



Q1 TLE 9-12 Bread and Pastry Prod NCII Module 4

batchelors of secondary education (Rizal Memorial Colleges, Inc.)



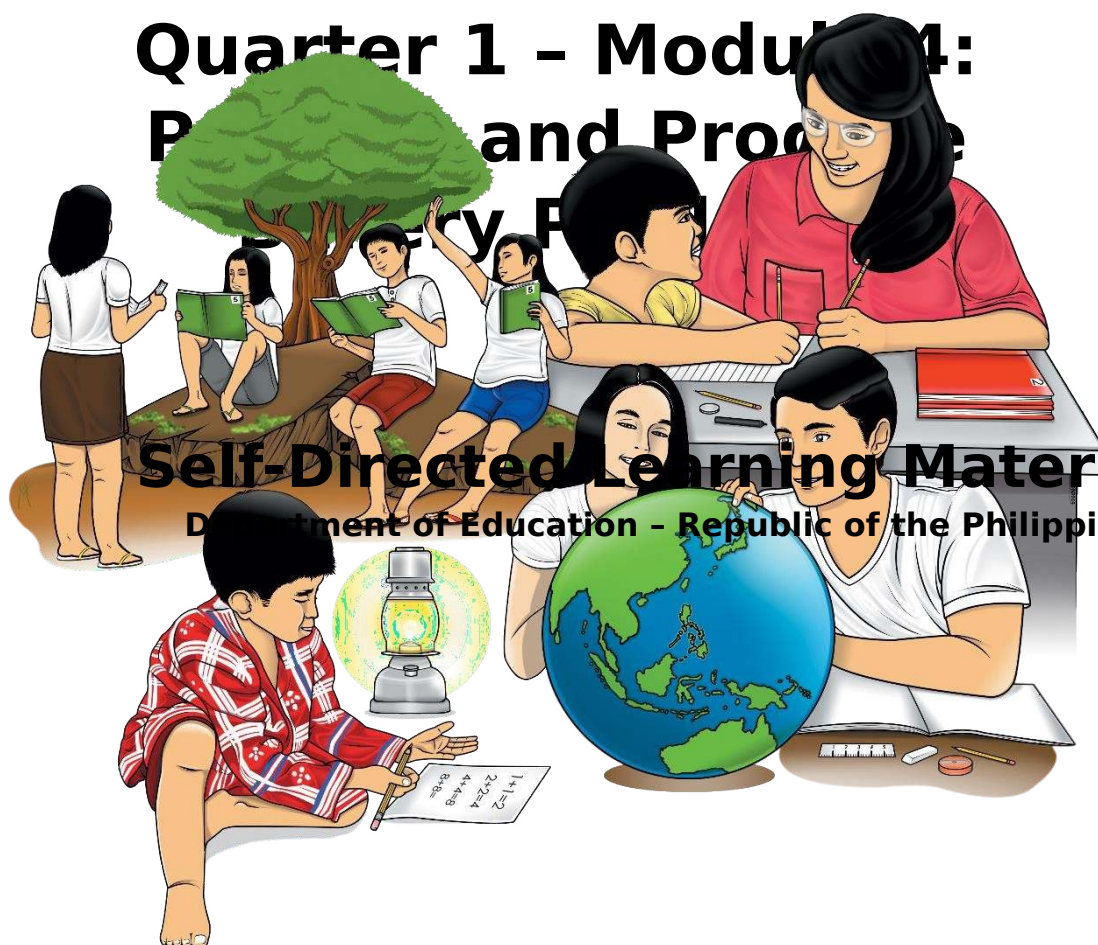
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Bread and Pastry Production NC II

Quarter 1 - Module 4:
Bread and Pastry Production

Self-Directed Learning Materials

Department of Education - Republic of the Philippines



Bread & Pastry Production NC II
Self-Directed Learning Material
Quarter 1 – Module 4: PREPARE AND PRODUCE BAKERY PRODUCTS
First Edition, 2020

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9/12

**Bread and
Pastry
Production NC
II**

**Quarter 1 - Module 4:
Prepare and Produce
Bakery Products**



Introductory Message


For the facilitator:

Welcome to the TLE/TVL - Bread and Pastry Production NC II Self-Directed Learning Material on Prepare and Produce Bakery Products.

This module was collaboratively designed, developed and reviewed by educators both from public and private institutions to assist you, the teacher or facilitator in helping the learners meet the standards set by the K to 12 Curriculum while overcoming their personal, social, and economic constraints in schooling.

This learning resource hopes to engage the learners into guided and independent learning activities at their own pace and time. Furthermore, this also aims to help learners acquire the needed 21st century skills while taking into consideration their needs and circumstances.

In addition to the material in the main text, you will also see this box in the body of the module:



Notes to the Teacher
This contains helpful tips or strategies that will help you in guiding the learners.

As a facilitator you are expected to orient the learners on how to use this module. You also need to keep track of the learners' progress while allowing them to manage their own learning. Furthermore, you are expected to encourage and assist the learners as they do the tasks included in the module.


For the learner:


Welcome to the TLE/TVL - Bread and Pastry Production NC II Self-Directed Learning Material on Prepare and Produce Bakery Products.

The hand is one of the most symbolized part of the human body. It is often used to depict skill, action and purpose. Through our hands we may learn, create and accomplish. Hence, the hand in this learning resource signifies that you as a learner is capable and empowered to successfully achieve the relevant competencies and skills at your own pace and time. Your academic success lies in your own hands!


This module was designed to provide you with fun and meaningful opportunities for guided and independent learning at your own pace and time. You will be enabled to process the contents of the learning resource while being an active learner.


This module has the following parts and corresponding icons:


This will give you an idea of the skills or competencies you are expected to learn in the module.  **What I Need to Know**

This part includes an activity that aims to check what you already know about the lesson to start with. If you get all the answers correct (100%), you may decide to skip this module.  **What I Know**


This is a brief drill or review to help you link the current lesson with the previous one.


In this portion, the new lesson will be introduced to you in various ways such as a story, a song, a poem, a problem opener, an activity or a situation.  **What's In**

This section provides a brief discussion of the lesson. This aims to help you discover and understand new concepts and skills.  **What's New**

This contains activities for independent practice to solidify your understanding and skills of the topic. You may check the answers to the exercises using the Answer Key at the end of the module.  **What is It**
What's More

This includes questions or blank sentence/paragraph to be filled in to process what you learned from the lesson.

This section provides an activity which will help you transfer your new knowledge or skill into real situations or concerns.  **What I Have Learned**
What I Can Do

This is a  which aims to evaluate your level of mastery in achieving the learning competencies. **Assessment**

In this portion, another activity will be given to you to enrich your knowledge or skill of the lesson learned. This also tends retention of learned concepts.

This contains answers to all activities in the module. **Additional Activities**

References

Bread and Pastry Learning Module



Answer Key

At the end of this module you will also find:

The following are some reminders in using this module:

1. Use the module with care. Do not put unnecessary mark/s on any part of the module. Use a separate sheet of paper in answering the exercises.
2. Don't forget to answer *What I Know* before moving on to the other activities included in the module.
3. Read the instruction carefully before doing each task.
4. Observe honesty and integrity in doing the tasks and checking your answers.
5. Finish the task at hand before proceeding to the next.
6. Return this module to your teacher/facilitator once you are through with it.

If you encounter any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator. Always bear in mind that you are not alone.

We hope that through this material, you will experience meaningful learning and gain a deep understanding of the relevant competencies. You can do it!



What I Need to Know

The best-baked goods, including light cakes, tender cookies, fine-textured bread, and high popovers depend on the precise combination of flour, liquid, leavening agents, fats, sugars, and flavors.

Mixing methods greatly affect flour mixtures and the resulting baked product. A variety of techniques have been developed for efficiency and convenience.

Lesson 1: Prepare and Produce Bakery Products

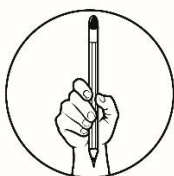
CONTENT STANDARD	PERFORMANCE STANDARD
The learners demonstrate an understanding of the core concepts and theories in bread and pastry production	The learners independently demonstrate core competencies in preparing and producing bakery products

Learning Outcome 1 - Prepare Bakery Products

- 1.1 Select, measure and weigh required ingredients according to recipe or production requirements
- 1.2 Prepare a variety of bakery products according to standard mixing procedures/ formulation/ recipes and desired product characteristics
- 1.3 Use appropriate equipment according to required bakery products and standard operating procedures
- 1.4 Bake bakery products according to techniques and appropriate conditions
- 1.5 Select required oven temperature to bake goods in accordance with the desired characteristics, standards recipe specifications

After going through this lesson, you are expected to:

- Identify major and minor ingredients in Baking;
- Analyze mixing techniques to be employed in the preparation of baking recipe;
- Select good quality flour for baked products.



What I Know

Directions: Read the questions carefully and choose the best answer from the options given. Write only the letter of your answer in your activity sheet.

1. Which of the following ingredients is usually used in the dough that gives better taste and flavor?
 - a. butter
 - b. compound lard
 - c. edible tallow
 - d. vegetable oil
2. What flour is used especially in bread, and other yeast-raised products because of its high gluten content?
 - a. all-purpose flour
 - b. bread flour
 - c. cake flour
 - d. cornstarch
3. Which of the ingredients is a biological leavening?
 - a. baking powder
 - b. baking soda
 - c. cream of tartar
 - d. yeast
4. What ingredients make our products “rise”?
 - a. egg
 - b. flour
 - c. leaveners
 - d. shortening
5. Which type of mixing technique is done only in baking bread?
 - a. blending
 - b. creaming
 - c. cut and fold
 - d. kneading
6. Why is the mixing process in bread making important?
 - a. because mixing distributes the yeast cells uniformly in the dough.
 - b. because it distributes the sugar which is food for the yeast.
 - c. because it makes the dough smooth and free from gluten content.
 - d. all of the above
7. Which of the following is any fat, which when added to flour mixtures increases tenderness?
 - a. oil
 - b. lard
 - c. butter
 - d. shortening
8. It refers to the procedure of rubbing one or two ingredients against a bowl with the tip of a wooden spoon or electric mixer.
 - a. beating
 - b. creaming
 - c. folding
 - d. stirring
9. It is a kind of beating for eggs and cream to fill them with air and make them thick and fluffy?
 - a. creaming
 - b. folding
 - c. stirring
 - d. whipping
10. What is the cheapest ingredient in baking?
 - a. fruit juice
 - b. milk
 - c. vegetable juice
 - d. water

Lesson 1

Major and Minor Ingredients in Baking and Mixing Techniques

Do you know that when baking ingredients are put together, they react differently with one another? Each baking ingredient has a role to play in the quality of cake or cookie that you make. Each baking ingredients influences the volume, the color, the texture and the flavor of any cake, bread, or cookie.

After learning the different ingredients used in baking, you can familiarize yourself with the different techniques. These techniques or methods have their specific purposes. So it is wise that you follow what the recipe requires.



What's In

Let's Review!

Identify the process of measuring ingredients that the illustration shows. Write your answer on your activity sheet.



Source: <https://www.recipe-tips.com/kitchen-tips/t--111/measuring-techniques.asp>

1. _____
2. _____
3. _____



What's New

The ingredients used in baking are flour, liquids, leavening agents, shortening, sugar eggs, and minor ingredients like salt, corn, chocolate, spices and seeds, flavoring, and coloring.

Flour is a finely ground meal or powdering product obtained from milling cereal grains, root crops, starchy vegetables, and other foods. It provides the structural framework of baked products and contributes to the product's color, texture, and form.

In the Philippines, wheat flour, rice flour, potato flour, soya flour, fish flour, and others are readily found in the market.



What is It

Major Ingredients in Baking

I. FLOUR

Flour is a finely ground meal or powdery product obtained from milling cereal grains, root crops, starchy vegetables and other foods. It provides the structural framework of baked products and contributes to the color, texture and form. In the Philippines, we have different kinds of flour like wheat flour, rice flour, potato flour, soya flour, fish flour, and several others.

The term unqualified refers to **all-purpose wheat flour**.

A. Types of Flour

There are 3 main kinds of wheat flour in the Philippines: bread flour, all-purpose flour and cake flour

1. *Bread flour* is also called Strong or Hard Flour. It contains 12-14% protein (high gluten strength). It is utilized for baked products such as bread, rolls, and sweet yeast-raised products. It could be distinguished from the two other kinds by the gritty, sandy, dry and granular feeling when rubbed between the fingers. It has a creamy color and does not form lumps easily when pressed together. Biological

leavening agents like yeast is used to produce the necessary gas to develop into a dough.

2. *All-Purpose Flour* is also called Family Flour, General Flour, or Pastry flour. It contains 10-11% protein (medium gluten strength). It is used a substitute for either bread or cake flour but requires more kneading for bread and less mixing in cakes to control gluten development. It has the quality of bread flour and cake flour. Yeast or chemical is used in dough development.

3. *Cake Flour* is also called Weak Flour or Soft Flour. It contains 7-9% protein (weak gluten strength) and is used for making cakes, cookies, pastries, crackers, and other specialty products like noodles. It is identified by its sleek, velvety and smooth feel when rubbed between fingers. It is whiter compared with bread flour and all-purpose flour. When pressed together it tends to hold its shape. A chemical leavening agent like baking powder and baking soda are used in dough development.

In addition to the above mentioned 3 types of flour, another type of flour abundant on the shelves of supermarkets are flour mixes or more commonly known as “ready mixes” or “pre-mixed” flour. They may contain salt, baking powder, milk solids, sugar and flavoring. Some mixes contain yeast for making fermented bread or rolls. These are classified as convenience foods. They are attractive to busy housewives because of their ease of preparation. Each package contains easy to follow the instruction that even children or non-experienced cooks can follow.

Properties of Flour

1. Whitish color
2. Tolerance
3. Strength
4. Uniformity
5. High Absorption

The Nutritive Value of Flour and Flour Mixtures

Wheat flour supplies generous amounts of protein and a considerable amount of carbohydrates and fats. In the Philippines, most of the flour that we use for bread and pastry making is enriched with B vitamins, thiamine and niacin. B complex prevents beriberi and helps in establishing healthy nerves, riboflavin for healthy skin and hair and niacin which prevents a chronic disease of the skin called pellagra. Calcium, iron and vitamin D are optional nutrients for enrichment.

II. LIQUID: WATER OR MILK

A. Water

Liquids in baking maybe milk, fruit juices or just plain water. It is the cheapest ingredient in baked products. It is important in the making of dough because of its role in converting the flour protein into gluten. Its other uses are:

1. controls consistency and temperature (warm or cool) of dough.
2. dissolves salts, suspends and distributes non-flour ingredients evenly in order for complex enzymatic and chemical changes to take place.
3. wets and swells starch to render it more digestible.

B. MILK

Milk is defined as the whole, fresh and clean lacteal secretion of the mammary glands. Unqualified milk refers to whole cow's milk.

Milk is an excellent animal protein food. It is one of the best sources of riboflavin, calcium and phosphoric acid and has a good supply of vitamins A and D. The average composition percentage of milk is 86.6% water, 3.8% protein, 4.6% sugar, 4.3% fat, and 7% minerals.

Milk is processed commercially in various ways:

Evaporated milk is full cream milk with 40% of the water removed by evaporation. It is homogenized before canning.

Dried milk may be made from full cream or skimmed milk.

Skimmed milk is milk from which the fat is removed.

Condensed milk is prepared similarly and has sugar added.

In addition to evaporated milk, dried milk and skim milk, cream milk and buttermilk or sour milk may be used for baking purposes. Condensed milk may also be used when diluted but it will yield a sweeter product. Fresh liquid milk or buttermilk should be scalded and cooled first to kill the enzymes that interfere with yeast action.

Uses of milk

1. Increases dough strength. It acts as a strengthening agent to proteins in flour because of its easier content. It is manifested in loaf volume.
2. Improves the dough's tolerance to mixing.
3. It enables longer fermentation of dough, hence acidity of dough is reduced. This results in a better aroma of baked products.
4. Gives a golden color to baked products. Lactose, casein and whey proteins are milk composition responsible for rendering a golden color to baked products
5. Improves grain and texture. The presence of milk in baked products results in a velvetier texture and the formation of small uniform cells.
6. Improves nutrition, flavor and eating quality.

III. SHORTENING

Shortening is any fat which when added to flour mixtures increases tenderness. This is done by preventing the sticking of gluten strands while mixing so that gluten is shortened and makes the product more tender.

The physical and chemical properties of fats are influenced by the fatty acid content. Fats contain a relatively high temperature of saturated fatty acids.

Fats are composed of carbon, hydrogen, and oxygen. They can be molded and creamed. They do not occur free in nature, hence, they are extracted from other materials or tissues and undergo refinement processes.

Classification of fats

By physical appearance

1. Visible fats – are purified fats and easily recognized. Examples of visible fats are margarine and hydrogenated fat.
2. Invisible fats – are fats present in various eaten foods such as meats, eggs, whole milk and avocados. They are hidden and not easily recognized.

By source

1. Fats – exist in bacon, butter, fish oils, poultry fats, suet and tallow.
2. Vegetable oil – found in coconut, cottonseed, peanut, sunflower and soybeans.

Forms of Fats and Oils

1. Butter – an excellent source of fat. It contains in varying degree, vitamins A and D. It is highly digestible. It is used for baking cakes and cookies mainly because of its flavor. Butter has an inferior shortening value. It does not cream top well and its products are generally lower in volume and coarser in grain than those made of high-quality shortening.
2. Margarine is a substitute for butter and is equal to butter in food value. The main difference between butter and margarine is largely one flavor. It is made of fat, milk and water.
3. Lard – extracted from pig's fat. It is referred to as almost pure fats and has no other food value.
4. Cooking fat – an alternative to lard. It contains only fats and oils. No milk is added and no vitamins.
5. Edible tallow – obtained mainly from cattle fats. It is used advantageously in a certain type of "dry bread" and crackers with thick bodies. Unrefined tallow is used mainly for manufacturing soaps.

Uses of Fats

1. Make bread products tender and improve flavor (By making gluten airtight).
2. Assist in gas retention giving bigger volume and better crust.
3. Prevents cohesion of gluten strands that allow a better volume of baked products.

IV. SUGAR

Sugar is available in the market in different forms. Knowing the descriptions of each form will help make their importance clear.

Granulated sugar is also known as table sugar or refined sugar is made from sugar cane or sugar beets syrup. It comes in white crystals and it lends itself to practically all uses.

Brown Sugar is light, medium, or dark brown. It consists of coarse sticky crystals locally known as muscovado. During the early stages of processing, it is allowed to dry up in halved coconut shells that form into a solid mass locally known as panutsa. It is used in products where the flavor and color of the brown sugar are desired.

Powdered Sugar or Confectioner's Sugar is obtained from granulated sugar by pulverization. Corn starch is added to prevent caking. It is considered to be the finest, smoothest and whitest form of sugar. It is commonly used for frostings, candies, and dusting for baked products.

Effects of Sugar on Baked Products

Sugar has several effects on dough properties and other baked products:

Increases dough development. This is brought about by the competition between the sugar and the gluten proteins for water.

Makes the color of the crust richer. The intensity of crust color varies with the kind of sugar present. A darker crust is obtained when sugar is increased. It is baked in a shorter time which helps retain maximum quantities of flour and moisture. As the sugar enters into the browning reaction an appetizing color is rendered as a result of the caramelizing of residual sugar.

Improves nutritive value, flavor and aroma of the product. This is brought about by the fact that sugar serves as food for yeast which enhances yeast activity thereby increasing effects on loaf volume.

V. EGGS

“Egg”, unqualified, refers to the ovum of a chicken. Its natural function is to provide for the development of the chick.

Eggs are essential and costly ingredients of bakery products specifically in cakes rich sweet doughs. They represent 50% or more of the cost of the ingredients used in cake production.

Major components

The major components of eggs have specific physiochemical characteristics that affect their performance in the food industries.

Mucin is a kind of protein and is found in the egg white and is responsible for the gel characteristics of the white. Ovalbumin is another protein that coagulates readily and is involved in heat coagulation and whipping.

Lecithin is a phospholipid found in egg yolk. It gives the yolk its emulsifying properties. It is responsible for causing spoilage when whole eggs are stored at warm temperatures.

Dextrose is present in small amounts in both the white and the yolk. This causes deterioration by a series of reactions with the phospholipids leading to insolubility, browning and off-flavors.

Uses in Baking

Eggs have numerous uses. Among these are:

Thickening agent. The protein of an egg coagulates when heated which makes possible the use of eggs as a thickening agent in foods such as puddings and custards.

Binding agent. The coagulation of protein along with the viscosity of the uncooked egg is the basis for the use of eggs as a binding agent and as a coating to hold crumbs together for crust formation on breaded foods. Coagulation increases the rigidity of cell walls and crust in numerous doughs and batters.

Emulsifying agent. Lipoproteins that are present in yolk make it valuable as an emulsifying agent.

Leavening agent. The surface activity of the proteins of the egg also makes the egg valuable in the production of a film that holds air which may be used to aid in the leavening of various food mixtures. The air beaten into the egg does the leavening but the characteristics of the egg make it possible for the air to be held in the product.

Color. The yolk provides a desirable yellow color which gives the cake a rich appearance.

Richness. The fat and other solids present in the eggs increase the fat content and make the product taste sweeter.

Flavor. Eggs contain flavor which makes the product more desirable.

Freshness and nutritive value. The moisture content of eggs (75% for whole eggs) coupled with its natural ability to binding and retaining moisture, retard staling.

Eggs have a high nutritional value and contribute a lot to the value of baked products as food. They are rich in calcium, phosphorous and iron. They contain complete proteins that supply all of the essential amino acids required to maintain growth and

good health. They also supply important amounts of vitamin A, D, thiamine and riboflavin.

VI. LEAVENING AGENTS

A leavening agent is a gas added or produced during the mixing and/or heating of a batter or dough allowing the mixture to rise, making the product light and porous.

There are 3 major leavening gases – air, water vapor or steam and carbon dioxide. Air is incorporated in flour mixtures by beating eggs, folding and rolling doughs, creaming fat and sugar together, sifting flour, or heating batters. Steam is probably produced in all flour mixtures to a certain degree since all flour mixture contains water and are usually heated to the vaporization temperature of the water. Carbon dioxide is produced in a flour mixture either by biological process (yeast) or by purely a chemical reaction (baking powder and baking soda).

Biological Leavening Agents

Yeast – a single celled plant that reproduces through budding which is capable of transforming sugar to alcohol and carbon dioxide in a process known as fermentation. There are two forms of commercial yeast: dry or granular and cake (compressed or fresh). In the granular form, dehydration makes the yeast dormant, making the yeast inactive and yeast alive. It is reactivated by adding water which is why if not in use, they must be kept in a cool dry place with the container tightly closed. In the cake, compressed or fresh, the yeasts are in an active state in a moist mixture with starch. The presence of moisture makes the product perishable and therefore needs to be refrigerated if not yet intended for use:

There are 2 main roles of yeast in bread making:

1. to lighten or raise the dough thereby improving greatly its ultimate palatability
2. to contribute to the aroma and flavor of the bread.

Chemical Leavening Agents

Chemical leavening agents are classified into 4 types:

1. *Baking Soda* is chemically known as sodium bicarbonate and is commercially distributed as “bicarbonate of soda”. Baking soda liberates carbon dioxide but in the process, a residue of washing soda is left in the cake imparting a dark color and unpleasant taste to the cake. An edible acid ingredient such as honey, molasses, lemon juice, or vinegar is added to counteract it.

2. *Baking Powder* is produced by mixing baking soda and acid salt. A stabilizer (flour or starch) is added to the mixture to standardize it such that at least 12% carbon dioxide is released upon heating.

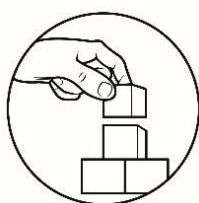
3. *Cream of tartar* is tartaric acid and is a fine white crystalline acid salt which is a by-product of the wine-making industry. It is used in the whipping of egg whites to stabilize them and allow them to reach maximum volume.

4. *Ammonium Carbonate and Ammonium Bicarbonate* is used as leavening agents in small quantities and is limited to certain types of cookies and cream puffs. One advantage of this type is it decomposes into 3 gases and does not leave a solid residue.

MINOR INGREDIENTS

The ingredients which are utilized in small quantities in baking are classified as “minor” only because of quantity. They are quite important ingredients and at times indispensable in achieving the sensory qualities and physical characteristics of baked products.

- a. Salt
- b. Spices and Seeds
- c. Flavorings
- d. Cocoa and chocolates



What's More

Vocabulary Matching

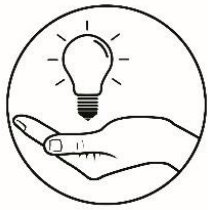
Match the words in column B with its description in column A. Write the answer in your answer sheet.

Column A

- ___1. Makes our bakery products “rise”.
- ___2. Cut or shortened gluten formation.
- ___3. Best flour for baked products.
- ___4. Improve nutrient, flavor and eating quality.
- ___5. Costly ingredient of bakery products.
- ___6. Kinds of protein found in the egg white.
- ___7. Cheapest ingredients in baking.
- ___8. Improve the general quality of the product.
- ___9. Enhance or improve the flavor and aroma.
- ___10. Extracted from pig’s fat.

Column B

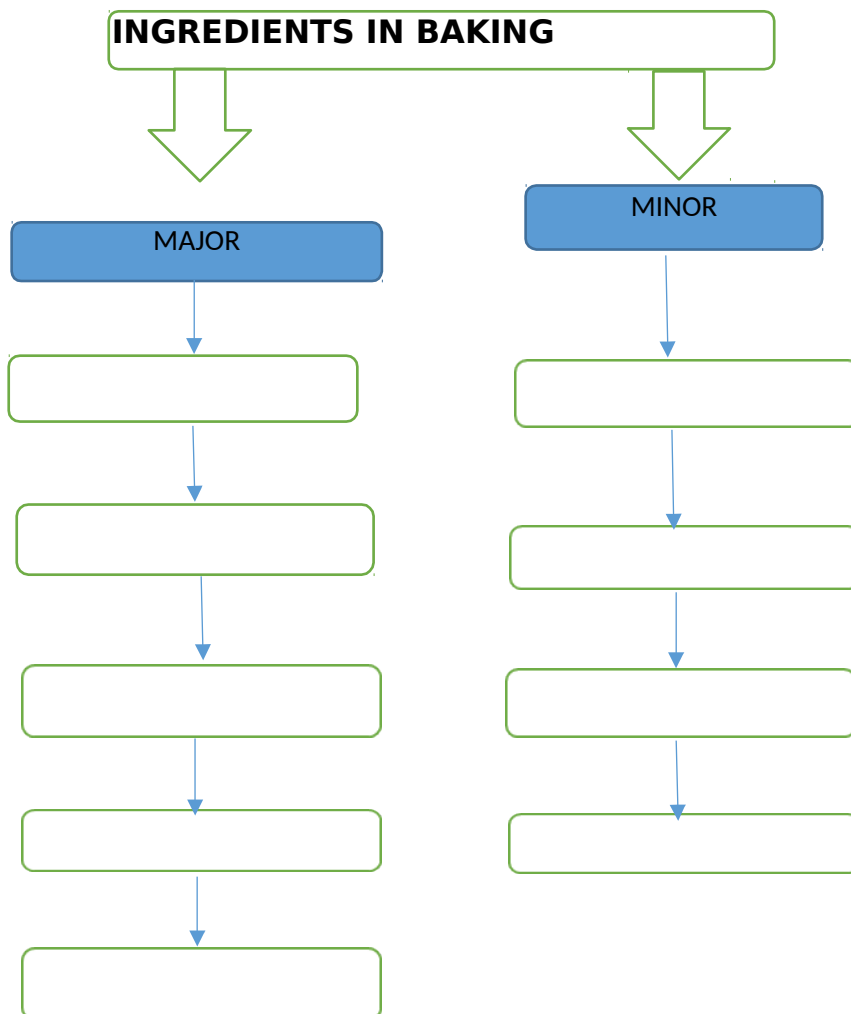
- a. Wheat flour
- b. Salt
- c. Milk
- d. Eggs
- e. Shortening
- f. Leaveners
- g. Water
- h. Lard
- j. Flavorings
- k. Mucin

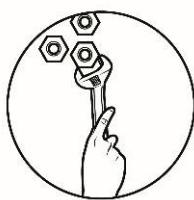


What I Have Learned

CHART FLOW of BAKING INGREDIENTS

Complete the flow chart in baking ingredients. Write the ingredients and their uses in your answer sheet.





What I Can Do

Something to do:

Activity 1 - How to soften dry or granular yeast.

1. Prepare $\frac{1}{2}$ Cup lukewarm water, add 1 tsp. white sugar. Add 1 Tablespoon dry yeast. Dissolve yeast carefully. Let it rest for 10 minutes.
2. What did you observe? In your answer sheet describe an alive and active yeast.

Activity 2 Compare the taste of baking powder and baking soda.

1. Taste baking powder. Then taste baking soda.
2. Do they have the same taste? How will you identify the baking soda from baking powder if the label is lost or erased?

Your answer will be rated using the rubric below.

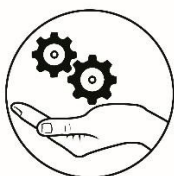
SCORE	CRITERIA
5	Thoroughly and comprehensive explanation, clear and easy to understand.
4	An important explanation, clear and quite easy to understand.
3	Limited or not comprehensive explanation, lack of clarity and difficult to understand.
2	Misconception on the explanation, unclear, cannot understand.



Assessment

Directions: Read the questions carefully and choose the best answer from the options given. Write only the letter of your answer in your activity sheet.

1. Which of the following ingredients is usually used in the dough that gives better taste and flavor?
 - a. butter
 - b. compound lard
 - c. edible tallow
 - d. vegetable oil
2. What flour is used especially in bread, and other yeast-raised products because of its high gluten content?
 - a. all-purpose flour
 - b. bread flour
 - c. cake flour
 - d. cornstarch
3. Which of the ingredients is a biological leavening agent?
 - a. baking powder
 - b. baking soda
 - c. cream of tartar
 - d. yeast
4. What ingredients make our products “rise”?
 - a. egg
 - b. flour
 - c. leaveners
 - d. shortening
5. Which type of mixing technique is done only in baking bread?
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 - b. creaming
 - c. cut and fold
 - d. kneading
6. Why is the mixing process in bread making important?
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 - a. oil
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8. It refers to the procedure of rubbing one or two ingredients against a bowl with the tip of a wooden spoon or electric mixer.
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 - d. stirring
9. It is a kind of beating for eggs and cream to fill them with air and make them thick and fluffy?
 - a. creaming
 - b. folding
 - c. stirring
 - d. whipping
10. What is the cheapest ingredient in baking?
 - a. fruit juice
 - b. milk
 - c. vegetable juice
 - d. water



Additional Activities

1. Have a taste of a Pandesal, Cookies, and Hotcake or any baked product that can be bought in your local area. Identify the ingredients used for each of them. Write your answer in your answer sheets.

Your answer will be rated using the rubric below.

SCORE	CRITERIA
5	Thoroughly and comprehensive explanation, clear and easy to understand
4	An important explanation, clear and quite easy to understand
3	Limited or not comprehensive explanation, lack of clarity and difficult to understand
2	Misconception on the explanation, unclear, cannot understand

References

A. MANUAL

Alcantara, Ines D. *Module in Baking I, Technology and HomeEconomics III*, Saint Bernadette Publications, Inc. 1991

Robles, Cynthia N., *Philippine Home Economics Baking Basics* (A Revised Edition of the Philippine Home Economics Baking Manual), U.S.A; Wheat Association, 1977

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