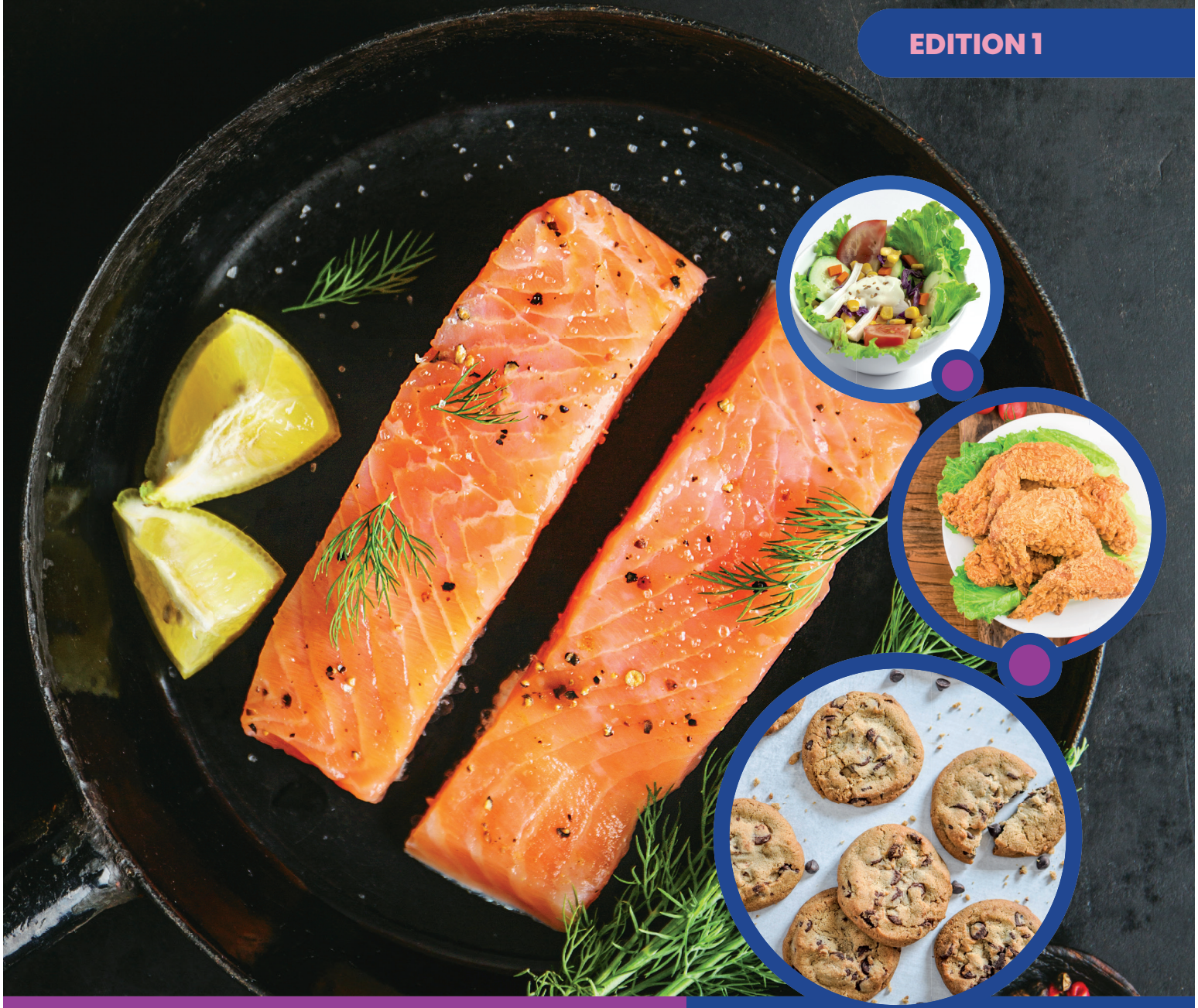
LifeTek-TLE 10

Practical Skills for Home and Livelihood

EDITION 1



techFactorsInc
Making learning a great experience

Sherry Suico-Shinyo
AUTHOR

LifeTek-TLE 10

Practical Skills for Home and Livelihood

Sherry Suico-Shinyo
Author

techFactorsInc
Making learning a great experience

Fourth printing of the first edition, 2024
ISBN 978-621-8266-21-6

Author Sherry Suico-Shinyo

Cover Design Jiyas Suministrado-Morales

Layout and Design Jiyas Suministrado-Morales and Joseph Timothy Bago

Content and Editorial David Michael Shinyo

Alvin Ramirez

Micah Angelie Dizon

Alexander Lim

Rondi Daryl Reyes

Divine Louise Anai

Angelica Mae Emata

Creatives Jiyas Suministrado-Morales

Gilbert Lavides

Christian Andrew Sabado

Joseph Timothy Bago

Justine Eliza Fontanilla

Kaye Ann Peñaverde

Aren Dela Cruz

Exclusively distributed by TechFactors, Inc.
101 V. Luna Road, Sikatuna Village
Quezon City 1101 Philippines

Telephone number: (632) 8929 6924
E-mail address: info@techfactors.com
Website: www.techfactors.com

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

Sherry Suico-Shinyo

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 10 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 Baking.

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.

TABLE OF CONTENTS

COOKERY 2

Lesson 1: Kitchen Sanitation and Safety 3
Lesson 2: Principles of Cooking 17
Lesson 3: Tools in the Kitchen 35
Lesson 4: Understanding Meats 51
Lesson 5: Understanding Poultry 67
Lesson 6: Understanding Fish and Shellfish 83
Lesson 7: Understanding Vegetables 103
Lesson 8: Salads and Salad Dressings 119

BAKING 140

Lesson 9: Baking Quickbreads 141
Lesson 10: Baking Cookies 161

LifeTek-TLE

Home Economics

Cookery

1. Kitchen Sanitation and Safety

2. Principles of Cooking

3. Tools in the Kitchen

4. Understanding Meats

5. Understanding Poultry

6. Understanding Fish and Shellfish

7. Understanding Vegetables

8. Salads and Salad Dressings

LESSON 1 Kitchen Sanitation and Safety

Learning Outcomes

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

1. Describe the different types of food hazards that can cause foodborne illnesses.
2. Understand how disease-causing bacteria grow and identify ways to inhibit their growth.
3. Create a guideline for good sanitation and safety practices in the kitchen.

Cooking is an important activity in every household. Because we need to eat every day, cooking or the preparation of food is also a daily affair.

We must be careful when we cook or handle food because people can get sick by eating contaminated food. The improper handling of food is one of the main causes of foodborne illnesses. Understanding how food gets contaminated and knowing the ways on how to avoid food contamination is not only useful but also very critical. Understanding sanitation and safety in the kitchen can save lives.

Engage

YouTube Video "Truth About Food Poisoning" by NSWFood-Authority

https://www.youtube.com/watch?v=Pq2me3r0cz4&t=5s

Explore

See how much you know. Write True or False in the space provided.

_____ 1. Washing your hands properly is very important to prevent foodborne illnesses.

_____ 2. There is no need to wash fruits with rinds.

_____ 3. Use separate cutting boards for raw meat and vegetables.

_____ 4. It is all right to mix newly cooked food with leftovers.

_____ 5. Avoid touching your nose, mouth, and other body parts when you are handling food.

Research

Research three (3) examples of foodborne illnesses caused by bacteria. What particular pathogen caused the food-borne illness? What are the signs and symptoms? How can you prevent being infected? Write a report.

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

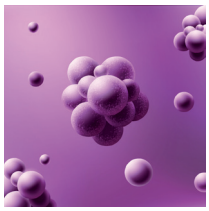
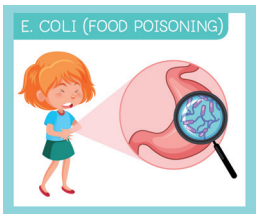
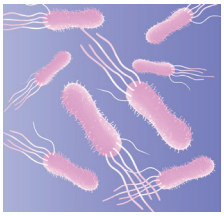
Bacteria

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 *Staphylococcus aureus* 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.	 *Staphylococcus aureus*
Escherichia coli Infection – caused by harmful strains of the bacterium *Escherichia coli* or *E. coli.* 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 E. coli. Regular hand washing helps prevent E. coli infection. We need to cook food thoroughly, especially red meats, to avoid E. coli infection.	 *Escherichia coli*
Salmonellosis – caused by the bacteria of the *Salmonella* type. Symptoms may include diarrhea, severe abdominal cramps, fever and vomiting. Salmonella can usually be found in contaminated meats and poultry, raw eggs and shellfish caught in polluted waters. To avoid Salmonella 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.	 *Salmonella*
Botulism – caused by the toxin produced by the bacterium *Clostridium botulinum*. 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.	 *Clostridium botulinum*

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, yeast 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 dough, 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 and other 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. **F**ood – bacteria need food to grow. Foods that are rich in protein such as meats, eggs and dairy are breeding grounds for bacteria.

2. **A**cidity or **A**lkalinity – 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. **T**emperature – 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. **T**ime – 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. **O**xygen – **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. **M**oisture – bacteria need water to grow. Dry and salted foods do not support bacterial growth.

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:

a) Do not handle food or prepare food for others when you are sick or have an infection.

b) Take a bath or shower daily.

c) 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.

d) Keep fingernails clean and trimmed.

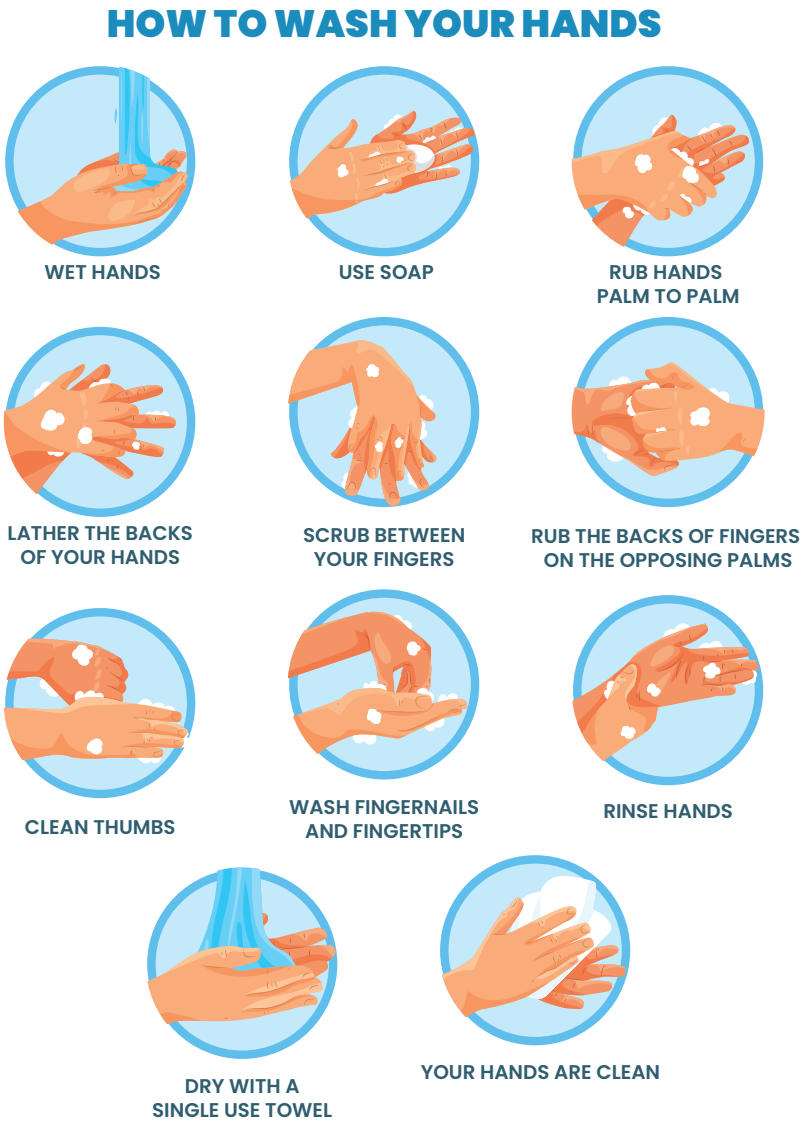
HYGIENE PERSONAL HYGIENE

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:



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 many 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 the 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 appliance 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 to 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?

Instruction: Choose your answer from the following:

botulism	applying heat	viruses	food contamination	lag phase
Food Danger Zone	first in, first out	parasites	pH	pathogen

1. _____ is a principle of stock rotation called FIFO.
2. _____ happens when pathogens come in contact with food.
3. _____ is caused by the toxin produced by the bacterium Clostridium botulinum.
4. _____ is a microbe that can cause an illness.
5. _____ are infectious agents that can only multiply when they are inside a living cell.
6. _____ is the measurement used to indicate the acidity or alkalinity of a substance.
7. _____ is the range of temperatures where there is rapid bacterial growth.
8. _____ are organisms that need hosts or other organisms to survive.
9. _____ is one of the ways to sanitize kitchen utensils and equipment.
10. _____ is the time needed by bacteria to adjust in their new environment.

Exercise 2

Instruction: Enumerate the following:

1. Give 2 kinds of foodborne illnesses.
   a. _____
   b. _____

2. Enumerate and describe 3 factors that are favorable for bacterial growth.

   a. _____

   b. _____

   c. _____

3. What are the ways to cool foods quickly?

   a. _____

   b. _____

   c. _____

   d. _____

4. Write the Minimum Internal Cooking Temperature for 3 Kinds of Food Products.

   a. _____

   b. _____

   c. _____

5. Write 4 ways to exhibit good personal hygiene.

   a. _____

   b. _____

   c. _____

   d. _____

6. Write 4 practices to prevent accidents and injuries in the kitchen.

   a. _____

   b. _____

   c. _____

   d. _____

Lesson Output

Individual Work – Using any word processing, spreadsheet, or presentation tool (or combination of 2 productivity tools), create a guideline for kitchen sanitation and safety.

Rubrics for Kitchen Sanitation and Safety Guideline

Criteria	5	4	3	2	1	Points
Content / Functionality	The student is able to completely identify and describe ALL guidelines for kitchen sanitation and safety.	The student is able to identify MOST of the guidelines for kitchen sanitation and safety and describe each one satisfactorily.	The student is able to identify MOST of the guidelines for kitchen sanitation and safety but some descriptions are not complete.	The student is able to identify SOME of the guidelines for kitchen sanitation and safety and some descriptions are not complete.	The student is able to identify SOME of the guidelines for kitchen sanitation and safety 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 after more than 2 days of the deadline.	
Total						

LESSON 2 Principles of Cooking

Learning Outcomes

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

1. Define heat and how it is transferred to food.
2. Classify and define cooking methods.
3. Describe the ways to build flavor in cooked/prepared dishes.

Engage

YouTube video "Why the Maillard Reaction Makes Everything Delicious" by Reactions

(Produced by The American Chemical Society)

https://www.youtube.com/watch?v=rs1JLYXROVU

Learning to cook is an important life skill. It is a skill that offers a lot of benefits. People who have learned how to cook are empowered to make smart, healthy choices in their diet. Cooking promotes self-reliance. It can be a means to de-stress, to cope with life's demands and challenges. It can also open doors to social connections, a way to make new friends.

But like other skills, it takes time, effort, and practice to be great at cooking. You cannot expect someone to be excellent in sports or in playing a musical instrument right away. Understanding the principles behind the science and art of cooking, and then practicing them are important steps in building this skill.

Explore

Name the Cooking Method.

Guess the correct cooking method used in the pictures below. Write your answer in the space provided under each picture.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

Research

Research about the popular dishes cooked or prepared in your city, town, or province. What are the names of the dishes? What ingredients were used? How are they prepared or what cooking methods are used to prepare the dishes? Write a short, 1-page report on your research.

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.

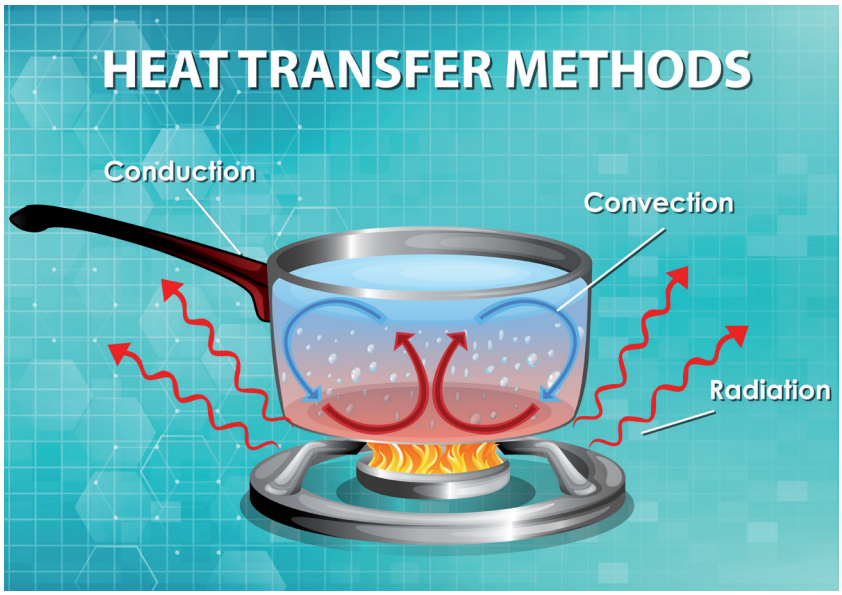
- **Maillard Reaction** – is the browning of meats. Meats contain small amounts of carbohydrates. The protein chains in meats react with the carbohydrate molecules when meats are heated at a high temperature (about 310°F or 154°C). Through this complex chemical reaction, meats turn brown and develop 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 **cuisson**, 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

To grill means to cook a food item using radiant heat coming from below. 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

To griddle means to cook a food item using radiant heat coming from below. 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

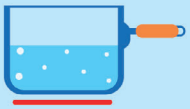
To pan-fry means to cook the food items in a moderate amount of fat. Pan-frying is done over moderate heat, and the cooking time is longer than that of sautéing. It is used for larger pieces of food items such as chops or chicken pieces. The food items are usually turned at least once to ensure even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

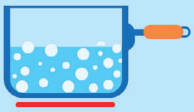
Summary of Cooking Methods

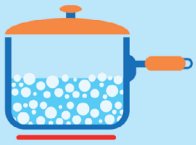
MOIST-HEAT METHODS



Poaching
low heat, to cook in a small amount of liquid that is hot but not bubbling

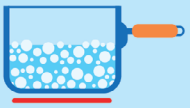
Simmering
medium heat, to cook food in a gently bubbling liquid





Boiling
high heat, to cook food by immersing it in a liquid that is very agitated and bubbling rapidly.

Blanching
high heat, to cook food partially within a short period of time



Steaming
high heat, to cook food by subjecting it directly to steam

Braising
high heat then low heat, to cook covered in a small amount of liquid after browning the food item first

DRY-HEAT METHODS Without Fat

Roast/Bake
medium to high heat, to cook by covering the food with hot, dry air, normally in an oven.

Barbecuing
high to low heat, to cook food using dry heat from the burning of hardwood or coal

Searing
high heat, to cook food until a brown crusted surface forms

Broiling
high heat, to cook a food item with radiant heat coming from above

Grilling
high to low heat, to cook fooc using radiant heat coming from below, done on a grill, an open wire grid

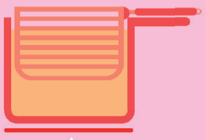
Griddling
low to high heat, to cook food using radiant heat coming from below, done on a griddle, a solid cooking surface

Pan-Broiling
medium to high heat, to cook food like griddling but with the use of a sauté pan or skillet, fats that collect on the pan must be removed

DRY-HEAT METHODS With Fat

Sautéing
high heat, to cook food quickly in a small amount of fat.

Pan-Frying
medium heat, to cook food in a moderate amount of fat,the cooking time is longer than sauteing



Deep-Frying
high heat, to cook food submerged or thoroughly covered in hot fat

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?

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

Column A	Column B
_____ 1. heat transfer that happens through the movement of air, steam or liquid	A. deglazing
_____ 2. a flavorful poaching liquid	B. caramelization
_____ 3. to cook the food items submerged or thoroughly covered in hot fat	C. Maillard Reaction
_____ 4. a form of energy that can be transferred from one object to another	D. griddling
_____ 5. browning of sugars	E. deep-frying
_____ 6. a bundle of different herbs used to flavor stocks, soups, and stews	F. bouquet garni
_____ 7. swirling liquid on the sauté pan to dissolve the cooked particles of food stuck on the bottom of the pan	G. convection
_____ 8. the seeds, fruits, bark and roots of plants and trees used to flavor dishes	H. heat
_____ 9. to cook a food item on a solid cooking surface using radiant heat from below	I. cuisson
_____ 10. the browning of meats	J. spices

Exercise 2

Instruction: Enumerate the following:

1. Three kinds of heat transfer and one (1) example for each kind

   a. _____

   b. _____

   c. _____

2. Five kinds of moist-heat cooking methods. Define each type.

   a. _____

   b. _____

   c. _____

   d. _____

   e. _____

3. Five kinds of dry-heat cooking methods. Define each type.

   a. _____

   b. _____

   c. _____

   d. _____

   e. _____

4. The five basic tastes

   a. _____

   b. _____

   c. _____

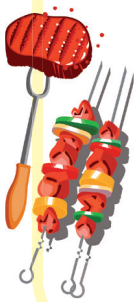
   d. _____

   e. _____

5. Two common seasoning or flavoring ingredients. Give characteristics of each item.

   a. _____

   b. _____



Lesson Output

Individual Work - Choose a recipe that you really like. Explain how each ingredient in your recipe contributes to the over-all flavor of the dish. Make a presentation using any word processing, spreadsheet, or presentation tool (or combination of 2 productivity tools).

Rubrics for Flavor Building

Criteria	5	4	3	2	1	Points
Content / Functionality	The student is able to completely list the ingredients in the recipe and relate each one to how it builds flavor in the dish.	The student is able to list most of the ingredients (except 1) in the recipe. Identified ingredients were described as to how they build flavor in the dish.	The student is able to list the ingredients (except 1) in the recipe. Identified ingredients (except 1) were described as to how they build flavor in the dish.	The student is able to list the ingredients (except 1) in the recipe. Some of the ingredients (2 or 3) were not described as to how they build flavor in the dish.	The student was not able to list ALL the ingredients (missed 3 or more) in the recipe. Some of the ingredients (3 or more) were not described as to how they build flavor in the dish.	
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 Tools in the Kitchen

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. Enumerate the common tools and equipment in the kitchen.
3. Define recipe and its parts.
4. Change the yield of a recipe.

Engage

YouTube Video
"19 Tools To Make Cooking Easier" by Joshua Weissman

https://www.youtube.com/watch?v=O5hW_65fTxs

The modern kitchen has a variety of tools and equipment for the purpose of making cooking, and kitchen work in general, much easier. This lesson aims to make you more familiar with the common tools used in the kitchen.

This lesson will also give you an introduction on recipes. It will give you an idea on the uses of recipes and also their limitations. You will learn how to adjust a recipe's yield or the total quantity of the recipe's finished product. Being able to do so is a skill that will help you make the best use of your ingredients and minimize wastage in the kitchen.

Explore

See how much you know. Identify the common kitchen tools illustrated below. Write your answer in the space provided under each picture.

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

Research

Research on important kitchen tools and equipment. Choose the top three (3) tools and equipment that you think a kitchen must have. Write a 1-page report.

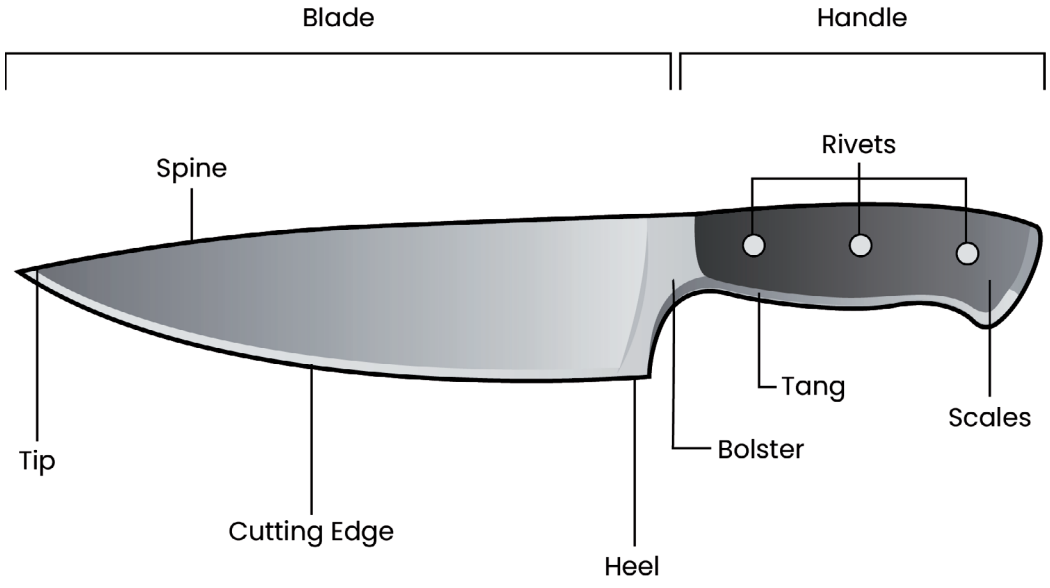
Explain

Tools in the Kitchen

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 and how to use it in the most efficient way.

Parts of the Chef's Knife



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

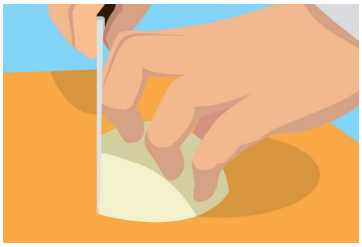
- The **spine** is the thick, dull, back portion of the blade.
- The **cutting edge** is the portion opposite the spine. It is the sharp part of the knife starting from the tip to the heel. Most of the cutting techniques make use of the center of the cutting edge.
- The **tip** is the narrow, pointed 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.

Essential Knives

There are many kinds of knives, and some are very specialized to do specific tasks. But we are not in a professional kitchen, and we do not need to have a full set of knives. Only a few good ones are needed to do all the cutting and chopping. If we are to have a few knives to help us do our work, these three knives will cover almost all the cutting tasks in the kitchen:

1. **Chef's knife** – as described above, the chef's knife is the all-around knife. It is designed to do most of the cutting and chopping needed in the kitchen.

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.

3. **Serrated slicer** – a knife with a jagged edge or "teeth". It is used for slicing bread, cakes, tomatoes and other similar items.

Chef's knife

Paring knife

Serrated slicer

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.

Blender

Immersion Blender

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.

Refrigerator

     - 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.

Stockpot

Saucepot

Bake pan

Saucepan

Sauté pan

Stainless-steel bowl

- **Stainless-steel bowls** – are bowls with round bottoms. They are used for mixing and are available in different sizes.

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.

Measuring spoons

Measuring cups

Volume measure

Scale

Meat thermometers

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

- **Spoons** – 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.
- **Vegetable peeler** – a tool with slotted, swiveling metal blade used for peeling fruits and vegetables.
- **Cutting board** – 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.


Skimmer


Tongs


Strainer


Grater


Wire whip or Whisk

Can opener

Colander

Vegetable Peeler

Cutting Board

Recipes

Recipes are also important tools in the kitchen. A **recipe** gives direction on how to cook or prepare a particular dish. A written recipe usually contains the following:

1. The name of the dish to be prepared
2. The yield – how many servings or portions will the recipe produce or the number of people the dish is prepared for
3. List of ingredients and the appropriate amount per ingredient
4. List of equipment needed
5. Instruction or procedure

    a) on how to cook or prepare the dish
    b) steps or suggestions for plating or serving the dish

Given below is a sample of a recipe:

Coleslaw

1. Name of Recipe

2. Yield

4. List of equipment

5. Instruction or Procedure

Yield: 1 kilo		**Portions: 10** **Portion Size: 100g**
Ingredients:	**Equipment:**	**Procedure:**
300 ml mayonnaise 25 ml vinegar 15 g sugar 5 ml salt 2 ml white pepper 800 g cabbage (trimmed)	1 large stainless-steel bowl 1 spatula	1. Combine all the ingredients in a stainless-steel bowl, except the cabbage. Mix thoroughly. 2. Add the cabbage and mix well. 3. Adjust the salt, sugar or vinegar according to your desired taste.
10 lettuce cups	1 tray or baking sheet (to arrange lettuce cups) 1 No.12 scooper Plastic wrap (if coleslaw is to be served later)	4. Arrange the lettuce cups as base for the coleslaw. 5. Scoop a mound of coleslaw (about 100g/mound) and place in the center of each lettuce cup. 6. Refrigerate if needed or if the coleslaw is to be served at a later time.

3. Ingredients

Some recipes provide very little information while some can be very detailed. But even if a recipe is very detailed it can still have limitations because of the following reasons:

1. **Not all food products are the same.**
   For example, you may be cooking a dish with vegetables as ingredients, but not all the vegetables you are cooking have the same size and shape, or even the same level of ripeness. These differences will affect their cooking time and over-all taste.

2. **Different equipment performs differently.**
   For example, cooking in a tall saucepot is different from cooking using a medium-sized one. Reducing the liquid of a sauce, stew or soup you are cooking is much faster when you are cooking using a saucepot that is wider and shorter.

3. **Recipe instructions can be interpreted differently by different people.**
   For example, how "thick" a sauce should be, can be understood differently by people with different levels of cooking experience. A "bunch" or a "pinch" of something can mean different ways to different people.

Citing the limitations of recipes does not mean that recipes do not have a purpose in cooking. It also does not mean that recipes are not helpful. This just goes to show that recipes are just tools. Understanding cooking principles and practicing how to cook regularly will help you become more skillful. As your experience in cooking grows, you will enjoy it more and will ultimately learn how to cook with better judgment.

Tips on Reading Recipes

- **Read the recipe very carefully. Then read the recipe again.**
  Sometimes when we read a recipe, we already have a pre-established notion of what should be done to cook or prepare the dish. This is especially true when we already know or have prepared the dish before. It is important to understand what the recipe actually says not what we think it says.

- **Before cooking any dish, it is a good idea to learn as much as you can about the dish you are about to prepare.**
  When you gain more experience in cooking, it will be helpful to research the dish you are about to cook or prepare. Doing so will give you ideas on different variations of making the dish.

- **Determine the cooking/preparation method that you are going to use.**
  Learn what you can about the particular cooking method/preparation that you will be using. For example, does the recipe require you to fry the food items? If so, you can review the correct ways or steps in frying.

- **Make sure that you correctly understand the ingredients you need to prepare and how to prepare them.**
  For example, determine how the ingredients should be cut. Cutting each ingredient in their proper size and shape will help to improve the over-all quality of a dish.

- **Review the steps or procedure in the recipe.**
  Check if there are any preparatory work that you have to do before starting the actual cooking.

Converting Recipes

Every recipe has a yield or the total amount of the finished product you are going to end up with once the dish is cooked or fully prepared. The yield of a recipe can be stated in different ways:

- **The total amount of the finished product.**
  In our coleslaw recipe the total amount of the finished product is 1 kilo.

- **The total number of portions.**
  In our coleslaw recipe the total portions are 10 or the recipe is for 10 people.

- **The total number of portions and the size per portion.**
  In our coleslaw recipe, it is indicated that the total portions are 10 and per portion is 100g or that each person gets 100g of coleslaw.

It is sometimes necessary to adjust a recipe to get a desired yield. For example, in our coleslaw recipe it is indicated that the yield of the finished product is for 10 people. What if we are preparing for a gathering or a party and we have a total of 30 attendees? How do we adjust the recipe?

We can adjust the quantity of the recipe by using a number called a conversion factor.

A **conversion factor** is a number that we can use to either increase or decrease the amount of each ingredient in a recipe so that we can achieve a different yield. We simply have to multiply the conversion factor to each of the ingredient in a recipe and we will have our desired yield.

Getting the conversion factor for a particular recipe is expressed as:

New yield ÷ old yield = conversion factor

Our coleslaw recipe has a yield of 10 portions. We want to have a recipe that will yield 30 portions.

Using the formula above:	30 ÷ 10 = 3 Our conversion factor is 3.

Decreasing or increasing the total yield of a recipe can be done using the following formula:

Old quantity x conversion factor = new quantity

If we multiply each ingredient in our coleslaw recipe by 3 then we will have 30 portions instead of 10.

To demonstrate:

New Coleslaw Recipe For 30 People

Yield: 3 kilos	**Portions: 30**	**Portion Size: 100g**			
Ingredients	**Old Quantity**		**Conversion Factor**		**New Quantity**
mayonnaise	300 ml	**x**	3	=	900 ml
vinegar	25 ml	**x**	3	=	75 ml
sugar	15 g	**x**	3	=	45 g
salt	5 ml	**x**	3	=	15 ml
white pepper	2 ml	**x**	3	=	6 ml
cabbage (trimmed)	800 g	**x**	3	=	2,400 g or 2.4 kilos
Lettuce cups	10	**x**	3	=	30 cups

Procedure:

1. Combine all the ingredients in a stainless-steel bowl, except the cabbage. Mix thoroughly.
2. Add the cabbage and mix well.
3. Adjust the salt, sugar or vinegar according to your desired taste.
4. Arrange the lettuce cups as base for the coleslaw.
5. Scoop a mound of coleslaw (about 100g/mound) and place in the center of each lettuce cup.
6. Refrigerate if needed or if the coleslaw is to be served at a later time.

Summary

Cooking is a satisfying activity although it can be very taxing. With a lot of modern kitchen tools and equipment available to professionals and budding chefs, working in the kitchen has never been more enjoyable. It is important to learn to use these tools properly so that you can make your kitchen a safe place to work in.

Use recipes as a guide in cooking. But keep in mind that like any other skill, getting better in cooking happens when you practice regularly. Understanding cooking principles will also help you become more competent. When you gain more experience in cooking, you will be able to cook even without written recipes.

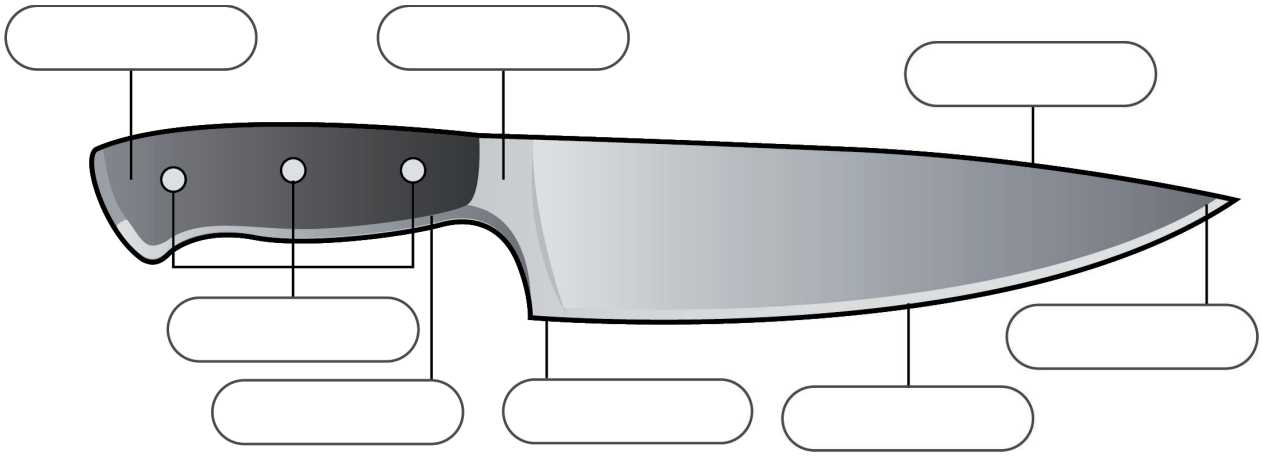
Exercises

Exercise 1

How much have you learned?

The Anatomy of a Chef's Knife.

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



Exercise 2

Converting Recipes

Original Recipe: Coleslaw

Yield: 1 kilo	**Portions: 10** **Portion Size: 100g**
Ingredients:	**Procedure:**
300 ml mayonnaise 25 ml vinegar 15 g sugar 5 ml salt 2 ml white pepper 800 g cabbage (trimmed)	1. Combine all the ingredients in a stainless-steel bowl, except the cabbage. Mix thoroughly. 2. Add the cabbage and mix well. 3. Adjust the salt, sugar or vinegar according to your desired taste.
10 lettuce cups	4. Arrange the lettuce cups as base for the coleslaw. 5. Scoop a mound of coleslaw (about 100g/ mound) and place in the center of each lettuce cup. 6. Refrigerate if needed or if the coleslaw is to be served at a later time.

Converting Recipe # 1

Instruction: You are preparing for a party and have a total of 50 attendees. Adjust the recipe above by calculating for the conversion factor and new quantity for each ingredient.

New Coleslaw Recipe For 50 People

Calculation for conversion factor:

Yield: ☐ **kilos**	**Portions:** ☐ **Portion Size: 100g**				
Ingredients	**Old Quantity**		**Conversion Factor**		**New Quantity**
mayonnaise	300 ml	X	☐	=	☐
vinegar	25 ml	X	☐	=	☐
sugar	15 g	X	☐	=	☐
salt	5 ml	X	☐	=	☐
white pepper	2 ml	X	☐	=	☐
cabbage (trimmed)	800 g	X	☐	=	☐
Lettuce cups	10	X	☐	=	☐

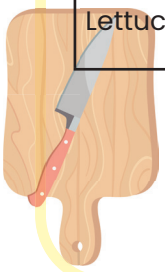
Converting Recipe # 2

Instruction: You are preparing for a party and have a total of 8 attendees. Adjust the original Coleslaw recipe by calculating for the conversion factor and new quantity for each ingredient.

New Coleslaw Recipe For 8 People

Calculation for conversion factor:

Yield: ☐ **kilos**	**Portions:** ☐ **Portion Size: 100g**				
Ingredients	**Old Quantity**		**Conversion Factor**		**New Quantity**
mayonnaise	300 ml	X	☐	=	☐
vinegar	25 ml	X	☐	=	☐
sugar	15 g	X	☐	=	☐
salt	5 ml	X	☐	=	☐
white pepper	2 ml	X	☐	=	☐
cabbage (trimmed)	800 g	X	☐	=	☐
Lettuce cups	10	X	☐	=	☐



Lesson Output

Individual Work - Make a presentation of the common kitchen tools and equipment you have learned in this lesson. Use any word processing, spreadsheet, or presentation tool (or combination of 2 productivity tools).

Rubrics for Common Kitchen Tools and Equipment

Criteria	5	4	3	2	1	Points
Content / Functionality	The student is able to list or identify at least 15 of the common kitchen tools and equipment. A proper description of each tool/ equipment is also given.	The student is able to list or identify less than 15 but at least 12 of the common kitchen tools and equipment. A proper description of each tool/ equipment is also given.	The student is able to list or identify less than 12 but at least 10 of the common kitchen tools and equipment. A proper description of each tool/ equipment is also given.	The student is able to list or identify at least 10 of the common kitchen tools and equipment. Some of the tools/ equipment (2 or 3) were not described correctly.	The student is able to list or identify less than 10 of the common kitchen tools and equipment. Some of the tools/ equipment (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 4 Understanding Meats

Learning Outcomes

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

1. Identify the components of meat.
2. Identify the market forms of meat including the primal cuts.
3. Discuss the correct cooking methods of meats based on cuts.

Engage

YouTube Video "Tough and Tender Cuts – from Cooking Sous Vide: Beyond the Basics" by ChefSteps

https://www.youtube.com/watch?v=eXpKt8iamXM

Even in the early times, man is known to hunt animals for food. Meat is a significant part of their diet.

Nowadays, meat is still the source of protein in the diet of most people, along with chicken, fish and other seafood.

The high demand for meat led to the domestication and breeding of animals for the purpose of meat production. Because meat is costly, it is important to minimize wastage by understanding the cuts of meat and the most suitable ways to cook them.

Explore

Find and circle the words associated with cuts of meat.

GROUNDBEEF	TENDERLOIN
TBONE	HAM
SPARERIBS	LEGOFLAMB
KASIM	PIGUE

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

Research

Research on different steak cuts. Write a 1-page report.

Explain

Meat

Understanding the composition of meat will help in choosing the appropriate cooking method to use. Meat is composed mainly of the following:

1. **Water** – Meat is about 75% water. Meat shrink or become smaller during the cooking process because it loses water. Too much moisture loss can be avoided by using the right cooking method and techniques.

2. **Protein** – Meat is made up of about 20% protein and is the most important nutrient in meat. As we have learned in Lesson 2, protein coagulates or turns solid when heated.

3. **Fat** – is an important vehicle for flavor and tenderness in meat. It also prevents meat from losing too much moisture. Today's society is very conscious of its fat intake but a certain amount of fat in meat makes meat more appetizing.

4. **Carbohydrate** – is a very small component of meat but its presence is important because of Maillard Reaction. As we have learned in Lesson 2, Maillard Reaction is a complex chemical reaction responsible for the browning of meats. The protein chains react with the carbohydrate molecules when meats are cooked or heated at a high temperature. This process develops rich flavors in cooked meat.

Meat is also made up of **connective tissues** that hold together the muscle fibers of meat. Connective tissue is tough. Therefore, cuts of meat that are high in connective tissue are tough. Knowing how to tenderize cuts of meat that are high in connective tissues is important in cooking.

Connective tissues are abundant in:

1. **Muscles of animals that are more exercised.**
   For example, the leg parts of cows and pigs have more connective tissues than their backs.

2. **Older or mature animals.**
   Older animals have more connective tissues that is why meats that come from older animals are tougher.

There are two kinds of connective tissues: **collagen** and **elastin**.

Collagen is a kind of connective tissue that is white in color. Using a moist-heat method or a cooking method using water or moisture will break down collagen and tenderize it. The heat and moisture will dissolve collagen into a gelatinous form.

Braising is a kind of moist-heat method suitable for cooking meat with high connective tissues. The long and slow cooking employed in braising turns tough meats into juicy and tender cuts.

Elastin is a kind of connective tissue that is yellow in color. Older animals have plenty of elastin. Unlike collagen that can be tenderized through cooking, meats high in elastin can only be tenderize by:

- ✓ Altogether removing or cutting away the elastin from the meat, or
- ✓ Pounding or grinding the meat

Market Forms of Meat

The four primary categories of meat sold in the market are:

1. **Beef** – the meat from cattle or cows
2. **Pork** – the meat from domestic pigs
3. **Lamb** – the meat from a young sheep. (The meat of an older sheep, more than one year old, is called mutton.)
4. **Veal** – the meat from young cattle or young cows

Terms to Remember:

To butcher – to kill or slaughter an animal for its meat

To fabricate – to cut or slice raw meat into small pieces or portions

To carve – to cut up cooked meat for serving (e.g., carving roast beef)

The **carcass** is the slaughtered body of an animal excluding its head, feet, hide and its entrails or innards. Only the head and entrails are removed from the carcass of a pig.

Primal cuts are the basic or initial cuts of meats after the carcass has been broken down into sides, quarters, foresaddles or hindsaddles.

Fabricated cuts are smaller cuts or portions of meat coming from the primal cuts. They can be in the form of chops, steaks, ground meats and others.

A carcass is broken down through the following ways:

- Beef is at first cut all through its whole length, splitting it into two sides. The sides are then divided into forequarters and hindquarters.
- Veal and lamb are not cut into two lengthwise sides like beef. Instead, they are cut crosswise into foresaddles and hindsaddles.
- Pork is immediately cut into primal or basic cuts.

Primal Cuts of Meat

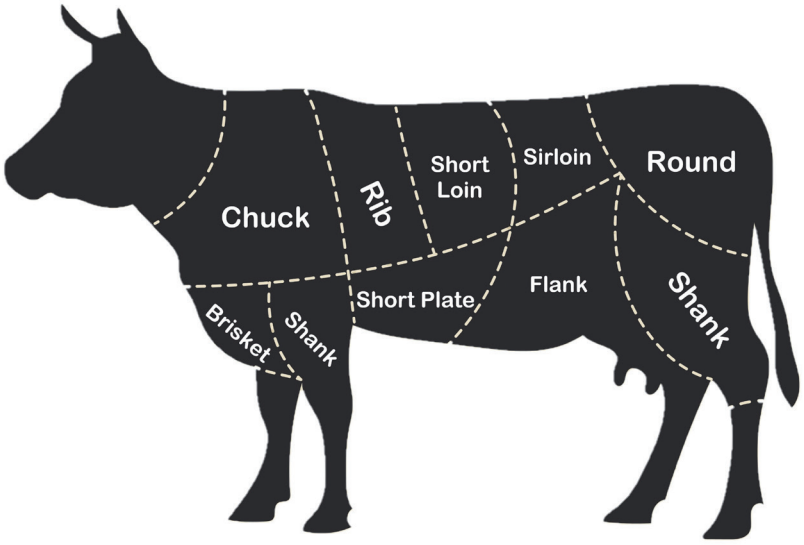
Beef is divided into forequarters and hindquarters after butchering.

The forequarter has the following primal cuts with the corresponding fabricated cuts:

- Chuck – can be fabricated into cubed steaks, chuck tender, ground chuck, triangle, etc.
- Brisket – can be fabricated into boneless brisket, corned beef brisket, ground beef.
- Shank – can be fabricated into stew meat and ground beef.
- Rib – can be fabricated into rib steaks and short ribs.
- Short plate – can be fabricated into stew meat, ground beef and short ribs.

The hindquarter has the following primal cuts with the corresponding fabricated cuts:

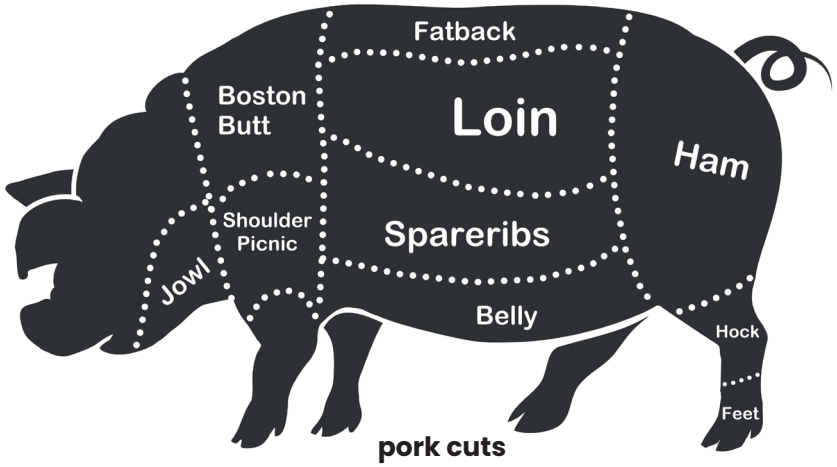
- Short loin – can be fabricated into T-bone steaks, porterhouse steak, strip loin steaks, etc.
- Sirloin – can be fabricated into top sirloin, bottom sirloin and tenderloin.
- Flank – can be fabricated into flank steak and ground beef.
- Round – can be fabricated sirloin tip, top round, bottom round steak or roasts, etc.



beef cuts

Pork is cut immediately into primal cuts and then fabricated into smaller cuts.

- Shoulder picnic – can be fabricated into hock, ground pork and sausage meat.
- Boston butt – can be fabricated into shoulder roasts, ground pork, sausage meat, etc.
- Loin – can be fabricated into loin roasts, rib chops, country-style ribs, etc.
- Ham – can be fabricated into fresh and smoked hams, etc.
- Belly – can be fabricated into bacon.
- Spareribs – can be fabricated into spareribs.
- Fatback – can be fabricated into fresh and salt fatback, salt pork and lard.
- Jowl – can be fabricated into bacon.
- Hock, Feet/Trotters – cooked as it is.



pork cuts

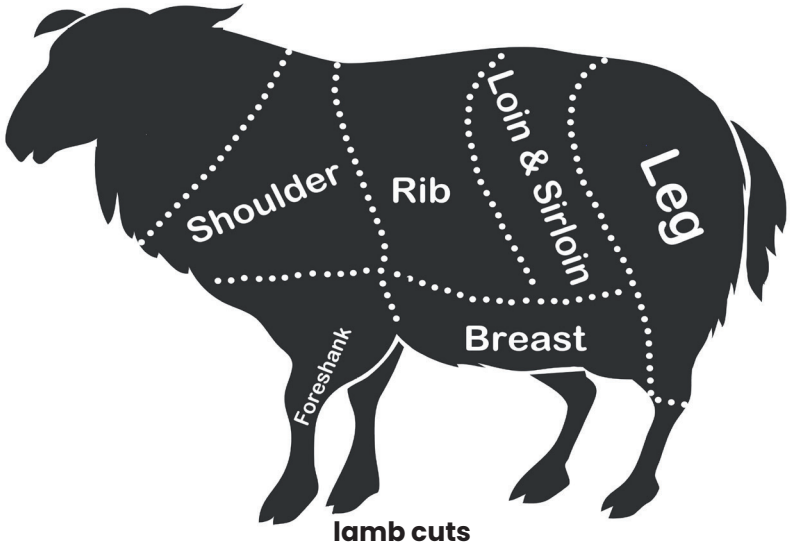
Lamb is divided into foresaddle and hindsaddle and then cut into primal cuts.

The foresaddle has the following primal cuts with the corresponding fabricated cuts:

- Shoulder – can be fabricated into roasts, chops, ground lamb, etc.
- Breast - can be fabricated into riblets, stew meat, ground lamb, etc.
- Foreshank – can be fabricated into riblets, stew meat, ground lamb, etc.
- Rib – can be fabricated into rack or rib roasts, chops, etc.

The hindsaddle has the following primal cuts with the corresponding fabricated cuts:

- Loin & Sirloin – can be fabricated into roasts and chops.
- Leg – can be fabricated into sirloin chops, roasts and chops



lamb cuts

Suitable Cooking Methods for Different Cuts of Meat

As we have learned in Lesson 2 Principles of Cooking, there are two kinds of cooking methods: dry heat and moist heat.

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. The following are dry-heat methods: roasting or baking, barbecuing, searing, broiling, grilling, sautéing, and frying.

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. The following are moist-heat methods: poaching, simmering, boiling, blanching, steaming, braising, and stewing.

Choosing the cooking method to use depends largely on the kind and cut of meat you are going to cook. Be guided by the following principles:

- ✓ Tender cuts of meat are usually cooked using dry-heat methods.
    - o Ribs and loins are very tender cuts of meats. They are usually made into roasts, steaks and chops.
    - o Smaller cuts of tender meats are best cooked using quick dry-heat cooking methods.

- ✓ Meat that has a lot of connective tissues are tougher cuts of meat. They should be cooked using a moist-heat method such as braising or stewing. They can also be mechanically tenderized by pounding or grinding.

    - o Shanks, breast, brisket and flanks are the least tender cuts of meats. But because they have abundant collagen, they can be flavorful and juicy when cooked long and slow, such as in braising.
    - o Beef chuck or shoulder are also tough cuts of meat and therefore cooked using moist-heat methods.
    - o Legs or rounds are less tender cuts of meat and are mostly braised. But they can also be roasted at a low temperature for a long time. Doing this will help break down their collagen.

- ✓ Fat can be added to lean cuts of meats to avoid dryness.

    - o Lean cuts of meat can be cooked by sautéing and frying.
    - o Fat can also be added using the following methods: barding and larding.

        - Barding – wrapping slices of fat, such as pork fatback or bacon, around lean cuts of meat so they will absorb moisture and will not dry out. This is usually done when roasting.
        - Larding – Using a larding needle, strips of fat are inserted into meat to make it tender and enhance its flavor.

Cooking Exercise: Learn How to Pan-fry

pan-frying

Pan-frying is a dry-heat method of cooking.

To pan-fry means to cook the food items in a moderate amount of fat, over moderate heat. It is used for cooking larger pieces of food items such as chops. The food items are usually turned at least once to ensure even cooking.

When pan-frying, remember the following:

- ✓ Before starting to cook, prepare all the ingredients and equipment you will be needing.
- ✓ Prepare the ingredient you are going to cook. You may need to do some preparatory work like cutting, trimming, blanching etc.
- ✓ Breading food items to be pan-fried makes for better fried products.

    - o **Breading** means to coat or cover food items with breadcrumbs or other crumbs before cooking. The resulting meats, when fried properly, have a golden-brown color and crispy texture.
    - o The **Standard Breading Procedure** is the method generally used to bread or coat food items. It is composed of the ingredients below:

        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

    - o For the proper way to bread food items see The Breading Process in the next page/s.

- ✓ Heat a moderate amount of fat or oil in the sauté pan.
- ✓ When the pan is hot enough, add the meat.
- ✓ Brown the meat first on one side. Then using a spatula turn the meat to brown the other side. Make sure the food is properly and evenly cooked.
- ✓ Strain or skim the cooking fat or oil in between cooking when frying a big batch of meat or other food items. This will prevent burnt food particles from sticking to the food items that are being fried.
- ✓ Serve fried foods immediately.

The Breading Process

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 bread-crumbs.

Summary

Preparing and cooking meat properly comes with understanding the character of each cut of meat:

- Tender cuts of meat such as ribs and loins are best cooked using dry-heat method.
- Tough cuts of meat that are rich in collagen are best cooked using moist-heat method.

Both tender and less tender (tough) cuts of meat have their place in the kitchen. Just because a cut of meat is tough or has lots of connective tissues does not mean it can't be made into a flavorful dish. In the same manner, a tender cut of meat such as a sirloin, will not fare well if cooked as a stew. It's all in the cooking method used. Any cut of wholesome meat can be made into a delicious dish if cooked using the appropriate cooking method.

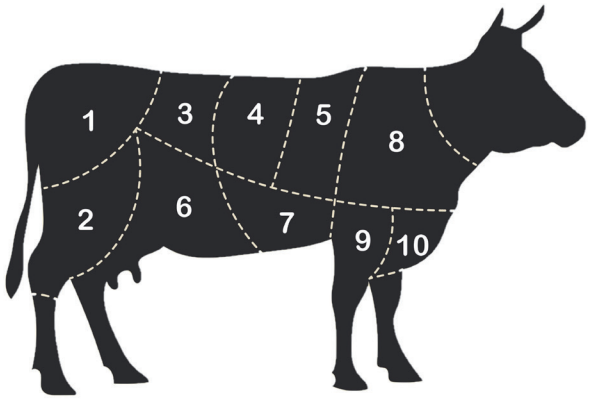
Exercises

Exercise 1

How much have you learned?

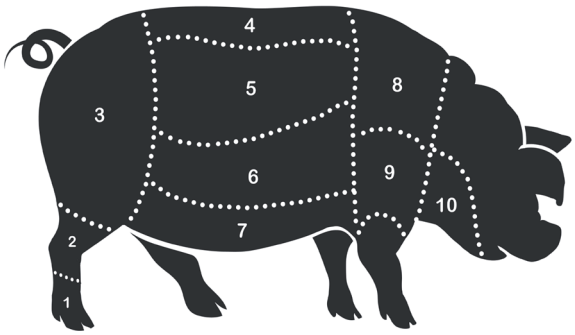
Know Your Cut of Meat!

Instruction: Identify the primal cuts of meat. Write your answer on the space provided.



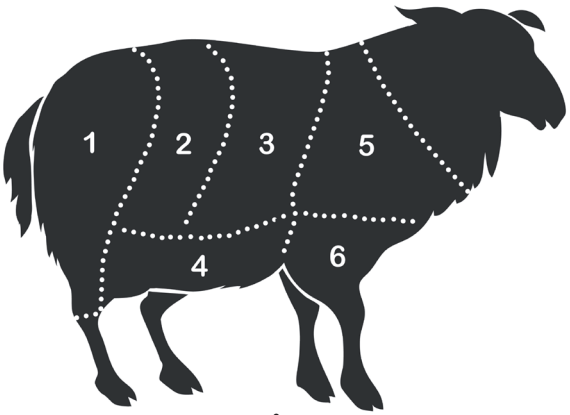
beef primal cuts

Beef Primal Cuts	
1.	6.
2.	7.
3.	8.
4.	9.
5.	10.



pork primal cuts

Pork Primal Cuts	
1.	6.
2.	7.
3.	8.
4.	9.
5.	10.



lamb primal cuts

Lamb Primal Cuts	
1.	6.
2.	
3.	
4.	
5.	

Exercise 2

Instruction: Answer the following:

1. List and describe the components of meat

    a. _____

    _____

    b. _____

    _____

    c. _____

    _____

    d. _____

    _____

2. What are the 4 primary categories of meat sold in the market?

    a. _____

    b. _____

    c. _____

    d. _____

3. What are connective tissues?

    _____

    _____

    _____

    _____

    _____

    _____

4. Identify and describe the 2 kinds of connective tissues.

   a. _____

   _____

   b. _____

   _____

5. How do you cook different cuts of meats?

   _____

   _____

   _____

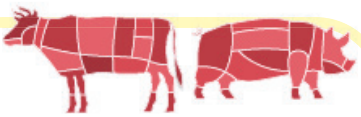
   _____

   _____

   _____

   _____

   _____



Lesson Output

Individual/Group Work – Prepare Breaded Pork Cutlets using the pan-frying method. Use the recipe below as guide. Make a slideshow or video presentation of yourself preparing/cooking the Breaded Pork Cutlets.

Breaded Pork Cutlets

Portions: 4 Portion Size: 125g	
Ingredients:	**Procedure:**
500 g porkloin or pigue, sliced into 4 portions/ cutlets	1. Using a meat mallet, lightly pound each pork cutlet until they become thin and flat. Be careful not to tear the meat.
Salt and pepper, to taste Calamansi juice, to taste	2. Season the pork cutlets with salt, pepper and calamansi juice.
Standard Breading procedure: 25 g flour 1 egg 50 ml milk 125 g breadcrumbs	3. Following the Standard Breading Procedure, bread the pork cutlets
50 ml cooking oil	4. Heat the oil in a sauté pan. When the oil is hot enough, place the pork cutlets in the pan and pan-fry until golden brown. Turn and brown the other side. 5. Remove the breaded pork cutlets from the pan and place on serving plates.
50 g butter	6. Heat the butter in a small sauté pan until lightly browned. Pour the browned butter over each portion of the breaded pork cutlets 7. Serve immediately.

Note:

1. For food safety and to prevent cross-contamination:
   - o Wash hands thoroughly before and after cooking.
   - o Wash hands thoroughly especially after handling raw meat.
2. The breaded pork cutlets must be cooked well done.
3. The quantities given in the Standard Breading Procedure are only guidelines. You may use more or less depending on the size and shape of the meat. The important thing is to make sure that each portion of the pork cutlets are completely and evenly coated. Make sure to shake off excess ingredients before pan-frying.

Rubrics for Preparing/Cooking Breaded Pork Cutlets

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 5 Understanding Poultry

Learning Outcomes

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

1. Differentiate light meat and dark meat in poultry.
2. Identify the market forms of poultry.
3. List a guideline for cooking poultry.

Engage

YouTube Video "How to Cut Up a Whole Chicken | Melissa Clark Recipes | The New York Times" by The New York Times

https://www.youtube.com/watch?v=GSvzRyu2h5g

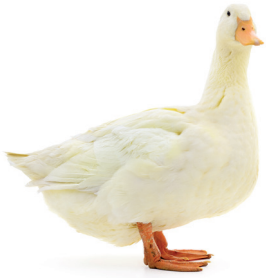
The word poultry comes from the French word *pouletrie* which is someone who sells *poulet* which means a young animal, particularly a hen.

Poultry is the second most widely eaten meat in the world, after pork. Its popularity may be credited to its relatively lower cost compared to other meats. Also, a lot of health-conscious people choose it because of its low fat and cholesterol content. Finally, poultry, particularly chicken, is a very versatile meat. Chicken is a great substitute for a lot of meat-based recipes. This results in less expensive and healthier meals.

Explore

Name That Bird

Identify the following domesticated birds. Write your answer on the space provided under each picture.

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

Research

Research on different kinds of poultry and game birds. Choose one and write a 1-page report on its origins and how it is commonly prepared or cooked now.

Explain

Poultry

The term **poultry** pertains to domesticated birds that humans keep for food, either for their meat or the eggs they produce. Poultry flesh is similar to the composition of meat. It has muscle tissues made up of a high percentage of water, followed by protein, fat, a small amount of carbohydrates and other elements. Like meat, the muscles of poultry are bound together by connective tissues.

The presence of connective tissues affects the tenderness of poultry. Connective tissues are abundant in:

1. Muscles of animals that are more exercised.
2. Older or mature animals.

Exercised muscles are unimportant in the case of poultry. Domesticated birds raised for food are usually young and their flesh relatively tender. A more significant concern when it comes to poultry flesh is the difference between light meat and dark meat.

Poultry, chicken in particular, consists of two kinds of flesh: **light meat** and **dark meat**:

The chicken breasts and wings are considered light meat. The flesh in these parts is leaner and have fewer connective tissues. These parts also cook fast.

The legs of the chicken which consist of the thighs and drumsticks are considered dark meat. The flesh in these parts have more fat and more connective tissues. Compared to the breasts and wings, the legs take longer to cook.

Dark meat gets its dark color from the protein myoglobin found in the muscle tissues. Myoglobin reserves oxygen for the muscle to use during physical activities.

- Chickens mainly walk and rarely fly. Their breasts and wings have no great need for myoglobin and are therefore white. But their legs and thighs, used for walking, have dark flesh.
- Other domesticated birds like ducks and geese which habitually fly have dark meat. Their flesh also has more connective tissues because their muscles are more exercised.

Maturity is a significant factor when choosing poultry and the cooking method to use. Appropriate methods to cook poultry will be discussed later in the lesson. You will see in the table **Classification of Poultry** that poultry is categorized mainly by its age.

Market Forms of Poultry

Poultry can be classified using the following categories:

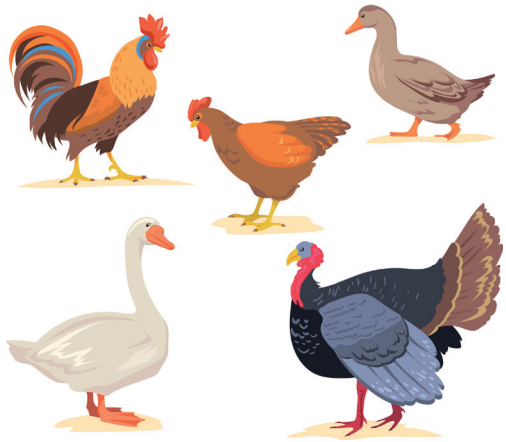
1. **Kind** – this classifies poultry according to species.

   For example, chicken, duck, goose or turkey.

2. **Class** – this classifies poultry according to its kind which is based on the age and sex of the poultry.

   The classification of poultry based on class will be shown on the table below.

3. **Style** – this classifies poultry according to how much cleaning and processing it has undergone.



kinds of poultry

- **Live** – with the availability of ready-to-cook chicken from markets and groceries, this form is not commonly purchased for homecooking.
- **Dressed** – slaughtered poultry. It has been bled and the feathers were removed.
- **Ready to cook** – very common commercial form of poultry, particularly chicken. The poultry has been dressed and its internal organs, head and feet are removed.

  - Whole
  - Cut up or parts

    (See illustration **Chicken Parts** – **Whole and Cut Ups**)

4. **State of Refrigeration**

   - Chilled
   - Frozen

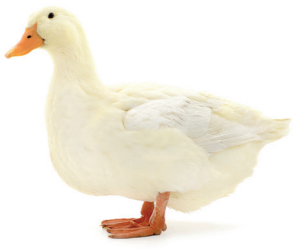
Kinds of Poultry

Chicken is the most popular poultry used in the kitchen. It can be cooked in a variety of ways and can be used or substituted in almost any recipe using other meats. Chicken meat is sometimes considered a healthier meat option compared to red meat because it has lesser fat and cholesterol content.

chicken

Duck and **goose** have dark meat. The presence of a thick layer of fat under their skin makes them suitable for roasting. **Peking Duck**, a roasted duck dish from China, has been served since the medieval times. It is popular for its very juicy, tender meat and thin, crispy skin.

goose



duck

Turkey is a large bird that is traditionally served roasted during Christmas and Thanksgiving in western countries. Like chicken, its meat is considered a healthier alternative to eating red meat.

Turkey

Young pigeons called **squabs** have dark meat and fatty skin. Its taste is usually described as gamy or exotic.

Guinea fowl

Guinea fowls are birds originating from Africa. They are farmed for their eggs and meat and are said to be more flavorful than chicken.

Classification of Poultry

Kind	Class	Description
Chicken	Broiler or fryer	Aged 6-12 weeks, weighs about 700 grams-1.6 kilos, can be male or female, has very tender flesh and smooth skin.
	Roaster	Aged 3-5 months, weighs about 1.6-2.3 kilos, can be male or female, has tender flesh and smooth skin.
	Capon	Aged less than 8 months, weighs about 2.3-3.6 kilos, castrated male chicken, has very tender and flavorful flesh.
	Stewing chicken	Aged more than 10 months, weighs about 1.6-2.7 kilos, usually a hen, has tough flesh and coarse skin. Best for stewing, or any long, moist-heat method of cooking.
	Cock or Rooster	Aged more than 10 months, weighs about 1.8-2.7 kilos, a mature male chicken, has tough dark meat. Best for stewing or braising.

Duck	Broiler or fryer duckling	Aged less than 8 weeks, weighs about 900 grams-1.8 kilos, has tender flesh.
	Roaster duckling	Aged less than 16 weeks, weighs about 1.8-2.7 kilos, has tender flesh.
	Mature duck	Aged more than 6 months, weighs about 1.8-2.7 kilos, has tough flesh.
Goose	Young goose	Aged less than 6 months, weighs about 2.7-4.5 kilos, has tender flesh.
	Mature goose	Aged more than 6 months, weighs about 4.5-7.3 kilos, has tough flesh.
Turkey	Fryer or roaster	Aged less than 16 weeks, weighs about 1.8-4 kilos, can be male or female, has very tender flesh and smooth skin.
	Young	Aged 5-7 months, weighs about 3.6-10 kilos, has tender flesh, can be male (tom) or female (hen).
	Yearling	Aged less than 15 months, weighs about 4.5-14 kilos, has tender flesh but not as tender as a young turkey.
	Mature or old	Aged more than 15 months, weighs about 4.5-14 kilos, has tough flesh and coarse skin.
Pigeon	Squab	Aged 3-4 weeks, weighs less than 450 grams, has light and very tender flesh.
	Pigeon	Aged more than 4 weeks, weighs about 450-900 grams, has tough and dark flesh.

Chicken Parts – Whole and Cut Ups

- **Whole** – ready to cook whole chicken is available in markets and groceries. They are available fresh or frozen, boneless or bone-in, fully cooked or uncooked. Whole chicken may be cut in halves, quarters or pieces. In the Philippines, chicken is very popular that there are several stores dedicated to selling roasted chicken.

whole chicken

- **Breasts** – the white meat part of the chicken. Available in various cuts, it can be quarters, bone-in or boneless, with skin or without skin. Chicken tenders or tenderloin comes from the breast part of the chicken.

- **Wings** – considered white meat, it is composed of three parts: drumette, flat and wing tip. The drumette is the fleshy part of the wings. The flat, also called a "wingette", has two small bones. Buffalo Wings, a dish whose main ingredient is chicken wings, is a popular finger food and is commonly served in restaurants.

- **Thighs** – the dark meat part of the chicken. It is the upper part of the chicken leg. It is available bone-in or boneless, with skin or without skin. It can also be sold as a chicken leg quarter, with the leg part of the chicken still attached to the thigh.

- **Legs** – the dark meat part of the chicken. Also called the "drumstick", it is the lower part of the chicken leg quarter cut.

- **Giblets and other parts** – include the heart, liver, and gizzard of the chicken. The neck, head, and feet are commonly eaten in most Asian countries.

chicken cut ups

chicken parts

Suitable Cooking Methods for Poultry

Choosing the cooking method to use depends largely on the maturity of the poultry you selected. Be guided by the following principles:

- ✓ Young birds have tender flesh. They can be cooked using dry-heat methods.
  - o The following are dry-heat methods: roasting or baking, barbecuing, searing, broiling, grilling, sautéing, and frying.
- ✓ Old or mature birds have tougher flesh. They are more appropriately cooked using moist-heat method.
  - o The following are moist-heat methods: poaching, simmering, boiling, blanching, steaming, braising, and stewing.
- ✓ White meat cooks faster than dark meat. When cooking whole poultry (e.g., roasted whole chicken), you may do the following to avoid drying or overcooking the breast part:
  - o Roast the whole chicken with the breast part down. Fat and moisture dripping from the roasting meat will keep the breast part from going dry.
  - o Bard or cover the breast part with pork fat or strips of bacon.
  - o Cook the light meat parts (breasts and wings) and the dark meat parts (thighs and legs) separately.

- ✓ For food safety, remember to always cook poultry (with a few exceptions) thoroughly. The recommended minimum internal temperature for roasted whole poultry is 165°F or 74°C.

    - o Check with an oven thermometer or a meat thermometer.
    - o Insert the thermometer in the thickest part of the inner thigh of the roasting poultry.

- ✓ These are the characteristics of a fully cooked poultry:

    - o Clear juice comes out of the flesh instead of bloody or cloudy liquid.
    - o The flesh is firm to the touch.
    - o Cooked flesh easily detaches from the bone.
    - o The bones easily move or pulls apart from the sockets.

Cooking Exercise: Learn How to Sauté and Braise

Sautéing

Sautéing is a dry-heat method of cooking.

To sauté means to cook the food items quickly in a small amount of fat.

When sautéing, remember the following:

- ✓ Before starting to cook, prepare all the ingredients and equipment you will be needing.
- ✓ Prepare the ingredient you are going to cook. You may need to do some preparatory work like cutting, trimming, blanching, etc.
- ✓ 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.

Braising

Braising is a moist-heat method of cooking.

To braise means to cook a food item covered in some amount of liquid after browning the food item first.

Braising is sometimes called a combination cooking method. That is, the food item 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.

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. The term stewing can also be used to call cooking by simmering in some amount of liquid without the browning of food items.

When braising, remember the following:

- ✓ Before starting to cook, prepare all the ingredients and equipment you will be needing.
- ✓ Prepare the ingredient you are going to cook. You may need to do some preparatory work like cutting, trimming, blanching, etc.
- ✓ When braising meat or poultry, the cooking liquid must be brought to a boil first.
- ✓ The rest of the cooking time is spent by simmering the dish. Heat is reduced so that the liquid will not boil. This process will make the meat juicier and more tender.
- ✓ Adjusting the consistency of the sauce is important before serving a braised or stewed dish. This will make the finished product more flavorful and appetizing. To adjust the thickness of the sauce the following may be done:
    - By reduction – simply let the sauce simmer for a little while until part of the liquid in the sauce evaporates or the sauce reached the desired thickness or consistency
    - Thicken the sauce using a thickening agent such as:
        - Roux (roo) - a thickening agent made from equal parts fat and flour.
        - Slurry - a mixture of a kind of starch and cold water.

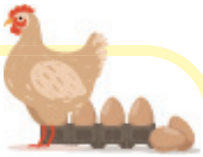
Note: You will be able to use what you have learned about sautéing and braising, when we prepare the dish Chicken in Creamy Mushroom Sauce.

Summary

Understanding poultry, in a way, is easier than understanding meat. Because poultry, especially chicken, are smaller animals and are simpler to cut and have parts that are easier to identify. Also, because chicken has become a staple food for a lot of homes, there is more opportunity to learn how to prepare and cook it.

Helping to prepare it at home will give you confidence to actually cook it on your own. Start with the simplest methods of cooking like pan-frying. With enough practice, you can level up your cooking skills with other delicious chicken dishes that you can share with your loved ones.

Exercises



Exercise 1

How much have you learned?

Instruction: Identify and describe the following chicken parts. Write your answer on the space provided.

Item	Chicken Part	Description
	1.	
	2.	
	3.	
	4.	
	5.	
	6.	

Exercise 2

Instruction: Answer the following:

1. Differentiate light meat and dark meat in poultry.

Item	Description
Light meat	
Dark meat	

2. List the 4 ways poultry is categorized.

   a. _____

   b. _____

   c. _____

   a. _____

3. Give 10 classifications of poultry, include its class and a description.

#	Kind	Class	Description
1.			
2.			
3.			
4.			
5.			
6.			

7.			
8.			
9.			
10.			

Lesson Output

Individual/Group Work – Prepare Chicken in Creamy Mushroom Sauce using the sautéing and braising methods. Use the recipe below as guide. Make a slideshow or video presentation of yourself preparing/cooking the Chicken in Creamy Mushroom Sauce.

Chicken in Creamy Mushroom Sauce

Portions: 2 Portion Size: 125g	
Ingredients:	**Procedure:**
2 chicken breasts, boneless and cut into strips Salt and pepper, to taste Cooking oil, just enough to sauté the chicken	1. Pat the chicken dry before cooking to ensure that they will brown properly. 2. Season the strips of chicken breast with salt and pepper. 3. Using a sauté pan, heat the cooking oil. 4. Sauté the chicken over moderate heat. Cook the chicken until lightly browned. 5. Remove the chicken from the pan. Set aside.
30 g butter 125 g mushroom, sliced 30 g white onion, diced 15 g garlic, minced 15 g all-purpose flour	6. In the same pan, add the butter and mushrooms and sauté briefly. 7. Add onion and garlic. Do not let them brown. 8. Add the flour. Mix well and cook for about two minutes.
125 ml cream	9. Reduce heat. 10. Add the cream slowly and simmer for a few minutes. Stir occasionally. 11. Continue cooking until sauce slightly thickens. Do not let it boil.
	12. Return the sautéed chicken to the pan. Stir gently. Simmer for a few minutes. 13. Adjust salt and pepper, if needed. 14. Reduce the cream sauce to desired consistency.
Chopped parsley (optional)	15. Garnish with chopped parsley. Serve hot with rice or pasta.
Note: 1. For food safety and to prevent cross-contamination: o Use separate cutting boards for chicken and the other ingredients. o Wash hands thoroughly before and after cooking. o Wash hands thoroughly especially after handling raw chicken	

Rubrics for Preparing/Cooking Chicken in Creamy Mushroom 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 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 Understanding Fish and Shellfish

Learning Outcomes

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

1. Classify fin fish.
2. Describe the market forms of fin fish and learn how to check for freshness.
3. Classify shellfish and give examples.

Engage

YouTube Video "How A 600 Pound Tunafish Sells For $3 Million At The Largest Fish Market In The World | Big Business" by Business Insider

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

Seafood can be divided into two groups:

1. **Fin fish** or fish that have fins and endoskeletons or internal skeletons
2. **Shellfish** or fish with exoskeletons or external shells

Unlike meat products which can be fabricated in so many ways, fish and shellfish are relatively easy to cut or prepare. However fish and shellfish have hundreds and thousands of species. Understanding the similarities and differences of fish and shellfish varieties will help in knowing how to handle and cook them properly.

Explore

Word Search Puzzle

Find and circle the words associated with seafood.

bangus tilapia sugpo alimasag talangka

talaba pusit salmon tuna sapsap

S	O	T	F	A	X	L	U	N	I	R	V
F	U	B	A	O	T	S	A	P	S	A	P
A	I	G	P	L	E	I	N	O	E	P	T
U	H	G	N	L	A	R	O	C	V	I	I
N	U	P	H	A	L	N	B	R	S	Y	E
S	E	A	C	I	B	V	G	U	O	H	S
A	R	K	I	P	O	R	P	K	L	U	A
U	T	U	N	A	K	O	H	N	A	W	L
P	O	T	A	L	A	B	A	H	Y	I	M
I	R	Y	G	I	E	H	O	W	A	J	O
O	B	I	F	T	A	U	L	I	B	E	N
M	I	R	A	L	I	M	A	S	A	G	Y

Research

Research on the locally available fish and shellfish in the Philippines. Write a 1-page report.

Explain

Fish

Fish, specifically **fin fish**, are aquatic animals with internal skeletons. There are many varieties of fish, and they can be found in almost all bodies of water around the world. Fish can be caught in the wild, either freshwater or saltwater. They are also commercially farmed to be able to supply the big demand for fish worldwide.

Fish is an important food for humans. They are a healthy source of protein, vitamins, and minerals and most importantly, omega-3 fatty acids.

Fish used as food can be grouped in different ways:

By Fat Content

- **Lean fish** – fish that have low fat content, usually less than 1%.
- **Fat fish** – fish that have high fat content, about 10-25%

By Shape

- **Flatfish** – fish that have a flat, oval shape. Their eyes are located on one side of their head. Flatfish yields four fillets.
- **Round fish** – fish that have the classic round shape of fish. Their eyes are located on both sides of their head. Round fish yields two fillets.

By Where They Live

- **Saltwater Fish** – fish that live most of their life in salt water
- **Freshwater Fish** – fish that live most of their life in fresh water

This classification is further divided into two categories:

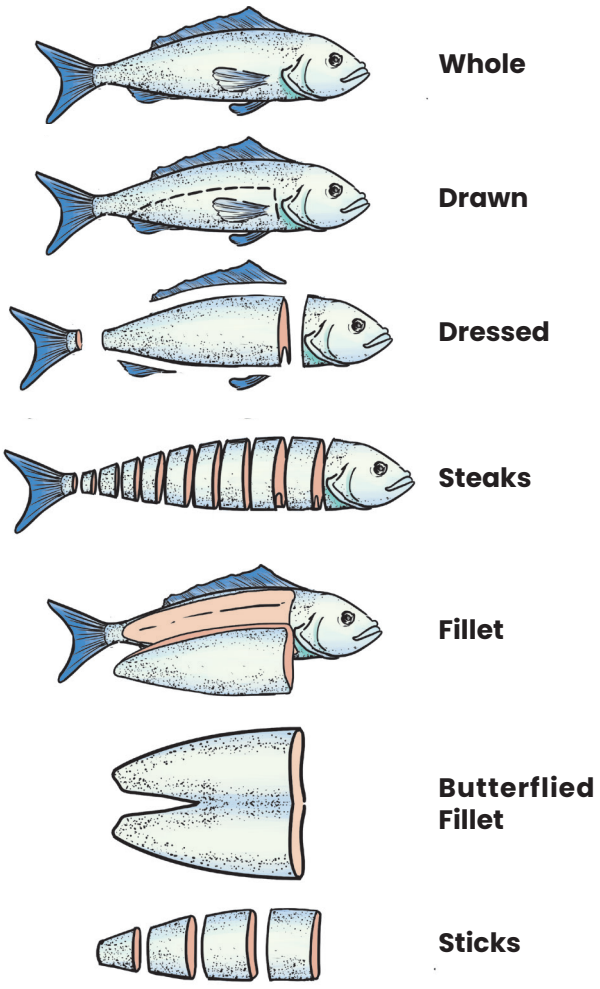
- **Anadromous** – fish that live in salt water but spawn or lay eggs in fresh water
  For example, salmon lives in the ocean but swims to the rivers to lay their eggs.

- **Catadromous** – fish that live in fresh water but spawn or lay eggs in salt water.
  For example, eels live in fresh water but swim to the ocean to breed.

Market Forms of Fish

Fish is commercially available in the following forms:

1. **Whole** – the fish is still not processed, all parts are complete
2. **Drawn** – the internal organs are removed
3. **Dressed** – the internal organs are removed; the scales, fins, tail and head have also been cut away
4. **Steaks** – cross-section cuts of the fish; each steak-cut has a section of the fish' backbone
5. **Fillets** – these are boneless cuts of the fish coming from its two sides, available with skin or without skin
6. **Butterflied fillets** – boneless cuts of fish coming from its two sides that are still joined together
7. **Sticks or tranches** – crosswise cuts of fish fillets



Market Forms of Fish

Checking for Fish Freshness

The following should be observed in fresh fish:

- ✓ There should be no off-odors.
- ✓ The overall appearance of the fish should be good.
- ✓ The fish shouldn't be slimy.
- ✓ The eyes should be clear, shiny and bulging.
- ✓ The gills should be red or pink.
- ✓ The flesh of the fish should be firm to the touch.
- ✓ The scales should be tight on the skin and shiny.
- ✓ The fins should be flexible and moist.
- ✓ There should be no belly burn or browned, decaying flesh inside the belly cavity.

Examples of Fish

Name of fish	Type	Description
Milkfish	Saltwater, Fat	Has an elongated body; very bony, has white flesh and a mild, sweet flavor when cooked. Popular in the Philippines, it is cooked in a variety of ways: grilled, pan-fried, *sinigang*, *paksiw* etc. De-boned milkfish or "boneless bangus" is widely available in supermarkets.
Salmon	Saltwater, Fat, Anadromous	Has a rich pink flesh and a rather meaty flavor. It is a rich source of omega-3 fatty acids. Popularly eaten raw as *sushi* and *sashimi* in Japanese cuisine. Salmon is also commercially available canned or smoked. Popular varieties of salmon are Atlantic, sockeye, chinook etc.
Tuna	Saltwater, Fat, Round	Has red flesh and a meaty texture and appearance. Its steak cuts are popularly grilled. It can also be served raw as *sushi* and *sashimi*. Popular varieties of tuna include yellowfin and Atlantic bluefin.
Sardine	Saltwater, Fat, Round	Small in size, oily, and has a full flavor. They are a rich source of vitamins and minerals. Sardines are usually sold canned although they can also be grilled, smoked, or pickled. Also called *tamban* or *tawilis* in the Philippines.
Mackerel	Saltwater, Fat, Round	Has firm, slightly dark flesh that is rich in flavor. There are many mackerel varieties. Short-bodied mackerel is called *hasa-hasa*, while the long-jawed mackerel is called *alumahan* in the Philippines.
Red Snapper	Saltwater, Lean, Round	Has firm, white flesh, and large bones. The skin is colored red. It has a sweet, mild taste when cooked. It can be fried, baked, grilled, and steamed. Also called *maya-maya* in the Philippines.
Grouper	Saltwater, Lean, Round	Has firm, white flesh and tough skin. It has a mild flavor, and its flesh is firm and flaky when cooked. Also called *lapu-lapu* in the Philippines.

Tilapia	Freshwater, Lean	Has firm, white flesh and mild flavor. Tilapia fish that are available are mostly farmed.
Eel	Freshwater, Fat	Has a snakelike body; it is long, slender, and slippery. It is popularly served in Japanese restaurants as *unagi*. Also called *palos* in the Philippines.
Catfish	Freshwater, can be Fat or Lean	Has a firm flesh and rich flavor; does not have scales. Most catfish have barbels or "whiskers" around the mouth. Also called *hito* or *kanduli* in the Philippines.

Milkfish

Salmon

Tuna

Sardine

Mackerel

Red Snapper

Grouper

Tilapia

Eel

Catfish

Shellfish

Shellfish is a term used for aquatic animals that humans use as food. They possess hard external shells and lack internal skeletons. They can be found both in saltwater and freshwater.

Classification of Shellfish

Shellfish are grouped as:

1. **Mollusks** – are soft-bodied sea animals. The following are edible mollusks:

    - **Univalves** – are mollusks with a single shell.
      For example, snails and abalone

    - **Bivalves** – are mollusks with two shells that are joined together.
      For example, mussels and clams

    - **Cephalopods** – are mollusks with conspicuous heads, tentacles and can usually squirt ink. The word cephalopod means "head" and "foot".
      For example, squids, octopus and cuttlefish

2. **Crustaceans** – are animals with shells that are segmented. Most edible crustaceans are decapods which means "ten-footed". They have many appendages but ten of these appendages are considered legs.
   For example, shrimp, crabs and lobsters

Examples of Shellfish

Mussels

Mussels are bivalved mollusks that have shells that are elongated and asymmetrical. Most mussels have black, dark blue, or gray colored shells that have a tinge of green. Their flesh is firm and range from yellow to orange in color. Mussels are available worldwide and are extensively farmed. They cling to rocks and other surfaces by means of their byssal threads or "beard" which are removed when mussels are cooked.

Popular varieties of mussels are Blue mussels, Pacific Blue mussels, Mediterranean mussels, Chilean mussels and New Zealand green lips mussels which are quite expensive.

Mussels must be alive for them to be safe to eat. When buying fresh mussels, look for ones that have shells that are closed tight or shells that close when disturbed. Discard any that are too light or feels hollow. Mussels that are too heavy may be full of mud and sand and should also be discarded.

Mussels are commonly cooked by simmering or steaming. They make flavorful broths and soups. They can also be sautéed in butter, barbecued or roasted.

Market Forms

1. Live, in the shell
2. Shucked (shells are removed) and packed in brine
3. Frozen, in whole shell or half shell

Clams

Clams are bivalved mollusks that have equal-sized shells. They are found both in freshwater and saltwater and come in many local varieties.

There are many kinds of edible clams but popular varieties include:

1. **Hard-shell clams or quahogs** (ko-hogs) usually have round shapes and have shells that are hard. Quahogs are grouped according to size:
    - **Littlenecks** are the smallest quahogs. About 1-2 inches in size, they are very tender and can be eaten raw.
    - **Cherrystones** are 2-3 inches in size. A little tougher than littlenecks, they can still be eaten raw. They are also commonly steamed.
    - **Chowders** are the largest of the quahogs, more than 3 inches in size. They are too tough to be eaten raw so they are usually chopped and cooked into chowders.

2. **Soft-shell clams** usually have fragile, elongated shells. Also called **longnecks** or **steamers**, they have shells that gape open because their "neck" sticks out once their out of the water. They are usually cooked steamed and are dipped in melted butter before eating.

3. **Manila clams** are hard-shell clams. They are tiny and have a sweet taste. Also known as Japanese littleneck clam, they are native to the coasts of the Pacific Ocean. They are commonly cooked in soups, sauces and pasta.

4. **Cockles** – they are not really clams but they resemble clams and are usually cooked like clams. They are very small in size, less than 1 inch, and they can be eaten raw.

Clams must be alive for them to be safe to eat. Fresh clams should not have any off odors. Because they bury themselves in sand or mud, they tend to be sandy inside. To clean clams, simply soak them in a brine, a concentrated solution of salt and water. Drain and repeat the process until the clams are clean and free of sand.

Common ways of cooking clams are steaming, baking, deep-frying and sautéing. They can be simmered to make hearty soups like clam chowder. They are also a great addition to pasta and to different kinds of sauces.

Market Forms

1. Live, in the shell
2. Shucked, fresh or frozen
3. Canned, can be sold whole or chopped

Oysters

Oysters are bivalves that have irregular-shaped shells. Their shells can be sharp that care must be taken when handling or opening them. The flesh of the oyster is very soft and delicate. Their favors are very complex and vary depending on where they came from. They can be salty, some are said to be fruity, and others are somewhat metallic and briny in flavor. Considered as a seafood delicacy, oysters can be very expensive.

Many varieties of oysters exist. Examples are:

- **Bluepoint** – common variety of oyster from Long Island that has a mild flavor.
- **Belon** – are European oysters native to the Belon River in France. They have flatter shells and have a rich, briny flavor.
- **Olympia** – small in size, native to the Pacific coast.
- **Pacific** – large oysters from the Pacific coast. They are the most extensively farmed oysters in the world.
- **Kumamoto** – same species as the Pacific oyster but smaller in size. It has a somewhat sweet, fruity flavor.
- **Rock oyster** – native to Australia and New Zealand, they are small and has a rich, fresh flavor.
- **Slipper oyster** – they are medium-sized oysters from the Philippines also known as Philippine cupped oyster or *talabang tsinelas*.

Oysters are low in calorie but rich in vitamins and minerals. They can be baked, steamed, smoked and stewed. But the most popular way of consuming them is to eat them raw, sometimes with a squeeze of lemon or vinegar.

Market Forms

1. Live, in the shell
2. Shucked, fresh or frozen
3. Canned

Scallops

Scallops are bivalves and a type of saltwater clams. They have the classic fan-shaped shells. Their adductor muscle, the muscle that opens and closes the shell, is white and spherical in shape. The **adductor muscle** and the orange, moon-shaped **coral** (roe or egg) are the parts in the scallop that are edible.

There are two kinds of scallops:

- **Bay scallops** – very sweet in taste and small in size. They are more expensive than sea scallops.
- **Sea scallops** – larger than bay scallops, they can grow up to 2 inches in size. They are the more common kind of scallops.

Scallops have a tender texture and a sweet, buttery taste when cooked properly. They are commonly sautéed, broiled, deep-fried or poached.

Market Forms

1. Shucked, fresh or frozen

Squids

Squids are mollusks with soft, elongated bodies. They have big eyes and ten tentacles, two of which are longer than the others. They are often referred to as **calamari**, the Italian word for squid, when served as food.

Squids must be cleaned before cooking or eating. Their skin and internal organs must be removed. The beak and plastic-like quill which serves as the squid's skeleton are also discarded.

Squids are served in different ways. In Asian cuisine, they can be eaten raw as sushi or sashimi. They can be battered and deep-fried and served as tempura or stir-fried in garlic, ginger and peppers like in the popular dish called Salt and Pepper Squid. They can also be stuffed and then grilled or baked. A common ingredient in stir-fries, they pair well with rice, noodles and vegetables.

Dried, salted squid is a familiar snack or breakfast item in some Asian countries. *Adobong pusit*, squid simmered in soy sauce and vinegar is a common way of cooking squid in the Philippines.

Cuttlefish, another cephalopod, is shorter and thicker than squids. Their internal shell called a cuttlebone is hard and chalky. They are prepared and cooked the same way as squids.

Market Forms

1. Fresh, whole
2. Frozen, rings or steaks

Shrimps

Shrimps are crustaceans with elongated bodies. Attached to their abdomen are appendages called swimmerets that they used primarily for swimming. They are found both in saltwater and freshwater. Their color ranges from white with bluish, greenish or grayish shades but they all turn pinkish or reddish in color once cooked. Shrimps taste sweet and juicy. The flesh is tender when properly cooked.

Shrimps are commercially available worldwide and many species exist. Some examples are:

- **White shrimp** – has a sweet flavor and firm texture, they can grow up to eight inches long.
- **Pink shrimp** – has a pinkish color even when raw. Small in size, it has a mild and sweet flavor.
- **Brown shrimp** – also called bay shrimp or common shrimp, it has a sandy color and has a mild, salty taste.
- **Tiger shrimp** – easy to identify because of the stripes on its body resembling that of a tiger. It has a mild taste and can grow as long as 12 inches in length.

Although prawns are technically different from shrimps, the terms are sometimes used interchangeably in many countries. Small-sized "shrimps" are commonly called shrimps while the bigger ones typically are called prawns.

Shrimps can be cooked in so many different ways. They can be simmered, sautéed, baked, deep-fried and added to rice, noodles or vegetable dishes.

Market Forms

1. Fresh, whole
2. Frozen, peeled and deveined (the digestive tract running along its back is removed)
3. Frozen, peeled, deveined and cooked

Crabs

Crabs are crustaceans found both in freshwater and saltwater. Male crabs can be distinguished from female crabs by looking at their abdomen. Male crabs have triangular shaped abdomen while female crabs have a more rounded one. Male crabs also have bigger claws.

Many species exist. The following are examples of commercially available crabs:

- **Blue crab** – also called *alimasag* in Filipino, it is the most common kind of crab. Male crabs have a spotted blue color while females are usually brownish or greenish. Commercially available frozen crabmeat usually come from blue crabs.
- **Mud crab or mangrove crab** – also called *alimango* in Filipino, they are bigger than blue crab. Their thick, hard shells range from speckled green to dark brownish in color.
- **River crab** – also called *talangka* in Filipino, they are small in size and valued for their *aligue* or crab fat.
- **King crab** – largest of the crabs and the most expensive. Due to their size, they have very chunky meat in their legs.
- **Snow crab** – found in the icy waters of the North Atlantic and North Pacific oceans, they are smaller than king crabs.
- **Soft-shell crabs** – blue crabs that are molting or shedding their old shell. They are harvested while the new shell has not hardened yet.

Market Forms

1. Fresh, whole
2. Cooked and frozen, in the shell
3. Cooked and frozen crabmeat
4. Crabstick, these are imitation crab meat made from white fish and starch. They are shaped like the meat you will get from king crab legs and are colored red on the outside. They are also called seafood sticks or *kanikama*.

Lobsters

Lobsters are crustaceans with five pairs of legs, of which the first pair has large claws. Their hard shell which are commonly dark green or blue in color turns red when cooked. Lobsters are prized seafood and can be very expensive. They have tender, juicy meat from the claws to the tail (abdomen) which can be dipped in melted butter. Their coral or roe and the tomalley or liver are also eaten and considered a delicacy.

Examples of commercially available lobsters are:

- **American lobster** – a kind of clawed lobster also known as Maine lobster or true lobster. They can weigh over 20 kilos making them the heaviest crustaceans. They typically live in the cold waters of the Atlantic.
- **Rock lobster** – also known as spiny lobster, this lobster does not have claws. The abdomen is usually sold as lobster tail.
- **European lobster** – a kind of clawed lobster with a bluish color related to the American lobster.

Lobsters are usually steamed or boiled. They can also be baked, broiled, and grilled. They make excellent main ingredients for soups and sauces (e.g., lobster bisque)

Market Forms

1. Live, whole
2. Cooked lobster meat, fresh or frozen

Suitable Cooking Methods for Fish and Shellfish

The flesh of fish is similar to that of meat. It is also composed of water, proteins, fat, vitamins, and minerals. But unlike meat, fish has very little connective tissues. This shortage of connective tissues impact the way we should cook fish. When cooking fish, the following should be noted:

- ✓ **Fish is naturally tender.**

  Fish flesh firms up when cooking due to the coagulation of protein not because of the connective tissues.

- ✓ **Fish cooks very fast.**

  It is important to remember that fish, unlike meat, have short cooking times. Fish can easily be overcooked because of its delicate flesh.

- ✓ **Fish can be cooked using both moist-heat and dry-heat methods.**

  - o **Lean fish** can easily become dry so it's important not to overcooked it.

    - ➢ Use moist-heat methods like poaching and steaming. Or serve it in soup or sauce to preserve its moistness.
    - ➢ Use dry-heat methods like frying, broiling, baking or sautéing. Adding fat like butter and oil will help in keeping it moist.

  - o **Fat fish** seldom gets dry even when cooked in high heat because of its high fat content.

    - ➢ Use moist-heat methods like poaching, braising or stewing.
    - ➢ Use dry-heat methods like grilling, frying, broiling, baking or sautéing. Care must be taken when adding fat like butter or oil as the finished product may become very greasy.

- ✓ **Cooked fish will exhibit the following qualities:**

  - o Cooked fish exhibits **flaking** – the flesh easily separates in segments when cooked. Flaking means that the flesh is just beginning to separate. It does not mean the flesh is falling apart.
  - o If the fish is cooked with its bones, the bone should no longer be pink in color. The flesh of the fish should also easily separate from the bone.
  - o The flesh of most fish will turn white and opaque when cooked.

- ✓ **Shellfish are cooked mostly the same way as fin fish. Use short cooking times or gentler methods of cooking so they will not become tough and rubbery.**

  - o All shellfish are great ingredients for soups, sauces and stewed dishes.
  - o Shellfish can be cooked using both moist-heat and dry-heat cooking methods.
  - o Steaming is a common way of cooking shellfish. Shellfish cooked this way retain their tenderness and fresh taste.
  - o Be careful when eating raw shellfish like oysters. Make sure you buy them from reputable suppliers and that you get the freshest catch.

Safety in Consuming Fish and Shellfish

Like any other food, there is some safety concerns when consuming fish and shellfish:

- Red tide which is the accumulation of harmful algae in bodies of water can affect seafood. Humans who eat contaminated fish and shellfish are in danger of seafood or shellfish poisoning.
- Almost all fish and shellfish contain some traces of methylmercury. This does not necessarily pose health problems to humans since our bodies can naturally eliminate it. However, large fish, like shark, swordfish and king mackerel, can contain high levels of mercury.
- One of the most common form of food allergy is shellfish allergy.
- Bacteria and viruses like, Listeria and Norovirus, can contaminate fish and shellfish.

To avoid foodborne illnesses in fish and shellfish, take note of the following:

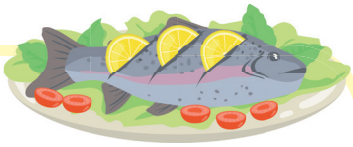
- ✓ Fish and shellfish should be handled and cooked properly.
  - o Wash hands thoroughly before, during and after handling raw fish and shellfish.
  - o It is recommended that seafood reach the minimum internal temperature of 145°F for at least 15 seconds to be safe to consume.
  - o Fish and shellfish must be kept cold at all times. They must be refrigerated or frozen if they are not yet to be cooked or eaten.
- ✓ Buy fish and seafood only from reputable sellers.
- ✓ Limit your consumption of larger fish (e.g., king mackerel, tilefish) because they can contain high levels of methylmercury. Fortunately, these larger fish are not readily available in the market. Most commercially available fish are low in methylmercury.
- ✓ Elderly people, pregnant women and small children should avoid eating raw fish and shellfish.
- ✓ Be cautious when eating shellfish like shrimps, crabs and clams. Even people who do not have shellfish allergy can develop one. If possible, carry over-the-counter (OTC) histamine to treat mild allergic reactions should they occur.

Summary

Recent years have shown an increase in popularity in the consumption of seafood. One of the reasons is that fish and shellfish are considered very nutritious foods. They are low in calorie but rich in protein, vitamins and minerals and omega-3 fatty acids. For good nutrition, it is recommended we consume fish or seafood at least two times a week.

The rich diversity of seafood also makes for interesting and exciting ways of preparing and cooking them. Fish and shellfish are easy to prepare. Cooking them using the simplest methods, like steaming, bring out their fresh flavors.

Exercises

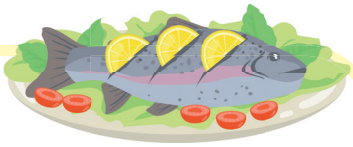


Exercise 1

How much have you learned?

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

Column A	Column B
_____ 1. The way fish flesh separates in segments when cooked.	A. lean
_____ 2. Fish that live in salt water but spawn or lay eggs in fresh water.	B. anadromous
_____ 3. Fish that have high fat content	C. cephalopods
_____ 4. Largest of the crabs and the most expensive.	D. flaking
_____ 5. Mollusks with two shells that are joined together.	E. bivalves
_____ 6. Mollusks with big heads, tentacles and can usually squirt ink.	F. crustaceans
_____ 7. Fish that have low fat content	G. univalves
_____ 8. Mollusks with a single shell.	H. fat
_____ 9. Aquatic animals with shells that are segmented.	I. catadromous
_____ 10. Fish that live in fresh water but spawn or lay eggs in salt water.	J. king



Exercise 2

Instruction: Answer the following:

1. List and describe the ways fin fish are categorized.

   a. _____

   _____

   _____

   b. _____

   _____

   _____

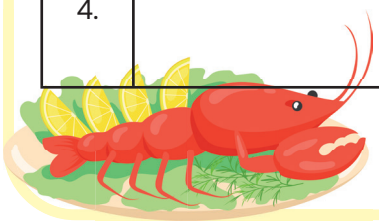
   c. _____

   _____

   _____

2. List and describe the 7 market forms of fish

#	Market Form	Description
1.		
2.		
3.		
4.		



5.		
6.		
7.		

3. Give 4 qualities of fresh fin fish

   a. _____

   b. _____

   c. _____

   d. _____

4. List 5 examples of shellfish. Give a description and their available market forms.

#	Shellfish	Description	Market Form/s
1.			
2.			
3.			

4.			
5.			

5. Describe the ways to cook fish and shellfish

_____

_____

_____

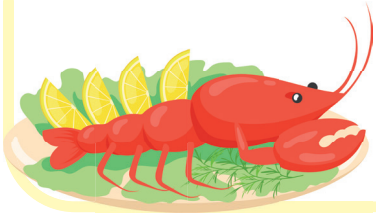
_____

_____

_____

_____

_____



Lesson Output

Individual Work – Make a creative presentation of the different kinds of fish and shellfish available in the market. Use any word processing, spreadsheet, or presentation tool (or combination of 2 productivity tools).

Rubrics for Presenting Different Kinds of Fish and Shellfish Available in the Market

Criteria	5	4	3	2	1	Points
Content / Functionality	The student is able to list or identify at least 15 different kinds of fish and shellfish available in the market. A proper description of each fish or shellfish is also given.	The student is able to list or identify less than 15 but at least 12 different kinds of fish and shellfish available in the market. A proper description of each fish or shellfish is also given.	The student is able to list or identify less than 12 but at least 10 different kinds of fish and shellfish available in the market. A proper description of each fish or shellfish is also given.	The student is able to list or identify at least 10 different kinds of fish and shellfish available in the market. Some of the fish or shellfish identified (2 or 3) were not described correctly.	The student is able to list or identify less than 10 different kinds of fish and shellfish available in the market. Some of the fish or shellfish identified (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 7 Understanding Vegetables

Learning Outcomes

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

1. Classify vegetables.
2. Give guidelines when cooking vegetables.
3. Describe the qualities of properly cooked vegetables.

Engage

YouTube Video "How Pumpkin Is Eaten Around The World" by Food Insider

https://www.youtube.com/watch?v=LEDxSD9zYow

Bahay-kubo, kahit munti
Ang halaman doon ay sari-sari
Singkamas at talong, sigarilyas at mani,
Sitaw, bataw, patani,
Kundol, patola, upo't kalabasa.
At tsaka mayro'n pang labanos, mustasa,
Sibuyas, kamatis, bawang at luya
Sa paligid-ligid ay puno ng linga.

The Philippine folk song "Bahay Kubo" illustrates the richness of our country.

A small piece of land can yield so many crops. The sheer variety of vegetables available in our country can make way to producing so many delicious and interesting dishes.

Explore

Who Said What?

Each letter in the phrase has been replaced with a number. Some clues are already given. Decode the message!

A	B	C	D	E	F	G	H	I	J	K	L	M
25												

N	O	P	Q	R	S	T	U	V	W	X	Y	Z
					19							

A
25

		S	
15	6	19	23

	A	
24	25	10

S					
19	9	11	4	22	12

			S				
2	11	10	19	6	12	23	5

		A	
13	9	25	13

		A			
9	23	25	22	13	9

	S
6	19

13	9	23

			A			S	
20	5	23	25	13	23	19	13

11	3

			A	
9	4	24	25	10

			S	S				S
14	22	23	19	19	6	10	20	19

-

							A			S
9	6	1	1	11	2	5	25	13	23	19

Research

Research on the different kinds of vegetables. Choose one that you particularly like. What are its characteristics? What do you like about it? How do you want it prepared or cooked? Write a 1-page report.

Explain

Vegetables

Vegetables are edible parts of herbaceous plants. Some of these edible parts can be readily seen in the plants since they are above ground. Examples of these parts are stems or stalks, leaves, flowers, or seeds. Some edible parts are under the ground. These underground parts can be the roots, tubers, or bulbs of plants.

Tomatoes, eggplants, peppers, and avocados are fruits in the scientific or botanical sense. But in the kitchen, they are used as vegetables.

Vegetables contain pigments. **Pigments** are what give vegetables their color.

- **Chlorophyll** is the pigment responsible for giving the green coloring to leafy and green vegetables.
- **Anthocyanins** are red, purple and blue pigments found in vegetables like red cabbage, eggplants and beets.
- **Anthoxanthin** makes vegetables creamy white or pale yellow. This can be seen in vegetables like cauliflower, onions, and the flesh of potatoes, cucumber and zucchini.
- **Carotenoids** are yellow and orange colorings found in carrots, squash, sweet potatoes, tomatoes and corn.

Cooking and certain ingredients affect these pigments and the overall appearance of vegetables. We will learn later in the lesson how to manage these color changes so that we can make the vegetable dishes we are cooking or preparing look appetizing as much as possible.

Culinary Classification of Vegetables

Vegetable Group	Description	Examples
Bulbs	Vegetables that grow just below the surface of the ground; have sprouts of leaves aboveground and roots at the bottom of the bulb; are usually segmented or have layers of skin.	Onions, garlic, leeks, shallots

Flowers or Cruciferous Vegetables	Edible flowers of plants; cruciferous means "cross-bearing" because the shape of their petals resembles a cross.	Cabbage, brussels sprout, bok choy, wombok, pechay. Also included in this group are cauliflower and broccoli
Fruits	Fruits that are used as vegetables in the kitchen; they are fleshy and contain seed/s.	Tomatoes, eggplant, avocado, peppers
Fungi	Several kinds of edible mushrooms	Shiitake, enoki, button, cremini, morel, chanterelle
Gourds	Fruits of climbing or trailing plants; usually have hard skin although there are varieties that are soft skinned.	Squash, pumpkins, cucumber, luffa (*patola*), chayote
Leafy Vegetables	Edible leaves of plants which can be eaten raw; also known as leafy greens or salad greens.	Lettuce, spinach, kale, moringa leaves (*malunggay*), water spinach (*kangkong*)
Roots and Tubers	Edible underground parts of plants	Carrot, potato, sweet potato, jicama, radish
Seeds	Plants that have pods with seeds inside.	Beans, peanuts, lentils, chickpeas
Stalks	Edible stems of plants	Celery, asparagus, rhubarb, bamboo shoots

Guidelines When Cooking Vegetables

When we cook vegetables, certain changes happen:

1. Cooking changes the texture of vegetables.
2. Cooking changes the flavor of vegetables.
3. Cooking changes the color of vegetables.
4. Cooking will lead to some nutrient lost in the vegetables.

To be able to control these changes, let's keep in mind the following:

- ✓ Vegetables are composed of fiber which give them their shape and texture.
  - o Some vegetables have more fiber than other vegetables.
    For example, carrots have more fiber than lettuce.
  - o Older vegetables have more fiber than younger ones.
    For example, old okras have more fiber than young ones.
  - o Some parts of a vegetable have more fiber than its other parts.
    For example, the leaves of celery have less fiber than its stalks.

- ✓ Cooking and certain ingredients affect the fiber in vegetables.
    - o Cooking will make fiber soften.
    - o Acids like calamansi juice, vinegar, tomatoes and tomato products will help in maintaining the firmness of vegetables.
    - o Baking soda can make green vegetables mushy.

- ✓ Cooking methods such as boiling can make vegetables lose flavor. Flavor is leached into the cooking liquid or is lost by evaporation. To minimize flavor loss:
    - o If possible, use other cooking methods like steaming.
    - o Cook vegetables quickly or as shortly as possible.
    - o Boil vegetables in salted water.

- ✓ Cooking and certain ingredients alter the color of vegetables.
    - o Acids can make green vegetables turn into a dull green color.
    - o Overcooking can also make green vegetables turn into a dull green.
    - o Leave the pot uncovered when cooking green vegetables. This will let plant acids escape so that the vegetables will retain their green color.
    - o Acids can brighten the red or purple color of vegetables and maintain the creamy white color of white vegetables.
    - o Red and purple pigments are water-soluble. Therefore, cook red and purple vegetables in the shortest time possible and also with as little amount of water as necessary to avoid too much loss of color.
    - o Yellow and orange pigments are the most stable of all the vegetable colorings. Acids and alkalis do not affect them much although overcooking can dull them.

- ✓ The heat in cooking can result in nutrient loss.
    - o Do not overcook vegetables. Long cooking times induce more nutrient loss.

Qualities of Properly Cooked Vegetables

- ✓ **Good color and over-all appearance**
    - o Properly cooked vegetables have bright, natural colors.
    - o Vegetables are cut uniformly. This will also help the vegetables to cook evenly.

- ✓ **Good texture**
    - o Properly cooked vegetables have the correct doneness. “Done” means the vegetable has achieved the desired tenderness. This tenderness varies depending on the kind of vegetable being cooked.
    - o Most vegetables should be cooked for a short time so they can have the **al dente** or firm to the bite texture, similar to pasta. Not tough but also not soggy.
    - o Vegetables cooked al dente not only the have the proper texture. They usually keep their color, flavor with less nutrient loss.

✓ **Good flavor**

- Properly cooked vegetables should have the pleasant taste of their natural flavors.
- If seasoned, the seasoning should be light.
- Sauces if used must complement the vegetable dish.

Note: For best quality of your vegetable dish

- Cook vegetables close to meal time.
- Don't mix old and new batches of cooked vegetables.

Examples of Commonly Used Vegetables

Onions

Onions are one of the most commonly used vegetables in the kitchen. They are bulbs with many layers and have a strong, sharp smell and flavor. Cutting onions will release enzymes that can be irritating to the eyes.

Onions belong to the *Allium* family of which garlic, shallots and leeks are also members. Onions come in three colors: red (also called purple in some countries), yellow (also called brown) and white. Red onions have very pungent flavor and smell and is commonly used in Asian cuisine. Yellow onions are sweet onions while white onions have a mild flavor.

Onions are rich in vitamins and minerals, particularly Vitamin C and B vitamins.

Varieties include:

- **Red Creole** – one of the red onion varieties produced in the Philippines. They are small to medium in size and has a very strong and spicy flavor and aroma. They also have a long shelf life.
- **Vidalia** – are very sweet onions that have a flatter shape than other onions. Recognized true Vidalia onions can only be grown in Georgia, USA where the soil has very low sulfuric content. This is what makes Vidalia onions unusually sweet.

When buying onions, choose the ones that are well-shaped. They should be hard, the skin tight and do not have molds.

Onions can be eaten raw, especially the sweet varieties. They can be added to burgers, sandwiches and salads. They are also used as aromatic vegetables and are commonly used to flavor soups, sauces and stews. They can be sautéed with meats and vegetables.

According to the **Department of Agriculture**, the top onion producing regions in the Philippines in 2019 are **Region 1** (Ilocos Region), **Region 3** (Central Luzon) and **Region 4B (MIMAROPA)** with Region 1 producing more than 38,000 metric tons of onions.

The most common varieties cultivated in the country are red creole, yellow granex and shallots.

https://www.da.gov.ph/wp-content/uploads/2021/04/Investment-Guide-for-Onion.pdf

Tomatoes

Tomatoes, from a botanical point of view are fruits, but are used as vegetables in the kitchen. They come in different shapes, colors and flavors. Some are red, yellow, green, orange and even purple. They can be circular, oval or pear-shaped. Tomatoes are sweet especially when they are ripe.

Tomatoes are nutrient-dense fruits. They are rich in Vitamin C and the antioxidant lycopene which is closely related to reduced risk of heart disease and cancer.

Varieties include:

- **Cherry tomatoes** – are juicy, round, bite-sized tomatoes. They can be added to salads or grilled with meats and other vegetables.
- **Roma tomatoes** - are egg-shaped or pear-shaped tomatoes. They do not have a lot a seeds which makes them ideal to use for sauces. Roma tomatoes are a kind of **plum tomatoes**. Plum tomatoes are also called paste tomatoes or processing tomatoes, they are a variety of tomatoes widely used for making tomato paste and canned tomatoes.
- **Globe tomatoes** – also called slicing tomatoes, they are the most common type of tomatoes. They are round, medium in size and has a mild flavor.

When buying tomatoes, select fruits that are firm, smooth and without blemishes. Do not refrigerate underripe tomatoes. Store them at room temperature so they can ripen and develop their color and flavor.

Tomatoes can be eaten raw, added to salads and sandwiches. They can be used to make sauces and stews. Some large varieties can be stuffed and baked. In the Philippines, tomatoes are a common condiment to fried foods like fish and pork.

Eggplant

Eggplants, like tomatoes are botanically classified as fruits. Their color come in shades of purple but green and white varieties also exist. The shape can be long and cylindrical, pear-shaped, oval or round. Also called aubergine, eggplants contain seeds. They have a spongy texture and a mild taste that goes well with garlic, onions and other strong-flavored vegetables.

Eggplants are low in calorie but rich in fiber. They are also a good source of vitamin B6, potassium, other vitamins and minerals and the antioxidant anthocyanin.

Varieties include:

- **Japanese eggplant** – has a dark purple color and a long, slender shape.
- **Chinese eggplant** – similar in shape with the Japanese eggplant but has a light purple color.
- **Globe eggplant** – is short and wide in size and has a deep purple color. It has a meaty texture.

When buying eggplants, select the ones that are firm and have no soft spots.

Eggplants can be grilled, baked, and fried. In the Philippines, *tortang talong* or eggplant omelet is a popular way of cooking eggplants. Eggplant is also one of the main ingredients in the vegetable dish *pinakbet*.

Carrots

Carrots are root vegetables that are widely used in many cuisines around the world. They come in assorted shapes and colors. The typical carrot shape is long with pointed ends but there are also rounded and cone shaped ones. There are carrots that are colored orange, purple, red, yellow, and white.

Carrots are rich in fiber, vitamins and minerals and the antioxidant beta carotene which our bodies convert to Vitamin A.

Varieties include:

- **Danvers** – looks like the typical carrot we see available in the market: orange in color and has a long, slender shape that tapers at the end. This variety is developed in Danvers, Massachusetts.
- **Nantes** *(nont)* – are carrots that have a more rounded shape at the top and at the bottom. They have a sweet flavor and a crisp texture. These carrots do not need to be peeled. The name Nantes came from a city in France where the soil is ideal to cultivate this variety of carrot.

When buying carrots, select ones that are firm, have a bright color and smooth surface. Carrots can be eaten raw, as a snack or as part of a salad. It is an aromatic vegetable that is used to make stocks, sauces, soups and stews. It can be grilled, baked, blanched, or juiced.

Cabbage

A **cabbage** is a vegetable that has a cluster of leaves that resembles a cross or a head. There are green, red or purple and white cabbages. Although the cabbage is typically round, there are varieties that are flat or elongated. Cabbages belong to the Brassica or mustard family, of which the cauliflower and broccoli are also a part of.

Cabbages are rich in Vitamin C, other vitamins and minerals, and fiber.

Varieties include:

- **Green cabbage** – has a round shape and light green to dark green leaves. It is the most common variety of cabbages.
- **Chinese cabbage** – has an elongated shape. Its leaves are wide, crinkly and has a light green color. Chinese cabbage is also called napa cabbage. In the Philippines it is called pechay Baguio or wombok.
- **Red cabbage** – has reddish or purplish leaves depending on the soil they were cultivated in. Red cabbage has a longer shelf life than the green varieties.

When buying cabbages, choose those that are firm, heavy for its size and has smooth, crisp leaves.

Cabbages can be eaten raw, as coleslaw or as part of a vegetable salad. It can be steamed, boiled, braised, or added to soups and stews. It can be preserved or pickled like sauerkraut or kimchi. **Sauerkraut** is a popular German dish of raw cabbage fermented with lactic acid. **Kimchi** is a well-known Korean side dish made with fermented napa cabbage, radish, chili and other seasonings.

Squash

Squash belongs to the gourd family. They usually have yellow or orange flesh. They come in different shapes: round, pear-shaped or elongated. The variety of squash is divided into two main groups: **summer squash** and **winter squash**. Types of summer squash are harvested when they are still young, so they are tender-skinned and have tender seeds inside the seed cavity. Types of winter squash have very thick, hard skins and hard seeds because they are harvested at a later time and are allowed to mature.

The term squash and pumpkin are often used interchangeably. Technically, a pumpkin is a variety of squash.

The squash is rich in fiber. It's also a good source of a number of vitamins and minerals including Vitamin A, B vitamins, folate, and potassium.
Varieties include:

- **Calabaza** – the most common type of squash in the Philippines. It has a hard skin that can be green, yellow, or orange in color. The flesh is sweet and has a firm texture. The flowers and leaves of calabaza can also be eaten. They can be added to soups, stews, and other vegetable dishes.
- **Butternut squash** – has the shape of a bulb. The skin is light brown-yellow and the flesh can have a deep orange color when ripe. This squash has a long shelf-life and can be stored for months.
- **Spaghetti squash** – has an oval shape. The flesh - which can be creamy white, yellow or orange in color – is fibrous and when scraped out looks like spaghetti pasta.

When buying squash, look for ones which are heavy, firm and have no blemishes.

Squash can be baked, grilled, sautéed, and deep-fried. They can be made into soups, added to salads, baked into sweet and savory pies, cakes and other desserts. In the Philippines, it is a main ingredient in the vegetable dish *pinakbet* and is popularly cooked in coconut milk known as *ginataang kalabasa*.

Okra

Okra belongs to the flowering plant family called *Malvaceae* or mallows. Also called lady's finger, it has a long, ridged body that tapers at the end. It contains tender seeds inside the pod that are enveloped by a sticky juice.

Okra is rich in fiber. It is a good source of Vitamin C and K, and folate.

Varieties include:

- **Smooth green** – okra variety available in the Philippines. It is long, slender and the skin has a bright green color.
- **Burgundy** – a variety of okra with red skin. The pod turns green when cooked.

When buying okra, select ones that are young and tender.

Okra can be steamed, boiled, sautéed and stir-fried. It is one of the main ingredients in the seafood dish gumbo. Okra is popularly steamed in the Philippines, with fish paste or bagoong as condiment. It is also added in pinakbet or *sinigang*.

Beans

Beans are seeds that are eaten as vegetables. They belong to the *Fabaceae* or legume family. Beans are small in size, with round, oval or kidney shapes.

Beans are a good source of fiber, protein, iron and other vitamins and minerals.

Varieties include:

- **Mung beans** – also called *munggo*, are small, round beans. The skin is dark green and the inside is white. They are popular in Asian cuisine and are used in both savory and sweet dishes. Mung beans can be sprouted to produce bean sprouts.
- **Kidney Beans** – as the name suggests, kidney beans are shaped like kidneys. They come in red and white varieties. **White kidney beans**, which are also called **cannellini beans**, have an off-white-colored skin. They have a mild flavor and creamy texture when cooked. **Red kidney beans** take a longer time to cook than the white kidney bean variety. They have a firm texture and nutty taste when cooked.

Beans can be bought fresh, dried or canned.

There are a lot of ways that you can incorporate beans in your cooking. They can be added to salads, baked, and cooked in soups and stews. They can serve as filling for breads, pastries and other desserts.

Avocados

Avocado is a fruit that contains a large seed at its center. It has a tough skin and tender flesh especially when ripe. Avocados can be pear-shaped, round or oval.

One avocado fruit packs a lot of vitamins and minerals and is rich in healthy monounsaturated fats.

Varieties include:

- **Hass** – the most common variety of avocados, comes from California or Mexico. It has dark green skin when not yet ripe and turns black once ripened. Its flesh is buttery because of its high fat content.
- **Simmonds** – commercially grown in Florida, this variety is pear-shaped and has a smooth, light green skin. The flesh is smooth, has a nutty flavor and is lower in fat content compared to the Hass varieties.

When buying avocados, choose fruits with good appearance and a heaviness that feels right to its size. Disregard the ones with bruises or blemishes.

Avocados can be eaten as it is. Just cut in half lengthwise and remove the big seed or pit at the center. In many Asian countries, avocados are served as a dessert with the addition of milk and sugar. It can also be made into a savory dish like **guacamole** (gwa-ka-mo-lee), which is a Mexican avocado dip made with avocados, onions, peppers, lemon juice, and salt.

Edible Mushrooms

Edible mushrooms are a special type of fleshy fungi that are either farmed or gathered in the wild. They come in many shapes and forms but for most of us, mushrooms look like little umbrellas. Mushrooms usually have a stem (called a **stipe**), a cap (called a **pileus**) and gills or **lamellae** which are slits found under the cap used by the mushroom for spore dispersal.

Mushrooms are a good source of fiber, minerals and vitamins, especially B vitamins. They are low in calorie, sodium and fat.

Varieties include:

- **Button mushroom** – is the fungus *Agaricus bisporus*, also known as **champignon** (sham-pi-nyon). Button mushrooms are the most common and also the most commercially available variety. They are sold and consumed at different stages of their maturity. **White button mushrooms** are the most immature and also the softest. The brown-capped ones, called **cremini mushrooms**, are slightly older, has a firmer texture and has more flavor. **Portobello mushrooms** are at the most mature stage. They are left to grow so they are the biggest in size, their cap can measure up to six inches. They are also the meatiest and most flavorful of all the button mushroom variety.

Button mushroom

- **Shiitake mushroom** – originally found in East Asia, shiitake mushrooms have brown to dark brown color. They have a firm texture and an earthy flavor. They come in fresh and dried forms, the dried form being more popular and more flavorful. Shiitake mushrooms are also called oak mushroom or black forest mushroom.

Shiitake mushroom

- **Oyster mushroom** – is a thin, fan-shaped mushroom that usually lacks a stipe or stem. Oyster mushrooms can be cream, yellow, pink, gray or black in color. They have a very delicate flavor. They are called oyster mushrooms for their resemblance to the shellfish oyster.

Oyster mushroom

When buying fresh mushrooms, select ones that are firm, have no blemishes and are not slimy. As some mushrooms can be poisonous, buy only known edible varieties and from reliable sellers.

Mushrooms are very flavorful; they give off an umami flavor. They can be baked or roasted, grilled and sautéed. They can be added to omelets, salads, soups, sauces and stews. Because mushrooms have a meaty flavor and texture, they can be used to make burger patties.

Handling Vegetables

- ✓ Wash vegetables thoroughly before cutting, peeling or cooking.
- ✓ Some vegetables should be stored in the refrigerator. They should be drained well after washing and then lightly covered. This is especially applicable to leafy vegetables.
- ✓ Vegetables like potatoes, onions, garlic should not be refrigerated. They should be kept at room temperature in a clean, dry place.
- ✓ Limp vegetables like lettuce and other leafy vegetables can be soaked in cold water to restore their crispness.
- ✓ Dried legumes and beans can be soaked in water first before cooking, preferably overnight. This will make their cooking time faster.
- ✓ When peeling vegetables, such as carrots and potatoes, peel as thinly as possible to minimize nutrient loss.
- ✓ Some vegetables easily turn brown when cut (e.g., potatoes, eggplants). To avoid browning, you can:
    - o Apply or coat with calamansi juice.
    - o Submerge in water until you are ready to use or cook them.
    - o Cut them close to cooking time.
- ✓ Discard vegetables that are already shriveled or slimy.

Summary

There are so many reasons to eat vegetables.

A diet rich in vegetables can help us lead healthy lives.

Vegetables are very nutritious foods. We can get from them the vitamins and minerals that our bodies need to function properly. They can help us prevent many diseases, including very serious ones like heart problems, high blood pressure and some types of cancer.

Vegetables are also tasty. Cooked vegetable dishes that taste fresh and are colorful can be very appetizing.

The unlimited number of vegetables, even the infinite varieties of each kind, can lead to so many tasty and creative ways of preparing and cooking them.

Exercises

Exercise 1

How much have you learned?

Instruction: Write **True** or **False** on the space provided.

_____ 1. Anthoxanthins are red, blue, and purple pigments in plants.

_____ 2. Cooking can change the texture of vegetables.

_____ 3. Tomatoes are fruits botanically speaking but are treated as vegetables in the kitchen.

_____ 4. Danvers is a variety of carrots.

_____ 5. Red kidney beans cook faster than white kidney beans.

_____ 6. We should thoroughly wash vegetables before eating, cutting, peeling, or cooking them.

_____ 7. We can apply calamansi juice on cut vegetables that easily brown.

_____ 8. We should peel the skins of most vegetables as thinly as possible to minimize nutrient loss.

_____ 9. Cabbages belong to the *Malvaceae* or mallows family.

_____ 10. Most vegetables should be cooked for a short time so they can have the al dente or firm to the bite texture, not tough but also not soggy.

Exercise 2

Instruction: Answer the following:

1. Identify the 9 culinary classification of vegetables.

a. _____

b. _____

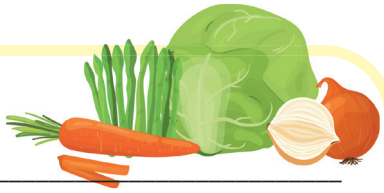
c. _____

d. _____

e. _____

f. _____

g. _____



h. _____

i. _____

2. Identify the 4 pigments found in vegetables

a. _____

b. _____

c. _____

d. _____

3. Give 3 qualities of properly cooked vegetables. Explain.

a. _____

_____

b. _____

_____

c. _____

_____

Lesson Output

Individual Work – Make a creative presentation of the different culinary classification of vegetables. Give examples. Use any word processing, spreadsheet, or presentation tool (or combination of 2 productivity tools).

Rubrics for Culinary Classification of Vegetables

Criteria	5	4	3	2	1	Points
Content/ Functionality	The student is able to list or identify ALL the 9 different culinary classification of vegetables. A proper description of each classification is given along with examples.	The student is able to list or identify only 8 of the culinary classification of vegetables. A proper description of each classification is given along with examples.	The student is able to list or identify only 7 of the culinary classification of vegetables. A proper description of each classification is given along with examples.	The student is able to list or identify only 7 of the culinary classification of vegetables. Some of the descriptions or examples given (1 to 2) were incorrect.	The student is able to list or identify less than 7 of the culinary classification of vegetables. Some of the descriptions or examples given (2 or more) were 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 8 Salads and Salad Dressings

Learning Outcomes

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

1. Identify different types of salads.
2. Classify basic salad dressings.
3. Identify the ingredients for making salad dressings.
4. List the general rules for arranging/plating salads.

Engage

YouTube Video "5 DIY SALAD DRESSING RECIPES | quick + easy"
by Clean and Delicious

https://www.youtube.com/watch?v=0rd8B46AiFc

A salad is a fun way of eating your fruits and vegetables. And with an infinite number of ingredients and combinations of ingredients, salads cannot be boring.

Salads are also easy to prepare. One does not need to be a chef or an expert to create a salad at home that everyone can dig in and enjoy.

Explore

Word Scramble: Name All Things Salad!

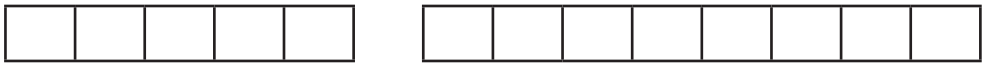
Solve the puzzle by rearranging the letters in Part 1. The final phrase in Part 2 is made up of the letters from the clue words from Part 1.

Part 1

ATRLSFDAIU

11 3 9

SERGNCNDHRSAI



10 1 17

HTNSOASLDANIDU

14 4

SAASAALRECD

18 5

UTEECTL

12

SEAOLLCW

13 2

YSNNEAAIMO

8 16 7 15 6

Part 2

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

Research

Research on the different kinds of salad dressings. Choose one that you particularly like. What are the ingredients? How is it prepared? What do you like about it? Write a 1-page report.

Explain

Salads

A **salad** is a cold dish made from different vegetables or fruits which can be raw or cooked and is then seasoned with a salad dressing.

Salads are very versatile dishes. They can be light or filling. They can be savory or sweet. And you can put almost anything in it.

The popularity of salads is growing steadily in our health-conscious society. Salads and salad ingredients are readily available in supermarkets and restaurants. Even fast-food chains offer salads now in their menus.

Types of Salads

Salads can be classified in different ways. They can be categorized according to when they are served during a meal. They can also be categorized based on the ingredients used or how these ingredients are arranged. It is important to note that these are not strict classifications of salads. One example of salad can fall into different categories or types.

According to When It is Served During A Meal

- **Appetizer Salad** – is a small-portioned salad used as a starter or as a first course of the meal. Appetizer salads are meant to stimulate the appetite.

Appetizer Salad

- **Accompaniment Salad** – a salad that serves as a side dish, the way other vegetables or starches serve as accompaniment to the main course. Accompaniment or side salads should serve to balance the meal. Care must be taken when choosing the ingredients of the side salad. If the main course or meal is already heavy then the side salad should be light.

Accompaniment Salad
chicken burger with fries and coleslaw

For example, a plate of burger and French fries (a kind of starch) - a green salad of lettuce and cucumbers or coleslaw (made of shredded cabbage) is more appropriate than say, a macaroni or potato salad (which is also starch)

- **Main-Course Salad** – a big-portioned salad. Main-course salads usually have a significant amount of protein to be heavy enough to be a meal on its own. Examples of protein are pieces or strips of grilled chicken or meat, fish or seafood, or egg and cheese.

Main-Course Salad
Caesar salad with strips of chicken breast

- **Dessert Salad** – a sweet salad served as a dessert. Dessert salads typically have fruits, nuts, milk, cream or gelatin as ingredients.

Dessert Salad

According to the Kind of Ingredients Used

- **Green salad** – a salad that is mainly composed of leafy greens such as different types of lettuce, spinach or cabbage.

Green Salad

- **Vegetable salad** – a salad that has more vegetables than leafy greens as ingredients. Vegetables such as tomatoes, peppers, onions, cucumbers, corn and carrots are common ingredients used to make vegetable salads. Some ingredients are used raw while others are cooked first and then chilled.

Vegetable Salad

- **Grain or legume salad** – a salad that has a kind of grain or legume as a main ingredient. Different kinds of beans can be made into nutritious and filling salads.

Mexican black bean, corn and quinoa salad

- **Starch or pasta salad** – a salad that is mainly composed of pasta or a kind of starch like potatoes.

Pasta Salad

- **Fruit salad** – a salad made up of fruits. These fruits can be fresh or canned. Fruits commonly used to make fruit salads are pineapples, peaches, apples, kiwis and bananas.

Fruit Salad

According to How It Is Mixed, Arranged or Plated

- **Bound Salad** - a kind of salad that is held together by a dressing, most common of which is mayonnaise. Bound salads can be scooped and retain its shape when plated. Popular choices for bound salads are chicken, tuna, turkey, ham, eggs, and potatoes. Bound salads can also be used as sandwich fillings.

- **Composed Salad** – a kind of salad that has its individual components arranged or plated rather than everything tossed or mixed together.

Parts of a Salad

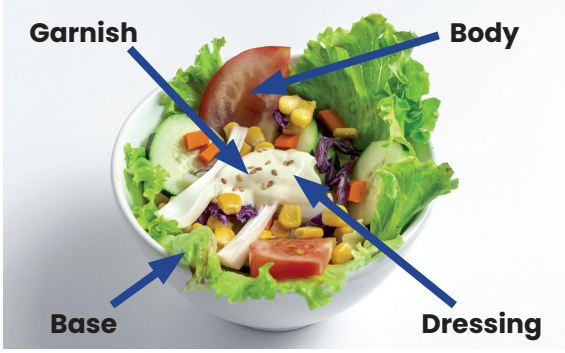
A salad typically has four parts.

1. **Base** – serves as an underliner or frame for the salad. Cup-shaped lettuce leaves like iceberg lettuce can be used as a base, as well as a mix of shredded lettuce leaves. Not all salads have a base or need a base. But for certain salads like bound salads, potato or pasta salad, the addition of a base makes them more attractive and appetizing.

2. **Body** – is the main part of the salad composed of its main ingredient or ingredients.

3. **Garnish** – is a decorative item or items on the salad added to make it look more attractive or interesting. A garnish should be edible. Its flavor and arrangement should complement the rest of the salad. The simple rule in garnishing is that: **make it simple!**

4. **Dressing** – is a seasoned liquid added to the salad to enhance, complement and add moisture. The components and the different types of salad dressings will be discussed later in the lesson.



Parts of a Salad

- Base – lettuce leaves
- Body – ingredients (tomatoes, cucumbers, corn)
- Garnish – sesame seeds
- Dressing - mayonnaise

Common Salad Ingredients

Almost any food item can be turned into a salad ingredient. The important thing in choosing your ingredients is that they are of good quality and that their individual flavors will all blend well together.

Salad greens

Lettuce and other leafy vegetables are common ingredients of salads. They can serve as a base or underliner, making the salad look more attractive and appetizing. They can also be the main ingredient of the salad, hence the refreshing salad called green salad.

There are many kinds of leafy greens. The following are examples:

- **Lettuce** – Lettuce is practically synonymous to salad. When we think of salads, we almost always think of this kind of leafy greens. A very popular ingredient of salads, their leaves can be separated individually. Lettuce comes in many varieties:

    - **Iceberg** – the cup-shaped leaves form a firm, rounded head. The leaves are light green in color, crisp in texture and mild in flavor.

Iceberg lettuce

- **Romaine** – also known as Cos lettuce. The leaves are elongated, coarse and dark green in color although the inner leaves may have a lighter shade of green. It has a sweet flavor.

Romaine lettuce

- **Loose-leaf Lettuce** – has soft, curly leaves that form a loose cluster. The leaves are fragile and highly perishable. Green and red kinds are available. **Lollo Rosso**, a variety of loose-leaf lettuce, has a deep red or maroon color and a mild, nutty flavor.

Loose-leaf lettuce

- **Arugula** – also known as rocket or Italian cress. The leaves are tender and have a peppery flavor. Arugula is a member of the mustard family.

Arugula

- **Spinach** – belongs to the family of flowering plants called amaranth. Baby spinach or the young, tender leaves of spinach make excellent raw salads because of their sweet flavor. The more mature leaves have a stronger flavor and are best enjoyed cooked.

Baby Spinach

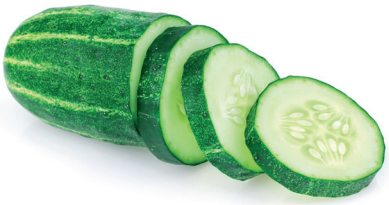
- **Sprouts** – are germinated seeds. They are very young plants that have just begun to develop their leaves. Alfalfa sprouts have a mild flavor and can be added to salads. Mung beans sprouts, which is very popular in Asian cuisine, can also be used to make salads.
- **Mesclun** – is not a single variety of salad greens but rather a mixture of different, young lettuce leaves or baby lettuces. Mesclun is available in supermarkets although you can choose to make your own mix by combining different kinds of young, salad greens.

Alfalfa Sprouts

Vegetables

Different kinds of vegetables can be added to salads to make them more nutritious and colorful. Vegetables added to salads can be raw, cooked, canned or preserved. The following are examples:

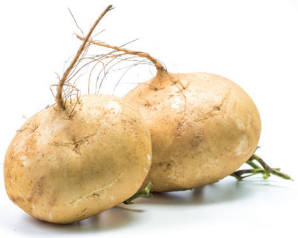
- **Cucumber** – belongs to the gourd family. It is tubular in shape and the color of the skin ranges from pale yellow to dark green depending on the variety. It contains a high percentage of water which makes it very refreshing and a suitable component of salad.
- **Bell Pepper** – is a member of the Capsicum family, of which other hot chilis belong to. Also called sweet peppers, they have fleshy walls and the center contains many seeds.
- **Sweet Corn** – is a type of corn that are harvested while still young. They are commercially available as fresh, frozen or canned.
- **Jicama** *(hee-ka-ma)* – is a kind of tuber known in the Philippines as *singkamas*. The flesh is white, crisp and sweet.
- **Olives** – are small fruits that have a pit or stone in the middle. The round fruits elongate when ripe. There are hundreds of varieties and their color range from shades of green, black and purple. Olives feature primarily in Mediterranean cuisine. Olive oil which is produced by pressing whole olives is a great source of healthy monounsaturated fats.



Cucumber

Bell Pepper

Sweet Corn



Jicama

Olives

Fruits

Fruits added to salads can be fresh, cooked, canned or frozen. The syrup or juice of canned fruits can be served as salad dressing or part of the salad dressing. The following are examples:

- **Apples** – ripe apples can be green, red, yellow, pink, or combinations of these colors. The flesh is soft, crisp and sweet though some varieties are naturally tart.

Apple

- **Pineapples** – are large tropical fruits. The skin is thick, rough, spiky and with "eyes". But the flesh inside is tender, bright yellow and can be both sweet and tart.

Pineapple

- **Berries** – are fruits that can come in different shapes and colors but they are typically small, rounded, fleshy and have small seeds or a pit or stone. Examples of berries used in salads are strawberries, raspberries, blueberries, blackberries and cranberries.

Berries

- **Bananas** – are elongated fruits. Ripe bananas can have different skin colors such as yellow, brown, red and green. The flesh is firm but soft and sweet. Bananas which are also called plantains belong to the Musaceae family.

Banana

- **Grapes** – are small, round fleshy fruits that grow in cluster. The skin can have purple, crimson, red, green and black colors. Grapes can be sweet or tart. There are seedless grape varieties. Raisins are dried grapes. They are customarily sun-dried but they can also be mechanically dehydrated.

Grapes

- **Mangoes** – are fleshy fruits with a large seed inside. The skin is thin but tough and the flesh inside can be very sweet especially when ripe. Mangoes can have an oval shape or a kidney shape. Many varieties exist with skin colors ranging from shades of yellow, green, orange and red.

Mangoes

Pineapples

Although not native to our country, this tropical fruit proves to have a match made in heaven with the Philippine soil.

We are in fact, the second largest producer of pineapples in the world, next only to Thailand. The top three regions contributing to our total pineapple production are Northern Mindanao, SOCCSKSARGEN and Bicol. The Philippines exports different kinds of pineapple products such as juices, purees, preserves as well as dried and fresh pineapples.

Pineapples are very nutritious. In addition to the vitamins and minerals found in them, they contain a substance called bromelain which helps in digestion and reduces inflammation.

https://www.ipsingredis.com/markets/12-facts-about-the-pineapple-industry-in-the-philippines/

Starches

Different kinds of starches can be used to make salads. There are salad recipes that make starch the main ingredient of the dish.

- **Pasta** – different pasta shapes can be incorporated in salad dishes but the most popular is the **macaroni**, a small, dry pasta shaped like the curve of an elbow.

Pasta

- **Potato** – a root vegetable that is a staple food in many countries around the world. There are different varieties of potatoes. They can be small or big, rounded or elongated. The skin can be yellow, brown, white, blue or red in color while the flesh can be yellow, white, and in some varieties blue or purple. Potatoes are generally classified in two groups in the kitchen: 1) **waxy potatoes** have low starch and high moisture and sugar content while 2) **starchy potatoes** have high starch and low moisture and sugar content.

Potatoes

- **Bread** – breads can be mixed in salads. **Croutons**, which are toasted or re-baked breads cut into cubes, give salads additional flavor and a crunchy texture.

Bread (Croutons)

- **Grains and beans** – many kinds of grains and beans can be used to make salads.

Grains and beans

Below is an example of a mixed bean salad:

3-Bean Salad with Olives and Tomatoes

Portions: 2	**Portion Size: 125g**	
Ingredients:		**Procedure:**
40g 40g 40g	chickpeas, cooked and drained red kidney beans, cooked and drained white kidney beans, cooked and drained	1. In a bowl, mix together all the beans. Make sure that all were properly drained.
50g 10g 10g 10g	tomatoes, peeled and seeded, small dice green olives, pitted black olives, pitted red onion, finely chopped	2. Add the tomatoes, olives and red onion. Toss gently.
40ml	vinaigrette	3. Add the vinaigrette and mix.
5g	parsley, chopped	4. Mix the chopped parsley just before serving.
2	iceberg lettuce cups	5. Arrange the lettuce cups on a cold salad plate. 6. Scoop a salad mixture onto the lettuce cups. 7. Serve.
Note: 1. For food safety and to prevent cross-contamination wash hands thoroughly before and after cooking or preparing food. 2. The beans in the recipe can be replaced with other kinds of beans or legumes.		

Proteins

- Different types of meat, poultry, fish and shellfish can be added to salads to make them more filling.
- Charcuterie products or preserved meats such as hams, salami and bacon can also be mixed with the salad.
- Hard-boiled eggs and many kinds of cheeses can make salads more flavorful.

Below is a recipe for Chef's Salad:

Chef's Salad

Portions: 2 **Portion Size: 125g**		
Ingredients:		**Procedure:**
250g	lettuce or mix of salad greens, washed and trimmed	1. Arrange the lettuce on salad plates or bowls.
50g 50g	cooked ham, any kind cheese, any kind, cut into strips	2. Arrange the ham and cheese on top of the salad greens.
1 pc 2 pcs 20g 6 pcs	tomato, cut into wedges eggs, hard-boiled, quartered carrot, cut into strips bell pepper strips	3. Arrange the rest of the ingredients attractively on the salad.
		4. Serve with the appropriate dressing.
Note: 1. For food safety and to prevent cross-contamination wash hands thoroughly before and after cooking or preparing food. 2. Other vegetables can be used to add or replace ingredients in this basic recipe.		

Salad Dressings

Salad dressings are seasoned liquids that are used to add flavors to salads. Like other sauces, their purpose is not just to add flavor but also to add moisture. Salad dressings must complement the salad dish, not overpower it.

Salad dressings can be categorized as:

1. **Vinaigrette** – are dressings primarily made of oil and vinegar and are usually not thickened. The ratio of oil to vinegar is usually 3 parts oil to 1 part vinegar or 3:1. This is not a strict rule and can be adjusted to taste.

Classic Italian Vinaigrette

Vinaigrette is a **temporary emulsion**. An **emulsion** is a mixture of two or more liquids that as a general rule are unmixable. When blended together, through shaking for example, one liquid forms miniscule droplets that are distributed all throughout the mixture. In the case of vinaigrette, the vinegar becomes tiny droplets dispersed in the oil. These two liquids will eventually separate. The next time you will use the vinaigrette, you would most likely need to shake or stir the mixture again.

2. **Creamy dressings** – a thickened dressing of which the main ingredient can be mayonnaise, yogurt, cream, or sour cream.

   Mayonnaise is a mixture of oil, vinegar and egg yolk. It is an example of a **permanent emulsion**. The **lecithin** in egg yolk is a strong emulsifier, making the emulsion stable.

Creamy Ranch Dressing

Ingredients for Salad Dressings

Oils

Different kinds of oils can be used to make a vinaigrette. Choosing the kind of oil to use depends largely on the kind of taste, or non-taste, you want to impart in the dressing. These are examples of oils used to make dressings:

- **Olive oil** – is the oil produced from pressing olive fruits. The best kinds of olive oil are made from the first pressings called *virgin* or *extra virgin olive oil*. It is greenish in color and has a very pleasant aroma. The taste can be sweet or spicy, depending on the olive variety that produce it or the maturity of the fruits when they are pressed. Olive oil has a very recognizable taste so it is used as a specialty oil rather than all-purpose oil.

Olive Oil

- **Canola oil, safflower oil** – are oils that have a milder flavor than olive oil.
  - Canola oil, also known as rapeseed oil, comes from the seed of the flowering plant rapeseed which is a member of the mustard or cabbage family.
  - Safflower oil comes from the seed of safflowers, a flowering plant that is similar to thistles which are prickly.
- **Walnut oil, hazelnut oil, grapeseed oil** – are specialty oils that give a nutty flavor to salad dressings.
- **Peanut oil and sesame oil** – both oils have a mild flavor and nutty taste. Using peanut oil and sesame oil will give an exotic, Asian flavor to any salad dressing.
- **Salad oil** – is a blend of mild-tasting vegetable oils that can be used as salad dressing. Examples of mild-tasting oils are corn oil, sunflower oil and soybean oil. Their light taste is sometimes desirable in a salad dressing especially if you want to infuse other flavors such as herbs and spices.

Vinegar

These are examples of vinegars used to make salad dressings:

- **Balsamic vinegar** – are special wine vinegars that have a dark brown color and a sweet taste.

  o True balsamic vinegar or traditional balsamic vinegar can only be made in the provinces of Modena and Reggio Emilia in Italy. They are produced using only certain varieties of grapes and are aged in wooden barrels for a minimum of ten years and for as long as fifty years. This process produces high quality balsamic vinegars that are almost syrupy in its thickness and are intensely flavorful. True balsamic vinegars are very expensive.

  o Commercially available balsamic vinegars (found in groceries or supermarkets) are usually made from wine vinegar and caramelized sugar. A small quantity of aged balsamic vinegar is sometimes added.

Balsamic Vinegar (left)

- **Cider vinegar** – a kind of vinegar that has a mild, sweet taste. It is made from fermented apple juice.
- **Wine vinegar** – made from red or white wine. Red wine vinegars have a sharp, strong flavor while white wine vinegar variety is milder in flavor.
- **Sherry vinegar** – made from the sherry, the Spanish wine.
- **White or distilled vinegar** – is purified vinegar containing about 5% to 8% acetic acid in water. It is clear or colorless and has a neutral flavor.
- **Flavored vinegars** – are vinegars infused with other flavors such as herbs and spices, berries, lemons and oranges.

Red Wine Vinegar

Lemon juice or calamansi juice

Juices from these citrus fruits can be added to vinegars or used in place of vinegars to make salad dressings.

Egg yolk

Egg yolk is an important ingredient when making mayonnaise and other emulsion-based dressings.

Flavorings

Fresh or dried herbs, spices and aromatic vegetables are commonly used to flavor salad dressings. It is important to note that dried herbs and spices release their flavors more slowly than fresh ones. Two things can be done to make sure you have flavorful salad dressings:

1. Make your salad dressing ahead of time, at least two hours before serving them.
2. Heat the dried herbs or spices in oil to release their flavor, then add to the salad dressing.

Seasonings like ketchup, mustard and Worcestershire sauce can also be added to build on the flavors of salad dressings.

Below is a recipe of a simple vinaigrette:

Basic Vinaigrette

<table>
<tr><td colspan="2">Yield: 250ml</td></tr>
<tr><td>Ingredients:</td><td>Procedure:</td></tr>
<tr><td>60ml wine vinegar
Salt and white pepper, to taste</td><td>1. Mix the wine vinegar, salt and pepper. Make sure that the salt has been properly dissolved in the vinegar.</td></tr>
<tr><td>200ml olive oil or salad oil (you can use part olive oil + other kinds of oil)</td><td>2. Add the oil slowly to the mixture. Mix well using a wire whip or whisk.</td></tr>
<tr><td></td><td>3. Mix again before using.</td></tr>
<tr><td colspan="2">Note:
1. For food safety and to prevent cross-contamination, wash hands thoroughly before and after cooking.

2. This basic vinaigrette recipe can have many variations:

• To make herbed vinaigrette, simply add the herb of your choice. Fresh or dried will do. Examples: basil, oregano, rosemary, parsley.
• To make citrus vinaigrette, simply add 50ml of lemon juice, calamansi juice or any fruit juice of your choice. Change the quantity of the wine vinegar to 20ml instead of 60ml.
• To make mustard vinaigrette, simply add 15g of French or Dijon mustard to the wine vinegar. Follow the procedure for the rest of the recipe. Note that the amount of mustard can be increased or decreased based on preference.
• To make Italian dressing, simply use 200ml olive oil (100% olive oil, no other kinds of oil mixed). Add ¼ tsp minced garlic, 1 tsp dried oregano, 1 tbsp chopped parsley.</td></tr>
</table>

Guidelines on Creating and Arranging a Salad

- ✓ **Wash your ingredients thoroughly.**
  It is important to start with fresh and clean ingredients. Some raw ingredients, especially the leafy greens, may still have sand in them. Change the cold water you are cleaning them with several times.

- ✓ **Drain your ingredients properly.**
  After washing your raw ingredients, it's a must that you drain them. This will prevent water from pooling at the bottom of your salad plate.

- ✓ **Cut your ingredients neatly and uniformly.**
  Cutting your ingredients evenly and bite-sized will make your salad a good-looking product. It will also make it easy or convenient to eat your salad.

- ✓ **Choose the right plate size for your salad.**
  Choosing the right size of plate will make your salad more attractive. If your plate is too big and the portion size of your salad is small, then your plate will look empty. In the same way, if your plate is small and you have a big-portioned salad, then some of the ingredients might just fall off the plate or your salad may look too messy.

- ✓ **Arrange the salad at the center of the plate.**
  Treat your salad plate or bowl like the frame of a photo. As much as you can, set your ingredients in the middle of the plate.

- ✓ **Color will make your salad look more interesting.**
  Adding a few colorful ingredients will make your salad look attractive. For example:
  - o A mix of lettuce leaves with different shades of green
  - o Strips or pieces of colorful fruits and vegetables like carrots, red peppers, corn kernels or orange segments.

- ✓ **Give your salad some height.**
  Lay out your salad in such a way that the ingredients do not lie flat on the plate. You can do this by making the ingredients lean against each other. In the case of bound salads, a mound or scoop will already give the appearance of height.

- ✓ **Keep the arrangement simple.**
  You do not need a complicated design to make your salad attractive. Most of the time, simple is best. Garnish if needed.

- ✓ **Dress or toss the salad with the salad dressing only if it will be eaten immediately.**
  Salad greens will wilt more easily once dressed. Alternatively, you can just serve the salad dressing in a separate container, plated on the side of the salad.

- ✓ **Ultimately, good quality salad has good quality ingredients.**
  Freshness is what makes salads enjoyable to eat. Make sure that your ingredients, especially the fresh or raw salad greens, fruits or vegetables are indeed fresh.

Summary

As was said earlier, salads are an enjoyable way of eating nutritious foods. They also take so little time to make. With just a few ingredients, you can already have a meal prepared.

There are no hard and fast rules when creating a salad. A lot of famous or iconic salads came into being because the ingredients used to make them are what's available at the time they were being made. A lot of people just like the combination so they become popular.

The important thing when making a salad, just like when preparing any other food item or meal, is to make sure the ingredients you are going to use are of good quality and are safe to eat.

Salads are synonymous to freshness. Having raw components contributes to the freshness of salads but it can also be a health risk if we are not careful. Proper food handling like washing our hands before handling any ingredients and washing raw ingredients properly will ensure that we get to enjoy eating our wonderful salad creations.

Exercises

Exercise 1

How much have you learned?

Instruction: Choose your answer from the following:

vinaigrette	egg yolk	green salad	wine vinegar	garnish
salad oil	cider vinegar	appetizer salad	mesclun	balsamic vinegar

_____ 1. Vinegar produced from fermented apple juice.

_____ 2. A small-portioned salad used as a starter.

_____ 3. A dressing mainly made of oil and vinegar.

_____ 4. A special wine vinegar that has a dark brown color and a sweet taste.

_____ 5. An example of a powerful emulsifier.

_____ 6. A mixture of different, young lettuce leaves or baby lettuces.

_____ 7. Vinegar made from red or white wine.

_____ 8. A decorative item or items on the salad added to make it look more attractive.

_____ 9. A salad that is mainly composed of leafy greens.

_____ 10. A blend of mild-tasting vegetable oils that can be used as salad dressing.

Exercise 2

Instruction: Answer the following:

1. Identify the 4 parts of a salad.

   a. _____

   b. _____

   c. _____

   d. _____

2. Identify and describe 5 kinds of salads.

   a. _____

   b. _____

   c. _____

   d. _____

   e. _____

3. Identify and describe 2 kinds of oils used to make salad dressings.

   a. _____

   b. _____

4. Identify and describe 2 kinds of vinegars used to make salad dressings.

   a. _____

   b. _____

5. What is a vinaigrette?

   _____

   _____

6. What is a creamy dressing?

   _____

   _____

7. List at least 3 guidelines when plating a salad?

   a. _____

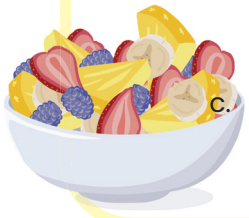
   _____

   b. _____

   _____

   c. _____

   _____



Lesson Output

Individual Work – Create your own salad. Make a slideshow or video presentation of yourself preparing and plating your salad. Use the recipes for Chef's Salad and Basic Vinaigrette found in this lesson as guide.

Rubrics for Preparing and Plating a Salad

Criteria	5	4	3	2	1	Points
Content/ Functionality	The student is able to completely identify ALL ingredients based on the recipes. 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 recipes. 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 recipes. 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 recipes. 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

Baking

Baking Quickbreads

9

Baking Cookies

10

LESSON 9 Baking Quickbreads

Learning Outcomes

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

1. Describe the basic principles of baking.
2. List the basic ingredients used in baking.
3. Describe quickbreads and mixing methods used to make quickbreads.

Engage

Watch the YouTube Video "29 Types Of Bread Around The World"
by Food Insider

https://www.youtube.com/watch?v=C8U23AS1irY

The Philippines is a rice-eating country. But it is equally true that we also love breads, for example our *pandesal*. The existence of so many bakeries, big and small, all over the country can attest to that.

This lesson is intended as an introduction to baking. The discussion on some of the fundamental concepts in baking, the ingredients and the methods commonly used aim to give you a better understanding of bakeshop production. It also aims to make you better appreciate the meticulous work involved in producing bakery goods, from both professional and home bakers.

If this triggers an interest in you to start baking, this lesson also gives you an introduction to quickbreads. Quickbreads are easy to make baked goods that you can produce at home. Learning a few basic methods and combinations of ingredients can help you create unlimited varieties of quickbreads.

Explore

Hidden Message Puzzle: All About Baking!

Solve for the hidden message by finding all the words in the list. Once all the words have been found, copy the unused letters starting in the top left corner into the blanks to discover the secret message.

waffle	pancake	baguette	cupcake
muffin	brownie	pandesal	breadstick
croissant	pie	bagel	cookie

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

HIDDEN MESSAGE:

Research

Research about popular breads around the world. Choose five and describe each. Write a report.

Explain

Baking – An Introduction

Baking is the process of producing breads, pastries and other bakery goods. As a cooking method, baking is defined as cooking by covering the food with hot, dry air, normally in an oven.

Making bread can be a very technical subject matter.

It requires accuracy and precision in terms of measurements, the kinds of ingredients and the methods to use. It also deals with complex processes happening even before the actual baking. During the preparatory stage, when the dough is being kneaded or the batter is being mixed, complex physical and chemical reactions are already taking place.

Baking can also be a very creative endeavor. A visit to a cakeshop or a pastry shop can tell you that creativity and imagination are needed to produce such products. Successful bakers not only have products that taste good, they also look good.

Indeed, you can say that baking is both a science and an art.

Baking Principles

- ✓ **Accuracy in measuring ingredients is very important in baking.**
  A small difference in the quantity of ingredients will yield to different qualities in the products. That is why professional bakers tend to measure by weight rather than by volume. Weight is more accurate.

- ✓ **Use the exact ingredients stated in the recipe.**
  Different ingredients will work differently. This is especially true in baking. A cup of unsifted flour is different from a cup of sifted flour. Bread flour will work differently from cake flour. Melted butter will work differently from room-temperature butter.

Bowl of flour on a kitchen scale

Substituting ingredients in baking will yield to a different quality in the product. If you do substitute, adjustments (e.g., measurements of ingredients) has to be made to the new recipe.

✓ **Gluten development is a special concern in baking.** **Gluten** is a substance that develops in doughs and batters that gives breads their structure and texture.

Wheat, which is what most breads are made of, contains proteins called glutenin and gliadin. These proteins develop into gluten once hydrated or mixed with water. When doughs and batters are kneaded or mixed, gluten is further developed by forming long, stretchy strands. These gluten strands will help the dough or batter to rise and retain their structure during baking.

Wheat flour

The level of gluten development affects the quality of bakery products. As such, controlling how gluten develops is important to the baker.

Gluten can be controlled by:

1. **Selecting the right kind of flour.**
   Wheat flours can be classified according to protein content. More protein content means more potential for gluten development.

   Strong flours – come from hard wheat varieties that have high protein content. Strong flours are used to make breads.

   Weak flours – come from soft wheat varieties that have low protein content. Weak flours are used to make cakes.

2. **Using shortening.**
   Shortening refers to a specific kind of solid fat that is used in baking. But in actual fact, **any fat used in baking acts as a shortening** – they **shorten** or **cut** the gluten strands in dough and in the process tenderize bakery products. **Cutting in fat** simply means mixing the fat (e.g., butter) with the dry ingredients (e.g., flour).

   Recipes with high fat content (e.g., cake) will produce baked goods that are soft and crumbly. Recipes with little or no fat content (e.g., baguette) will produce breads that are airy and chewy.

Butter
(butter can be used as shortening)

3. **Adding liquid.**
   Adding liquid to the flour will jumpstart gluten development. The amount of liquid in the dough or batter will also affect how tough or tender the baked product will be.

4. **Mixing**
   Mixing a batter or kneading a dough will help gluten development. The longer the mixing or kneading done, the more gluten will develop.

   Gluten development is desirable in breads. This is why bread doughs are kneaded for a long time, rested, and then kneaded again. In contrast, very minimal mixing is done in batters of cakes and muffins so that little gluten development will happen and the resulting product will be tender.

✓ **Many processes happen during baking.**
The baking process is a very exciting one. Many physical and chemical reactions happen. Usually, these processes do not happen one after the other. Many times, these processes or reactions happen simultaneously. They all contribute to creating the wonderful smell, appearance and taste we associate with freshly baked goods.

- Fats melt and tenderize the bakery products.
- Gases are formed and they expand, making the dough or batter rise.
- Yeast and other microorganisms die. The high temperature in baking kills the yeast, and other microorganisms that may be present in bread doughs. This also ends the fermentation process.
- The heat in the oven will make the proteins in the dough or batter become firm or coagulate.
- Starches in the dough or batter absorb moisture and gelatinize.
- Water evaporates.
- Other gases escape the baking dough or batter.
- The crust forms and browns. The sugars and proteins in the dough or batter go through caramelization and Maillard reaction (Lesson 2).

✓ **Staling** is a process wherein breads or baked goods become dry and hard. You can do the following to slow down the staling process of baked goods:

- **Wrap breads in plastic or cling wrap.**
  An exception to this is breads with hard crusts (e.g., baguette). Hard-crusted breads are normally wrapped in food-grade paper. They should be consumed immediately.

- **Putting frosting or icing on cakes will slow down staling.**

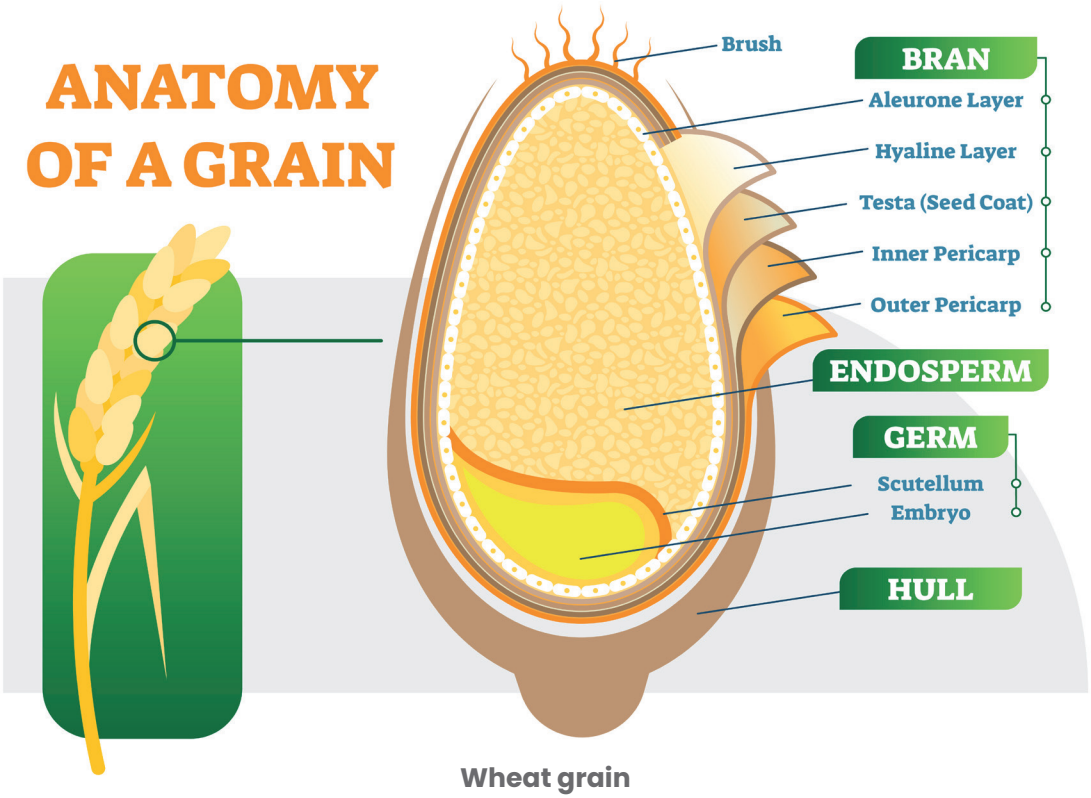
- **Fats and sugars are preservatives.**
  Breads and baked goods that are high in fats and sugars have longer shelf-life. This is because fats and sugars help retain moisture in these products.

- **Freeze breads before they become stale.**
  Frozen breads thawed, reheated and served immediately generally maintain good quality.

Ingredients in Baking

Flour

Flour is a major ingredient when making bread and other pastries. Many types of flour are available in the market. The most common type of flour comes from wheat or wheat grain. The wheat grain is composed of the **endosperm** (the starch part that contains proteins), **germ** (contains fat) and **bran** (contains insoluble fiber).



Wheat grain

Choosing the kind of flour to use depends on the kind of bread or baked good you are making.

- **White Wheat Flour** – is the milled or pulverized form of wheat grains after the bran and germ have been removed.
    - **Bread flour** – is a type of strong flour. It is mainly used to make breads and other kinds of baked goods that need high gluten content. It has a cream color and a slightly coarse texture.
    - **Cake flour** – is a type of weak flour. It is used to make cakes and other delicate baked goods that call for low gluten content. It is pure white in color and has a very smooth and fine texture.
    - **Pastry flour** – the gluten content of this flour falls between that of bread flour and cake flour. It is used to make muffins, cookies, biscuits and other kinds of baked goods. It has a creamy white color like bread flour but the texture is smooth like cake flour.
    - **All-purpose flour** – is the most common flour available in supermarkets. It has a slightly less gluten content than bread flour and can be used to make not only breads but also other pastries.

      Professional bakers do not typically use all-purpose flour. They prefer to use specific flours for the specific kind of baked goods they intend to make.

- **Whole Wheat Flour** - is the milled or pulverized form of wheat grains including the bran and germ.
- **Rye flour** – a type of flour made from rye grain which is low in gluten content. Breads made with rye are usually darker in color and has a nutty flavor.

Fats

Fats make breads and pastries soft and tender by shortening their gluten strands. They also add moistness and richness of flavor in baked goods. The following are types of fats used for baking:

- **Butter** – fat derived from milk. Butter is very flavorful and melts easily giving a nice mouthfeel to baked goods.
- **Shortenings** – baking fats that are solid at room temperature, white in color and flavorless. Modern shortening used for baking is mostly made from vegetable oil.
- **Margarine** – product made from either animal fats or vegetable oil that resembles butter.
- **Oils** – fats in liquid form. Not commonly used as shortening although some quickbread recipes make use of oil.
- **Lard** – fat derived from fatty tissues of pigs. It used to be the preferred shortening before the commercialization of shortenings made from vegetable oils.

Margarine

Oil

Sugars

Sugar adds sweetness and tenderness to baked goods. Its presence makes it possible for the crust of bakery products to turn into the attractive color of brown. It also helps lengthen the shelf-life of baked goods by retaining moisture. The following are kinds of sugars used for baking:

- **Refined sugars** – made from sugar obtained from sugarcane or sugar beet. Refined sugar is categorized according to grain size or the size of the sugar crystals which can have varying degrees of coarseness or fineness.
    - **Granulated sugar** – also known as table sugar.
    - **Caster sugar** – also called ultrafine, it has smaller sugar crystals than granulated sugar. It dissolves easily.
    - **Sanding sugar** – has very coarse texture and comes in different colors. It is also called decorating sugar and is used to coat doughnuts, cakes and candies.
    - **Confectioner's sugar** – also called powdered sugar, it is sugar ground into a powder form. A small amount of starch is added to confectioner's sugar to prevent it from caking or hardening. It is used to make icing or frosting or dusted on baked goods.

Various types of sugars

- **Brown sugar** – is granulated sugar containing **molasses**, the dark, concentrated syrup that comes from the process of turning sugarcane or sugar beets to sugar. The darker the brown sugar the more molasses it contains.
- **Honey** – a natural sweetener composed mostly of glucose and fructose. Its flavor, texture and color vary depending on the source. Baked goods that make use of honey tend to be more expensive.
- **Corn syrup** – a sweetener processed specifically from corn. It is mainly composed of glucose. It helps in making desserts soft and smooth. It also prevents sugars from re-crystalizing.
- **Glucose syrup** – a sweetener which can be processed from different plant sources such as potato, wheat, corn, and other fruits and vegetables. Corn syrup is a kind of glucose syrup. Glucose syrup has a thicker consistency than corn syrup. It is colorless and flavorless.

Liquids

- **Water** - very important ingredient in baking especially when making breads. The amount of water present affects all the other ingredients and the whole baking process. Water aids in gluten development, gelatinization of starches and the activation of leavening agents such as baking powder.
- **Milk** – adds moisture, color and flavor to baked goods. Dry or the powder form of milk can also be used in baking.

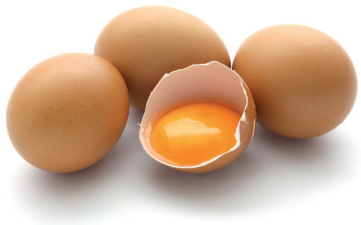
Liquid in baked goods can also come from cream, honey, eggs, and butter which have varying amounts of moisture or water in them.

Milk
(in powder and liquid form)

Eggs

Eggs are very important baking ingredients. They perform several functions, some of which are:

- As binding agents. They give structure to breads, cakes and pastries through the coagulation of egg proteins.
- As shortening, due to their fat content.
- As leavening. Beating eggs, such as in the method of foaming, aerates batters. During baking, the air trapped in batters expands and leavens the product.
- As emulsifier. Batters smoothen, producing good texture in baked goods.
- Eggs also contribute to the moisture, flavor, good color, and over-all nutritional value of bakery products.



Eggs

Leavening Agents

Leavening agents are ingredients that produce gas in doughs or batters so that they rise or double in volume.

- **Yeast** – is a type of fungus useful in the processing of many food products. In breadmaking, yeast is responsible for the process of fermentation. **Fermentation** happens when yeast digests sugars in the dough and converts them to carbon dioxide and alcohol. When bread is baked, these gases expand making the dough rise.

Types of yeast

  - **Fresh yeast** – used by professional bakers. It is soft, moist and beige in color. Highly perishable, it is also called compressed yeast.
  - **Active dry yeast** – available in granular form. It needs to be proofed or activated first before using. This is done by dissolving it in warm water about 110°F (43°C).
  - **Instant dry yeast** – also available in granular form. Instant dry yeast can be added immediately to the flour. Also called rapid-rise yeast, it produces more gas than active dry yeast so less amount is needed when using it.

- **Baking Soda** – also known as the chemical sodium bicarbonate. It produces gas when mixed with moisture and an acid such as honey, buttermilk, cocoa, and others. Bakery products using sodium bicarbonate must be baked immediately because the gases produced can escape easily, lessening its leavening power.

Baking soda

- **Baking Powder** – is a combination of baking soda and an acid.
  - **Single-acting baking powder** – only needs moisture to be activated. You must bake immediately any bakery product which uses single-acting baking powder.
  - **Double-acting baking powder** – releases gas in two stages: 1) when moistened and 2) when heated. Bakery products using double-acting baking powder can be prepared or mixed ahead and baked at a later time.

- **Air** – expands when heated which can make batters rise. Two methods can be used to incorporate air into batters:
  - **Creaming** – is the method of beating together fat and sugar. Creaming, when properly done, will increase the volume of fat by creating tiny air pockets in the mixture. This will help the batter to rise when baked.
  - **Foaming** – is the method of beating eggs which can be whole eggs or egg whites only. Foaming can be done with or without sugar added.

    Creaming and foaming can be done manually using a whisk. But the easiest way to do them is to use an electric stand mixer or an electric hand mixer especially when you are baking a big batch.

- **Steam** – water turns to steam and then expands when heated. Since all bakery products contain moisture, steam can be a leavening agent.

Flavorings

- **Salt** – has several functions in baking. Salt enhances the flavor of baked goods. It also improves the texture of breads by strengthening the gluten structure of the dough. A stronger gluten structure means more gases are trapped increasing the volume of the bread. Salt also helps preserve breads and other baked goods by absorbing moisture preventing bacterial and fungal growth.

- **Chocolate and cocoa** – are products produced from cocoa or cacao beans.

  - **Chocolate liquor** – the product produced by fermenting, roasting and grinding cacao beans. Chocolate liquor contains **cocoa solid**s and a yellowish fat called **cocoa butter**.

  - **Cocoa** – is the powdered form of the cocoa solids after the cocoa butter has been removed. Cocoa or cocoa powder is naturally acidic.

Cocoa powder, dark chocolate and cacao beans

  - **Dutch process cocoa** – is natural cocoa powder treated with an alkali to reduce its acidity and bitter flavor. Dutch process cocoa has a darker color than natural cocoa powder.

  - **Unsweetened chocolate** – is one hundred percent chocolate liquor. It is also called bitter chocolate or baking chocolate.

  - **Dark chocolate** – is bitter chocolate with added sugar. Depending on the amount of sugar added, chocolates can be labelled bittersweet, semisweet or sweet.

  - **Milk chocolate** – is sweet chocolate with added milk.

- **Spices** – are the seeds, fruits, bark and roots of plants and trees used in the kitchen for flavoring. Some of the spices commonly used for baking are cinnamon, nutmeg, ginger, allspice, cloves and others.

- **Nuts** – different kinds of nuts can be mixed in baking products to enhance flavor and texture. Commonly used nuts in baking are walnuts, almonds, pecans, macadamia and many others.

- **Extracts** – alcohol-based flavors extracted from spices, fruits, nuts and other plant parts. Example of extracts are vanilla, lemon, mint and almond.

- **Emulsions** – water-based flavors extracted from spices, fruits, nuts and other plant parts. Examples of emulsions are orange, lemon and blueberry.

Quickbreads

Quickbreads are tender breads leavened by chemical leavening agents such as baking soda.

They are called quickbreads because they are quick to make. They can be baked right away because unlike breads made with yeast, they do not need time for fermentation. Very little gluten development is required of quickbreads so mixing them is also very quick.

Kinds of Quickbread Mixture

Quickbreads can be made from batters or doughs.

Batters, in baking, are mixtures of flour, egg and liquid which can be milk or water. Batters have a thin consistency and cannot be kneaded.

Batters

Doughs are mixtures of flour and liquid, which can be milk or water. They are firm enough to be rolled out and kneaded.

Doughs

Quickbreads have the following kinds of mixtures:

1. **Pour batters** – are batters with pourable consistency.
   The ratio is 1:1. One part liquid to 1 part flour.
   Example: pancake batter.

2. **Drop batters** – have a thicker consistency and would have to be scooped and dropped from a spoon.
   The ratio is 1:2. One part liquid to 2 parts flour.
   Example: muffin batter.

3. **Soft doughs** – mixtures that can hold their form and can be rolled out or kneaded.
   The ratio is 1:3. One part liquid to 3 parts flour.
   Example: biscuit dough

Mixing Methods

Quickbreads can be mixed using the following methods:

1. **Creaming method** – combining room temperature butter or fat with sugar and then mixing or creaming them together.

   The creaming method is suitable for quickbread recipes that are high in fat and sugar. Creaming butter and sugar will create tiny air cells in the mixture. This will result in baked goods that are cakelike: moist, rich in flavor and smooth in texture. Creaming can be done using the paddle attachment of a stand mixer.

   Creaming method

   The creaming method is used to make cakes and cookies.

   How to do creaming method:

   a. Cream the room-temperature butter or shortening until smooth and creamy.
   b. Add sugar and continue creaming or mixing until light and fluffy.
   c. Add eggs gradually.
   d. Add the sifted dry ingredients and liquid ingredients alternately until all ingredients are incorporated.

2. **Muffin method** - combining dry ingredients and wet ingredients and then mixing them gently and quickly with a spatula.

   The muffin method is suitable for quickbread recipes that are low in fat and sugar. The fat used is in the form of a liquid, such as melted butter or vegetable oil.

   This method produces baked products that are not as airy or light as products produced using the creaming method. As such, the muffins' texture is similar to traditional muffins. They are denser than the cupcakes we are familiar with.

   The muffin method is used for making muffins, pancakes, waffles, corn breads and others.

   How to do muffin method:

   a. Combine all dry ingredients.
   b. Combine all liquid ingredients including the melted butter or vegetable oil.
   c. Combine the dry ingredient mixture and the liquid ingredient mixture.
   d. Mix gently and only until all ingredients are combined. The batter should look a little lumpy, not smooth.
   e. Do not overmix.

   Muffin method

3. **Biscuit method** – cutting in or mixing cold, solid butter or shortening with the flour.

   The cold butter or shortening is broken down into small pieces which will create a flaky or crusty texture in the bread when baked. Cutting in the butter can be done manually using your fingers or a pastry blender.

   The biscuit method is used for making biscuit, croissants, scones and pie crusts.

   How to do biscuit method:

   a. Combine all dry ingredients and then cut in the cold fat.
   b. Combine all liquid ingredients.
   c. Combine the dry ingredient mixture and the liquid ingredient mixture.
   d. Knead lightly or roll out if needed.

Biscuit method

Examples of Quickbreads

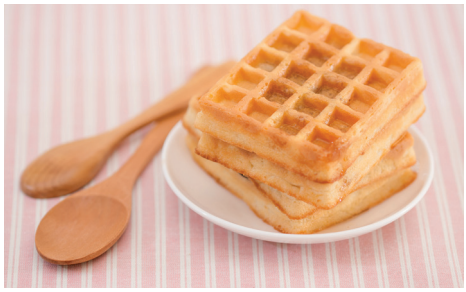
- **Pancake** – is a popular breakfast food item. It is a flat, round cake made from a batter containing a kind of starch, eggs, milk and butter. Pancakes are cooked on a hot frying pan or griddle and are usually served with a sweet syrup.

  Wheat flour is commonly used to make pancakes although any kind of starch will do like potatoes, beans, peas or rice. Many countries around the world have their own version of making pancakes.

Pancakes

- **Waffle** – is a cake cooked between two hot plates called a waffle iron that gives it the characteristic crisscross pattern. Waffles can be eaten on its own, but they are popularly served with fruits, whipped cream, chocolate syrup, ice cream and other toppings.

  Egg waffles are egg-shaped waffles made with eggs, flour, milk and sugar. They are popular as a street snack in Hongkong and Macau.



Waffles

- **Muffin** – is a serving size bread which can be flat or have a cupcake-like shape. They can be sweet or savory. Muffins can be flavored with chocolate, blueberries, cheese, corn and many other ingredients. They have a dense texture unlike cupcakes which can be light and airy.

Muffins

Muffins are commonly sold in cafes and restaurants. They are also commercially packed and available in supermarkets.

- **Biscuit** – is a small round bread which is hard and crusty outside but soft and crumbly inside. It pairs well with butter and honey and is popularly served with deep-fried chicken.

Biscuit

- **Banana bread** – is a popular quickbread made with overripe mashed bananas, sugar, eggs, butter and flour. Banana breads can be made with added chocolate chunks or chips, nuts and fruits.

Banana bread

- **Soda bread** – is a traditional European bread leavened with baking soda instead of yeast. It is made using a weak flour, salt and buttermilk which reacts with the baking soda. Minimal mixing is recommended when making soda bread.

Soda bread farl

A Soda bread farl. – by Canterbury Tail

Banana breads are a crowd favorite. They are a popular snack and dessert.
They are also very easy to make.
Learn to bake banana bread by watching this video:

Professional Baker Teaches You How To Make BANANA BREAD!
by Oh Yum with Anna Olson

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

Summary

Even if you haven't done any breadmaking, it is most likely that you have already experienced making quickbreads or have helped make quickbreads. As we have learned in the lesson, pancakes and waffles are examples of quickbreads. And with a lot of pancake mixes available in supermarkets, chances are you've cooked one at home.

If you have not, now is a great time to start and acquaint yourself with making this very easy-to-make quickbread. Pre-mixes for pancakes and muffins are available in supermarkets but making these quickbreads from scratch is simple and straightforward. Measuring a handful of ingredients is just one of the few steps to make these quickbreads.

Learning to bake has a lot of advantages.

Baking can be really fun. You can make unlimited varieties of pancakes, muffins and cupcakes by just adding or combining them with different ingredients. Baking will surely bring out the creativity in you.

Baking can also be a profitable endeavor. You just have to look around in stores, physical and online, to know that there is great demand for desserts like quickbreads. Maybe a baking hobby can turn into a commercial success.

But even without a business in mind at first, baking in itself is a fulfilling activity. It can develop in you many good habits and qualities. And in creating baked goods that you can share with loved-ones, relationships are cherished and strengthened.

Exercises

Exercise 1

How much have you learned?

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

Column A	Column B
_____ 1. Ingredients that produce gas in doughs or batters so that they rise or double in volume.	A. staling
_____ 2. A type of strong flour that has a cream color, coarse texture and has high gluten content.	B. confectioner's sugar
_____ 3. Sugar that has a very coarse texture and comes in different colors.	C. cake flour
_____ 4. A natural cocoa powder treated with an alkali to reduce its acidity and bitter flavor.	D. sanding sugar
_____ 5. Sugar ground into a powder form.	E. leavening agents
_____ 6. The process wherein breads or baked goods become dry and hard.	F. cocoa butter
_____ 7. The yellowish fat in chocolate liquor.	G. shortening
_____ 8. The chemical sodium bicarbonate.	H. baking soda
_____ 9. Baking fats that are white, colorless and solid at room temperature.	I. dutch process cocoa
_____ 10. A type of weak flour that is white, has a smooth texture and has low gluten content.	J. bread flour

Exercise 2

Instruction: Answer the following:

1. What are the four ways to control gluten development? Describe each.

   a. _____

   _____

   b. _____

   _____

   c. _____

   _____

   d. _____

   _____

2. Give two ways to delay staling in baked goods.

   a. _____

   _____

   b. _____

   _____

3. Give five examples of baking ingredients. Describe each.

   a. _____

   _____

   b. _____

   _____

   c. _____

   _____

   d. _____

   _____

   e. _____

   _____

4. What are quickbreads?

_____

_____

_____

_____

_____

_____

_____

_____

5. Give the three mixing methods for making quickbreads and the state/form of the fat to use in each method.

   a. _____

   b. _____

   c. _____

Lesson Output

Individual/Group Work – Bake banana bread. Use the recipe below as guide. Make a slideshow or video presentation of yourself preparing and baking banana bread.

Below is a recipe for Banana Bread:

Banana Bread

Ingredients:		**Procedure:**
		1. Preheat the oven to 325°F (160°C). 2. Grease a 9x5 loaf pan.
400g (3-4 pcs) 90g 100g 100g	ripe bananas, mashed unsalted butter, melted white sugar light brown sugar, packed	3. Using a whisk, combine the mashed bananas, melted butter, white sugar and light brown sugar. Mix well.
1 5ml (1 tsp)	large egg, at room temperature vanilla extract	4. Add the egg and vanilla extract. Mix well.
225g 5g (1 tsp) 1/4 tsp salt	all-purpose flour baking soda salt	5. In a different bowl, sift the all-purpose flour, baking soda and salt. 6. Using a spatula, add your dry ingredients to the banana mixture and mix until just blended. Your batter should be a little lumpy.
250g	Chocolate chips (optional)	7. Add chocolate chips, if using.
		8. Transfer your banana bread batter to the greased loaf pan.
		9. Bake for about 75 minutes, or until a wooden skewer or toothpick inserted at the center of the loaf comes out clean. 10. Remove from the oven. 11. Let it cool in the loaf pan for about 20 minutes. 12. Remove from the loaf pan and let it cool completely in a cooling rack.
Note: 1. For food safety and to prevent cross-contamination wash hands thoroughly before and after cooking or preparing food. 2. The chocolate chips in this recipe can be substituted with raisins or any preferred toasted nuts.		

Rubrics for Preparing and Baking Banana Bread

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 10 Baking Cookies

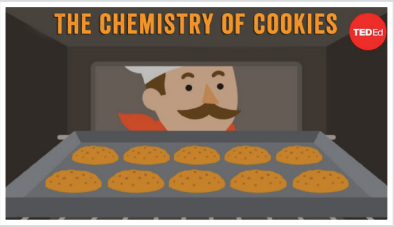
Learning Outcomes

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

1. Define cookies and its types.
2. Describe the factors affecting cookie characteristics.
3. Set a guideline for baking cookies.

Engage

Watch the YouTube Video "The chemistry of cookies - Stephanie Warren"
by TED-Ed



https://www.youtube.com/watch?v=n6wpNhyreDE

The wide selection of cookies in supermarkets, convenience stores and coffee shops indicates a strong demand for these sweet treats.

Indeed, they are treats! A cookie can make almost anyone smile. They can be consumed in so many ways. They can be enjoyed with your favorite coffee, tea or a glass of milk. They can be eaten with ice cream, a spoonful of peanut butter or fruit jam. They can even be used as a base for other desserts or crumbled and sprinkled on other sweets. Warmed or not, crisp or chewy, it is always a treat to eat a piece (or two) of cookie!

Explore

What's In The Cookie Jar?

Identify the following cookies. Write your answer on the space provided under each picture.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

Research

Research about the most popular cookies in the Philippines or around the world. Choose 3 of your own favorites. Describe what you like about them. Write a 1-page report.

Explain

Cookies

Cookies are baked goods that are usually sweet and small. They are, most often than not, individually shaped before baking. They are commonly made from flour, sugar, eggs and fat.

The word cookie comes from the Dutch *koekje* which means "little cake". Indeed, some cookies are made from cake batters. But unlike cake, most cookies have little or no liquid ingredient in them, except from the moisture that is in the other ingredients like butter and eggs. Cookie recipes are usually high in sugar and fat but low in moisture content.

The following are kinds of dough that can be used to make cookies:

Soft dough – a mixture that can hold their form and can be rolled out or kneaded. The ratio is 1:3. One part liquid to 3 parts flour.

Stiff dough – a mixture that is firmer and feels heavier than soft dough but can still be kneaded and rolled out. The ratio is 1:4. One part liquid to 4 parts flour.

Kinds of Cookies

Cookies are classified in different ways. They can be classified based on the main ingredient used to make them (e.g., chocolate cookies, peanut butter cookies, almond cookies etc.). They can also be grouped based on the season or special occasion they are associated with (e.g., Christmas cookies, Halloween cookies etc.).

Another way of classifying them is by their make-up technique or the way they are prepared after the dough has been mixed. Cookie classifications based on make-up technique are the following:

- ✓ **Dropped cookies** – are cookies where the soft dough has been scooped and then dropped on the baking sheets.

  The dough can be portioned using a spoon. But for more precise portioning, use a **cookie scoop**, a baking tool with a spring-loaded handle. A cookie scoop looks and works like an ice cream scooper. Cookie scoops come in different sizes. For example, a No. 30 scoop can hold about 30g of cookie dough which can give you a medium-sized cookie.

Dropped cookies

  Whether using a spoon or a scoop, the important thing is to have uniform-sized cookie dough portions. This will ensure even baking.

  Chocolate chip cookies and peanut butter cookies are among the most popular dropped cookies.

- ✓ **Pressed cookies** – also called **bagged cookies** because the soft dough is placed inside a cookie press or pastry bag and pressed out onto the baking sheets. Danish cookies can be prepared in the same manner.

  Using a cookie press will enable you to make cookies with different designs. A **cookie press** is a baking tool that is made up of a cylinder, a plunger and plates with holes. Cookie dough inside the cylinder is forced out of the plates by pushing the plunger. The plates are interchangeable and have different designs such as star or flower shapes.

Danish cookies

  French macaroons or **macarons** are examples of pressed cookies. Macaron shells are light and crispy cookies made from almond flour, sugar and egg whites. They are usually served like a sandwich cookie. Two macaron shells are joined together by a filling, such as chocolate ganache or buttercream.

- ✓ **Molded cookies** – are cookies that are formed into different shapes or designs either by hand or by using a mold.

  Traditional cookie molds are made of carved wood. Nowadays, molds are made from different materials such as plastic, metal and ceramic. Decorative cookies can be made using individual molds, mold pans, cookie stamps or a Springerle rolling pin. A **Springerle** (*schpring-er-lee*) rolling pin is a baking tool with carved designs or patterns, usually of nature, Christmas or Thanksgiving theme.

Molded cookies

Doughs for molded cookies should be stiff or firm to the touch so they can retain their shape or design during baking.

- ✓ **Rolled Cookies** – are also called **cut out cookies**. The stiff dough is chilled first, rolled out and then cut out using cookie cutters, a pastry wheel or a knife.

  Try to cut the cookie shapes as close as possible when making rolled cookies using cookie cutters. This will help reduce scraps of dough. Although these scraps can be rolled again, they will produce tougher cookies.

Rolled cookies

- ✓ **Bar cookies** – are cookies made by forming doughs into long bars and then cutting them into serving-sized bars or squares.

  Chocolate brownies are an example of bar cookies. They can be baked with chocolate chips and nuts added. Brownies can have a fudgy or a cakey texture.

  Another example of bar cookies is **biscotti**, an Italian cookie that is dry and crunchy and can be dipped in sweet wine, coffee or tea. The word biscotti means "twice baked".

Brownies

- ✓ **Icebox cookies** – are also called **refrigerator cookies**. The dough is formed into a log and then refrigerated, preferably overnight. They are then sliced with uniform thickness and then baked.

  Icebox cookie doughs can be rolled in nuts or sugar before slicing. They can also be made ahead and then frozen for later use.

  Pinwheel cookies are an example of icebox cookies.

Icebox cookies

- ✓ **Sheet cookies** – are cookies made by laying out or pouring soft dough on a large, shallow pan called a sheet pan. They can be frosted or iced after baking and then cut into serving-sized squares.

Sheet pan cookies

Cookie Characteristics

Most of us like cookies, but there are differences in how we like them. Some like them soft and chewy, others like them crisp.

Different qualities of cookies are affected by different factors such as the type of ingredients used, mixing method, the heat of the oven and many others. A basic understanding of how cookies come to have such qualities will help us produce them more consistently.

Cookie recipes can be modified to produce the qualities that we want. Just remember to always adjust the other ingredients in the recipe whenever we modify.

Soft cookies

- A high ratio of liquid in the dough will produce soft cookies.
- Sweeteners like brown sugar, honey and corn syrup are **hygroscopic**, they absorb moisture in the air. Cookie recipes with these ingredients will help produce soft cookies.
- Butter, and other fats, help in tenderizing cookies. For really soft cookies, use shortening instead of butter.
- Large-sized or thick cookies tend to be soft because they can hold more moisture.
- Underbaking, or baking cookies a minute or two shorter than what's stated in the recipe, will produce softer cookies.

Chewy cookies

- Using a type of flour with more potential for gluten development (e.g., bread flour) will yield chewy cookies.
- Creaming the butter only slightly will make cookies dense and chewy.
- White sugar and brown sugar can be combined to make cookies. A higher ratio of brown sugar than white sugar will make cookies softer and chewier. Using sweeteners like honey or molasses can also make cookies soft and chewy.
- Egg yolks help cookies retain moisture so they stay soft and chewy longer.

Crisp cookies

- A small quantity of liquid in the dough will produce crisper cookies.
- Using granulated sugar or white sugar will make crispy cookies.
- Butter helps the cookie dough spread during baking. In the process, it can produce flat, crisp cookies.
- Small-sized cookies are crisper because they dry quickly during baking.

Spread, or how the cookie dough widens or expands as it bakes, is affected by many factors:

- Cookie dough with high sugar content, particularly white granulated sugar, spreads easily.
- Butter, as it melts, helps the dough to spread.
- Greasing the baking pan with fat or oil contributes to the spread of cookies.
- Leavening agents like baking soda make cookies spread.
- Creaming method incorporates air in the dough which helps in the spread of cookies. The longer the creaming method is done, the more air is incorporated.
- The heat of the oven affects the spread of cookies. Low oven temperatures will make cookie doughs spread more. Cookies baked at high temperatures have less spread because the high heat of the oven sets or bakes the cookies faster than they can spread.

Soft cookies

Chewy cookies

Crisp cookies

Guidelines for Baking and Handling Cookies

✓ **Cookies can be mixed using different mixing methods.**

One way of mixing cookies is using the creaming method. **Creaming method** is combining room temperature butter or fat with sugar and then mixing or creaming them together.

To make cookies using the creaming method, do the following:

a. Combine the room-temperature butter or shortening with the sugar. Cream them until well-blended.
b. Add eggs and other liquid ingredients, if any. Blend.
c. Add the dry ingredients and mix until all ingredients are combined.

✓ **Make sure to portion cookies in uniform size and thickness.**

Doing so will help them bake evenly. Because cookies are baked for a short duration of time, having different cookie sizes will affect doneness of cookies. Some small cookies may already be overcooked or burnt while the larger ones are still baking.

Cookie dough spreads when baking. When placing your doughs on the baking pans, make sure to space them properly. The right amount of space in between cookie doughs will help them bake and brown evenly.

Chilling your cookie dough is an optional stage or procedure in baking cookies. But doing so will make your baked cookies crispy outside and chewy inside.

✓ **Preheat your oven.**

The right temperature of your oven will ensure even baking. It will also help the leavening agents in your dough or batter to do their job, to make your cookies rise properly.

Cookies are typically baked at 350°F (175°C). Higher or lower temperature may be indicated in the recipe. Remember to read and understand the whole recipe first before starting or before making any modification.

✓ **Prepare your baking pans.**

- Use baking pans that are not bended or twisted.
- Grease your baking pans if needed. **Greasing** means coating your baking pan with fat, such as butter or oil, so that the food item you are baking will not stick to the pan.
- Instead of greasing the pans, you can line them with parchment paper or silicone baking mats.

✓ **Cool cookies properly.**

- Remove the cookies from the pans after baking because the heat in the pan will continue to cook them even after removing them from the oven.
- If the cookies are very soft, leave them for a little while on the pans until you can safely remove them without crumbling.
- Preferably, cool your cookies on cooling racks to help them cool quickly and evenly.

✓ **Store cookies properly**

- Cool cookies completely before storing them.
- Store cookies in air-tight containers. It is recommended that you separate cookies with different flavors. This will prevent their flavors and aroma from mixing.

Who can resist chocolate chip cookies?
Chocolate chip cookies are ultimate treats!

Learn to bake chocolate chip cookies by watching this video:
Professional Baker Teaches You How To Make CHOCOLATE CHIP COOKIES!
by Oh Yum with Anna Olson

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

Exercises

Exercise 1

How much have you learned?

Instruction: Choose your answer from the following:

rolled cookies	sheet cookies	macarons	icebox cookies	biscotti
soft dough	bagged cookies	cookie press	stiff dough	greasing

_____ 1. Cookies placed inside a cookie press and pressed out onto the baking sheets.

_____ 2. Dough mixture that is one part liquid to 3 parts flour.

_____ 3. Italian cookie that is dry, crunchy and is twice baked.

_____ 4. Cookies that are cut out using a cookie cutter, pastry wheel or a knife.

_____ 5. Coating your baking pan with fat so the food item will not stick to the pan.

_____ 6. Pressed cookies that are light, crispy, and made from almond flour, sugar and egg whites.

_____ 7. Dough mixture that is one part liquid to 4 parts flour.

_____ 8. Cookies that are formed into a log and then refrigerated.

_____ 9. A baking tool with a cylinder where cookie dough is placed and is forced out of the plates by pushing the plunger.

_____ 10. Cookies that are made by laying out or pouring soft dough on a large, shallow pan.

Exercise 2

Instruction: Answer the following:

1. Describe factors affecting cookie characteristics

   a. _____

   _____

b. _____

_____

c. _____

_____

d. _____

_____

e. _____

_____

2. Give guidelines on baking and handling cookies

a. _____

_____

_____

b. _____

_____

_____

c. _____

_____

_____

d. _____

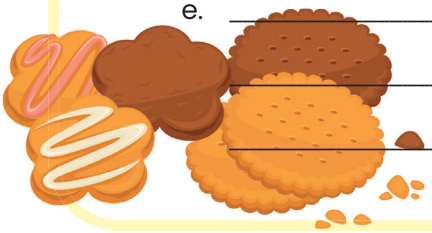
_____

_____

e. _____

_____

_____



Summary

Cookies are adaptable desserts or treats. Many food items can be incorporated in a cookie recipe and will blend right in. Examples of cookie mix-ins are:

- Different kinds of nuts such as almonds, pecans, macadamia, peanuts, pistachios, etc.
- Different fruits and berries such as dried cranberries, raisins, dried cherries, etc.
- Different kinds and forms of chocolates such as dark chocolate, milk chocolate, chocolates in the form of chips, chunks or buttons, etc.
- Different spices such as cinnamon, ginger, nutmeg, allspice etc.
- Regular mix-ins like oatmeal, candy sprinkles, marshmallows or other store-bought cookies.

With cookies, you can experiment with flavor combinations.

As we have learned in the lesson, different qualities of cookies appeal to different people. Recipes can be adjusted based on preference. Even if we see a recipe tagged as the best cookie recipe ever, ultimately the best cookie is the one that is baked and served the way you want it!

Lesson Output

Individual/Group Work – Bake chocolate chip cookies. Use the recipe below as guide. Make a slideshow or video presentation of yourself preparing and baking chocolate chip cookies.

Below is a recipe for Chocolate Chip Cookies:

Chocolate Chip Cookies

Ingredients:		**Procedure:**
		1. Preheat the oven to 325°F (160°C). 2. Grease baking pans.
115g 100g 100g	unsalted butter, at room temperature white sugar light brown sugar, packed	3. Combine room-temperature butter, white sugar and light brown sugar. Using a spatula, cream them.
1 5ml (1 tsp)	large egg, at room temperature vanilla extract	4. Add the egg and vanilla extract. Mix well.
185g 1 tbsp 1/2 tsp 1/2 tsp	all-purpose flour cornstarch baking soda salt	5. In a different bowl, sift the all-purpose flour, cornstarch, baking soda and salt. 6. Add your dry ingredients to the butter mixture and mix until blended.
250g 100g	chocolate chips pecans, toasted and chopped (optional)	7. Add chocolate chips and pecans. Mix well.
		8. Using a cookie scoop or a tablespoon, portion the cookie dough – 2 tablespoon per portion. Shape them into balls and place them on non-stick baking pans or baking sheets lined with parchment paper. 9. Chill the portioned cookie doughs in the refrigerator for at least an hour. 10. Arrange the portioned cookie doughs on baking pans, spacing them about 3 inches apart. 11. Bake for 15-18 minutes, until edges begin to brown. 12. Remove from pans and let them cool, preferably on cooling racks.
Note: 1. For food safety and to prevent cross-contamination wash hands thoroughly before and after cooking or preparing food. 2. The nuts in this recipe can be substituted with any preferred toasted nuts.		

Rubrics for Preparing and Baking Chocolate Chip Cookies

Criteria	5	4	3	2	1	Points
Content/ Functionality	The student is able to completely identify ALL ingredients based on the recipes. 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 recipes. 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 recipes. 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 recipes. 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						