining. Brining preserves and enhances the flavor of poultry, pork, and fish.

The product to be preserved should be fully submerged in the brine solution. A brine pump can also be used to inject the brine directly in the meat. After injection, the product should still be fully submerged in a brine.

Brining is especially suited for preserving whole poultry. The uneven shape of poultry such as chicken is hard to evenly coat with a dry cure mixture. Brining, aside from preserving, improves the flavor, texture and moistness of food.



wet curing
anchovy (fish) in brine

There are two ways to prepare a wet cure or brine:

1. The dry curing mixture may be dissolved in warm water or,
2. The water may be simmered first so that the flavor of the herbs and spices will be fully extracted

The brine must be cooled or chilled first before using it for curing. After submerging the product in the brine, the brine must be refrigerated. For food safety reasons, brines should never be reused.

Below is an example of a brine recipe:

Ingredients:	Procedure:
4 liters water 350g kosher salt 225g white sugar 40ml calamansi juice 1 clove of garlic, minced herbs and spices (optional)	1. Put all the ingredients in a stockpot. 2. Bring the brine to a boil. Simmer for a few minutes. 3. Cool the brine before using.

Other Curing Method

Marination, aside from imparting flavor and making food items tender, is also a form of food preservation. As discussed in Lesson 3, to marinate a food item means to soak it in a seasoned liquid, called a **marinade**, before cooking it. Marinades have three key ingredients: oil, acid, and flavorings.



marination
raw, marinated, chicken wings

Marination is the easiest and most common way to preserve meats and other food items that are prepared at home. To ensure even marination, it is important that all parts of the marinating items are soaked or covered with the marinade.

Below is a simple Calamansi-Rosemary marinade that can be used to make Herbed Chicken or Pork:

Calamansi-Rosemary Marinade

Ingredients:	Procedure:
1/4 cup calamansi juice 2 tbsp dried rosemary 1/4 cup olive oil 2 cloves of garlic, crushed Salt and pepper	1. Combine all the ingredients and mix thoroughly. 2. Marinate the chicken or pork for at least 1 hour in the mixture. Refrigerate.
Note: This marinade can be made ahead of time. Store in an airtight container and refrigerate. It will keep for 1 week.	

Pork tocino, is a popular and much-loved Filipino breakfast item. It is commercially available and can be found in almost all grocery stores all over the country. It is also very simple to make!

To demonstrate how to cure/marinate pork tocino, watch the following video:

“Pork Tocino, SIMPOL!” by Simpol

https://www.youtube.com/watch?v=U_hj3f9BmZQ

Smoking

Smoking is the process of drying and preserving meats by surrounding them with smoke from a burning wood. Different kinds of woods are used for smoking. The popular ones to use are hickory, mesquite and oak.

Nowadays, smoking is mostly done for the flavor it imparts to the food rather than its preserving power. Smoked meat products have a reddish-brown color due to the combination of the process of curing and smoking.

Meats that are to be smoked should be dried first because smoke cannot cling to the wet surface of food. The meats are typically hanged for air drying in a room with a controlled temperature and humidity. They are adequately spaced so that air can circulate around them.

When cured foods are hanged long enough to dry, they develop a sort of sticky or tacky skin called a **pellicle**. This coating is important because it acts like a protective barrier for the meat. The pellicle also helps in the smoking process by trapping the flavor and color of smoke, making them adhere more to the smoked items.

It should be emphasized here that curing is a different process from smoking. Proper curing preserves even the inside of meats while smoking only touches the external part or skin of the meat. When meat is being smoked, specifically cold-smoked, it spends time in the Food Danger Zone, the temperature range that is favorable for bacteria to grow and multiply. As such, **meats to be smoked must first be cured for food safety reasons**. Cured foods, on the other hand, do not have to be smoked.

There are two kinds of smoking: cold smoking and hot smoking.



Smoked Fish

smoked fish in smoker by Daniela
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Cold Smoking

Cold smoking is done below the temperature of 85°F (30°C). The food items being cold smoked take on the flavor of smoke but they are not cooked. Salmon, seafood and chicken breasts can be cold-smoked.

Hot Smoking

Hot smoking is done at 165°F (74°C) temperature for meats and sausages. Fish and poultry are hot smoked at a temperature as high as 200°F (93°C). Foods to be smoked must reach the internal temperature of 150-160°F (65-74°C) to be fully cooked. Higher temperatures than the ones mentioned above are generally avoided because the products will undergo excessive shrinkage.

Other Hot-Smoking Methods

Smoke roasting, also called pit roasting, can be done at home. The temperature while smoke roasting should be about 250°F (121°C). To set-up, use a regular barbecue grill. Wood chips may be placed with the coals to produce the desired smoke flavor and aroma. Other dried herbs and leaves may be added.

Alternatively, using a **liquid smoke** can impart the taste and aroma of smoke in food. This is a commercially available product that gives the flavor of smoke and is in liquid form. It can be incorporated with the meat mixture to be processed or applied on the skin of the charcuterie product.

To sum up, meats to be smoked undergo three (3) processes:

1. They are to be cured first either by dry curing or wet curing.
2. They are to be air-dried.
3. Lastly, they are smoked either by cold smoking or hot smoking.



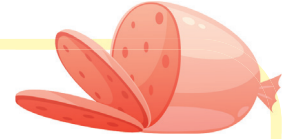
Summary

Curing and smoking are important food preservation and food flavoring processes. If appropriately done, they help in ensuring food safety and enhance the flavor and appearance of food. Understanding how preserved meat products are done will give us a level of appreciation for the skill and artistry needed to produce them.

Learning food preservation, even just for personal consumption, can be a very practical skill. It costs less to make your own cured meats than buying them. You are also in control of what you will put in your products. You can even make healthier versions of preserved meats. It goes without saying that it takes practice to master the skill. But once you've learned it, you will sure find a sense of satisfaction from making and preparing your own charcuterie products.



Exercises

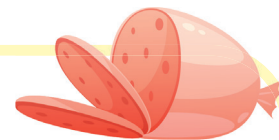


Exercise 1

How much have you learned?

Instructions: Choose the letter of the correct answer.

- _____ 1. The sticky or tacky skin that develops in cured meats after air drying is _____.
a. sodium chloride b. liquid smoke c. pellicle
- _____ 2. The process of turning over the curing meats repeatedly is _____.
a. overhauling b. air drying c. cold smoking
- _____ 3. A salt-water solution is also called a _____.
a. liquid smoke b. nitrite c. brine
- _____ 4. The preservation and flavoring of food, particularly meats or fish, by adding a certain amount of salt is called _____.
a. smoking b. curing c. smoke roasting
- _____ 5. The most important food preservative known to man is _____.
a. nitrite b. salt c. nitrate
- _____ 6. The organic compound that is highly associated with the development of cancer is _____.
a. Clostridium botulinum b. trichinella c. nitrosamine
- _____ 7. The curing ingredient used to counter the harsh taste of salt in cured meats is _____.
a. sugar b. herbs c. spices
- _____ 8. The temperature for hot smoking meats and sausages is _____.
a. 140°F b. 165°F c. 100°F
- _____ 9. The process of drying and preserving meats by surrounding them with smoke from a burning wood is _____.
a. curing b. air drying c. smoking



_____ 10. Meats are submerged in _____ water when brining.

a. warm

b. hot

c. chilled

Exercise 2

Enumerate the following:

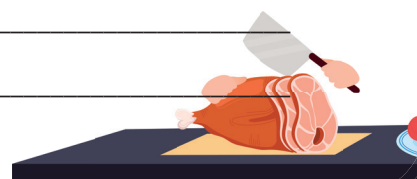
1. Enumerate the different ingredients used in curing and their functions.

#	Ingredient	Description
1.		
2.		
3.		
4.		
5.		

2. What is dry curing?

3. What is wet curing?

4. What is smoking?





Lesson Output

Individual/Group Work – Prepare Pork Tocino using the recipe below as guide. Make a slideshow or video presentation of yourself preparing the Pork Tocino.

Homemade Pork Tocino

Ingredients:	Procedure:
1/2 kilo pork pigue or kasim, sliced (1/4 inch thick) 1/2 cup sugar 1 tablespoon garlic, minced 1/2 cup pineapple juice 1/4 cup banana ketchup 1 tablespoon salt 1/4 teaspoon ground pepper	1. Combine all the ingredients. Make sure that the pork slices are thoroughly covered with the marinade. 2. Store in a covered container. 3. Refrigerate overnight to cure.
Note: 1. You can test if the taste of the pork tocino is to your liking by frying a few slices before storing in the refrigerator. Adjust your seasoning as needed. 2. This recipe can be modified using chicken as meat, instead of pork.	

Rubrics for Preparing Pork Tocino

Criteria	5	4	3	2	1	Points
Content / Functionality	The student is able to completely identify ALL ingredients based on the recipe. The procedure and proper sequence were followed. EXCELLENT product quality and presentation in terms of final output.	The student is able to identify MOST of the ingredients based on the recipe. The procedure and proper sequence were followed. Product quality and presentation in terms of final output is GOOD.	The student is able to identify MOST of the ingredients based on the recipe. The procedure and proper sequence were followed. Product quality and presentation in terms of final output is SATISFACTORY.	The student is able to identify MOST of the ingredients based on the recipe. Some procedures and instructions were NOT followed. Product quality and presentation in terms of final output is SATISFACTORY.	The student is NOT able to identify MOST of the ingredients. Procedures and instructions were NOT followed. Product quality and presentation in terms of final output is NOT SATISFACTORY.	
Creativity	The work shows creativity of the student and the design has high visual appeal.	The work shows creativity of the student. The design took one or two elements from several existing sources, such as that from other people or the Internet, and built on these.	The project's requirements are met. The design took 3 or more elements from several existing sources, such as that from other people or the Internet, and built on these.	The work lacks creativity, and the design took most of its elements from several existing sources, such as that from other people or the Internet and didn't change or add to them.	The work lacks creativity and shows minimal to no effort in design. The student directly copied (plagiarized) their project from another source, such as from a person or from the Internet.	
Promptness	The student was able to submit the output before the given deadline.	The student was able to submit the output on time.	The student was late in submitting the output but was able to do so within the same day.	The student submitted the output 1 day after the deadline.	The student submitted the output more than 2 days of the deadline.	
Total						

LESSON 3

Basics of Sausage-making



Learning Outcomes

At the end of the lesson, you are expected to be able to:

1. Classify the different types of sausages.
2. Differentiate the types of casings used to make sausages.
3. Describe the procedure for making *longganisa*.

The term sausage is derived from the Latin word *salsus* which means “preserved” or “salted”. Making sausages is a method of preserving meats. It is also a practical way of utilizing small cuts of meats that would otherwise be wasted.

Sausage-making is one of the earliest ways of processing foods. Historical records show that ancient civilizations were already making sausages. This practice not only survived up to this day but has been a thriving tradition. Charcutiers, inspired by the versatility of this dish, have created a thousand varieties of sausages enjoyed all over the world.



Engage

YouTube Video “How Traditional Cumberland Sausages Are Made in England | Regional Eats” by Food Insider



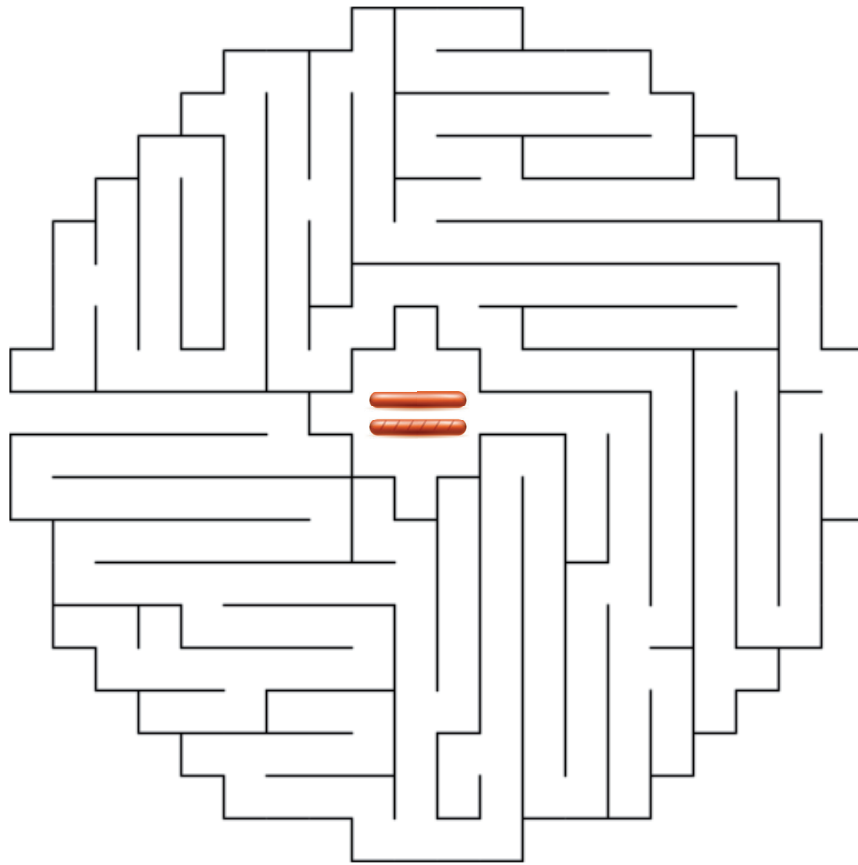
<https://www.youtube.com/watch?v=i9cTB7xhLXE>



Explore

Let's Get Grilling!

It's meal time! Cook the sausages on the barbecue grill by solving the maze.



Research

Research on the different kinds of sausages. Choose one (1) example that is popular in a particular country, region, or province. Describe how it is made. Write a 1-page report.



Explain

Sausages

Sausages are ground meat mixed with seasonings and flavorings that are then stuffed in a casing. The seasoning can be as basic as just salt or it can be a blend of three or more herbs and spices. The seasonings and flavorings used is what makes one sausage different from the others.



There is an infinite variety of sausages. Different regions around the world have different ways of making their sausages. They use unique ingredients only available in their area. This is one of the reasons why sausages are very popular. Different parts of the world have their distinct recipe or way of making sausages that it can become a source of regional or national pride.

Ingredients for Making Sausages

Sausages have three basic ingredients: meat, fat, and seasonings or flavorings. A fourth one, curing mixes, are used in cured and smoked sausages.

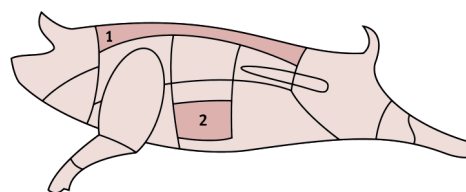
Pork is the most popular meat used in sausages. But any other meat can actually be used. Pork can be mixed with beef, chicken, or another kind of meat. In some cases, pork can even be mixed with offal or organ meats.

Fat is an important ingredient when making sausages because it imparts flavor and moisture. Fatback, the hard fat taken from the back of the pig, is the preferred fat to use for making sausages. The typical meat-fat ratio of sausages is 70-30. That is, a sausage recipe can be made with 70% meat and 30% fat. Today's health-conscious society has encouraged sausage-makers to create leaner versions of sausages with the fat content as low as 10 or 15%. Care must be taken, though, when cooking lean sausages as they can end up very dry when overcooked.

The seasonings and flavorings used in the making of sausages determine what kind of sausage it is. The list seems to be endless when you look at all the kinds of sausages made all over the world. That's because different blends of herbs and spices will produce different kinds of sausages.

In the Philippines alone, we have dozens of variants of sausages or *longganisa*. These sausages have specific ingredients that give them their distinct flavor. Some are even called based on the province or region they are made from. Philippine *longganisa* can either be *hamonado* (sweet variety) or a *derecado* (garlicky or mixed with spices and herbs variety). For example, Vigan *longganisa*, which is a garlicky sausage, originated from the Ilocos region. Chorizo de Cebu is a sweet *longganisa* from Cebu. Pampanga *longganisa*, a sweet *longganisa* from Pampanga is arguably the most popular sausage in the country due to its mass production.

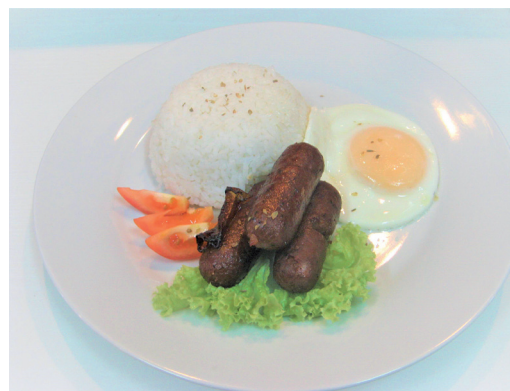
The Philippines has a long list of other well-loved *longganisa* variants. A Filipino breakfast is a lot more special with a plate of fried, just-cooked *longganisa* served with a sunny-side egg and a cup of rice.



Fatback (Labeled "1")

Schematic representation of a pig, back and pork belly – by Rainer Zenz

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longganisa served with rice and egg

Types of Sausages

The texture of the sausage, whether it has a coarse texture or a fine one, is largely based on how the meat is ground. Typically, meat is processed using a meat grinder. The meat is first cut into small pieces, so they easily fit through the grinder. No matter what texture you want the final product to be, it is best to do a **progressive grinding** — that is start grinding using the grinder plate with the biggest holes. After doing so, you may use the next grinder plate with the smaller holes. Repeat the process until you get your desired texture.

Basic grind sausages have a coarse texture. Their meat has been ground using a grinder plate that has big holes. In the case of Toulouse sausage, a kind of sausage from France, the meat is not ground using a meat grinder. Rather, the meat is chopped by hand which gives the final product a coarse texture. On the other hand, **emulsified** or **emulsion grind** sausages have very fine texture. Their meat and fat have been ground into a purée and then liquid such as water or milk has been added in the mixture.

The following are types of sausages:

1. Fresh Sausages

Fresh sausages are sausages that do not have nitrites or nitrates as ingredients in their production. They are basically just made up of ground meat, seasonings and flavorings. Fresh sausages must be thoroughly cooked before eating.



fresh sausages

2. Cured Sausages

Cured sausages, as the name suggests, are sausages that are cured or have nitrites or nitrates as ingredients in their production. These chemicals, discussed in Lesson 9, help to make charcuterie products safe to eat. They preserve meats and contribute to the reddish or pinkish color that is characteristic of preserved meat products.



cured sausages

3. Smoked Sausages

Smoked sausages are sausages that have undergone either cold smoking or hot smoking. Sausages that have been hot smoked are already cooked. This is due to the high cooking temperature they have been subjected to during smoking. All sausages that are to be smoked should undergo a curing process first for food safety purposes.



smoked sausages

Types of Casings Used for Making Sausages

Casings, which are the materials used to contain the sausage mixture can be classified into natural casings and artificial casings. **Haggis**, a Scottish pudding made from organ meats such as lungs, heart and liver, is enveloped in a casing made from the stomach of the sheep.

1. **Natural casings** are casings that are made from animal intestines. Intestines from animals such as pigs, cows and sheep can be used. Natural casings are usually sold salted and in packs.
 - **Sheep casings** – smallest in diameter of all the natural casings. Diameter ranges from $\frac{3}{4}$ inch to just more than 1 inch.
 - **Hog casings** – medium in size in terms of diameter. Diameter ranges from 1 inch to $1\frac{1}{2}$ inch.
 - **Beef casings** – size varies. Diameter ranges from $1\frac{3}{4}$ inches to 4 inches.



natural casings – casing from beef (in bucket) and sheep (on rear edge of bucket)

Natural Casing for sale at the meat market in Aleppo, Syria – by Ankara

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2. **Artificial casings** are manufactured casings. The use of artificial casings is necessary to keep up with the mass production of sausages and other charcuterie products.

- **Collagen casings** – are casings made from the collagen found in the skin of cattle animals. There are edible and nonedible varieties of collagen casings.
- **Cellulose casings** – are casings made from wood or cotton fibers. They are inedible and are usually peeled off before the product is eaten.
- **Plastic casings** – are casings made from plastic materials. Plastic casings are not edible. They are mainly used for mass production of meat products that must have uniformed shapes and sizes.
- **Fibrous casings** – are casings made from semi-synthetic materials. They are made by forming tubular layers of a specific type of paper and cellulose materials. Fibrous casings are very durable and are ideal for casing salamis and pepperonis.
- **Spice-lined casings** – are casings that have spice mixtures coating the inside of the casing. These spice mixtures will encrust the sausage once it is cooked and casing is removed.
- **Novelty casings** – are casings that are made from a variety of materials such as collagen, cellulose and others. They come in different shapes or designs.



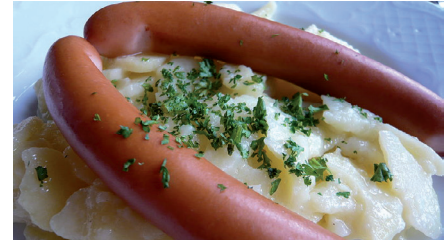
Beretta Salami and Collagen Casing
Salami (Fratelli Beretta brand Nostrano Salami) and the collagen casing it came in.

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Examples of Sausages

Sausages come in different varieties. Below are examples of popular kinds of sausages:

- **Garlic Sausage** – a type of sausage that makes use of garlic as its main flavoring ingredient. Garlic sausages can be made of any kind of meat, but pork meat is generally used.
- **Frankfurter** – a type of smoked sausage that has a fine texture. Beef is usually used to make Frankfurters, although it can be combined with other kinds of meat such as pork. Black pepper and nutmeg are typically used to flavor this sausage.
- **Chorizo** – a type of cured and smoked pork sausage that has a coarse texture. It is a very flavorful and generously seasoned sausage. It can be eaten on its own or is used to flavor other dishes. Many varieties of chorizo exist. The Spanish chorizo has a distinct red, smoky appearance and taste due to its use of paprika as a main flavoring ingredient.
- **Andouille (an-du-wee)** – is a spicy French pork sausage that has onions, garlic, and pork intestines as ingredients. This type of sausage can be semi-dry and has a medium texture.
- **Salami** – is a popular sausage that originated from Europe. Salamis are cured and then air-dried. They can be stored at room temperature and have a very long shelf-life.
- **Bratwurst** – is a type of German sausage made from pork, sometimes combined with veal. They are typically cured and then smoked. Many varieties of Bratwurst exist.
- **Mortadella** – is a type of Italian sausage made with highly emulsified pork which makes its texture very fine. This sausage is typically garnished with diced hard pork fat and pistachios.



Frankfurter

A pair of frankfurters on potato salad
by WordRidden / Jessica Spengler
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Commons Attribution 2.0 Generic
license



Spanish Chorizo



Salami



Mortadella

- **Blood Sausage** – is a type of cooked sausage that has blood as an ingredient. Other ingredients include pork jowl, ground meat, spices and cooked rice or some other kind of grain. Many countries around the world has a version of blood sausage. In the Philippines, there is a kind of blood sausage called *pinuneg*. It is a traditional sausage made by the Igorots. It contains, aside from blood, pork meat and innards and aromatics like garlic, ginger and onions.



Blood Sausage

- **Tuscan** – is a type of Italian sausage that is made from coarse ground pork. It is also seasoned with cheese and tomatoes.
- **Kielbasa** – is a type of Polish sausage made from pork or a combination of pork and beef. It has a fine texture. Although there are different varieties of Kielbasa, it is popularly known to have a U-shape in the United States.



Kielbasa

There are different varieties of *longganisa* in the Philippines. Many regions or provinces have their distinct way of making these favorite breakfast item. The aroma of frying *longganisa* is enough to wake you up in the morning.

To demonstrate how to make *longganisa*, watch the following video:

“Longganisa Hamonado, SIMPOL!” by Simpol

https://www.youtube.com/watch?v=ZWh7M7A_yU0

Summary

With enough practice, sausages can be easy to make. You can enjoy your own version of homemade sausages with quality ingredients you personally choose.

There is also a great business opportunity in making sausages. Because Filipinos love their *longganisa*, there is a big demand of this product in the market. In fact, there are successful meat product companies in the Philippines that started as small businesses based at home. With perseverance and good management, it is possible to grow a *longganisa* business.

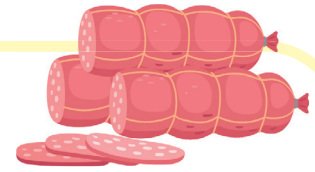


Exercises

Exercise 1

How much have you learned?

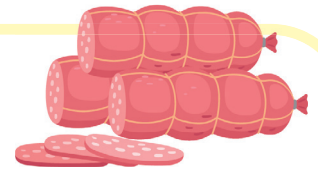
Instructions: Match Column A with Column B. Write the LETTER of the correct answer on the space provided before each number.



Column A	Column B
_____ 1. sausages that have nitrites or nitrates as ingredients in their production	a. Fresh sausages
_____ 2. casings that have spice mixtures coating the inside of the casing	b. haggis
_____ 3. ground meat mixed with seasonings and flavorings that are then stuffed in a casing	c. spice-lined
_____ 4. a Scottish pudding made from organ meats	d. emulsified
_____ 5. sausages that have undergone either cold or hot smoking.	e. sausages
_____ 6. casings made from animal intestines.	f. smoked sausages
_____ 7. a kind of sausage grind that have a coarse texture	g. cured sausages
_____ 8. casings that are manufactured	h. artificial
_____ 9. sausages that do not have nitrites or nitrates as ingredients in their production	i. basic
_____ 10. a kind of sausage grind that have been ground into a purée with liquid like water or milk added in the mixture	j. natural

Exercise 2

Instructions: Define or describe the following.

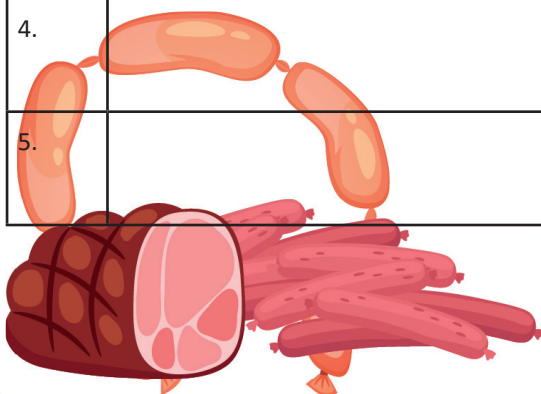


1. Give five (5) examples of sausages and describe each kind.

#	Example of a Sausage	Description
1.		
2.		
3.		
4.		
5.		

6. Give five (5) examples of sausage casing and describe each kind.

#	Sausage Casing	Description
1.		
2.		
3.		
4.		
5.		





Lesson Output

Individual/Group Work – Prepare Longganisa using the recipe below as guide. Make a slideshow or video presentation of yourself preparing the longganisa

Homemade Pork Longganisa

Ingredients:	Procedure:
1 kilo ground pork 1 tablespoon salt 1 teaspoon ground pepper 1/2 cup sugar 3 tablespoons garlic, minced 1/4 cup pineapple juice 1/4 cup banana ketchup Hog casing or wax paper, for portioning	1. Combine all the ingredients. Mix thoroughly 2. Make sausages using hog casing or wax paper. 3. Store in a covered container. 4. Refrigerate overnight to cure.
Note: 1. You can test if the taste of the pork longganisa is to your liking by frying small patties before storing in the refrigerator. Adjust your seasoning as needed. 2. This recipe can be modified using ground chicken as meat instead of ground pork. 3. Alternatively, the longganisa mixture can be portioned by shaping them into oval sausage patties or rolling them into 2-inch sausage rolls using wax paper as seen in this video: "Longganisa Hamonado, SIMPOL!" by Simpol https://www.youtube.com/watch?v=ZWh7M7A_yU0	

Rubrics for Preparing Longganisa

Criteria	5	4	3	2	1	Points
Content / Functionality	The student is able to completely identify ALL ingredients based on the recipe. The procedure and proper sequence were followed. EXCELLENT product quality and presentation in terms of final output.	The student is able to identify MOST of the ingredients based on the recipe. The procedure and proper sequence were followed. Product quality and presentation in terms of final output is GOOD.	The student is able to identify MOST of the ingredients based on the recipe. The procedure and proper sequence were followed. Product quality and presentation in terms of final output is SATISFACTORY.	The student is able to identify MOST of the ingredients based on the recipe. Some procedures and instructions were NOT followed. Product quality and presentation in terms of final output is SATISFACTORY.	The student is NOT able to identify MOST of the ingredients. Procedures and instructions were NOT followed. Product quality and presentation in terms of final output is NOT SATISFACTORY.	
Creativity	The work shows creativity of the student and the design has high visual appeal.	The work shows creativity of the student. The design took one or two elements from several existing sources, such as that from other people or the Internet, and built on these.	The project's requirements are met. The design took 3 or more elements from several existing sources, such as that from other people or the Internet, and built on these.	The work lacks creativity, and the design took most of its elements from several existing sources, such as that from other people or the Internet and didn't change or add to them.	The work lacks creativity and shows minimal to no effort in design. The student directly copied (plagiarized) their project from another source, such as from a person or from the Internet.	
Promptness	The student was able to submit the output before the given deadline.	The student was able to submit the output on time.	The student was late in submitting the output but was able to do so within the same day.	The student submitted the output 1 day after the deadline.	The student submitted the output more than 2 days of the deadline.	
Total						

