

8

Lesson Exemplar for TLE

Quarter 2
Lesson

6

GOVERNMENT PROPERTY
NOT FOR SALE

Lesson Exemplar for TLE Grade 8
Quarter 2: Lesson 6 (Week 6)
SY/TP 2025-2026

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<p>Development Team</p> <p>Writer:</p> <p>Gracelyn B. Honrada (Nicolas L. Galvez Memorial Integrated National High School)</p> <p>Validator:</p> <p>Maria Gracia R. Samson (Philippine Normal University-South Luzon)</p> <p>Management Team</p> <p>Philippine Normal University Research Institute for Teacher Quality SiMERR National Research Centre</p>

Every care has been taken to ensure the accuracy of the information provided in this material. For inquiries or feedback, please write or call the Office of the Director of the Bureau of Learning Resources via telephone numbers (02) 8634-1072 and 8631-6922 or by email at blr.od@deped.gov.ph.

TLE /QUARTER 2/ GRADE 8

I. CURRICULUM CONTENT, STANDARDS, AND LESSON COMPETENCIES

A. Content Standards	The learners demonstrate an understanding of the concepts and skills in fisheries
B. Performance Standards	The learners perform the skills in fisheries following safety precautions
C. Learning Competencies and Objectives	<p><i>Learning Competency</i> The learners</p> <ul style="list-style-type: none"> • Discuss the importance of food processing • Discuss opportunities for food processing as a career and as a business • Discuss different raw materials used in food processing • Explain the ingredients used for food processing <p><i>Learning objectives</i> At the end of the lesson, the students are expected to:</p> <ol style="list-style-type: none"> 1. Explain the importance of food processing 2. Identify opportunities for food processing as a career and as a business 3. Enumerate different raw materials used in food processing 4. Identify the ingredients used for food processing
D. Content	<p>Importance of Food Processing Career and Business Opportunities Classifications of Ingredients Used in Food Processing Ingredients Used for Food Processing</p>
E. Integration	<p>SDG 2: Zero Hunger SDG 8: Decent Work and Economic Growth</p>

II. LEARNING RESOURCES

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III. TEACHING AND LEARNING PROCEDURE		NOTES TO TEACHERS
A. Activating Prior Knowledge	<p>DAY 1</p> <p>1. Short Review</p> <p>The teacher will ask the following questions:</p> <ol style="list-style-type: none"> 1. What are the examples of traditional fishing techniques? 2. Can you give examples of modern fishing techniques? 3. What are the examples of post-harvest handling activities? <p>2. Feedback (Optional)</p>	<p>Answers:</p> <ol style="list-style-type: none"> 1. hand line fishing, spearfishing, cast netting 2. rod and reel fishing 3. sorting and grading, storing
	<p>1. Lesson Purpose</p> <p>“Guess the Picture Challenge”</p> <ul style="list-style-type: none"> • Based on the given pictures, guess the food processing method being shown or described. 	



Mega Sardines (Baliuag, Bulacan) by 1732Foods, from [Wikimedia Commons](#).

C_N_I_G



Fish in a Refrigerator from [Pexels](#).

F_E_E_I_G



Smoking of Fish in Kalangala by Foto & Art, from [Wikimedia Commons](#).

S_O_I_G



Sardine Fish Being Dried Under the Sun from Rosario, Cavite, Philippines by Ben & Liza, from [Wikimedia Commons](#).

D_R_I_G

B. Establishing Lesson Purpose

The teacher will ask the following questions:

1. Can you enumerate the different food processing in the picture?
2. Why do we need to process fish?
3. What is the importance of different processing methods?

2. Unlocking Content Vocabulary

- **Edible** - something that is safe and suitable for consumption as food.
- **Shelf life**- the length of time a product can be stored and remain safe for consumption while retaining its desired quality, taste, and nutritional value. **Convenient**- describes something that is easy to use, saves time, or simplifies a task or process.
- **Palatable**- something that has a pleasant taste or flavor, making it enjoyable to eat or drink.

Answers:

1. CANNING
2. FREEZING
3. SMOKING
4. DRYING

	<ul style="list-style-type: none"> • Variety- diversity or range of different options within a particular category or context. 	
C. Developing and Deepening Understanding	<p>SUB-TOPIC 1: Importance of Food Processing</p> <p>Food processing enhances edibility, taste, and safety, and preserves foods so they can be consumed beyond the harvest season. It also increases the variety of available foods, expanding consumer choices, as seen in the diverse components of a store-bought salad.</p> <p>To meet consumers' expectations, the food industry must provide foods that are safe, tasty, nutritious, varied, and affordable. These expectations result in multiple reasons for food processing:</p> <ul style="list-style-type: none"> • Extended Shelf Life and Food Safety: The primary reason for food processing is to prolong shelf life and ensure safety by using methods such as heating, drying, canning, and freezing to deactivate or inhibit microorganisms responsible for spoilage and foodborne diseases. • Innovation and Variety: Processing allows for year-round availability of durable products, reduces post-harvest loss, and transforms surplus fresh produce into various food products using different technologies. • Economic Benefits: The food processing industry creates numerous jobs across manufacturing, quality control, logistics, and sales. • Nutritional Enhancement: Processing enables the fortification of foods with essential vitamins and minerals, enhancing overall nutritional intake. • Sustainability: Processing increases the variety of food products and their convenience, aligning with the demands of modern, on-the-go lifestyles. • Convenience: Processed foods offer affordable and ready-to-eat meal options, catering to busy lifestyles and requiring minimal preparation. <p>These key points highlight the importance and benefits of food processing in meeting consumer needs and industry demands.</p> <p>2. Worked Example “Fish Processing and Its Impact” <i>Group Activity:</i></p> <ul style="list-style-type: none"> • Divide students into four groups. Each group will be given a specific method of food fish processing (canning, freezing, smoking and drying) with informational resources (either internet access for research or printed materials). <p><i>I- Research:</i> Each group researches their assigned product, focusing on:</p>	

- 1.The method used to process the fish
2. Benefits of this processing method
3. Nutritional value and safety aspects
4. Economic and environmental impact

II: Creative Presentation

Poster Creation: Each group creates a poster showcasing their findings. The poster should include:

- 1.The type of processed fish
- 2.The processing method used
- 3.Key benefits (safety, preservation, nutritional value)
- 4.Interesting facts or historical context

Presentation:

- Groups present their posters to the class, explaining what they learned about their specific type of processed fish and its importance.

3. Lesson Activity

“Exploring Fish Processing Benefits”

Let the students answer the reflective questions:

- What did you find most surprising about fish processing?
- How does food processing contribute to global food security?
- What are some ways to make fish processing more sustainable?

DAY 2

SUB-TOPIC 2: Career and Business Opportunities

1. Explicitation

Food fish processing offers numerous career and business opportunities due to its essential role in ensuring food safety, extending shelf life, and meeting consumer demand for convenient and nutritious products. Here are some potential career paths and business ventures in this field:

	<ul style="list-style-type: none">● Quality Control Specialist- Ensures that fish products meet safety and quality standards. Attention to detail, knowledge of food safety regulations, laboratory testing.● Food Scientist- Develops new processing techniques and improves existing ones. Strong background in chemistry and biology, innovation, problem-solving.● Production Manager- Oversees the processing operations, ensuring efficiency and compliance. Leadership, organizational skills, knowledge of processing equipment● Marine Biologist- Studies marine life to improve sustainable fish harvesting and processing practices. Research, data analysis, environmental science.● Supply Chain Manager- Manages the logistics of sourcing, processing, and distributing fish products. Logistics, project management, negotiation.● Business Opportunities● Fish Processing Plant- Establish a facility that processes fish into various products like fillets, canned fish, and smoked fish. Requires significant investment in equipment, adherence to strict health and safety regulations, and a steady supply of raw fish.● Specialty Fish Products- Create niche products such as organic, sustainably sourced, or gourmet fish products. Market research, branding, and establishing supply chains for premium ingredients.● Fish Farming (Aquaculture)- Combine fish farming with processing to control the supply chain from production to final product. Knowledge of aquaculture, investment in both farming and processing facilities, and environmental impact management.● Fish Snack Production. Develop and market fish-based snacks such as jerky, chips, or dried fish. Product development, taste testing, packaging design, and marketing.● Frozen Fish Products- Produce and distribute frozen fish items like fish sticks, fillets, and ready-to-cook meals. Freezing technology, packaging solutions, and distribution networks. <p>2. Worked Example "Exploring Careers and Ventures in Food Fish Processing" Divide the students into small groups and let each group choose a specific career or business opportunity within the food fish processing industry.</p> <p>Each group will research their assigned career or business opportunity, focusing on:</p> <ol style="list-style-type: none">1. Job roles and responsibilities or business operations2. Required skills and education or startup requirements	
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	<p>3. The importance of this role or business in the industry</p> <p>4. Potential challenges and rewards</p> <p>Creative Presentation</p> <p><i>Poster or Slide Creation:</i> Each group creates a poster or presentation summarizing their findings. The presentation should include:</p> <ol style="list-style-type: none">1.Title of the career or business2.Detailed description of roles and responsibilities or business operations3.Required skills, education, or resources4.Importance and impact on the food fish processing industry5.Potential challenges and benefits <p><i>Presentation:</i> Groups present their posters or slides to the class, explaining what they learned about their specific career or business opportunity.</p> <p>Part 4: Reflection and Discussion (30 minutes)</p> <p><i>Class Discussion:</i> After all presentations, lead a discussion to reflect on what the students have learned. Use questions like:</p> <ul style="list-style-type: none">• Which career or business opportunity seems the most interesting to you and why?• What skills or knowledge do you think are most important for success in this industry?• How do different roles and businesses contribute to the overall success of the food fish processing industry? <p><i>Worksheet:</i> Distribute a worksheet with reflective questions such as:</p> <ul style="list-style-type: none">• Which career or business opportunity would you consider pursuing and why?• How does the food fish processing industry impact local and global economies?• What are some ways to make fish processing more sustainable and innovative? <p><i>Assessment:</i></p> <ul style="list-style-type: none">• Evaluate students based on their participation in group activities, the accuracy and depth of their research, the creativity and clarity of their presentations, and their responses to the reflective questions. <p><i>Extension Activity:</i></p> <ul style="list-style-type: none">• As a follow-up, organize a virtual or in-person guest speaker session with a professional from the food fish processing industry to provide real-world insights and answer student questions.	
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	<p>This activity aims to engage students in hands-on learning, promote teamwork, and deepen their understanding of the diverse career and business opportunities within the food fish processing industry</p> <p>3. Lesson Activity “Think and Reflect”</p> <p>Let the students answer the following reflective questions:</p> <ul style="list-style-type: none">• Which career or business opportunity seems the most interesting to you and why?• What skills or knowledge do you think are most important for success in this industry?• How do different roles and businesses contribute to the overall success of the food fish processing industry? <p>DAY 3 SUB-TOPIC 3: CLASSIFICATIONS OF INGREDIENTS USED IN FOOD PROCESSING</p> <p>Classification of ingredients used in food processing, specifically focusing on types of meat, fish and shellfish, and fruits and vegetables:</p> <p><u>Types of Meat</u></p> <p>Beef: Examples: Steak, ground beef, brisket, ribs. Uses: Burgers, stews, roasts, steaks.</p> <p>Pork: Examples: Pork chops, bacon, ham, pork loin. Uses: Bacon sandwiches, ham salads, grilled pork chops.</p> <p>Poultry: Examples: Chicken, turkey, duck. Uses: Grilled chicken, roast turkey, chicken curry.</p> <p>Lamb and Mutton: Examples: Lamb chops, lamb leg, mutton curry. Uses: Roast lamb, lamb kebabs, shepherd's pie.</p>	
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	<p>Game Meat: Examples: Venison, rabbit, wild boar. Uses: Venison steaks, rabbit stew, wild boar sausages.</p> <p><u>Fish and Shellfish</u></p> <p>Whitefish: Examples: Cod, haddock, pollock, sole. Uses: Fish and chips, grilled fillets, fish tacos.</p> <p>Salmonids: Examples: Salmon, trout. Uses: Baked salmon, smoked salmon, grilled trout. Flatfish: Examples: Flounder, halibut, plaice. Uses: Pan-fried fillets, fish sandwiches, fish pies.</p> <p>Shellfish: Examples: Shrimp/prawns, crab, lobster, mussels, oysters. Uses: Shrimp pasta, crab cakes, lobster bisque, seafood paella.</p> <p><u>Fruits and Vegetables</u></p> <p>Berries: Examples: Strawberries, blueberries, raspberries. Uses: Fruit salads, berry pies, smoothies.</p> <p>Citrus Fruits: Examples: Oranges, lemons, limes. Uses: Citrus marinades, lemon tarts, lime sorbet.</p> <p>Tropical Fruits: Examples: Pineapple, mango, papaya. Uses: Tropical fruit salads, mango salsa, pineapple upside-down cake.</p>	
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	<p>Root Vegetables: Examples: Carrots, potatoes, beets. Uses: Roasted root vegetables, mashed potatoes, beet salad.</p> <p>Leafy Greens: Examples: Spinach, kale, lettuce. Uses: Spinach salads, kale smoothies, lettuce wraps.</p> <p>2. Worked Example “Ingredients Classification Challenge”</p> <p>Group Formation:</p> <ul style="list-style-type: none">• Divide students into small groups.• Ingredient Selection: Provide each group with a selection of food ingredients (pictures) representing different categories. Ensure there is a variety of items from each category.• <p>Classification Task:</p> <ul style="list-style-type: none">• Instruct each group to classify the ingredients into the appropriate categories (meat, fish and shellfish, fruits, and vegetables). <p>Visual Representation:</p> <ul style="list-style-type: none">• Ask groups to create visual representations of their classifications using the poster boards, markers, pens, and labels. They can arrange and label the ingredients accordingly. <p>Group Presentations:</p> <ul style="list-style-type: none">• Invite each group to present their visual representations to the class. They should explain their classification decisions and highlight the key characteristics of each ingredient category. <p>3. Lesson Activity “A Deep Dive into Ingredients”</p> <ul style="list-style-type: none">• Research and present on specific ingredients within each category, discussing their nutritional value, culinary uses, and significance in food processing.	
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DAY 4

SUB-TOPIC 4: INGREDIENTS USED FOR FOOD PROCESSING

Condiments are ingredients that are added to food to improve flavor, complete meals, or provide moisture. They frequently have seasoning, spreads, and sauces.

Examples:

- **Ketchup:** A tangy, tomato-based condiment commonly used on burgers, fries, and hot dogs.
- **Mustard:** A pungent condiment made from mustard seeds, often used on sandwiches, pretzels, and grilled meats.
- **Mayonnaise:** A creamy condiment made from oil, egg yolks, and vinegar, used in salads, sandwiches, and as a base for sauces.
- **Soy Sauce:** A salty, fermented condiment made from soybeans and wheat, commonly used in Asian cuisine as a seasoning and marinade.
- **Hot Sauce:** A spicy condiment made from chili peppers, vinegar, and spices, used to add heat and flavor to various dishes.

Herbs and spices- plant-derived ingredients used to flavor food. Herbs typically come from the leaves of plants, while spices are derived from other parts such as seeds, bark, roots, or fruits.

Examples:

- **Basil:** A fragrant herb commonly used in Italian cuisine, such as in tomato sauce, pesto, and salads.
- **Cinnamon:** A sweet and aromatic spice made from the inner bark of the Cinnamomum tree, used in baking, desserts, and savory dishes.
- **Oregano:** A pungent herb commonly used in Mediterranean and Mexican cuisine, such as in pizza sauce, marinades, and soups.
- **Cumin:** A warm and earthy spice commonly used in Indian, Middle Eastern, and Mexican dishes, such as in curries, chili, and tacos.
- **Ginger:** A pungent and spicy root used both fresh and dried in Asian cuisine, such as in stir-fries, marinades, and teas.

Food additives- substances added to food during processing to improve flavor, texture, appearance, or shelf life. Preservatives are a subset of food additives specifically added to prevent spoilage and extend shelf life.

Examples:

- **Monosodium Glutamate (MSG):** A flavor enhancer commonly used in savory dishes to enhance umami flavor.
- **Ascorbic Acid (Vitamin C):** An antioxidant used as a preservative to prevent browning in fruits and vegetables and to preserve the color and flavor of processed foods.
- **Sodium Nitrite:** A preservative and color fixative used in cured meats such as bacon, ham, and hot dogs to prevent bacterial growth and maintain pink color.
- **Calcium Propionate:** A preservative used in baked goods to prevent mold growth and extend shelf life.
- **Xanthan Gum:** A thickening agent and stabilizer used in food processing to improve texture and consistency in products such as sauces, dressings, and baked goods.

2. Worked Example

“Ingredients Classification Challenge”

Let the students classify the ingredients as to condiments, herbs and spices, food additives

CONDIMENTS	HERBS AND SPICES	FOOD ADDITIVES

3. Lesson Activity

"Ingredient Catalog Creation"

- Students will research, compile, and present a catalog of condiments, herbs and spices, and food preservatives commonly used in food processing, fostering understanding of their roles and significance in the culinary world.
- They will design a catalog layout that includes sections for condiments, herbs and spices, and food preservatives.

D. Making Generalizations	<p>1. Learners' Takeaways</p> <ul style="list-style-type: none"> • What are the different ingredients used in food fish processing? • Can you classify the different ingredients used in food fish processing? • How has creating this catalog of condiments, herbs and spices, and food preservatives deepened your understanding of the role these ingredients play in food processing and culinary culture? <p>2. Reflection on Learning Have the students completed the following sentences? I understand that _____. I realize that _____. I need to learn more about _____.</p>	
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IV. EVALUATING LEARNING: FORMATIVE ASSESSMENT AND TEACHER'S REFLECTION		NOTES TO TEACHERS
A. Evaluating Learning	<p>1. Formative Assessment Multiple Choice Quiz: Students will answer the 5-item test about the phases of fish culture and classification of fish according to habitat.</p> <p>1. This is the main, and probably the primary, reason is to increase the shelf life of the product and thereby ensure food safety.</p> <ol style="list-style-type: none"> Sustainability Extended Shelf Life and Food Safety Innovation and Variety Economic Benefits <p>2. The food processing industry creates numerous jobs, from manufacturing and quality control to logistics and sales.</p> <ol style="list-style-type: none"> Sustainability Extended Shelf Life and Food Safety Innovation and Variety Economic Benefits <p>3. This develops new processing techniques and improves existing ones. Strong background in chemistry and biology, innovation, problem-solving.</p> <ol style="list-style-type: none"> Food Scientist Production Manager Quality Control Specialist 	<p><i>Answer Key:</i></p> <ol style="list-style-type: none"> b d a c a

	<p>d. Drying</p> <p>4. They ensure that fish products meet safety and quality standards. Attention to detail, knowledge of food safety regulations, laboratory testing.</p> <p>a. Food Scientist</p> <p>b. Production Manager</p> <p>c. Quality Control Specialist</p> <p>d. Drying</p> <p>5. These are substances added to food to enhance flavor, complement dishes, or add moisture. They often include sauces, spreads, or seasonings.</p> <p>a. Condiments</p> <p>b. Herbs</p> <p>c. Spices</p> <p>d. Food Additives</p>			
B. Teacher's Remarks	<i>Note observations on any of the following areas:</i>	Effective Practices	Problems Encountered	The teacher may take note of some observations related to the effective practices and problems encountered after utilizing the different strategies, materials used, the learner engagement and other related stuff. Teachers may also suggest ways to improve the different activities explored.
	<i>strategies explored</i>			
	<i>materials used</i>			
	<i>learner engagement/ interaction</i>			
	<i>others</i>			
C. Teacher's Reflection	<p><i>Reflection guide or prompt can be on:</i></p> <ul style="list-style-type: none"> ▪ <u>principles behind the teaching</u> <i>What principles and beliefs informed my lesson?</i> <i>Why did I teach the lesson the way I did?</i> ▪ <u>students</u> <i>What roles did my students play in my lesson?</i> <i>What did my students learn? How did they learn?</i> ▪ <u>ways forward</u> <i>What could I have done differently?</i> <i>What can I explore in the next lesson?</i> 			Teacher's reflection in every lesson conducted/facilitated is essential and necessary to improve practice. You may also consider this as an input for the LAC/Collab sessions.