Strengthened Senior High School

DepED
DEPARTMENT OF EDUCATION

Lesson Exemplars for Organic Agriculture Production

TECH-PRO ELECTIVE



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LESSON EXEMPLAR			
Learning Area	**ORGANIC AGRICULTURE PRODUCTION**	**Grade Level**	**11**
Term	**1**	**Lesson Exemplar**	**1**

I. OBJECTIVES	
A. Content Standard	The learners demonstrate understanding of principles in overview of organic agriculture production, maintenance of farm tools, materials and equipment, establish nursery for organic vegetable production, planting, plant care , harvest and post-harvest handling operation following industry practices.
B. Performance Standard	The learners perform maintenance of farm tools, materials and equipment, nursery establishment, planting operation and harvest and post-harvest handling operation following safety precautions
C. Learning Competencies	Discuss the overview of Organic Agriculture Production
II. REFERENCES and MATERIALS	**A. REFERENCES** Technical Education and Skills Development Authority-Qualification Standards Office. *Training Regulations for OAP NC II.* Taguig City, Philippines: TESDA, 2012. Department of Agriculture, *Philippine National Standard-Organic Agriculture,* Quezon City, Philippines: BAFS, 2016. Retrieved from: http://www.bafs.da.gov.ph/accreditation/assets/documents/BAFS-PNS-OA-07-2016.pdf Department of Agriculture-Bureau of Animal Industry, *Pag-aalaga ng Native na Baboy,* Brgy. Lagalag, Tiaong, Quezon, Philippines: NSPRDC, 2014. Department of Science and Technology, *Organic Agriculture in the Philippines: A training Manual,* Los Baños, Laguna Philippines: PCARRD, 2014 (Reprint) www.dictionary.com Badgley C., Moghtader, J., Quintero, E., Zakem, E., Chappell, J., AvilésVázquez, K., Samulon, A and Perfecto, I. 2007. Organic Agriculture and the Global Food Supply. Renewable Agriculture and Food Systems. June 2007. Castro, A.D. 2011. Paper presented during the Roundtable Discussion on "How Sustainable is Organic Agriculture ?",14 March 2011, NAST, PHL. Hyatt Hotel and Casino, Manila.

	Dangour, A.D., S .K. Dodhia, A. Hayter, E. Allen, K. Lock and R. Uauy. 2009. Nutritional quality of organic foods: a systematic review. Am J Clin Nutr 90: 680 – 685. **B. MATERIALS** Pictures, video clip, power point presentation, laptop/ tablets, smart TV, activity sheets, internet connectivity, actual tools, implements and equipment	
III. CONTENT	**Overview of Organic Agriculture Production** **Importance and Principles of Organic Farming**	
IV. OBJECTIVES	1.1. Identify and analyze career and business opportunities in organic agriculture, distinguishing between farming, agribusiness, consultancy, and certification pathways 1.2. Define and correctly use key terminologies in organic agriculture production, applying them in discussions and written outputs. 1.3. Examine modern technologies and innovations in organic agriculture, evaluating their impact on productivity, sustainability, and market competitiveness.	
V. PROCEDURES		**ANNOTATIONS**
A. Activating Prior Knowledge	***Day 1*** 1**. Activating Prior Knowledge** This part of the lesson helps learners mastering farming practices and food products equips learners with **knowledge, skills, and values** that promote safe food, sustainable agriculture, and responsible citizenship.	The teacher will ensure guided inquiry when asking questions to the learners. The SHS IDF present in this part of the of the plan is **relevant and reflective**. Relevant because learners will be able to see the immediate use and value of planting materials in daily life, community agriculture, or family livelihood. Reflective because the teacher's questions will prompt learners to reflect on personal or

Title: *GUESS WHAT'S ORGANIC!*

Instructions:

1. Below is a list of common farming practices and food products.
2. Place a ✔ if you think the item or practice is related to **organic agriculture**, and an ✘ if it is **not**.

Item/Practice	✔/✘
1. Using compost as fertilizer	
2. Spraying synthetic pesticides	
3. Crop rotation	
4. Genetically modified seeds (GMO)	
5. Using cow manure	
6. Artificial growth hormones	
7. Intercropping	
8. Green Manuring	

Processing Questions (after checking answers):

- What do the correct answers have in common?
- Why do you think some practices are not allowed in organic agriculture?
- Have you or your family ever used or bought anything organic?

2. **Establishing the Purpose of the Lesson**

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

1.1 Analyze and Evaluate Trends and Challenges.
1. 2 Explore Career Opportunities
1.3 Design and Apply Career/Business Plans

family experiences with planting, deepening ownership of the learning. Further, it uses the following approaches: **Inclusive:** The use of realia and visual aids accommodates learners with different learning styles and literacy levels. **Ideational:** Students express ideas and prior knowledge about planting materials, fostering conceptual connections. Finally, it uses **experience** wherein learners share personal stories or family practices involving seeds and cuttings, valuing informal learning.

B. Instituting New Knowledge	1. **Presenting Examples** **What to do:** Below are 10 items about organic agriculture. Each one fits into one of the 5 topics listed below. Write the letter (A, B, C, D, or E) that best matches each item. *Topics:* **A** – Trends (What's popular or new in organic farming) **B** – Challenges (Problems or difficulties in organic farming) **C** – Career Opportunities (Jobs you can have in organic farming) **D** – Business Ventures (Businesses you can start or join) **E** – Technological Innovations (New tools or technology in farming) ____1. Infrastructure ____6. Organic Livestock Raiser ____2. Food Security ____7. Remote Sensing ____3. Farm-to-Table Restaurant/ Catering ____8. Organic Processing/Production Business ____4. Agritourism ____9. Environmental Conservation ____5. Maintenance Costs ___10. Organic Fertilizer/Concoction Producer 2. **Discussing New Concept** ***A. DEFINITION OF TERMS*** · **Trend** – A general direction in which something is developing. *Example:* The growing popularity of **farm-to-table restaurants** shows a trend toward healthier, organic food consumption. · **Challenge** – A difficulty or obstacle that must be overcome. *Example:* **High maintenance costs** are a challenge for small organic farmers. · **Evaluation** – The process of assessing the value, impact, or effectiveness of something. *Example:* Evaluating how **government support programs** help farmers adopt organic practices.	*This part of the plan uses **collaboration** where small group discussions allow students to learn from each other's interpretations and background knowledge.*

	· **Career Opportunity** – A possible job or profession available in a specific field. *Example:* Becoming an **organic livestock raiser** who raises chickens or goats without synthetic feeds. · **Traditional Farming Role** – Conventional agricultural jobs focused on crop or livestock production using synthetic inputs. *Example:* A farmer using **chemical fertilizers** to grow rice. · **Emerging Agribusiness Opportunity** – New and innovative career paths or ventures in agriculture. *Example:* Starting an **agritourism farm** where visitors learn about organic practices. · **Differentiation** – The act of recognizing differences between two or more things. *Example:* Differentiating between **organic fertilizer producers** and traditional chemical fertilizer manufacturers. · **Business Plan** – A structured outline of goals, strategies, resources, and expected outcomes for a venture. *Example:* A plan to open an **organic store** selling vegetables and fertilizers. · **Application** – Putting knowledge and skills into practice. *Example:* Applying **crop rotation techniques** in a farm business plan to improve soil fertility. · **Innovation** – The introduction of new ideas, methods, or products. *Example:* Using **remote sensing technology** to monitor crop health in organic farming.	

	· **Entrepreneurship** – The process of creating and managing a business venture. *Example:* Launching a **farm-to-table catering service** that uses locally grown organic produce. ***B. DISCUSSION*** **SHORT DISCUSSION & EXAMPLES** 1. **Contextualize the Lesson** Begin by presenting the current state of organic agriculture in the Philippines—highlighting **trends** and **challenges** **KEY TRENDS IN ORGANIC AGRICULTURE PRODUCTION** ✓ *Increased Demand* Consumers are increasingly seeking organic produce, believing it to be healthier and environmentally friendly. ✓ *Government Support* Favorable policies encourage domestic production of organic food, as seen in the National Organic Agriculture Program (NOAP). ✓ *Market Growth* The organic food market is projected to expand at a Compound Annual Growth Rate (CAGR) of 6.8%. ✓ *Sustainable Practices* The emphasis on sustainable and environmentally friendly agriculture is a major driver of the trend.	

	✓ *Agritourism* Farms are increasingly integrating as tourist attractions, providing additional income for farmers and educating visitors about farming practices. ✓ *Regional Leadership* Negros Occidental is recognized as the "organic agriculture capital" of the Philippines due to its large organic production area. ✓ *Technological Advancements* Modern organic farming is incorporating scientific methods and techniques, moving beyond traditional indigenous practices. ✓ *Food Security and Environmental Conservation* Organic agriculture is seen as crucial for enhancing food security and environmental conservation in the Philippines. **CHALLENGES IN ORGANIC AGRICULTURE PRODUCTION** Organic farming, while environmentally beneficial, faces challenges including higher production costs, pest and weed management issues, soil fertility concerns, certification hurdles, market access difficulties, and the impacts of climate change. These challenges can be addressed through integrated pest management, soil conservation practices, cooperative efforts, and increased consumer education.	

	✓ *Infrastructure:* The lack of adequate infrastructure for storage and delivery of organic products is a major hurdle. ✓ *Initial and Maintenance Costs:* High initial and maintenance costs can be a barrier to entry for some farmers. ✓ *Competition:* Competition from alternative products can limit market potential. ✓ *Climate Change and Economic Slowdown:* These factors can also impact market growth. **ADDRESSING THE CHALLENGES:** Integrated Pest Management (IPM) IPM strategies, which combine natural pest control methods with other approaches, can help reduce pest and weed issues while minimizing reliance on synthetic pesticides. Soil Conservation Practices Implementing practices like cover cropping, no-till agriculture, and crop rotation can improve soil health and fertility. Cooperative Efforts Farmers can collaborate to share knowledge, resources, and marketing efforts, helping to overcome some of the challenges of organic farming. Increased Consumer Education Educating consumers about the benefits of organic food and the challenges of organic farming can help build demand and support for organic producers.	

	Government Support Government policies, such as subsidies, research funding, and streamlined certification processes, can help support organic farming and address market access challenges. **CAREER OPPORTUNITIES IN ORGANIC AGRICULTURE PRODUCTION** Organic Agriculture Production NC II program opens doors to various career and business opportunities in the agriculture sector, particularly in organic farming. Graduates can become organic farmers, chicken or hog raisers, or even producers of organic fertilizers and concoctions. There's also potential to work in related fields like marketing and production coordination. ▪ Organic Farmer: You can specialize in growing various organic crops, like vegetables, fruits, or grains. ▪ Organic Livestock Raiser: You can raise organic chickens, hogs, or small ruminants like goats or sheep. ▪ Organic Fertilizer/Concoction Producer: You can create and sell organic fertilizers, extracts, and other products for use in organic farming. ▪ Farm Supervisor/Manager: With experience, you can take on supervisory or management roles within organic farms or agricultural enterprises.	

	▪ Inspection Officer: Some positions involve inspecting organic farms to ensure they adhere to organic standards. ▪ Marketing Coordinator/Production Coordinator: You can assist in marketing organic produce or manage the production aspects of an organic farm. **BUSINESS OPPORTUNITIES IN ORGANIC AGRICULTURE PRODUCTION** More people want healthy and natural food, so organic farming is growing in the country. This creates many chances to start a business. You can grow crops, raise animals, or make and sell organic products. Below is a list of business ideas in organic farming that can help you get started. 1. Start your own Organic Farm You can establish and operate your own organic farm, specializing in particular crops or livestock. 2. Open an Organic Store/Market You can create a retail outlet that exclusively sells organic products. 3. Organic Processing/Production Business You can establish a business that processes organic crops or produces organic fertilizers and extracts. 4. Farm-to-Table Restaurant/Catering You can partner with organic farms to supply ingredients for a restaurant or catering service.	

Additional Considerations:

- *Certification*
  Becoming a certified organic producer can open up more market opportunities and potentially higher prices for your products.
- *Networking*
  Connecting with other organic farmers, distributors, and consumers can help you build a successful business.
- *Continued Learning*
  The field of organic agriculture is constantly evolving, so staying informed about new techniques and standards is crucial.

TECHNOLOGY AND INNOVATION IN ORGANIC AGRICULTURE PRODUCTION

Technology and innovation play a key role in improving organic agriculture by making better use of resources, increasing efficiency, and supporting sustainability. These advancements cover many areas, such as digital farming, data analysis/interpretation, pest control, and modern production methods.

Precision Farming and Data Analytics:

a. **Soil health monitoring**
   Using sensors and drones to gather real-time information on soil quality, weather, and crop health, helping farmers make better decisions about planting, irrigation, and fertilizing.

	b. **Data-driven decision-making** Using big data and smart computer programs to study large amounts of information, find patterns, and improve farming methods. c. **Smart irrigation systems** Implementing smart irrigation techniques to increase water efficiency and minimize waste. d. **Remote sensing** Utilizing satellite and drone imagery to monitor crop growth and identify potential problems. ***Pest and Weed Management*** a. **Integrated Pest Management (IPM)** Implementing IPM strategies that combine various techniques, including crop rotation, polycultures, and habitat diversification, to manage pests effectively. b. **Beneficial insects and microbial solutions** Using helpful insects like ladybugs and tiny wasps, along with natural microbes, to control pests and keep the environment healthy. c. **Automated weeding** Using robots and smart machines to find and remove weeds accurately, which helps reduce the use of chemicals and hard manual work. d. **Pheromone traps (attractants)** Using special traps to attract and capture.	

	Day 2 3. **Developing Mastery** 1. **Facilitate Active Engagement** Use collaborative tasks, simulations, and project-based learning to help students apply knowledge in practical contexts. **Teacher Facilitation Guide** **Objective A: Analyze and Evaluate Trends and Challenges** • **Activity: Trend & Challenge Debate** ○ **Task:** Divide the class into groups. One group presents current global/local trends (e.g., agritourism, government support, technological innovations), while another presents challenges (e.g., certification hurdles, infrastructure, climate change). ○ **Engagement:** After presentations, groups debate how trends can overcome challenges. ○ **Output:** A joint "solutions board" summarizing strategies like integrated pest management, cooperative efforts, or consumer education. ○ **Purpose:** Encourages critical thinking and collaborative problem-solving.	*This station rotation activity transforms the classroom into an* ***interactive, learner-centered space*** *where students actively engage with various types of planting materials. Through movement, observation, and discussion, learners develop not just technical knowledge but also* ***critical thinking, social awareness, and problem-solving skills****.*

Criteria	4 – Excellent	3 – Proficient	2 – Developing	1 – Needs Improvement
Content Accuracy	Trends and challenges are clearly identified, well-explained, and supported with accurate examples.	Trends and challenges are identified with minor inaccuracies or limited examples.	Trends and challenges are partially identified; explanations lack clarity or depth.	Trends and challenges are unclear, inaccurate, or missing.
Critical Thinking	Arguments are logical, well-structured, and show deep analysis of issues.	Arguments are generally clear with some analysis, but limited depth.	Arguments show minimal analysis; reasoning is weak or inconsistent.	Arguments are unclear, unsupported, or irrelevant.
Collaboration	Actively participates, contributes ideas, and works harmoniously with peers to complete the solutions board.	Participates and contributes but with occasional lapses in teamwork.	Limited participation; relies on peers to complete tasks.	Rarely participates; shows lack of cooperation.
Creativity	Proposes highly innovative and practical strategies that address challenges effectively.	Proposes strategies that are somewhat innovative and practical.	Strategies are basic, with little originality or practicality.	Strategies are repetitive, impractical, or missing.

Objective B: Differentiate and Explore Career Opportunities

- **Activity: Career Role Simulation**
  - **Task:** Assign each group a career (e.g., organic farmer, livestock raiser, fertilizer producer, marketing coordinator). Learners role-play daily responsibilities, challenges, and opportunities.
  - **Engagement:** Groups present their role to the class, highlighting differences between traditional farming roles and emerging agribusiness opportunities.
  - **Output:** A comparative chart of "Traditional vs. Emerging Careers."

	○ **Purpose:** Makes career exploration interactive and relevant to learners' futures. **Objective C: Design and Apply Career/Business Plans** • **Activity: Business Plan Workshop** ○ **Task:** In project teams, learners design a mini career or business plan leveraging organic agriculture practices (e.g., farm-to-table catering, organic fertilizer production, agritourism). ○ **Engagement:** Teams outline vision, resources, challenges, and innovations in a poster or presentation. ○ **Output:** A "Pitch Presentation" where each team presents their plan to the class. ○ **Purpose:** Builds entrepreneurial skills and applies knowledge in a practical, creative context. **Assessment Ideas** • **Group Outputs:** Debate board, comparative charts, business plan posters. • **Individual Reflection:** Short journal entry on **"Which organic agriculture career or venture best fits my skills and community needs, and why?"** **Performance Task:** Evaluate presentations using rubrics for analysis, creativity, and application.	*This part of the lesson is **reflective:** learners are guided to evaluate and justify choices, strengthening critical thinking and personal insight.*

Score	Content Accuracy	Engagement	Collaboration	Critical Thinking
4 – Excellent	Responsibilities, challenges, and opportunities are explained with clarity and depth; no factual errors.	Highly creative role-play; actively engages peers with enthusiasm.	Significant contribution to chart; ideas are well-organized and insightful.	Strong analysis; clearly differentiates career opportunities with logical reasoning.
3 – Good	Mostly accurate with minor gaps; explanations are clear but not fully detailed.	Creative effort shown; participates consistently in role-play.	Contributes useful information to chart; ideas are relevant but may lack depth.	Demonstrates analysis; differentiates opportunities with some clarity.
2 – Fair	Some inaccuracies or vague explanations; responsibilities and challenges only partially addressed.	Limited creativity; participation in role-play is minimal or inconsistent.	Contributes occasionally; ideas may be incomplete or lack relevance.	Basic differentiation; analysis is superficial or unclear.
1 – Needs Improvement	Explanations are inaccurate, unclear, or missing key elements.	Little to no creativity; does not engage in role-play.	Rarely contributes to chart; ideas are irrelevant or absent.	No meaningful analysis; unable to differentiate career opportunities.

Day 3

1**. Activating Prior Knowledge**

1. **Concept Recall: "What Do You Know?"**
    - **Purpose:** Build conceptual understanding.
    - **Activity:** Ask students to brainstorm what they already know about farming practices in their community. Write their ideas on the board and highlight any mention of "organic" or "natural" methods.
    - **Output:** A word cloud or list of familiar farming practices.

	2. **Think-Pair-Share: "Healthy or Harmful?"** o **Purpose:** Develop analytical skills. o **Activity:** Present everyday farming inputs (e.g., chemical fertilizer, compost, pesticides, crop rotation). Students first think individually, then pair up to classify them as "healthy/sustainable" or "harmful/conventional." o **Output:** A simple chart comparing organic vs. conventional practices. 3. **Community Connection: "Farming Around Us"** o **Purpose:** Cultivate positive values. o **Activity:** Invite students to share stories of local farmers or family practices they've observed. Guide them to reflect on how these practices affect health, environment, and livelihood. o **Output:** Short sharing session or reflection notes linking farming practices to sustainability and community well-being. 2. **Establishing the Purpose of the Lesson** At the end of the lesson, the learners should be able to: a. grasp the meaning and benefits of organic agriculture, establishing a strong foundation for deeper study b. compare organic and conventional farming practices through a simple chart activity, fostering critical thinking and differentiation skills. c. To encourage learners to appreciate sustainable farming methods, promoting attitudes of responsibility toward health, the environment, and community well-being.	

C. Demonstrating Knowledge and Skills	**1. FINDING PRACTICAL APPLICATION** **Scenario: Local Agritourism and Organic Farming** Imagine that in your town, a small family-owned farm has recently opened its doors to visitors as an **agritourism site**. The farm grows organic vegetables, raises free-range chickens, and produces homemade organic fertilizers. Families visit on weekends to learn about composting, crop rotation, and how organic farming supports **food security** and **environmental conservation**. Some learners may have relatives who farm rice, vegetables, or livestock, while others may have seen organic products sold in local markets or supermarkets. The farm also partners with a nearby **farm-to-table restaurant**, which uses their organic produce for healthy meals. **Teacher Prompt** • "Think about farms or food businesses you know in our community. How are they similar to or different from this scenario?" • "What challenges might this farm face in terms of costs, certification, or market access?" • "If you were part of this farm, what career role or business idea would you pursue?" **Activity: "Farm Practice Comparison Workshop"** **Steps:** 1. **Group Assignment:** o Divide the class into small groups.	*This activity helps learners use what they've learned in a hands-on and creative way by imagining themselves as farm planners. It gives them a chance to make real-life decisions based on what's possible in their own community. At the same time, it builds their confidence, encourages creative thinking, and strengthens their ability to solve problems. These skills are important for someone working in agriculture today. It is* ***inclusive*** *because every learner gets a chance to design their own farm, allowing for differentiated responses that respect diverse learning styles, interests, and backgrounds. This activity is* ***integrative*** *integrating earlier knowledge like types of planting materials, crop characteristics, and environmental factors tying it all together in a meaningful context. Lastly, it is* ***innovative*** *allowing learners to think like young agricultural entrepreneurs, creatively planning for yield, sustainability, and resource management.*

	○ Each group is tasked to research or recall farming practices from their community (e.g., fertilizer use, pest control, crop rotation). 2. **Chart Creation (Knowledge → Skills):** ○ Groups create a **comparison chart** with two columns: **Organic Farming** vs. **Conventional Farming**. ○ They list at least 3 practices under each category (e.g., compost vs. chemical fertilizer, beneficial insects vs. pesticides). 3. **Mini Presentation (Skills):** ○ Each group presents their chart to the class, explaining the differences and highlighting the benefits of organic methods. ○ Encourage them to give real-life examples from their community or family farms. 4. **Reflection (Attitude):** ○ After presentations, students write a short reflection: **"Why do I think organic farming is important for health, environment, and community?"** **Output:** • A group comparison chart (visual evidence of knowledge and skills). • A short reflection note (evidence of attitude and values).	

	2. Making Generalization Teacher's Prompt: "From what we've discussed, how does organic farming differ from conventional farming, and why is it important for both our health and the environment? Let's reflect on how these practices can shape the future of agriculture in our communities." **Sample Answer** Organic farming is an approach to agriculture that relies on natural methods such as composting, crop rotation, and biological pest control instead of synthetic chemicals. It produces healthier food, protects the environment, and supports sustainable communities. By comparing organic and conventional farming, learners can recognize how organic practices nurture soil fertility, biodiversity, and food security, while conventional methods often depend on synthetic inputs that may harm ecosystems. This highlights the importance of responsible farming that balances productivity with care for people and nature. **3. Evaluating Learning** **Teacher's Prompt** "To check if you have mastered our lesson on organic farming, I'd like you to do two things: First, explain in your own words the meaning and benefits of organic agriculture. Second, complete a simple chart comparing organic and conventional farming practices, highlighting at least three differences. Finally, share one reflection on why organic farming is important for our health, environment, or community. Through this, I will see how well you understand the concepts,	

	can apply your skills, and appreciate the values we discussed." **4. Additional Activities** **1. Poster-Making: "Organic vs. Conventional Farming"** • **Purpose:** Reinforce knowledge and creativity. • **Activity:** Learners design posters showing the differences between organic and conventional farming, highlighting benefits of organic practices. • **Output:** Visual materials that can be displayed in the classroom or school bulletin board. **2. Role Play: "Farmer's Choice"** • **Purpose:** Apply skills in decision-making. • **Activity:** Groups act out scenarios where a farmer must choose between organic and conventional methods. They present the advantages and disadvantages of each choice. • **Output:** Short skits demonstrating understanding of farming practices and their impacts. **3. Community Interview** • **Purpose:** Connect lesson to real-life context. • **Activity:** Learners interview local farmers or family members about their farming practices, then share findings in class. • **Output:** Reflection notes or oral reports linking classroom learning to community realities. **4. Sustainability Pledge** • **Purpose:** Develop positive attitudes. • **Activity:** Each learner writes a short pledge on how they can support sustainable farming or eco-friendly practices in daily life.	

Output: A collective "class pledge wall" promoting responsibility and values.

Criteria	Weight	4 – Excellent	3 – Proficient	2 – Developing	1 – Needs Improvement
Understanding of Concepts	40%	Demonstrates thorough and accurate understanding of concepts; explanations are clear and well-supported.	Shows good understanding with minor inaccuracies or gaps.	Shows partial understanding; explanations lack depth or clarity.	Shows little or no understanding; explanations are inaccurate or missing.
Decision-Making Presentation	30%	Presentation is clear, logical, and persuasive; decisions are well-justified with strong evidence.	Presentation is generally clear with some justification; minor lapses in logic or persuasiveness.	Presentation is somewhat unclear; decisions lack strong justification.	Presentation is unclear, poorly structured, or lacks justification.
Teamwork & Participation	20%	Actively participates, collaborates effectively, and contributes meaningfully to group tasks.	Participates and collaborates but with occasional lapses.	Limited participation; relies on peers to complete tasks.	Rarely participates; shows lack of cooperation.
Creativity	10%	Proposes highly innovative and practical ideas that enhance the activity.	Proposes somewhat innovative ideas with practical application.	Ideas are basic, with little originality or practicality.	Ideas are repetitive, impractical, or missing.

2. Making Generalization

Teacher's Prompt:

"From what we've discussed, how does organic farming differ from conventional farming, and why is it important for both our health and the environment? Let's reflect on how these practices can shape the future of agriculture in our communities."

	Sample Answer Organic farming is an approach to agriculture that relies on natural methods such as composting, crop rotation, and biological pest control instead of synthetic chemicals. It produces healthier food, protects the environment, and supports sustainable communities. By comparing organic and conventional farming, learners can recognize how organic practices nurture soil fertility, biodiversity, and food security, while conventional methods often depend on synthetic inputs that may harm ecosystems. This highlights the importance of responsible farming that balances productivity with care for people and nature. **3. EVALUATING LEARNING** **Teacher's Prompt** "To check if you have mastered our lesson on organic farming, I'd like you to do two things: First, explain in your own words the meaning and benefits of organic agriculture. Second, complete a simple chart comparing organic and conventional farming practices, highlighting at least three differences. Finally, share one reflection on why organic farming is important for our health, environment, or community. Through this, I will see how well you understand the concepts, can apply your skills, and appreciate the values we discussed." **4. ADDITIONAL ACTIVITIES** ***Day 4 and 5*** **1. Poster-Making: "Organic vs. Conventional Farming"** • **Purpose:** Reinforce knowledge and creativity.	

	• **Activity:** Learners design posters showing the differences between organic and conventional farming, highlighting benefits of organic practices. • **Output:** Visual materials that can be displayed in the classroom or school bulletin board. **2. Role Play: "Farmer's Choice"** • **Purpose:** Apply skills in decision-making. • **Activity:** Groups act out scenarios where a farmer must choose between organic and conventional methods. They present the advantages and disadvantages of each choice. • **Output:** Short skits demonstrating understanding of farming practices and their impacts. **3. Community Interview** • **Purpose:** Connect lesson to real-life context. • **Activity:** Learners interview local farmers or family members about their farming practices, then share findings in class. • **Output:** Reflection notes or oral reports linking classroom learning to community realities. **4. Sustainability Pledge** • **Purpose:** Develop positive attitudes. • **Activity:** Each learner writes a short pledge on how they can support sustainable farming or eco-friendly practices in daily life. • **Output:** A collective "class pledge wall" promoting responsibility and values..	

	<table><tr><th>Criteria</th><th>Weight</th><th>4 – Excellent</th><th>3 – Proficient</th><th>2 – Developing</th><th>1 – Needs Improvement</th></tr><tr><td><u>Sincerity & Relevance of Pledge</u></td><td>40%</td><td>Pledge is heartfelt, highly relevant, and strongly connected to the purpose of the activity.</td><td>Pledge is sincere and relevant but lacks depth or strong connection.</td><td>Pledge shows limited sincerity or partial relevance.</td><td>Pledge is insincere, irrelevant, or missing.</td></tr><tr><td><u>Clarity of Expression</u></td><td>30%</td><td>Ideas are expressed clearly, confidently, and fluently; message is easy to understand.</td><td>Ideas are generally clear but with minor lapses in fluency or confidence.</td><td>Ideas are somewhat unclear; message is difficult to follow.</td><td>Ideas are confusing, poorly expressed, or incomplete.</td></tr><tr><td><u>Creativity in Presentation</u></td><td>20%</td><td>Presentation is highly creative, engaging, and enhances the pledge's impact.</td><td>Presentation shows some creativity and engagement.</td><td>Presentation is basic, with little originality or impact.</td><td>Presentation is repetitive, unoriginal, or missing.</td></tr><tr><td><u>Participation</u></td><td>10%</td><td>Actively participates, contributes meaningfully, and shows enthusiasm.</td><td>Participates but with occasional lapses in engagement.</td><td>Limited participation; relies on peers to complete the activity.</td><td>Rarely participates; shows lack of involvement.</td></tr></table>	
VI. ASSESSMENT	*This section will serve as a culminating assessment intended to evaluate the entire unit, including both the Content Standard and the Performance Standard.* **1. What is the main principle of organic farming?** A. Use of synthetic fertilizers B. Reliance on natural methods C. Heavy use of pesticides D. Maximizing yield at all costs **Answer:** B **2. Which of the following is a benefit of organic farming?** A. Increased chemical residue in food B. Improved soil fertility C. Higher pollution levels D. Reduced biodiversity **Answer:** B	

	3. What material is commonly used as fertilizer in organic farming? A. Compost and manure B. Synthetic nitrogen fertilizer C. Chemical pesticides D. Plastic mulch **Answer:** A **4. Which practice is typical of conventional farming?** A. Crop rotation B. Use of chemical pesticides C. Composting D. Integrated pest management **Answer:** B **5. Organic farming contributes to which of the following?** A. Soil degradation B. Environmental sustainability C. Increased chemical dependency D. Higher pollution levels **Answer:** B **6. What is one difference between organic and conventional farming?** A. Organic farming uses synthetic fertilizers, conventional does not B. Organic farming avoids synthetic chemicals, conventional relies on them C. Both use the same pest control methods D. Conventional farming promotes biodiversity more than organic **Answer:** B **7. Which of the following is NOT a benefit of organic farming?** A. Healthier food B. Reduced pollution C. Increased biodiversity D. Higher chemical residue in crops **Answer:** D **8. In organic farming, pest control is often achieved through:** A. Chemical sprays B. Beneficial insects and natural methods C. Genetic modification

	D. Burning fields **Answer:** B **9. Why do many consumers prefer organic products?** A. They are cheaper B. They are believed to be healthier and eco-friendly C. They are more chemically treated D. They are mass-produced **Answer:** B **10. What value does organic farming promote among communities?** A. Profit maximization only B. Responsibility and care for health and environment C. Dependence on synthetic inputs D. Ignoring biodiversity **Answer:** B
VII. REFLECTION	Reflect on this Short Answer Questions 1. How did these activities ensure that learning was relevant to community realities, reflective of future career paths, and supportive of applied skill development? 2. Why do experiential and interactive approaches reinforce the importance of teaching organic agriculture effectively?
VIII. USE OF GENERATIVE AI	In preparing this Learning Exemplar (LE), the author(s) used Copilot in order to generate more learning activities. The author(s) reviewed and finalized the writing of the content. The author(s) take(s) full responsibility for the content of this LE.

LESSON EXEMPLAR			
Learning Area	**ORGANIC AGRICULTURE PRODUCTION**	**Grade Level**	**11**
Term	**1**	**Lesson Exemplar**	**2**

I. OBJECTIVES	
A. Content Standard	The learners demonstrate understanding of principles in overview of organic agriculture production, maintenance of farm tools, materials and equipment, establish nursery for organic vegetable production, planting, and harvest and post-harvest handling operation following industry practices.
B. Performance Standard	The learners perform maintenance of farm tools, materials and equipment, nursery establishment, planting operation and harvest and post-harvest handling operation following safety precautions
C. Learning Competencies	Perform maintenance of farm tools, materials, and equipment following safety precautions
II. REFERENCES and MATERIALS	REFERENCES : Department of Education. (2013). *K to 12 Basic Education Curriculum: Agri-Fishery Arts Specializations*. Department of Education, Philippines. Retrieved from https://www.deped.gov.ph Education in Philippines. (n.d.). *Organic Agriculture (NC II) Curriculum Guide – K to 12 Agri-Fishery Arts*. Retrieved March 27, 2026, from https://educationinphilippines.com Learning Resource Center – LRMDS. (n.d.). *K to 12 Basic Education Curriculum: Organic Agriculture NC II*. Department of Education, Philippines. Retrieved March 27, 2026 TESDA. (2013). *Training Regulations for Organic Agriculture Production NC II*. Technical Education and Skills Development Authority, Philippines. Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD). (2019). *Organic Agriculture Research and Development Highlights*. Los Baños, Laguna: Department of Science and Technology.
III. CONTENT	Farm tools, materials and equipment, types of maintenance, and maintenance activities
IV. OBJECTIVES	At the end of the lesson, the learners should be able to: a. Discuss the types of maintenance-preventive, corrective, and scheduled- for farm tools, materials, and equipment, and b. Perform maintenance of farm tools, materials, and equipment following safety precautions c. demonstrate proper safety precautions you be observed during each maintenance activity.

V. PROCEDURES		ANNOTATIONS
A. Activating Prior Knowledge	At the end of the lesson, the learners should be able to: a. Discuss the types of maintenance-preventive, corrective, and scheduled-for farm tools, materials, and equipment, and b. Perform maintenance of farm tools, materials, and equipment following safety precautions c. Demonstrate proper safety precautions to be observed during each maintenance activity.	The teacher should provide pictures or actual samples of farm tools, materials and equipment learners will gain competence in classifying and maintain farm tools responsibly, while developing discipline and teamwork essential for safe and sustainable agricultural practices
B. Instituting New Knowledge	**1. Presenting Examples** **Activity: "Tool Gallery Walk"** **Procedure**: Display actual farm tools/equipment or picture cards around the classroom. Learners walk around, observe, and classify each item as a tool or equipment. **Teacher's Prompt**: "Look closely at each item. Is it a tool or equipment? What is its specific function in farming?" **Expected Outcome**: Learners classify farm tools and equipment by functions. **Activity: "Safety First Brainstorm"** • **Procedure**: In groups, learners list possible risks in handling farm tools such as cuts, slips, misuse." Then, they brainstorm safety precautions to prevent these risks. Each group presents their list. • **Teacher's Prompt**: "What accidents might happen if tools are not handled properly? How can we prevent them? Let's share our safety rules." • **Expected Outcome**: Learners articulate safety precautions and connect them to real-life farming situations.	These activities transform the lesson into a **bridge between knowledge and practice**, equipping learners with critical and reflective competencies

	Activity: "Maintenance Relay Challenge" • **Procedure**: Learners form teams. Each team is assigned a set of tools (real or simulated). They perform maintenance tasks in sequence: cleaning → sharpening → lubricating → storing. Teams reflect on how cooperation and discipline made task easier. • **Teacher's Prompt**: "Work together to maintain your assigned tools. Notice how teamwork, discipline, and organization help you finish faster and safer." • **Expected Outcome**: Learners demonstrate responsibility and teamwork while practicing proper maintenance activities. 2. **Discussing New Concept** **Scenario** "Imagine two farmers in the same village. Farmer A always cleans his tools after use, sharpens blades regularly, and stores everything properly. His tools last for years, and his work is always safe and efficient. Farmer B, however, leaves his tools dirty, rusty, and scattered around. Soon, his hoe breaks, his sprayer clogs, and he spends more time fixing problems than farming. Which farmer do you think is more productive and responsible? This shows us that farming doesn't only depend on having tools—it depends on how we care for them. Proper maintenance makes work easier, faster, and safer." ***B. Discussion*** **A. Farm Tools, Materials, and Equipment** 1. **Farm Tools** – handheld implements used in basic farm operations (e.g., hoe, rake, spade).	This lesson equips learners to classify farm tools, materials, and equipment, apply proper maintenance practices, and develop responsibility and teamwork—ensuring safe, efficient, and sustainable farming operations

	○ *Function*: For digging, cultivating, and preparing soil. 2. **Farm Materials** – consumable items used in farming (e.g., fertilizers, pesticides, seeds, ropes). ○ *Function*: For plant growth, pest control, and support. 3. **Farm Equipment** – larger implements, often mechanized (e.g., tractor, sprayer, thresher). ○ *Function*: For heavy-duty tasks like plowing, spraying, or harvesting. **B. Types of Maintenance** 1. **Preventive Maintenance** – regular care to avoid damage (e.g., cleaning after use, oiling). 2. **Corrective Maintenance** – repair or replacement when tools/equipment are damaged. 3. **Scheduled Maintenance** – planned servicing at specific intervals (e.g., monthly sharpening, annual check-up). **C. Maintenance Activities** • **Cleaning** – removing dirt and residues after use. • **Sanitation/Disinfection** – ensuring tools are free from harmful organisms. • **Sharpening** – keeping blades effective and safe. • **Lubrication** – reducing friction in moving parts. • **Storing** – keeping tools in proper places to prevent damage and accidents.	

	Day 7 **2. Developing Mastery** **Teacher's Prompt:** "Farmers succeed when they use the right tool for the right task and care for it properly. In this activity, you will classify tools, demonstrate how to maintain them, and create a schedule to ensure they last longer. Work together as a team—your discipline and cooperation will show how farming is not just about tools, but about responsibility and sustainability." TASK: Maintenance Demonstration • Select one tool from your group's set. • Demonstrate its proper maintenance (cleaning, sharpening, lubricating, storing).	Learners applied their knowledge by designing maintenance schedules for farm tools, demonstrating responsibility, discipline, and teamwork. The activity reinforced efficiency, safety, and sustainability in farming practices while integrating both technical skills and values.
C. Demonstrating Knowledge and Skills	**1. Finding Practical Application** **Activity:** *Maintenance Schedule Chart* • In groups, learners design a simple chart showing when and how to clean, sharpen, lubricate, and store selected farm tools. • **Teacher's Prompt:** "Work together to create a maintenance schedule for your tools. Think about how cleaning, sharpening, lubricating, and storing should be done regularly. Notice how teamwork and discipline make the task easier and more effective." **2. Making Generalization** Teacher's Prompt: "How does properly classifying and maintaining farm tools show responsibility, discipline, and teamwork in farming?"	

	3. Evaluating Learning **Teacher's Prompt** "Now that we've explored farm tools, materials, and equipment, let's see how well you've mastered the lesson. Can you correctly classify the items I will show as tools, materials, or equipment? Next, demonstrate how you would maintain one of these implements—whether by cleaning, sharpening, lubricating, or storing. Finally, explain why practicing safety, responsibility, and teamwork in caring for farm tools is important for efficient and sustainable farming." **4. Additional Activities** **Activity:** Maintenance Schedule Chart Learners create a weekly or monthly chart for maintaining selected farm tools (e.g., hoe, sprayer, rake). **Teacher's Prompt:** "Plan ahead! Create a schedule that shows when and how each tool should be cleaned, sharpened, or stored. This will help ensure efficiency and safety in farming."	Learners demonstrated mastery by accurately classifying farm tools and equipment, performing proper maintenance practices, and articulating the importance of safety, responsibility, and teamwork. Their performance shows readiness to apply these skills and values in real-world farming for efficiency and sustainability
VI. ASSESSMENT	Multiple Choice **1.** Which of the following is considered a farm tool? a. Tractor b. Hoe c. Sprayer d. Thresher **Answer: b. Hoe** **2.** Farm materials are best described as: a. Simple handheld implements b. Consumable items used in farming c. Large mechanized implements d. Heavy-duty machines for plowing **Answer: b. Consumable items used in farming**	

	3. Which type of maintenance involves regular care to avoid damage? a. Corrective maintenance b. Scheduled maintenance c. Preventive maintenance d. Emergency maintenance **Answer: c. Preventive maintenance** **4.** Why is sharpening important in maintaining farm tools? a. It reduces friction in moving parts b. It keeps blades effective and safe c. It disinfects harmful organisms d. It prevents rusting during storage **Answer: b. It keeps blades effective and safe** **5.** Responsible care of farm tools reflects: a. Efficiency only b. Discipline and teamwork c. Knowledge of farming techniques d. Corrective maintenance alone **Answer: b. Discipline and teamwork** 6. Before sharpening a tool, what should be checked first? a. The weather b. The tool's condition c. The storage area d. The lubricant **b. The tool's condition** 7. Which material is commonly used to lubricate farm tools? a. Water b. Oil c. Soap d. Vinegar **b. Oil** 8. Proper cleaning of farm tools after use prevents: a. Rust b. Breakage c. Overheating d. Dust **a. Rust**

	9. Storing tools in a dry place prevents: a. Rusting b. Sharpening c. Lubrication d. Breakage **a. Rusting** 10. Which step is part of scheduled maintenance? a. Cleaning tools after every use b. Repairing broken handles c. Buying new tools d. Ignoring minor damage **a. Cleaning tools after every use** 11. What should be worn when sharpening tools? a. Gloves b. Slippers c. Sunglasses d. Hat **a. Gloves** 12. When cleaning tools, what safety precaution should be observed? a. Use bare hands b. Avoid strong chemicals c. Store tools wet d. Ignore rust **b. Avoid strong chemicals** 13. Why should tools be handled carefully during maintenance? a. To avoid accidents b. To save time c. To look professional d. To impress others **a. To avoid accidents** 14. Which safety precaution is important when lubricating tools? a. Apply oil near fire b. Use proper amount of oil c. Store tools immediately after use d. Ignore excess oil

	b. Use proper amount of oil 15. What is the safest way to carry sharp tools after maintenance? a. Pointing upward b. Pointing downward c. Holding loosely d. Carrying in pockets **b. Pointing downward**
VII. REFLECTION	Facilitating the lesson showed that hands-on, collaborative activities strengthened learners' technical skills while nurturing responsibility, discipline, and teamwork. This affirmed the value of integrating knowledge, skills, and values to prepare students for sustainable agricultural practices.
VIII. USE OF GENERATIVE AI	In preparing this Learning Exemplar (LE), the author(s) used Copilot in order to find more learning activities and resources. The author(s) reviewed and finalized the writing of the content. The author(s) take(s) full responsibility for the content of this LE.

LESSON EXEMPLAR			
Learning Area	**ORGANIC AGRICULTURE PRODUCTION**	**Grade Level**	**11**
Term	**1**	**Lesson Exemplar**	**3**

I. OBJECTIVES	
A. Content Standard	The learners demonstrate understanding of principles in overview of organic agriculture production, maintenance of farm tools, materials and equipment, establish nursery for organic vegetable production, planting, and harvest and post-harvest handling operation following industry practices.
B. Performance Standard	The learners perform maintenance of farm tools, materials and equipment, nursery establishment, planting operation and harvest and post-harvest handling operation following safety precautions
C. Learning Competencies	Discuss the overview of Organic Agriculture Production
II. REFERENCES and MATERIALS	**A. REFERENCES** - TESDA Training Regulations for OAP NC II - Department of Agriculture – Bureau of Agriculture and Fisheries Standards (BAFS) - RA 10068 (Organic Agriculture Act of 2010) - PhilGAP Manual and PNS Guidelines - Manila paper, markers, and reference handout **B. MATERIALS** Pictures, video clip, power point presentation, laptop/ tablets, smart TV, activity sheets, internet connectivity, actual tools, implements and equipment
III. CONTENT	Laws and Regulations o Occupational Safety Health Standard (OSHS) o Philippine National Standard (PNS) o Philippine Good Agricultural Practices (PHILGAP) o Organic Agriculture Act 0f 2010 (RA 10068) o Certification System

IV. OBJECTIVES	At the end of the lesson, learners should be able to: 1. Identify key provisions of RA 10068, OSHS, PNS, and PhilGAP. 2. Explain the importance of occupational safety and national standards in organic farming. 3. Discuss the role of certification systems in ensuring product integrity. 4. Demonstrate awareness of compliance with laws and standards through group activities	
V. PROCEDURES		**ANNOTATIONS**
A. Activating Prior Knowledge	At the end of the lesson, learners should be able to: 1.1. Identify key provisions of RA 10068, OSHS, PNS, and PhilGAP. 1.2. Explain the importance of occupational safety and national standards in organic farming. 1.3. Discuss the role of certification systems in ensuring product integrity. 1.4. Demonstrate awareness of compliance with laws and standards through group activities	
B. Instituting New Knowledge	1. **Presenting Examples** Group Activity – "Law in Action" (25 minutes) • Divide learners into five groups. • Each group researches one topic: OSHS, PNS, PhilGAP, RA 10068, Certification System. • Groups create **a** visual chart or infographic **summarizing**: ○ Purpose of the law/standard ○ Key provisions ○ Impact on farmers and consumers	

Criteria	Excellent (4)	Proficient (3)	Developing (2)	Needs Improvement (1)
Content Accuracy	Laws/standards explained clearly with accurate examples	Mostly accurate with minor gaps	Partial accuracy; vague explanations	Inaccurate or missing
Participation	Actively engages, contributes meaningful ideas	Participates consistently	Limited participation	Rarely participates
Clarity of Presentation	Ideas are well-structured and easy to follow	Generally clear with minor lapses	Somewhat unclear	Confusing or incomplete

2. **Discussing New Concept**

- Groups present their outputs.
- Teacher facilitates discussion connecting all laws into a unified system of agricultural governance.

Criteria	Weight	Description
Content Accuracy	40%	Correct identification and explanation of laws and standards
Creativity & Organization	30%	Clear, engaging, and well-organized presentation

Teacher's Prompt

"We have learned about **OSHS, PNS, PhilGAP, RA 10068, and the Certification System**. Think about how these laws and standards connect to your daily life and future work in agriculture.

- Why do you think safety and standards are necessary in farming?

Collaboration	20%	Active participation and teamwork
Reflection Quality	10%	Depth of insight and connection to real-life application

B. DISCUSSION

Activity 1: Law in Focus – Jigsaw Learning

- Procedure:
  - Divide the class into five groups.
  - Assign each group one topic: OSHS, PNS, PhilGAP, RA 10068, and Certification System.
  - Each group researches and prepares a summary chart of:
    - Purpose of the law/standard
    - Key provisions
    - Impact on farmers and consumers
  - Groups present their findings to the class.

Activity 2: Case Scenario Analysis

- Procedure:
  - Provide learners with short scenarios (e.g., a farmer injured due to unsafe tool use, a farm applying for organic certification, a cooperative adopting PhilGAP).
  - Learners identify which law/standard applies and explain how compliance addresses the issue.
  - Groups share their answers and discuss practical applications.

- How do these laws protect not only farmers but also consumers and the environment?
- If you were a farmer, which of these standards would you prioritize first, and why?
- How can compliance with these laws improve the credibility and sustainability of organic agriculture in the Philippines?”

	Activity 3: "Compliance Matters" Poster Creation • Procedure: ○ Learners design a poster that visually represents one law/standard and its importance. ○ Posters should highlight benefits of compliance (e.g., worker safety, consumer trust, environmental sustainability). ○ Display posters in the classroom for reinforcement. 3. **Developing** Activity: "Law-to-Life Application Workshop" Learners will connect abstract laws and standards to practical farming situations, thereby developing new knowledge through application and analysis. Procedure: **1.** Group Assignment: ○ Divide the class into 4 groups. ○ Assign each group one focus area: OSHS, PNS, PhilGAP, RA_10068 & Certification System. **2.** Scenario Development: ○ Each group is given a farming scenario (e.g., unsafe tool use, improper waste disposal, farm applying for certification, farmer selling organic produce). ○ Groups analyze the scenario and apply their assigned law/standard to propose solutions.	**Teacher's Prompt** "We have studied OSHS, PNS, PhilGAP, RA 10068, and Certification Systems. Now, let's think critically: • How do these laws and standards protect farmers, consumers, and the environment? • What might happen if these standards are ignored in real farming situations? • Can you connect these laws to practices you see in your community? • How do these standards build trust in organic agriculture products?"

3. Knowledge Sharing:
- Groups present their solutions in a **"**Law-to-Life Chart"**:**
  - Problem Identified
  - Applicable Law/Standard
  - Proposed Solution
  - Expected Outcome

4. Class Discussion:
- Teacher facilitates a discussion linking all outputs, showing how laws and standards work together to ensure safe, sustainable, and credible agriculture**.**

Criteria	Excellent (4)	Proficient (3)	Developing (2)	Needs Improvement (1)
Application of Law/Standard	Correctly applies law to scenario with strong reasoning	Applies law with minor lapses	Limited or vague application	Incorrect or missing
Problem-Solution Analysis	Clear identification of problem and practical solution	Problem identified with basic solution	Problem or solution incomplete	No clear problem-solution link
Collaboration	Group works harmoniously, all members contribute	Most members contribute	Few members contribute	Minimal teamwork

C. Demonstrating Knowledge and Skills	Activity**:** "Compliance in Action" Demonstration Workshop Learners will demonstrate both knowledge (explaining laws/standards) and skills **(**applying them in simulated farming practices). Procedure: **1.** Group Division**:** o Form 4–5 groups. o Assign each group one focus area: OSHS, PNS, PhilGAP, RA_10068, Certification_System. **2.** Demonstration Task: o Each group prepares a short skit or demonstration showing: ▪ A farming scenario (e.g., tool handling, crop production, waste management, certification audit). ▪ The law/standard applied to solve the issue. ▪ The skills demonstrated (e.g., safe tool use, proper waste segregation, documentation for certification). **3.** Presentation: o Groups perform their demonstration in front of the class. o Each group explains the knowledge behind their actions (law/standard provisions) and the skills applied**.** **4.** Reflection: o Learners individually write:	"You have shown how OSHS, PNS, PhilGAP, RA 10068, and Certification Systems apply in real farming situations. Let's reflect: • What specific skills did you demonstrate that connect directly to these laws and standards? • How does applying these standards make farming safer and more sustainable? • Why is it important for farmers to not only know the law but also practice it daily? • How can these demonstrations inspire communities to adopt better agricultural practices?"

Criteria	Excellent (4)	Proficient (3)	Developing (2)	Needs Improvement (1)
Knowledge Demonstrated	Explains law/standard accurately during demo	Mostly accurate explanation	Limited or vague explanation	Inaccurate or missing
Skill Application	Demonstrates correct and safe practices	Minor lapses in skill application	Skills partially demonstrated	Skills missing or unsafe
Creativity & Engagement	Skit/demo is engaging and original	Some creativity shown	Basic or repetitive	No creativity
Reflection Quality	Insightful reflection connecting law to real life	Reflection shows some insight	Reflection is basic	Reflection missing

1. **Making Generalization**

Teacher's Prompt for Generalization

"We have discussed the different laws and standards that guide organic agriculture: **Occupational Safety and Health Standards (OSHS), Philippine National Standards (PNS), Philippine Good Agricultural Practices (PhilGAP), the Organic Agriculture Act of 2010 (RA 10068), and the Certification System**.

	• Looking at all these together, what common purpose do they serve in agriculture? • How do these laws and standards connect safety, quality, and sustainability? • Can we say that compliance with these regulations is not just about following rules, but about protecting farmers, consumers, and the environment? • Based on our discussion, what general statement can we make about the importance of these laws in ensuring trustworthy and sustainable organic farming?" **3. EVALUATING LEARNING** Teacher's Prompt for Evaluating Learning "We have explored the different laws and standards that guide organic agriculture: **Occupational Safety and Health Standards (OSHS), Philippine National Standards (PNS), Philippine Good Agricultural Practices (PhilGAP), the Organic Agriculture Act of 2010 (RA 10068), and the Certification System**. • Which of these laws or standards do you now understand most clearly, and why? • Can you explain how these standards protect farmers, consumers, and the environment in practical terms? • What new knowledge or skills did you gain that you can apply in real farming situations? • If you were to evaluate yourself, how confident are you in applying these laws and standards to	**Teacher's Prompt** "You acted as inspectors and applied OSHS, PNS, PhilGAP, RA 10068, and Certification Systems to real farming situations. Let's evaluate your learning: • Which problems were easiest to connect to a law or standard, and why? • How did your group's recommendations show

	ensure safe and sustainable agricultural practices?" **4. ADDITIONAL ACTIVITIES** Activity: "Compliance Audit Simulation" Learners will demonstrate their ability to apply laws and standards by simulating an **audit or inspection** of a farm's practices. Procedure: 1. Group Division: o Form groups of 4–6 learners. o Assign each group the role of farm inspectors. 2. Audit Task: o Teacher provides a mock farm profile (e.g., a farm with issues like unsafe tool use, improper waste disposal, uncertified organic produce). o Groups identify which law/standard applies (OSHS, PNS, PhilGAP, RA 10068, Certification System). o Groups prepare an audit checklist: ▪ Observed problem ▪ Applicable law/standard ▪ Recommended corrective action 3. Presentation: o Each group presents their audit findings to the class. o Teacher facilitates discussion on how compliance ensures safety, quality, and sustainability.	both knowledge and practical skills? • What did you realize about the importance of compliance in ensuring safe and sustainable farming? • If you were a farmer, how would you prepare your farm to pass such an audit?"

4. Reflection:
    - Learners individually write: *"Why is compliance with agricultural laws and standards important for farmers, consumers, and the environment?"*

Criteria	Excellent (4)	Proficient (3)	Developing (2)	Needs Improvement (1)
Audit Checklist Accuracy	Problems, laws, and solutions clearly identified	Mostly accurate with minor gaps	Partial identification	Inaccurate or missing
Critical Thinking	Recommendations are logical and practical	Recommendations somewhat clear	Limited reasoning	Weak or irrelevant
Presentation Clarity	Findings presented confidently and clearly	Generally clear	Somewhat unclear	Confusing or incomplete
Collaboration	Active teamwork, balanced contributions	Most members contribute	Few members contribute	Minimal teamwork

VI. ASSESSMENT

Multiple Choice Quiz

1. Which law ensures safe working conditions for farmers and agricultural workers?
    a. RA 10068
    b. OSHS
    c. PhilGAP
    d. PNS

	2. The Philippine National Standard (PNS) is primarily concerned with: a. Worker safety b. Product quality benchmarks c. Certification procedures d. Waste management 3. Which program promotes food safety, environmental protection, and worker welfare? a. OSHS b. PhilGAP c. RA 10068 d. Certification System 4. RA 10068 is also known as: a. Ecological Solid Waste Management Act b. Organic Agriculture Act of 2010 c. Philippine National Standards Act d. Good Agricultural Practices Act 5. Which system validates compliance with organic standards through accredited bodies? a. Certification System b. OSHS c. PNS d. RA 9003 6. Which of the following is NOT a focus of OSHS? a. Safe tool handling b. Proper storage of chemicals c. Market access for organic produce d. Accident prevention 7. PhilGAP emphasizes: a. Use of synthetic fertilizers b. Consumer education c. Food safety and sustainability d. Certification fees 8. RA 10068 was enacted to: a. Promote conventional farming b. Institutionalize organic agriculture nationwide c. Replace PhilGAP standards d. Focus only on livestock production

	9. Certification systems in agriculture are important because they: a. Increase farm size b. Build consumer trust c. Reduce farm labor d. Eliminate government support 10. Which law or standard directly addresses quality benchmarks for organic products? a. OSHS b. PNS c. PhilGAP d. RA 10068 11. Which of the following is a benefit of compliance with OSHS? a. Higher market prices b. Safer working environment c. Easier certification process d. Reduced taxes 12. PhilGAP contributes to sustainability by: a. Encouraging pesticide use b. Promoting eco-friendly farming practices c. Limiting organic certification d. Reducing consumer awareness 13. RA 10068 supports farmers by: a. Providing subsidies and training for organic practices b. Requiring chemical fertilizer use c. Removing certification requirements d. Limiting exports of organic produce 14. Certification systems ensure that: a. Farms meet organic standards before products reach consumers b. Farmers avoid paying taxes c. Conventional farming is prioritized d. OSHS is no longer necessary 15. The common purpose of OSHS, PNS, PhilGAP, RA 10068, and Certification Systems is to: a. Increase farm profits only b. Ensure safety, quality, and sustainability in agriculture

	c. Replace traditional farming completely d. Focus only on export markets **✅ Key to Correction** 1. b 2. b 3. b 4. b 5. a 6. c 7. c 8. b 9. b 10. b 11. b 12. b 13. a 14. a 15. b
VII. REFLECTION	Reflect on these Short Answer Questions: 1. How did these activities ensure that learning was relevant to community realities, reflective of future career paths, and supportive of applied skill development? 2. Why do experiential and interactive approaches reinforce the importance of teaching organic agriculture effectively?
VIII. USE OF GENERATIVE AI	In preparing this Learning Exemplar (LE), the author(s) used Copilot in order to generate more learning activities. The author(s) reviewed and finalized the writing of the content. The author(s) take(s) full responsibility for the content of this LE.

LESSON EXEMPLAR			
Learning Area	**ORGANIC AGRICULTURE PRODUCTION**	**Grade Level**	**11**
Term	**1**	**Lesson Exemplar**	**4**

I. OBJECTIVES	
A. Content Standard	The learners demonstrate understanding of principles in overview of organic agriculture production, maintenance of farm tools, materials and equipment, establish nursery for organic vegetable production, planting, and harvest and post-harvest handling operation following industry practices.
B. Performance Standard	The learners perform maintenance of farm tools, materials and equipment, nursery establishment, planting operation and harvest and post-harvest handling operation following safety precautions
C. Learning Competencies	Discuss the overview of Organic Agriculture Production
II. REFERENCES and MATERIALS	**A. REFERENCES** Technical Education and Skills Development Authority-Qualification Standards Office. *Training Regulations for OAP NC II.* Taguig City, Philippines: TESDA, 2012. Department of Agriculture, *Philippine National Standard-Organic Agriculture,* Quezon City, Philippines: BAFS, 2016. Retrieved from: http://www.bafs.da.gov.ph/accreditation/assets/documents/BAFS-PNS-OA-07-2016.pdf Department of Agriculture-Bureau of Animal Industry, *Pag-aalaga ng Native na Baboy,* Brgy. Lagalag, Tiaong, Quezon, Philippines: NSPRDC, 2014. Department of Science and Technology, *Organic Agriculture in the Philippines: A training Manual,* Los Baños, Laguna Philippines: PCARRD, 2014 (Reprint) www.dictionary.com Badgley C., Moghtader, J., Quintero, E., Zakem, E., Chappell, J., AvilésVázquez, K., Samulon, A and Perfecto, I. 2007. Organic Agriculture and the Global Food Supply. Renewable Agriculture and Food Systems. June 2007. Castro, A.D. 2011. Paper presented during the Roundtable Discussion on "How Sustainable is Organic Agriculture ?",14 March 2011, NAST, PHL. Hyatt Hotel and Casino, Manila. Dangour, A.D., S .K. Dodhia, A. Hayter, E. Allen, K. Lock and R. Uauy. 2009. Nutritional quality of organic foods: a systematic review. Am J Clin Nutr 90: 680 – 685.

	B. MATERIALS Pictures, video clip, power point presentation, laptop/ tablets, smart TV, activity sheets, internet connectivity, actual tools, implements and equipment	
III. CONTENT	Farm Waste Disposal Management ○ Solid Waste Management Act of 2000 (RA 9003) ○ Importance of Proper waste disposal ○ Reduce, Reuse and Recycles (3Rs)	
IV. OBJECTIVES	1. Farm Waste Disposal Management *1.1.* Explain the key provisions of RA 9003 and its role in promoting environmental sustainability.. *1.2.* Identify the environmental, health, and social impacts of improper waste management. *1.3.* Foster a culture of resource conservation and sustainable living among learners and communities 1.4 Create innovative projects or campaigns that showcase the application of the 3Rs and compliance with RA 9003.	
V. PROCEDURES		**ANNOTATIONS**
A. Activating Prior Knowledge	***Day 1*** 1**. Activating Prior Knowledge** This part of the lesson helps learners mastering farming practices and food products equips learners with **knowledge, skills, and values** that promote safe food, sustainable agriculture, and responsible citizenship. Ask: *"What do you already know about RA 9003 or proper waste disposal?"* *Activity: Waste Sorting Challenge* □ Distribute flashcards with waste items.	The teacher will ensure guided inquiry when asking questions to the learners. The SHS IDF present in this part of the of the plan is **relevant and reflective**. Relevant because learners will be able to see the immediate use and value of planting materials in daily life, community agriculture, or family livelihood. Reflective because the teacher's questions will prompt learners to reflect on personal or family experiences with planting,

	Learners decide whether each item should be **biodegradable, recyclable, or special waste** (linking to RA 9003 provisions). Briefly discuss why each item belongs in that category. 2. **Establishing the Purpose of the Lesson** At the end of the lesson, learners will be able to: *1.1* Explain the Provisions of RA 9003 *1. 2* Analyze the Impacts of Improper Waste Management *1.3* Apply Sustainable Waste Management Practices	deepening ownership of the learning. Further, it uses the following approaches: **Inclusive:** The use of realia and visual aids accommodates learners with different learning styles and literacy levels. **Ideational:** Students express ideas and prior knowledge about planting materials, fostering conceptual connections. Finally, it uses **experience** wherein learners share personal stories or family practices involving seeds and cuttings, valuing informal learning.
B. Instituting New Knowledge	1. **Presenting Examples** **Activity 1: *Provision Hunt – RA 9003 in Action*** **Teacher's Prompt:** "Class, let's explore the key provisions of RA 9003. I will give you short case scenarios (like a barangay setting up a Materials Recovery Facility or a household segregating waste). Your task is to identify which provision of RA 9003 applies to each scenario. Afterward, we'll discuss how these provisions promote environmental sustainability."	**Performance Task: *Community Waste Management Advocacy Campaign*** **Task Description** Learners will design and present a **mini-campaign plan** that promotes awareness and action on RA 9003 provisions, proper waste disposal, and the 3Rs (Reduce, Reuse, Recycle). The campaign should highlight the environmental, health, and social impacts of improper waste

	Activity 2: *Impact Carousel – What Happens If…* **Teacher's Prompt:** "Imagine improper waste disposal in your community—plastic thrown in rivers, garbage left uncollected, or burning of waste. In groups, list down the possible **environmental, health, and social impacts** of each situation. Write your answers on manila paper under three headings: Environmental, Health, Social. Then, rotate papers with other groups to add more ideas. This way, we'll see the wide-ranging effects of poor waste management." **Activity 3: *3Rs Challenge – From Waste to Resource*** **Teacher's Prompt:** "Now let's think of solutions. I'll show you common waste items (plastic bottles, old clothes, food scraps). For each item, suggest one way to **reduce**, one way to **reuse**, and one way to **recycle** it. Share your ideas with the class. This activity will help us see how the 3Rs can be applied in everyday life to support RA 9003 and sustainability." 2. **Discussing New Concept** **Activity 1: *Concept Discovery – RA 9003 Provisions***	management and propose practical solutions for the community. **Steps & Teacher's Prompts** 1. **Group Formation & Brainstorming** o *Teacher's Prompt:* "Form small groups. Imagine you are an advocacy team tasked to educate your community about RA 9003 and proper waste management. Brainstorm ideas for a campaign that will encourage people to practice the 3Rs and avoid improper disposal." **2. Campaign Design** Each group prepares: • A **slogan or tagline** (e.g., "Segregate Today, Save Tomorrow"). • A **poster or infographic** showing RA 9003 provisions and impacts of poor waste management.

	Teacher's Prompt: "Let's uncover the main provisions of RA 9003. I will present a short summary of the law, and you will highlight the parts that directly affect households, schools, and communities. Afterward, we'll discuss why these provisions are important for promoting environmental sustainability." **Activity Flow:** • Teacher presents a simplified chart of RA 9003 provisions (segregation, recycling centers, penalties, etc.). • Learners identify which provisions they already practice or see in their community. • Class discussion on how these provisions connect to sustainability. **Activity 2: *Cause-and-Effect Mapping – Impacts of Improper Waste Disposal*** **Teacher's Prompt:** "Think about what happens when waste is not properly managed. In groups, create a cause-and-effect diagram showing how improper disposal leads to environmental, health, and social problems. For example: *Unsegregated garbage → clogged drainage → flooding → health risks.*" **Activity Flow:** • Groups draw a simple flowchart or diagram. • Each group presents one chain of cause-and-effect.	• A **short skit, video, or role-play** demonstrating correct practices and consequences of neglect. *Teacher's Prompt:* "Decide how you will deliver your message—through posters, skits, or digital media. Make sure your campaign shows both the problems caused by improper waste disposal and the solutions offered by RA 9003 and the 3Rs." **2. Presentation & Reflection** • Groups present their campaign to the class. • After presentations, learners reflect on what they learned. *Teacher's Prompt:* "Present your campaign as if you are speaking to your barangay or school community. Afterward, reflect: How can these ideas be applied in real life? What role can you personally play in promoting environmental sustainability?"

	• Teacher connects their ideas to real-life community issues. **Activity 3: *Interactive Discussion – Linking 3Rs to Sustainability*** **Teacher's Prompt:** "Now let's connect solutions to these problems. For each type of waste we identified earlier, suggest one way to reduce, one way to reuse, and one way to recycle it. Share your ideas, and we'll see how the 3Rs directly support RA 9003 and sustainability goals." **Activity Flow:** • Teacher shows common waste items (plastic, paper, food scraps). • Learners brainstorm 3Rs applications. • Teacher emphasizes how these practices reduce negative impacts and align with RA 9003. ***B. DISCUSSION*** **SHORT DISCUSSION & EXAMPLES** 1. **Contextualize the Lesson** **Introduction to RA 9003** **Republic Act No. 9003**, enacted in **January 2001**, is officially titled the *Ecological Solid Waste Management Act of 2000*. It provides a comprehensive framework for managing solid	

waste in the Philippines, aiming to protect public health and the environment through sustainable practices.

The law promotes:

Waste segregation at source
Recycling and composting
Community participation
Institutional accountability

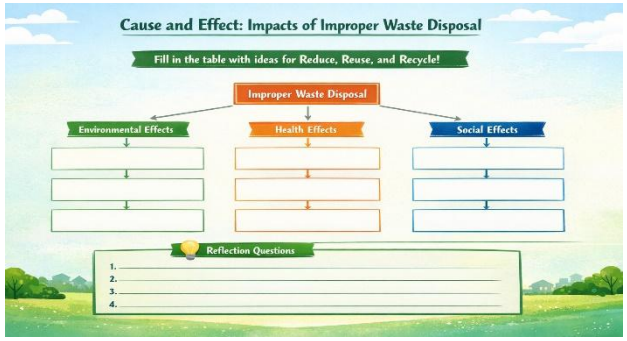
It created the **National Solid Waste Management Commission** and mandated **local Solid Waste Management Boards** to implement programs at the barangay, municipal, and city levels.

Provision	Description
Section 21	*Mandatory Segregation of Solid Waste at Source* – Households, schools, and businesses must separate biodegradable, recyclable, and residual waste.
Section 32	*Establishment of Materials Recovery Facility (MRF)* – Every barangay or cluster of barangays must set up an MRF to sort and process waste.
Section 36	*Waste Diversion Goals* – LGUs must divert at least 25% of waste from disposal facilities through reuse, recycling, and composting.
Section 48	*Prohibited Acts* – Includes littering, open burning, and unauthorized dumping. Violators may face fines or community service.
Section 50	*Citizen Suits* – Allows individuals or groups to file legal action against violators of the law.

🏠 **Provisions That Directly Affect Households, Schools, and Communities**

🏠 Households

- Must segregate waste at source (Section 21)
- Encouraged to compost biodegradable waste
- Prohibited from burning or dumping waste (Section 48)

	• 🏫 Schools • Expected to model proper segregation and recycling • Can partner with LGUs for MRFs and composting • Serve as education hubs for sustainability practices • 🏘️ Communities • Barangays must establish MRFs (Section 32) • LGUs must meet diversion targets (Section 36) • Community members can report violations or file suits (Section 50) • RA 9003 empowers every Filipino to be part of the solution. Whether through composting food scraps, recycling paper, or organizing clean-up drives, the law turns everyday actions into legal contributions to sustainability. Cause-and-Effect Mapping – Impacts of Improper Waste Disposal  	

	Linking 3Rs to Sustainability  3. **Developing** 1. apply knowledge in practical contexts. Activity Title: "Waste Watchers: From Law to Action" **Activity Flow:** 1. **Group Investigation** ○ Learners form groups and observe waste practices in school or community (e.g., unsegregated bins, burning waste, lack of composting). ○ Each group documents one issue and its effects.	*This station rotation activity transforms the classroom into an **interactive, learner-centered space** where students actively engage with various types of planting materials. Through movement, observation, and discussion, learners develop not just technical knowledge but also **critical thinking, social awareness, and problem-solving skills**.* ***Teacher's Prompt:** "Class, today you'll become Waste Watchers! Your mission is to investigate how RA 9003 works in real life. You'll explore your school or barangay, identify waste-related issues, and match them with specific provisions of RA 9003. Then, propose practical 3Rs-based solutions. Let's turn problems into sustainable actions!"*

	2. **Law Connection** ○ Groups identify which RA 9003 provision addresses the issue (e.g., Section 21 on segregation, Section 48 on prohibited acts). 3. **Solution Proposal** ○ Groups propose one **Reduce**, one **Reuse**, and one **Recycle** solution. ○ They present their findings in a visual format (poster, infographic, or short skit). 4. **Class Discussion** ○ Teacher facilitates a discussion connecting each group's findings to	*This part of the lesson is **reflective:** learners are guided to evaluate and justify choices, strengthening critical thinking and personal insight.*
C. Demonstrating Knowledge and Skills	**INDING PRACTICAL APPLICATION** Activity Title: "Eco Audit: Our Waste, Our Responsibility" Teachers Prompt : "Let's take action! You'll conduct a mini eco-audit of your classroom or school. Observe how waste is handled, identify what's being done right and what needs improvement. Then, link your findings to RA 9003 provisions and propose sustainable solutions using the 3Rs. This is your chance to turn knowledge into impact!" 🛠️ **Activity Flow:** 1. **Observation & Documentation** ○ Learners inspect waste bins, disposal areas, and daily practices in school. ○ They record types of waste, segregation practices, and any violations (e.g., mixed waste, burning, lack of composting).	

	2. **RA 9003 Connection** o Learners identify which provisions are being followed or violated (e.g., Section 21 on segregation, Section 48 on prohibited acts). o They explain the legal and environmental implications. 3. **Solution Planning** o Learners propose 3Rs-based solutions tailored to their school setting. o Examples: setting up labeled bins, composting food waste, reusing paper for notes. o **Presentation & Action** o Groups present their findings and solutions. o The class votes on one solution to implement as a pilot project. **2. Making Generalization** "Class, we've seen how improper waste disposal leads to serious problems, and how RA 9003 gives us solutions. Let's remember: every household, school, and community has a role to play. By practicing the 3Rs—reducing what we use, reusing what we can, and recycling what we must—we directly support the law and protect our environment. Think about one action you can start today, whether at home or in school, that shows your commitment to sustainable waste management."	

	3. EVALUATING LEARNING Knowledge (K): "Explain one key provision of RA 9003 in your own words. How does this law guide households, schools, or communities in managing waste properly?" Skills (S): "Using a real or imagined scenario, analyze the impacts of improper waste management. Show the chain of cause-and-effect and propose one practical solution using the 3Rs." Attitudes (A): "Reflect on your role as a student and community member. What personal action will you commit to that supports RA 9003 and promotes sustainability in your daily life?" **4. ADDITIONAL ACTIVITIES** "Class, imagine you are part of a community council tasked with solving waste problems in your barangay. Your group will design a simple project proposal that follows RA 9003 provisions, addresses the impacts of improper waste management, and applies the 3Rs. Present your idea as if you are pitching it to the community." 1. **Group Brainstorming** o Each group identifies one common waste issue in their community (e.g., unsegregated garbage, burning of plastics, lack of composting). 2. **RA 9003 Connection** o Groups link the issue to a specific RA 9003 provision (e.g., Section 21 on segregation, Section 32 on MRFs, Section 48 on prohibited acts).	

	3. **Solution Design** ○ Groups propose a practical project applying the 3Rs (Reduce, Reuse, Recycle). ○ Examples: setting up compost bins in school, organizing a recycling drive, or creating eco-bricks from plastic waste. 4. **Pitch Presentation** ○ Groups present their project in 3–5 minutes, highlighting the problem, RA 9003 provision, impacts, and their sustainable solution.	
VI. ASSESSMENT	📘 **Multiple Choice Items** **1.** RA 9003 is officially known as: A. Clean Air Act B. Ecological Solid Waste Management Act C. Water Code of the Philippines D. Climate Change Act **Answer:** B **2.** Which section of RA 9003 requires segregation of waste at source? A. Section 21 B. Section 32 C. Section 36 D. Section 48 **Answer:** A **3.** What is the main purpose of establishing a Materials Recovery Facility (MRF)? A. To burn waste safely B. To sort, recycle, and compost waste C. To store hazardous chemicals D. To collect taxes on waste disposal **Answer:** B	

4. Which of the following is a prohibited act under RA 9003?

A. Composting biodegradable waste
B. Recycling plastic bottles
C. Open burning of solid waste
D. Segregating waste at source

Answer: C

5. Improper waste disposal often leads to clogged drainage. What is the most likely effect?

A. Increased recycling rates
B. Flooding and health risks
C. Cleaner communities
D. Reduced landfill waste

Answer: B

6. Which of the following best represents the **Reduce** principle of the 3Rs?

A. Using scratch paper for notes
B. Composting food scraps
C. Printing double-sided to save paper
D. Selling tin cans to junk shops

Answer: C

7. Feeding suitable food scraps to animals is an example of:

A. Reduce
B. Reuse
C. Recycle
D. Segregate

Answer: B

8. Composting biodegradable waste supports which RA 9003 provision?

A. Section 21 – Segregation at Source
B. Section 32 – Establishment of MRF
C. Section 36 – Waste Diversion Goals
D. Section 50 – Citizen Suits

Answer: C

	9. Which of the following impacts is most directly linked to burning plastic waste? A. Soil erosion B. Respiratory illnesses C. Flooding D. Loss of biodiversity **Answer:** B **10.** Why is RA 9003 important for schools and communities? A. It provides guidelines for proper waste management and promotes sustainability. B. It allows open dumping of waste. C. It focuses only on industrial waste. D. It eliminates the need for recycling. **Answer:** A
VII. REFLECTION	Reflect on this Short Answer Questions 1. How did these activities ensure that learning was relevant to community realities, reflective of future career paths, and supportive of applied skill development? 2. Why do experiential and interactive approaches reinforce the importance of teaching organic agriculture effectively?
VIII. USE OF GENERATIVE AI	In preparing this Learning Exemplar (LE), the author(s) used Copilot in order to generate more learning activities. The author(s) reviewed and finalized the writing of the content. The author(s) take(s) full responsibility for the content of this LE.

LESSON EXEMPLAR			
Learning Area	**ORGANIC AGRICULTURE PRODUCTION**	**Grade Level**	**11**
Term	**1**	**Lesson Exemplar**	**5**

I. OBJECTIVES	
A. Content Standard	The learners demonstrate understanding of principles in overview of organic agriculture production, maintenance of farm tools, materials and equipment, establish nursery for organic vegetable production, planting, and harvest and post-harvest handling operation following industry practices.
B. Performance Standard	The learners perform maintenance of farm tools, materials and equipment, nursery establishment, planting operation and harvest and post-harvest handling operation following safety precautions
C. Learning Competencies	Perform maintenance of farm tools, materials, and equipment following safety precautions
II. REFERENCES and MATERIALS	REFERENCES : Department of Education. (2013). *K to 12 Basic Education Curriculum: Agri-Fishery Arts Specializations*. Department of Education, Philippines. Retrieved from https://www.deped.gov.ph Education in Philippines. (n.d.). *Organic Agriculture (NC II) Curriculum Guide – K to 12 Agri-Fishery Arts*. Retrieved March 27, 2026, from https://educationinphilippines.com Learning Resource Center – LRMDS. (n.d.). *K to 12 Basic Education Curriculum: Organic Agriculture NC II*. Department of Education, Philippines. Retrieved March 27, 2026 TESDA. (2013). *Training Regulations for Organic Agriculture Production NC II*. Technical Education and Skills Development Authority, Philippines. Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD). (2019). *Organic Agriculture Research and Development Highlights*. Los Baños, Laguna: Department of Science and Technology.
III. CONTENT	**Farm Tools, Materials, and Equipment** • **Farm tools** • **Materials** • **Equipment** **Types of Maintenance** • **Preventive** • **Corrective** • **Schedule** **Perform maintenance of farm tools, materials and equipment following safety precautions**

<table>
<tr><td>IV. OBJECTIVES</td><td colspan="2">At the end of the lesson, the learners should be able to:
a. Identify the different types of maintenance
b. Demonstrate proper maintenance techniques (cleaning, sharpening, lubricating, storing) on selected farm tools and equipment
c. Develop a sense of responsibility and discipline in caring for farm tools and equipment.</td></tr>
<tr><td colspan="2">V. PROCEDURES</td><td>ANNOTATIONS</td></tr>
<tr><td>A. Activating Prior Knowledge</td><td>Day 8

1. Activating Prior Knowledge

Procedure
1. Prepare three labeled cards/areas: PREVENTIVE, CORRECTIVE, and SCHEDULED.
2. Provide learners with scenario cards e.g.
o “Sharpening a bolo before planting season”
o “Replacing a broken handle of a hoe”
o “Cleaning tools every Friday afternoon”
3. Learners work in small groups to match each scenario to the correct type of maintenance.
4. Groups present their answers and explain their reasoning

2. Establishing the Purpose of the Lesson

At the end of the lesson, the learners should be able to:
a. Identify the different types of maintenance
b. Demonstrate proper maintenance techniques (cleaning, sharpening, lubricating, storing) on selected farm tools and equipment
c. Develop a sense of responsibility and discipline in caring for farm tools and equipment.</td><td>Teacher’s Prompt
“Class, before we dive deeper into tool maintenance, let’s recall what we already know. Imagine you are farmers preparing for the season. Some of you clean tools regularly, others fix them only when broken, and some follow a set schedule.

Which of these actions do you think belong to preventive, corrective, or scheduled maintenance? Work with your group to match the scenarios to the right category, then explain why.”

Sample Scenarios for Cards
• Cleaning tools after every use
• Repairing a cracked shovel blade
• Oiling a plow to prevent rust
• Replacing a broken sickle handle</td></tr>
</table>

B. Instituting New Knowledge	**1. Presenting Examples** **1. Maintenance Sorting Game** **Objective:** Identify the different types of maintenance. • **Activity:** Learners are given cards with different farm tool scenarios (e.g., "Sharpening a bolo before planting season," "Replacing a broken hoe handle," "Cleaning tools every Friday"). They sort each card under **PREVENTIVE, CORRECTIVE, and SCHEDULED** maintenance. • **Output:** Group chart showing examples of each maintenance type **2. Hands-On Demonstration** **Objective:** Demonstrate proper maintenance techniques (cleaning, sharpening, lubricating, storing). • **Activity:** Learners bring one farm tool (or use school-provided tools). In small groups, they perform the four maintenance steps: 1. Cleaning – remove dirt and rust. 2. Sharpening – ensure cutting edges are functional. 3. Lubricating – apply oil/grease to prevent rust. 4. Storing – place tools in proper storage. • **Output:** Live demonstration with group reflection on safety precautions observed.	**Teacher's Prompt** "Class, today we will explore how farmers keep their tools safe and effective. First, let's sort different scenarios into the right type of maintenance — preventive, corrective, or scheduled. Then, you'll practice the actual steps of cleaning, sharpening, lubricating, and storing tools. Finally, we'll reflect on why discipline and responsibility in tool care matter not only for productivity but also for safety. Remember, a well-maintained tool is a farmer's best partner."

	3. Responsibility Reflection Circle **Objective:** Develop a sense of responsibility and discipline in caring for farm tools and equipment. • **Activity:** Learners sit in a circle and share short reflections: *"Why is it important to care for farm tools?"* and *"What responsibility do farmers have in maintaining equipment?"* • **Output:** Written reflection notes collected as part of formative assessment 2. **Discussing New Concept** ***B. Discussion*** **Lesson Discussion – Farm Tool Maintenance** **Introduction of the Concept** "Farm tools and equipment are the farmer's partners in production. Just like how we take care of our own health to stay strong, tools also need proper care to remain effective and safe. This process is called **maintenance**. Maintenance ensures that tools last longer, work efficiently, and prevent accidents in the field." **Key Points to Discuss** 1. **Types of Maintenance** o **Preventive Maintenance:** Actions taken before a problem occurs (e.g., cleaning tools after use, applying oil to prevent rust). o **Corrective Maintenance:** Actions taken after a tool is damaged (e.g., replacing a broken handle, repairing a cracked blade).	**Teacher's Prompt** "Class, think about the last time you used a farm tool. Did you clean it after use? Did you store it properly? Today, we will learn the three types of maintenance — preventive, corrective, and scheduled — and practice the proper techniques of cleaning, sharpening, lubricating, and storing. As we go through this lesson, remember: caring for tools is not just about keeping them functional, it's about being responsible and disciplined farmers."

	- **Scheduled Maintenance:** Actions done at regular intervals (e.g., sharpening tools every Monday, monthly inspections). 2. **Proper Maintenance Techniques** - **Cleaning:** Remove dirt, mud, and rust after every use. - **Sharpening:** Keep cutting tools sharp for efficiency. - **Lubricating:** Apply oil or grease to moving parts to prevent rust. - **Storing:** Place tools in a dry, safe area to avoid damage. 3. **Safety Precautions** - Wear gloves when sharpening tools. - Use proper cleaning materials (avoid strong chemicals). - Handle sharp tools carefully to prevent injury. - Store tools properly to avoid accidents. 4. **Responsibility and Discipline** - Farmers must treat tools with care because they are investments. - Discipline in maintenance ensures productivity, safety, and sustainability. - Responsible tool care reflects professionalism and respect for work.	**Teacher's Prompt:** "Class, let's test how well you can distinguish between preventive, corrective, and scheduled maintenance. Read each scenario carefully and decide which category it belongs to. Remember, preventive avoids problems, corrective fixes them, and scheduled follows a timetable."

	2. Developing Mastery **1. Maintenance Identification Drill** **Objective:** Identify the different types of maintenance. • **Activity:** Learners are given a worksheet with 10 scenarios (e.g., "Sharpening a bolo before planting season," "Replacing a broken hoe handle," "Cleaning tools every Friday"). They classify each scenario as **Preventive**, **Corrective**, or **Scheduled**. • **Assessment:** Accuracy of classification and justification of answers. **2. Hands-On Maintenance Workshop** **Objective:** Demonstrate proper maintenance techniques (cleaning, sharpening, lubricating, storing). • **Activity:** Learners rotate through four stations: 1. Cleaning tools with brush and water. 2. Sharpening cutting tools with a file. 3. Lubricating metal parts with oil. 4. Storing tools in a designated safe area. • **Assessment:** Observation checklist on technique, safety, and completion.	**Teacher's Prompt:** "Now it's time to practice. At each station, you'll perform one maintenance technique. Show me how you clean, sharpen, lubricate, and store tools properly. Remember to follow safety precautions — gloves, careful handling, and correct use of materials." **Teacher's Prompt:** "Caring for tools is not just about keeping them functional — it's about being responsible and disciplined. In your journal, reflect on why tool maintenance matters and how you can personally commit to caring for tools responsibly."

	3. Responsibility Reflection Journal **Objective:** Develop a sense of responsibility and discipline in caring for farm tools and equipment. • **Activity:** Learners write a short journal entry answering: ○ *Why is tool maintenance important for farmers?* ○ *How can I show responsibility and discipline in caring for tools?* • **Assessment:** Depth of reflection and connection to values.	
C. Demonstrating Knowledge and Skills	**2. Making Generalization** **Activity: "Maintenance Mind Map"** Learners generalize the lesson by identifying connections among the types of maintenance, techniques, and responsibilities in tool care. **Procedure** 1. Divide the class into small groups. 2. Provide each group with a large sheet of paper or board space. 3. Ask them to create a **mind map** with "Farm Tool Maintenance" at the center. ○ Branch 1: **Types of Maintenance** (Preventive, Corrective, Scheduled). ○ Branch 2: **Techniques** (Cleaning, Sharpening, Lubricating, Storing).	Teachers Prompt : "Class, we've learned about the types of maintenance, practiced proper techniques, and reflected on responsibility in tool care. Now, let's bring all these ideas together. Create a mind map showing how these concepts connect. Think of maintenance as a system: the types guide us, the techniques show us what to do, and responsibility ensures we do it consistently and safely. By the end, you should see the bigger picture of why tool maintenance is essential for every farmer."

	○ Branch 3: **Values** (Responsibility, Discipline, Safety). 4. Groups present their mind maps to the class, explaining how the branches connect. **3. Evaluating Learning** **Teacher's Prompt :** "Class, let's see how well you've mastered today's lesson. 1. First, I want you to **identify** whether the following scenarios show *preventive*, *corrective*, or *scheduled maintenance*. ○ Example: *Sharpening a bolo before planting season* → Preventive. 2. Next, I will ask each group to **demonstrate one maintenance technique** — cleaning, sharpening, lubricating, or storing — using the tools provided. Show me the correct steps and the safety precautions you must observe. 3. Finally, reflect on this question: *Why is responsibility and discipline important in caring for farm tools and equipment?* Share your answer briefly with the class."	"Class, you have learned the types of maintenance, practiced proper techniques, and reflected on responsibility in tool care. To evaluate your mastery, I want you to show me how these ideas connect. Think carefully: *When should preventive maintenance be done? What happens if corrective maintenance is ignored? Why is scheduled maintenance important for discipline?* Demonstrate your skills and explain your reasoning — this will show me how well you've mastered today's lesson."

	4. Additional Activities **1. Scenario Analysis** • Learners are given short case studies (e.g., "A farmer neglects cleaning tools after use, resulting in rust."). • Task: Identify the type of maintenance needed and propose the correct technique. • Output: Written solutions with justification.	
VI. ASSESSMENT	**Multiple Choice** **1.** Which of the following is considered a farm tool? a. Tractor b. Hoe c. Sprayer d. Thresher **Answer: b. Hoe** **2.** Farm materials are best described as: a. Simple handheld implements b. Consumable items used in farming c. Large mechanized implements d. Heavy-duty machines for plowing **Answer: b. Consumable items used in farming** **3.** Which type of maintenance involves regular care to avoid damage? a. Corrective maintenance b. Scheduled maintenance c. Preventive maintenance d. Emergency maintenance **Answer: c. Preventive maintenance**	

	4. Why is sharpening important in maintaining farm tools? a. It reduces friction in moving parts b. It keeps blades effective and safe c. It disinfects harmful organisms d. It prevents rusting during storage **Answer: b. It keeps blades effective and safe** **5.** Responsible care of farm tools reflects: a. Efficiency only b. Discipline and teamwork c. Knowledge of farming techniques d. Corrective maintenance alone **Answer: b. Discipline and teamwork**
VII. REFLECTION	Facilitating the lesson showed that hands-on, collaborative activities strengthened learners' technical skills while nurturing responsibility, discipline, and teamwork. This affirmed the value of integrating knowledge, skills, and values to prepare students for sustainable agricultural practices.
VIII. USE OF GENERATIVE AI	In preparing this Learning Exemplar (LE), the author(s) used Copilot in order to find more learning activities and resources The author(s) reviewed and finalized the writing of the content. The author(s) take(s) full responsibility for the content of this LE.

LESSON EXEMPLAR			
Learning Area	**ORGANIC AGRICULTURE PRODUCTION**	**Grade Level**	**11**
Term	**1**	**Lesson Exemplar**	**6**

I. OBJECTIVES	
A. Content Standard	*The learners demonstrate understanding of principles in overview of organic agriculture production, maintenance of farm tools, materials and equipment, establish nursery for organic vegetable production, planting, and harvest and post-harvest handling operation following industry practices.*
B. Performance Standard	*The learners perform maintenance of farm tools, materials and equipment, nursery establishment, planting operation and harvest and post-harvest handling operation following safety precautions*
C. Learning Competencies	*Perform nursery operations for organic vegetable production*
II. REFERENCES and MATERIALS	Agricultural Training Institute – Cordillera Administrative Region (ATI-CAR). (2023). *Organic vegetable production.* Department of Agriculture. https://ati2.da.gov.ph/ati-car/content/sites/default/files/2023-08/ORGANIC%20VEGETABLE%20PRODUCTION.pdf Technical Education and Skills Development Authority (TESDA). (2026). *Organic agriculture production NC II: Training regulations*. TESDA Official Publication. https://tesda.gov.ph/Downloadables/TRs/Organic%20Agriculture%20Production%20NC%20II.pdf OpenAI. (2026). *ChatGPT (GPT-5.3) [Large language model]*. Retrieved April 4, 2026, from https://chat.openai.com/
III. CONTENT	Farm Nursery Operations ● Growing media ● Seed sowing o appropriate seedling tray for the different types of crops ○ method of Seed Sowing ○ good quality of seed
IV. OBJECTIVES	At the end of the lesson, the learners should be able to *a.* Identify and describe the components of growing media, types of seedling trays, and seed sowing methods used in organic farm nursery operations. *b.* Prepare growing media, sow seeds correctly using appropriate methods, and organize seedling trays for different types of crops. *c.* Demonstrate care, responsibility, and sustainability awareness by handling seedlings properly and applying organic practices in nursery operations.

V. PROCEDURES		ANNOTATIONS
A. Activating Prior Knowledge	**ACTIVATING PRIOR KNOWLEDGE** 1. Class Discussion / Brainstorming ● The teacher asks learners: ○ "Have you ever grown plants at home or in school?" ○ "What materials did you use to plant seeds?" ○ "How did you care for seedlings to make them grow healthy?" ● Learners share experiences, which are noted on the board to highlight familiar practices. 2. Show Visual Stimuli ● The teacher presents pictures or short videos of: ○ Seedling trays ○ Various types of growing media (soil, compost, cocopeat) ○ Seed sowing methods ● Learners are asked: ○ "What do you notice?" ○ "Have you seen or used these before?" 3. KWL Chart (Know – Want to Know – Learned) ● Learners fill out the first two columns: ○ K (Know): What they already know about growing seedlings or planting seeds. ○ W (Want to Know): What they want to learn about organic nursery operations. ● This activity helps identify prior knowledge gaps and set learning goals.	Instructions for the Teacher: ● Ask learners the guiding questions one by one. ● Encourage learners to share their personal experiences. ● As learners respond, write key points on the board to highlight familiar practices and link them to the lesson content. ● Validate all responses and gently correct misconceptions if needed, emphasizing that everyone's experience is valuable. ● Use follow-up questions to dig deeper, e.g., "Which of these practices helped your plants grow best?" or "Why do you think some seedlings did not grow well?" ● Highlight key differences and uses of each tool or method, preparing learners for deeper exploration in the lesson. ● Encourage honesty—learners do not need to know everything; the goal is to identify learning gaps and curiosity.

	4. Questioning / Think-Pair-Share • Learners answer guiding questions: ○ "Why is it important to prepare the soil or growing media before sowing seeds?" ○ "What do you think makes a seed high quality?" • They first think individually, then discuss with a partner, and finally share with the class. **ESTABLISHING THE PURPOSE OF THE LESSON** "WHICH SEED WILL GROW?" Activity Title: *The Seed Challenge* Materials: • Two small containers or seedling trays • Soil (one good growing media, one poor—e.g., sandy or compacted soil) • Two types of seeds (one good quality, one visibly poor/damaged if available) • Pictures (optional) of healthy vs. unhealthy seedlings Procedure: 1. Show and Ask ○ Present two containers with different growing media and two types of seeds. ○ Ask the learners: ▪ If we plant these seeds, which one do you think will grow better? ▪ What factors do you think affect the growth of a seed? 2. Prediction Time ○ Let students vote or raise hands to choose which setup will produce healthier plants. ○ Encourage them to explain their answers. 3. Quick Demonstration (Optional) ○ Briefly demonstrate how seeds are sown in both setups (no need to wait for actual growth).	• Use probing questions to deepen understanding, e.g., "How does soil preparation affect seed germination?" or "What could happen if poor-quality seeds are used?" **Establishing the Purpose of the Lesson** • Reinforce curiosity and link the activity to the lesson objectives, ensuring learners understand the relevance of what they will learn. • Use this activity to connect learners' prior knowledge to new concepts. • Emphasize observation and reasoning over correct answers—this encourages critical thinking. • Encourage learners to make predictions and justify them, which sets the purpose for learning.

	○ Emphasize visible differences (soil texture, seed quality, spacing). 4. Reveal the Idea ○ Ask: ▪ Do you think planting is just putting seeds in soil? ○ Transition to the lesson by saying: Just like in our activity, not all seeds grow the same way. The success of a plant starts from how we prepare it in the nursery. Today, we will learn how proper growing media, correct seed sowing methods, appropriate seedling trays, and good quality seeds can make a big difference in plant growth.	
B. Instituting New Knowledge	**PRESENTING EXAMPLES** At this stage, the teacher will present concrete examples to help learners clearly understand the key concepts. Example 1: Growing Media The teacher shows two samples of soil: ● Sample A: Dark, loose, and moist soil mixed with compost ● Sample B: Dry, compact, and sandy soil Discussion: ● Ask: "Which soil do you think is better for growing seeds? Why?" ● Explain that good growing media should be: ○ Well-drained ○ Rich in nutrients ○ Loose for root growth Key Point: Healthy seedlings start with the right growing media.	Prepare the materials: soil samples, seedling trays, seeds, and illustrations of sowing methods. Show each example one at a time: ● Compare good vs. poor growing media ● Display different tray types for various crops ● Demonstrate or show sowing methods (broadcasting vs. row sowing) ● Show good vs. poor quality seeds Ask learners short guiding questions for each example (e.g., "Which soil is better?" or "Why use this tray?"). Explain the key points clearly after each example. Conclude by summarizing the main factors affecting seedling growth: growing media, tray type, sowing method, and seed quality.

	Example 2: Seedling Trays for Different Crops The teacher presents different types of seedling trays (or pictures if not available): • Tray with small holes – for small seeds (e.g., lettuce, pechay) • Tray with larger holes – for bigger seeds (e.g., tomato, eggplant) Discussion: • Ask: "Why do you think different crops need different tray sizes?" • Explain that tray size affects root development and spacing. Key Point: Using the appropriate seedling tray helps seedlings grow properly without overcrowding. Example 3: Methods of Seed Sowing The teacher demonstrates or shows illustrations of two methods: 1. Broadcasting – scattering seeds on the surface 2. Line/Row Sowing – placing seeds in rows with spacing Discussion: • Ask: "Which method do you think is more organized and easier to manage?" • Explain advantages: o Row sowing = easier to monitor and maintain o Proper spacing = better growth Key Point: Correct sowing methods improve seed germination and seedling health. Example 4: Good Quality vs. Poor Quality Seeds The teacher shows: • Good seeds: uniform size, clean, not broken • Poor seeds: discolored, cracked, or very small	

	Discussion: ● Ask: "Which seeds would you choose to plant? Why?" ● Explain that good quality seeds: ○ Have higher germination rate ○ Produce stronger plants Key Point: The quality of seeds directly affects the success of planting. After presenting all examples, ask: ● "What are the important factors we should consider before planting seeds?" (Expected answers: growing media, seed quality, tray type, and sowing method) **DISCUSSING NEW CONCEPT** A. Definition of Terms ● Growing Media The material used to support plant growth in a nursery, providing nutrients, moisture, and aeration for seedlings. ▪ Compost Decomposed organic matter used to enrich the soil and improve its fertility and structure. ▪ Cocopeat A natural fiber from coconut husk used in growing media for its excellent water retention and aeration properties. ▪ Soil Sterilization The process of eliminating harmful organisms in the soil using heat or natural methods like solarization. ▪ Aeration The presence of air spaces in the growing media that allows roots to breathe and grow properly.	Briefly present key terms with simple explanations and examples. Check learners' understanding by asking quick questions and linking each term to the lesson objectives and examples shown.

	▪ Seed Sowing The process of planting seeds in a prepared growing medium to start plant growth. ▪ Seedling Tray A container with small compartments used for germinating and growing seedlings individually. ▪ Germination The process by which a seed begins to grow and develop into a seedling. ▪ Surface Sowing A method of sowing where seeds are placed on top of the soil and lightly pressed without deep covering. ▪ Broadcast Sowing Scattering seeds evenly over the surface of the growing media or soil. ▪ Row (Drill) Sowing Planting seeds in straight lines or rows to allow proper spacing and management. ▪ Dibble (Hole) Sowing Planting seeds in individual holes or cells, commonly used in seedling trays. ▪ Good Quality Seeds Seeds that are healthy, viable, free from disease, and capable of producing strong seedlings. ▪ Damping-Off A common fungal disease in nurseries that causes seedlings to wilt and die. ▪ Moisture Retention The ability of the growing media to hold water for plant use. B. Discussion Farm Nursery Operations A farm nursery is a controlled area where seeds are germinated, seedlings are raised, and young plants are nurtured until they are ready to be transplanted to the main field. In organic agriculture, nurseries are managed using	Facilitate a class discussion by asking guiding questions related to the examples presented. Encourage learners to share ideas, explain their reasoning, and connect responses to key concepts such as growing media,

	natural inputs, avoiding synthetic chemicals, and emphasizing soil health, biodiversity, and sustainable practices. 1. Growing Media The growing media is the material in which seeds are sown and seedlings grow. In organic farming, the media must be nutrient-rich, well-draining, and free from chemical fertilizers. Components of Organic Growing Media: 1. Soil – fertile garden soil or loam; provides structure and nutrients. 2. Compost – decomposed organic matter; adds nutrients and improves water retention. 3. Cocopeat / Peat moss – retains moisture and improves aeration. 4. Sand – ensures proper drainage and prevents waterlogging. 5. Rice hulls or vermiculite – improves aeration and reduces compaction. Recommended Ratio Example: • Garden soil: 40% • Compost: 30% • Cocopeat: 20% • Sand: 10% Best Practices: • Sterilize soil using solarization or boiling water to reduce pests and diseases. • Ensure the media is light, fluffy, and moist, not compacted. • Check pH (ideal 6.0–6.5 for most crops).	seedling trays, seed quality, and sowing methods. Summarize the main points to reinforce understanding.

2. Seed Sowing

Seed sowing is the process of planting seeds in trays, pots, or beds to start the growth cycle. Proper sowing ensures healthy, uniform seedlings.

A. Appropriate Seedling Trays for Different Crops

Different crops need different tray types depending on their root systems and growth requirements.

Crop Type	**Recommended Tray Type**	**Notes**
Leafy vegetables (lettuce, spinach)	Shallow trays (1–2 inches deep)	Seeds are small; shallow media is sufficient.
Fruit vegetables (tomato, pepper)	Medium-deep trays (2–3 inches deep)	Stronger root development is needed.
Root crops (carrot, radish)	Deep trays or pots (3–4 inches deep)	Prevents root distortion.
Herbs (basil, parsley)	Shallow trays or small pots	Requires gentle handling for transplanting.

Tray Material Options (Organic-Friendly):

- Biodegradable trays (cocopeat, paper, peat)
- Plastic trays (reuse to reduce waste)

B. Method of Seed Sowing

The method depends on seed size, germination requirements, and crop type.

1. Surface Sowing:
   - Small seeds like lettuce or spinach.
   - Sprinkle lightly on moist media, press gently, do not cover too deep.

	2. Broadcast Sowing: o For fast-growing leafy crops in nursery beds. o Seeds scattered evenly, then lightly covered with fine soil or compost. 3. Drilling / Row Sowing: o Seeds planted in rows, common for vegetables like tomatoes, pepper, and cabbage. o Allows better management and thinning of seedlings. 4. Hole or Dibble Sowing (Individual Cells): o Seeds placed in individual tray cells; ideal for transplanting. o Ensure strong root development, reduces transplant shock. **Steps for Successful Sowing:** 1. Moisten the growing media before sowing. 2. Sow seeds at proper depth (usually 2–3x seed size). 3. Cover lightly with fine media or compost if required. 4. Label trays with crop type and sowing date. 5. Keep trays in a nursery area with shade, proper airflow, and gentle watering. C. Good Quality Seeds Seed quality is critical for organic nursery success. Characteristics of Good Seeds: • High germination rate (>80% for most vegetables) • Free from disease or damage • True to type (variety purity) • Adapted to local climate and soil conditions Seed Sources for Organic Farming: • Certified organic seed suppliers • Local heirloom or open-pollinated varieties • Seeds collected from previous organic harvests	

	Seed Handling Tips: • Store in a cool, dry place before sowing. • Treat with organic methods (e.g., soaking in warm water or compost tea) to improve germination and reduce disease. Organic nursery operations focus on healthy growing media, proper seed sowing techniques, and high-quality seeds. By following these methods, farmers can produce strong seedlings that grow into productive, organic crops. **DEVELOPING MASTERY** To strengthen learners' understanding and skills, the teacher will provide guided and hands-on activities: 1. Guided Practice (Group Activity) • Learners will be grouped into small teams. • Each group will be given materials such as: o Growing media (soil, compost, cocopeat) o Seedling trays o Different types of seeds • The teacher will guide learners to: o Prepare the correct growing media mixture o Fill the seedling tray properly o Perform the appropriate seed sowing method 2. Hands-On Application • Each learner will practice: o Sowing seeds using the correct depth and spacing o Selecting the appropriate tray for a specific crop • The teacher will move around to observe, assist, and give immediate feedback.	Guide learners to apply what they have learned by performing hands-on activities such as preparing growing media, selecting seeds, sowing seeds in trays, and organizing seedlings. Observe and provide feedback, correct mistakes, and reinforce proper techniques while encouraging care, responsibility, and sustainable practices.

	3. Differentiated Tasks • For learners who need support: o Provide step-by-step instructions or demonstration again • For fast learners: o Assign them to explain or demonstrate proper sowing techniques to peers 4. Reinforcement Activity (Think-Pair-Share) • Learners will answer guide questions such as: o Why is proper growing media important? o What will happen if seeds are planted too deep or too shallow? • They will discuss with a partner and share answers with the class 5. Error Analysis • The teacher will present common mistakes (e.g., overcrowded seeds, improper media). • Learners will identify the errors and suggest correct practices.	
C. Demonstrating Knowledge and Skills	**FINDING PRACTICAL APPLICATION** 1. Real-Life Observation • Learners will visit a school or community organic farm nursery (if available) to observe: o Different types of growing media o Seedling trays used for various crops o Seed sowing methods in practice • Learners will take notes or photos of what they observe and relate it to the lesson. 2. Hands-On Application in the Classroom / School Nursery • Learners will prepare their own small-scale nursery using available materials: o Mix growing media correctly o Fill seedling trays with media	Ask learners to relate the lesson to real-life situations, such as planting at home, school gardens, or future farm work. Encourage them to identify how proper growing media, seed selection, tray use, and sowing methods can improve seedling health and crop success. Highlight the importance of applying responsible and sustainable practices in daily activities.

	○ Sow seeds using the appropriate method for each crop • This allows learners to experience real-life nursery operations safely and practically. 3. Problem-Solving Exercise • Learners will analyze scenarios and suggest solutions, such as: ○ Seedlings are not growing properly → What could be wrong with the growing media or sowing method? ○ Seeds are overcrowded → How can spacing and tray selection be corrected? 4. Connecting to Community / Home Gardening • Learners are encouraged to apply these nursery techniques at home: ○ Growing vegetables or herbs in small trays ○ Using compost and organic materials to improve soil ○ Sharing techniques with family or neighbors 5. Reflection / Reporting • After performing the practical activity, learners will: ○ Write a short reflection on what they learned ○ Discuss the challenges they faced and solutions they found ○ Present their findings to the class for peer learning **MAKING GENERALIZATION** Activity Title: "Complete the Growth Chain" Materials: • Strips of paper or cartolina with phrases written on them: ○ Growing media ○ Seedling tray ○ Seed sowing	Lead learners to summarize the key ideas from the lesson. Ask guiding questions to help them identify important factors—growing media, seedling trays, sowing methods, and seed quality. Emphasize how proper nursery practices ensure healthy seedlings and successful crop growth.

	○ Good quality seeds ○ Healthy seedlings ○ Strong plants / Good harvest • Tape or board space Procedure: 1. Group the Learners ○ Divide the class into small groups. 2. Distribute Strips ○ Give each group a set of mixed-up strips. 3. Task Proper ○ Ask each group to arrange the strips in the correct order showing how plants grow successfully starting from the nursery. 4. Guide Questions While Working ○ "Which comes first?" ○ "What happens after choosing good seeds?" ○ "What leads to healthy seedlings?" 5. Presentation ○ Each group will present their arranged sequence and explain their answer. Expected Output (Correct Flow): Good Quality Seeds → Growing Media → Seedling Tray → Proper Seed Sowing → Healthy Seedlings → Strong Plants / Good Harvest Processing: Ask: • "Why is each step important?" • "What will happen if one step is not done properly?" Farm nursery operations are essential in producing healthy and productive crops. By being able to identify and describe the components of growing media, types of seedling trays, and proper seed sowing methods, learners gain the	

	necessary knowledge for successful planting. Applying this knowledge through the proper preparation of growing media, correct sowing of seeds, and proper organization of seedling trays ensures strong and healthy seedlings. Moreover, showing care, responsibility, and awareness of sustainable organic practices helps protect the environment and promotes long-term agricultural productivity. **EVALUATING LEARNING** Part A: Written Assessment Instructions: Answer the following questions. Multiple Choice: 1. Which of the following is the most important characteristic of a good growing media? a. Compact and heavy b. Loose and nutrient-rich c. Dry and sandy d. Full of stones 2. Why is it important to use the correct seedling tray? a. To decorate the nursery b. To support proper root growth and plant spacing c. To make watering easier d. To speed up germination 3. Which is correct method of seed sowing? a. Throwing seeds randomly b. Planting seeds with proper spacing and depth c. Planting seeds on top of rocks d. Burying seeds too deep Short Answer: 4. Name two components of a good growing media. 5. How does proper seed sowing affect the growth of seedlings? 6. Why is it important to choose good quality seeds?	Assess learners' understanding through written questions, practical demonstrations, and reflections. Check knowledge of growing media, seedling trays, sowing methods, and seed quality, as well as skills in preparing and caring for seedlings. Provide feedback to reinforce correct practices and address misconceptions.

Part B: Performance-Based Assessment
Activity: *"Prepare and Sow Your Seedling Tray"*

Instructions:

- Prepare a seedling tray with proper growing media.
- Choose appropriate seeds for the crop.
- Sow the seeds using the correct method.
- Take care of your seedlings while demonstrating proper handling.

Assessment Criteria (Rubric):

Criteria	**Excellent (5)**	**Good (4)**	**Fair (3)**	**Needs Improvement (2)**
Growing media preparation	Correctly prepared, well-mixed	Minor mistakes	Some errors	Poorly prepared
Seed selection	Good quality seeds, appropriate for crop	Mostly good seeds	Some poor seeds	Poor or wrong seeds
Seedling tray use	Correct tray, properly arranged	Minor mistakes	Incorrect tray choice	Wrong tray used
Seed sowing method	Proper spacing and depth	Minor errors	Inconsistent sowing	Incorrect method
Care and handling	Careful, organized, responsible	Mostly careful	Some negligence	Careless handling
Application of organic practices	Fully applied	Partially applied	Rarely applied	Not applied

Scoring Guide:

- 26–30 = Outstanding
- 21–25 = Very Satisfactory
- 16–20 = Satisfactory
- 10–15 = Needs Improvement

	Part C: Reflection Ask learners to answer: 1. What is the most important thing you learned about nursery operations? 2. How can you show care and responsibility when handling seedlings? 3. How will you apply sustainable and organic practices in the future? **ADDITIONAL ACTIVITIES** Activity Title: *"Design Your Own Organic Mini Nursery"* Materials: ● Small containers, recycled boxes, or seedling trays ● Organic soil mix (compost + garden soil + sand) ● Seeds (vegetables, herbs, or flowers) ● Labels or markers ● Drawing materials (optional) for planning Procedure: 1. Planning o Ask learners to sketch or plan their mini nursery layout on paper. o Include: ▪ Type of growing media ▪ Tray selection ▪ Seed selection and sowing method ▪ Space for seedlings 2. Setup o Using the materials provided, learners will set up their mini nursery according to their plan. o Ensure correct soil preparation, proper tray arrangement, and correct seed sowing. 3. Presentation o Each learner or group will present their nursery design. o They should explain why they chose certain trays, growing media, seeds, and their method of sowing. o Highlight how they incorporated organic and sustainable practices.	Provide learners with extra tasks, such as designing a mini organic nursery or observing seed germination. Encourage creativity, application of nursery concepts, and responsible, sustainable practices. Monitor their work and guide them to connect the activity to real-life farming or gardening.

	4. Teacher Observation o Evaluate learners on: ▪ Creativity and planning ▪ Accuracy in applying nursery principles ▪ Care and organization ▪ Awareness of organic practices	
VI. ASSESSMENT	**ASSESSMENT** **A**. Written Assessment Part I: Multiple Choice. Choose the correct answer. 1. What is the best characteristic of a good growing media? a. Hard and compact b. Dry and sandy c. Loose and rich in nutrients d. Rocky and heavy 2. Why is it important to use the appropriate seedling tray? a. To make the tray look nice b. To control plant color c. To support proper root growth d. To reduce watering 3. Which of the following is a proper method of seed sowing? a. Throwing seeds randomly b. Placing seeds with proper spacing c. Planting seeds too deep d. Using no soil 4. What is a sign of good quality seeds? a. Broken and cracked b. Discolored c. Uniform and healthy-looking d. Very small and damaged 5. What will most likely happen if poor quality seeds are used? a. Faster growth b. Stronger plants c. Higher germination rate d. Weak or no germination	

Part II: Identification. Identify what is being described.

1. It is the material where seeds are planted.
2. A container used for raising seedlings.
3. A method of planting seeds in rows with proper spacing.
4. Seeds that are healthy, clean, and not damaged.
5. The process of placing seeds into the soil.

Part III: Short Answer

1. Why is growing media important in seed germination?
2. How does proper seed sowing affect plant growth?
3. Why should farmers choose good quality seeds?

B. Performance-Based Assessment
Activity: *Seed Sowing Demonstration*
Each learner (or group) will demonstrate proper seed sowing using a seedling tray.

Criteria (Rubric):

Criteria	Excellent (5)	Good (4)	Fair (3)	Needs Improvement (2)
Growing Media Preparation	Correct and well-prepared	Minor errors	Some mistakes	Poor preparation
Seed Selection	Clearly good quality seeds	Mostly good seeds	Some poor seeds	Poor seed choice
Use of Seedling Tray	Appropriate and correct use	Minor mistakes	Incorrect size choice	Wrong usage
Sowing Method	Proper spacing and depth	Minor errors	Inconsistent	Incorrect method
Workmanship	Clean, organized, careful	Slightly disorganized	Messy	Very messy

Scoring Guide:

- 21–25 = Outstanding
- 16–20 = Very Satisfactory
- 11–15 = Satisfactory
- 6–10 = Needs Improvement

VII. REFLECTION	**REFLECTION** Activity Title: "My Nursery Commitment" Materials: ● Paper or notebook ● Pen or pencil ● Optional: colored markers for creativity Procedure: 1. Individual Reflection o Ask learners to think about what they did during the nursery activities and what they learned about: ▪ Growing media ▪ Seedling trays ▪ Seed sowing methods ▪ Handling seedlings responsibly ▪ Organic/sustainable practices 2. Writing Task o Have learners write a short paragraph answering: ▪ What is one important thing I learned today about farm nursery operations? ▪ How will I take care of seedlings responsibly in the future? ▪ How can I apply organic or sustainable practices in my own gardening or farm? 3. Sharing (Optional) o Invite a few learners to share their reflections with the class. o Encourage learners to listen and acknowledge their classmates' ideas. 4. Commitment Statement o Ask each learner to write a short commitment statement such as: I will take care of my seedlings by… and practice organic farming by…
VIII. USE OF	In preparing this Learning Exemplar (LE), the author used Generative AI tool in order to generate activities, reflective questions, individual and group performance tasks, and evaluation tools to support the teaching of Farm Nursery Operations. These include activities on growing media, seed sowing, appropriate seedling tray for the different types of crops, method of seed sowing,s and good quality of seed with completing guided reflections to assess understanding and application. The author reviewed and finalized the writing of the content. The author takes full responsibility for the content of this LE.

LESSON EXEMPLAR			
Learning Area	**ORGANIC AGRICULTURE PRODUCTION**	**Grade Level**	**11**
Term	**1**	**Lesson Exemplar**	**7**

I. OBJECTIVES	
A. Content Standard	*The learners demonstrate understanding of principles in overview of organic agriculture production, maintenance of farm tools, materials and equipment, establish nursery for organic vegetable production, planting, and harvest and post-harvest handling operation following industry practices.*
B. Performance Standard	*The learners perform maintenance of farm tools, materials and equipment, nursery establishment, planting operation and harvest and post-harvest handling operation following safety precautions*
C. Learning Competencies	*Perform nursery operations for organic vegetable production*
II. REFERENCES and MATERIALS	Republic of the Philippines, Department of Education. *Strengthened Senior High School Curriculum: Organic Agriculture Production*. DepEd, 2024. PDF. Bureau of Agriculture and Fisheries Standards. *Philippine National Standard for Organic Agriculture (PNS/BAFS-07:2016)*. Version 6. Philippines: Bureau of Agriculture and Fisheries Standards, 2016. https://drive.google.com/file/d/1ysjv8R9QTxYFomhx5MsABCO4EEPsjVFc/view OpenAI. ChatGPT (GPT-5 Mini). "Organic Agriculture Topics (Site Selection, Materials, Nursery Types, and Design & Lay-Out)." Response to user query, March 27, 2026. https://chat.openai.com/.
III. CONTENT	Farm Nursery Operations • Plant propagation techniques ○ sexual propagation ○ asexual propagation
IV. OBJECTIVES	At the end of the lesson, the learners should be able to *a.* Understand the principles and methods of plant propagation, including sexual (seed) and asexual (cuttings, grafting, layering, tissue culture) techniques, and the factors influencing propagation success. *b.* Demonstrate practical skills in propagating plants using appropriate techniques, tools, and media, ensuring high survival and healthy growth of propagated plants. *c.* Develop a responsible and careful attitude towards plant propagation, showing patience, attention to detail, and commitment to sustainable horticultural practices.

V. PROCEDURES		ANNOTATIONS
A. Activating Prior Knowledge	1. **Activating Prior Knowledge** Activity 1: "Have You Tried This Before?" (Experience Sharing) • The teacher asks learners: ○ "Have you ever planted a seed before?" ○ "Have you ever seen a plant grow from a cutting (like a stem or leaf)?" • Learners share their experiences such as planting mongo seeds, growing roses from cuttings, or observing plants at home. • The teacher lists their answers on the board and groups them into: ○ From seeds → (to introduce *sexual propagation*) ○ From plant parts → (to introduce *asexual propagation*) Activity 2: "Picture Sorting" (Think and Classify) • The teacher shows pictures of different plant propagation methods, such as: ○ Seeds being planted ○ Stem cutting (e.g., rose, cassava) ○ Grafting ○ Growing from bulbs (onion) • Learners are asked to classify the pictures into two groups: ○ Group A: From seeds ○ Group B: From plant parts • The teacher then introduces the terms: ○ Sexual propagation (from seeds) ○ Asexual propagation (from plant parts) **2. Establishing the Purpose of the Lesson** Activity 1: Mystery Seed Challenge • Bring different seeds or small cuttings in a bag. • Ask learners to guess what plant it will become.	**Activating Prior Knowledge** Activity 1: Ask learners to share their experiences with growing plants from seeds or plant parts and classify them as sexual or asexual propagation. **Activity 2:** Show pictures of different plant propagation methods and have learners sort them into seeds (sexual) or plant parts (asexual). **Establishing the Purpose of the Lesson** Activity 1: Mystery Seed Challenge *Prepare a bag with different seeds or cuttings, have learners take turns*

	• Explain that understanding propagation helps us grow these plants successfully. Activity 2: Mini Garden Plan • Ask learners to draw a quick plan of a small garden they would like to grow at home or school. • Ask them to identify which plants they would grow from seeds and from cuttings. • Relate this to the importance of learning sexual and asexual propagation. Activity 3: Video or Photo Observation • Show a short video or slides of plants growing from seeds and cuttings. • Ask learners: "What differences do you notice between the plants grown from seeds and those grown from cuttings?" • Connect their observations to the purpose of learning propagation techniques.	*guessing each plant, and discuss how knowing propagation techniques helps them grow plants successfully.* Activity 2: Mini Garden Plan *Ask learners to draw a simple garden plan, label which plants they would grow from seeds or cuttings, and explain how understanding sexual and asexual propagation helps them grow their garden effectively.* Activity 3: Video or Photo Observation *Show learners a short video or slideshow of plants growing from seeds and cuttings, ask them to observe and discuss the differences, and relate their observations to the importance of learning sexual and asexual propagation.*
B. Instituting New Knowledge	**PRESENTING EXAMPLES** Activity 1: Demonstration and Identification • The teacher demonstrates seed sowing and stem cutting, then presents actual samples or pictures, and asks learners to identify whether each example is sexual or asexual propagation and explain their answers. Activity 2: Group Sorting and Comparison • Learners work in groups to sort pictures of different propagation methods into sexual and asexual, then compare examples (seed-grown vs cutting-grown	

	plants) and present their observations and explanations. **DISCUSSING NEW CONCEPT** A. Definition of Terms ● Plant Propagation – The process of creating new plants from a parent plant through seeds or plant parts to produce healthy and productive offspring. ● Sexual Propagation – A method of growing new plants using seeds, which involves the fusion of male and female gametes, resulting in offspring with genetic variation. ● Asexual Propagation – A method of producing new plants from vegetative parts of a parent plant such as stems, leaves, roots, bulbs, or tubers, resulting in offspring genetically identical to the parent plant. ● Seedling – A young plant that grows from a seed and is ready for transplanting after developing roots and shoots. ● Cutting – A portion of a plant (stem, leaf, or root) used in asexual propagation to grow a new plant. ● Grafting – An asexual propagation technique where a portion of one plant (scion) is joined to another plant (rootstock) to grow as a single plant. ● Budding – A form of asexual propagation in which a bud from one plant is inserted into another plant to grow and develop. ● Runner / Stolon – A horizontal stem that grows above the ground and forms new plants at nodes, used in asexual propagation. B. Discussion Plant propagation is the process of producing new plants from a parent plant. It allows gardeners and	

	farmers to grow more plants efficiently, maintain plant quality, and ensure the availability of healthy crops. Methods of Plant Propagation: **a. Sexual Propagation** Sexual propagation in organic agriculture means growing plants naturally from seeds to produce healthy and diverse crops. In organic agriculture, farmers use natural, untreated seeds and avoid chemicals to ensure healthy and safe crop production. Seeds are formed when the male and female parts of a plant combine, producing a new plant that may have slightly different characteristics from the parent plant. This variation helps plants become stronger and more adaptable to the environment. Organic farmers prefer sexual propagation because it: • Promotes natural plant growth • Maintains biodiversity • Produces crops that can adapt to local conditions **3. Asexual Propagation** Asexual propagation is the process of growing new plants using parts of a plant such as stems, leaves, or roots instead of seeds. In organic agriculture, farmers use healthy plant parts and natural methods to grow new plants without chemicals. The new plant will be the same as the parent plant, so its quality is maintained. Organic farmers use asexual propagation because it: • Produces plants faster • Keeps the same quality of the parent plant	

	• Ensures uniform growth Asexual propagation in organic agriculture means growing plants from plant parts to produce the same kind of healthy plant quickly and naturally. • Examples: ○ Cuttings: Rose or cassava stem cuttings ○ Grafting: Fruit trees ○ Budding: Citrus plants ○ Runners: Strawberry plants **DEVELOPING MASTERY** 1. Group Activity • Divide learners into small groups. • Provide each group with materials such as: ○ Seeds ○ Small containers or trays with soil ○ Plant cuttings (e.g. camote, or cassava) 2. Hands-On Application • Each learner will: ○ Plant at least one seed and one cutting ○ Follow proper steps in planting and handling materials • The teacher will observe and give immediate feedback. 3. Comparison Activity • After planting, learners will compare: ○ Seeds vs cuttings ○ Time of growth (expected) ○ Differences in method • Ask: ○ “Which method is faster?” ○ “Which method produces identical plants?”	

	4. Think-Pair-Share • Learners answer: o "When should we use seeds?" o "When is it better to use cuttings?" • They discuss with a partner and share with the class. 5. Error Identification • Present common mistakes (e.g., planting seeds too deep, using unhealthy cuttings). • Learners identify the mistake and suggest the correct practice.	
C. Demonstrating Knowledge and Skills	**FINDING PRACTICAL APPLICATION** a. Home Gardening o Learners can grow vegetables like pechay, tomatoes, or lettuce from seeds (sexual propagation) or grow sweet potato and cassava from cuttings (asexual propagation) at home. b. School Garden / Community Garden o Students can help maintain a school or community garden by using proper propagation techniques, ensuring plants grow healthy and uniform. c. Sustainable Farming o Farmers can choose the best propagation method for each crop: ▪ Seeds for crops where genetic diversity is needed (e.g., corn, beans) ▪ Cuttings or grafting for plants where uniformity is important (e.g., rose, fruit trees)	

	d. Entrepreneurship / Livelihood Projects o Learners can sell seedlings or propagated plants in the community, promoting organic and sustainable farming practices. e. Environmental Awareness o Using propagation techniques naturally (without chemicals) helps maintain soil fertility and supports eco-friendly farming practices. **MAKING GENERALIZATION** Activity: Group Reflection and Charting Step 1: Group Discussion Divide learners into small groups. Ask each group to discuss the following questions: o "What did you notice about growing plants from seeds versus cuttings?" o "Which method is faster, and which maintains plant quality?" o "How can these methods be useful in real life?" Step 2: Create a Summary Chart Each group lists their observations and writes key points on a chart under headings: o Sexual propagation o Asexual propagation o Real-life applications **EVALUATING LEARNING** 1. Written Assessment • Ask learners to answer short questions such as: o Define sexual and asexual propagation.	Each group presents their chart. The teacher guides learners to combine the key points into general statements about propagation.

	○ Give one example of sexual propagation and one example of asexual propagation. ○ List two advantages of each propagation method. ○ Explain when it is better to use seeds and when to use cuttings. 2. Practical Demonstration • Have learners demonstrate: ○ Planting seeds for sexual propagation ○ Planting cuttings for asexual propagation • Assess learners based on: ○ Proper technique ○ Care and handling of seeds or cuttings ○ Correct identification of propagation type 3. Oral Questions / Discussion • Ask learners questions such as: ○ "Why is sexual propagation important in organic farming?" ○ "How does asexual propagation help maintain plant quality?" • Evaluate their understanding and ability to explain concepts in their own words. **ADDITIONAL ACTIVITIES** Activity: "Propagation Matching Game" Instructions: 1. Prepare cards or slips of paper with names/pictures of plants and propagation methods (e.g., tomato seed, rose cutting, strawberry runner, corn seed). 2. Divide learners into small groups. 3. Ask each group to match the plant with the correct propagation method (sexual or asexual). 4. After matching, each group explains why they chose that method. 5. The teacher reviews the answers and clarifies any misconceptions.	Teacher observes learners during hands-on activities and notes: ○ Participation and cooperation in group work ○ Accuracy in performing propagation steps ○ Ability to explain differences between sexual and asexual methods

VI. ASSESSMENT	**ASSESSMENT:** A. Multiple Choice: Choose the correct answer. 1. Which of the following is a method of sexual propagation? a) Stem cutting b) Seed sowing c) Grafting d) Runner propagation 2. A plant grown from a cutting is an example of: a) Sexual propagation b) Asexual propagation c) Cross-breeding d) Hybridization 3. Which part of the plant is used in sexual propagation? a) Stem b) Root c) Seed d) Leaf 4. Which technique is an example of asexual propagation? a) Seed sowing b) Cross-pollination c) Bulb planting d) Hybrid seed planting 5. Sexual propagation produces plants that are: a) Identical to the parent b) Genetically varied c) Never viable d) Always sterile 6. Asexual propagation produces offspring that are: a) Genetically diverse b) Genetically identical c) Always slower-growing d) Always weaker

7. Which of the following is a vegetative part used for asexual propagation?
   a) Seed
   b) Fruit
   c) Root
   d) Pollen

8. Which plants are commonly propagated by runners (stolons)?
   a) Strawberry
   b) Corn
   c) Tomato
   d) Beans

9. Grafting is commonly used for:
   a) Root crops
   b) Fruit trees
   c) Flower seeds
   d) Grass propagation

10. Which of the following is true about seeds?
    a) They are used only in asexual propagation
    b) They do not require soil
    c) They contain the embryo of a plant
    d) They are always sterile

11. What is the first step in sexual propagation?
    a) Cutting collection
    b) Seed sowing
    c) Root trimming
    d) Leaf removal

12. Which of the following best describes propagation?
    a) Creating clones only
    b) Producing new plants from parent plants
    c) Only planting seeds
    d) Harvesting fruits

13. Why do organic farmers prefer asexual propagation for ornamental plants?
    a) It produces identical plants
    b) It produces variable offspring
    c) It uses seeds only
    d) It requires no soil

14. Which part is NOT normally used for asexual propagation?
    a) Stem
    b) Leaf
    c) Seed
    d) Root

15. In sexual propagation, variation is beneficial because it:
    a) Limits plant survival
    b) Helps adaptation
    c) Always reduces yield
    d) Causes weakness

16. What is the primary benefit of asexual propagation?
    a) Faster maturity
    b) Always higher yield
    c) Greater genetic variation
    d) Requires seeds

17. Which plant is most likely propagated using cuttings?
    a) Carrot
    b) Cassava
    c) Lettuce
    d) Corn

18. Which statement is true?
    a) Seeds can produce genetically different plants
    b) Cuttings always create variation
    c) Asexual propagation uses gametes
    d) Sexual propagation produces clones

19. Which of these is a result of sexual propagation?
    a) Rooting of a stem
    b) Growth of fruit from seed
    c) Leaf producing new plant
    d) Bulb sprouting

20. Which of the following propagation methods uses a bulb?
    a) Seed sowing
    b) Cutting
    c) Bulb planting
    d) Layering

21. A plant propagated through eyes of tubers (like sweet potato) primarily uses:
    a) Seeds
    b) Leaf petioles
    c) Vegetative parts
    d) Fruit segments

22. Sexual propagation is most commonly used for:
    a) Cloning plants
    b) Vegetable crops from seed
    c) Bulb plants
    d) Grafted orchids

23. Which is true about asexual propagation?
    a) It always uses seeds
    b) It produces uniform crops
    c) It increases genetic diversity
    d) It never uses plant parts

24. Why is sexual propagation important in organic farming?
    a) It ensures all plants are identical
    b) It promotes genetic diversity
    c) It always produces faster growth
    d) It uses chemicals

	25. Which of the following shows correct pairing of method and example? a) Sexual propagation — Rose cutting b) Asexual propagation — Tomato seed c) Sexual propagation — Corn seed d) Asexual propagation — Hybrid seed
VII. REFLECTION	Activity: "Garden Journal Reflection" Instructions: 1. Ask each learner to take a notebook or journal. 2. Have them write 3–5 sentences answering these questions: o What did you learn about sexual and asexual propagation? o Which method do you think is easier or more useful and why? o How can you apply what you learned in a garden at home, school, or community? 3. Invite learners to share one insight with a partner or the class.
VIII. USE OF GENERATIVE AI	In preparing this Learning Exemplar (LE), the author used Generative AI tool in order to generate activities, reflective questions, individual and group performance tasks, and evaluation tools to support the teaching of Farm Nursery Operations. These include activities on Plant Propagation Techniques and completing guided reflections to assess understanding and application. The author(s) reviewed and finalized the writing of the content. The author(s) take(s) full responsibility for the content of this LE.

LESSON EXEMPLAR			
Learning Area	**ORGANIC AGRICULTURE PRODUCTION**	**Grade Level**	**11**
Term	**1**	**Lesson Exemplar**	**8**

I. OBJECTIVES	
A. Content Standard	*The learners demonstrate understanding of principles in overview of organic agriculture production, maintenance of farm tools, materials and equipment, establish nursery for organic vegetable production, planting, and harvest and post-harvest handling operation following industry practices.*
B. Performance Standard	*The learners perform maintenance of farm tools, materials and equipment, nursery establishment, planting operation and harvest and post-harvest handling operation following safety precautions*
C. Learning Competencies	*Perform nursery operations for organic vegetable production*
II. REFERENCES and MATERIALS	Department of Education. (2016). **K to 12 Curriculum Guide for Agricultural Crop Production / Organic Agriculture Production NC II**. DepEd Philippines. Technical Education and Skills Development Authority (TESDA). (2017). **Training Regulations for Organic Agriculture Production NC II**. TESDA, Taguig City, Philippines. Food and Agriculture Organization of the United Nations (FAO). (2014). **Organic Agriculture and Sustainable Crop Production Guidelines**. Rome: FAO. OpenAI. (2026). *ChatGPT* [Large language model]. https://chat.openai.com/
III. CONTENT	Farm Nursery Operations • Care and Maintenance
IV. OBJECTIVES	At the end of the lesson, learners should be able to: • Explain the importance of proper nursery care in organic vegetable production. • Demonstrate proper maintenance practices for seedlings. • Apply organic methods in managing nursery pests, diseases, and growth conditions.

V. PROCEDURES		ANNOTATIONS
A. Activating Prior Knowledge	**1. ACTIVATING PRIOR KNOWLEDGE** **Activity Title: "Nursery Rescue Mission"** **A. Set-Up (Teacher Preparation)** Prepare 3 small "nursery stations" or picture cards: • **Station 1: Healthy Nursery** (green, upright seedlings, clean area) • **Station 2: Struggling Nursery** (wilting seedlings, dry soil, weeds) • **Station 3: Neglected Nursery** (overwatered, pests, dirty surroundings) You may also use printed photos if actual materials are not available. **B. Instructions to Learners** Tell the class: "You are now plant rescuers. Your mission is to inspect different nurseries and decide what is happening to the plants and how to fix them." Divide learners into small groups and assign each group a station. **C. Group Task** Each group will answer: 1. What do you observe in your assigned nursery? 2. What do you think caused the problem (if any)? 3. What should be done to improve or save the seedlings? 4. What care practices are being done correctly or incorrectly? **D. Output Sharing (Quick Report)** Each group will present in 1 minute: • "Our nursery condition is…" • "We think the problem is…" • "To improve it, we will…"	**Activating Prior Knowledge** *Prepare the needed materials before class and arrange them properly. Introduce the activity clearly and motivate the learners to participate. Group the learners and give clear directions on what they need to do. Allow them enough time to observe, discuss, and answer the guide questions.* *While the groups are working, move around the classroom to monitor participation, assist learners when needed, and encourage teamwork. After the activity, let each group share their answers briefly.* *Facilitate a short discussion by asking follow-up questions and clarifying important ideas. Highlight the value of proper care and maintenance of seedlings. Connect the learners' responses to the new lesson and smoothly transition to the discussion.*

	E. Processing Questions (Teacher-Led) After presentations, ask: • Which nursery would produce strong seedlings? Why? • What common problems did you notice? • What care practices are important for healthy seedlings? **F. Transition to Lesson** Say: "You already acted like real nursery managers by identifying problems and solutions. This time, we will learn the correct care and maintenance practices in organic nursery operations so you can apply them properly in real vegetable production." **2. ESTABLISHING THE PURPOSE OF THE LESSON** **A. Real-Life Situation** The teacher presents a short scenario: "Many farmers prepare seedlings in a nursery, but not all of them grow healthy. Some seedlings die before transplanting because of improper care such as overwatering, lack of shade, pests, or poor sanitation. This results in wasted seeds, time, and effort." **B. Guiding Questions** Ask the learners: • Why do you think some seedlings survive while others do not? • What happens if seedlings are not properly cared for before transplanting? • How can farmers ensure that seedlings are strong and healthy? **C. Purpose Statement (Teacher's Emphasis)** "Today's lesson will help us understand the proper care and maintenance practices in nursery operations for organic vegetable production. This knowledge is important so that we can raise healthy seedlings	**Establishing the Purpose of the Lesson** *Start the lesson by presenting a simple real-life situation about problems in nursery production. Explain it clearly so learners can easily understand.* *Ask the learners to guide questions and let them share their ideas. Encourage participation and accept all answers.* *State the purpose of the lesson by explaining that they will learn proper nursery care and maintenance for growing healthy seedlings using organic methods.* *End by emphasizing that taking care of seedlings also builds good values like patience, responsibility, and care for the environment. Then move to the main lesson discussion.*

	without using harmful chemicals and ensure successful transplanting in the field." **D. Value Integration** "By learning proper nursery care, we are not only improving plant growth but also practicing patience, responsibility, and environmental stewardship through organic farming methods."	
B. Instituting New Knowledge	**PRESENTING EXAMPLES** To help learners clearly understand the lesson, the teacher presents real and relatable examples of proper and improper nursery practices. A. Example 1: Proper Nursery Care (Well-Managed Nursery) A farmer prepares a nursery bed for pechay and lettuce using compost-rich soil. The seedlings are: • Watered lightly every morning • Placed under a net shade to protect from strong sunlight • Regularly checked for pests and diseases • Kept in a clean area free from weeds and debris Result: Seedlings grow green, strong, and uniform—ready for transplanting. B. Example 2: Poor Nursery Care (Neglected Nursery) Another farmer plants seeds but: • Waters them excessively or irregularly • Leaves the nursery exposed to direct harsh sunlight • Ignores weeds and insect pests • Uses contaminated water and dirty containers Result: Seedlings become weak, wilted, and many die before transplanting. C. Example 3: Organic Pest Control Practice A gardener notices insects attacking seedlings. Instead of using chemical pesticides, they: • Spray neem leaf extract	*Present each example clearly and in a simple manner so learners can easily understand the differences between proper and improper nursery practices.* *Use the examples to explain real situations in organic vegetable production.* *After presenting, guide learners in answering the processing questions. Encourage participation and allow different responses.* *Clarify important ideas and highlight the correct practices in nursery care. End by connecting the examples to the next part of the lesson on proper care and maintenance practices.*

	• Use garlic-chili solution • Remove affected seedlings manually Result: Pest population decreases without harming the environment. D. Example 4: Hardening Off Process Before transplanting, seedlings are: • Gradually exposed to sunlight for a few hours daily • Watered less frequently • Kept outdoors for several days Result: Seedlings become stronger and adapt well after transplanting. **Processing Questions** Ask learners: • Which example shows the best nursery practice? Why? • What mistakes were made in the poor nursery example? • How do organic methods help nursery care? **Transition Statement** "From these examples, we can see that proper care and maintenance are essential in raising healthy seedlings. Let us now learn the correct practices in detail and how to apply them in organic vegetable production." **DISCUSSING NEW CONCEPT** A. Definition of Terms ▪ Care and Maintenance The regular practices are done to ensure healthy growth of seedlings, such as watering, weeding, shading, fertilizing, and pest control. ▪ Watering The application of water to seedlings to maintain moisture are needed for germination and growth. ▪ Drainage	

	The removal of excess water from the nursery bed or containers to prevent root rot and diseases. ▪ Shading Providing partial cover to protect seedlings from excessive sunlight, heat, or heavy rain. ▪ Weeding The removal of unwanted plants that compete with seedlings for nutrients, water, and space. ▪ Thinning The removal of excess seedlings to provide enough space for healthy growth of remaining plants. ▪ Pricking Out The careful transfer of young seedlings from seed trays or beds to wider spacing or separate containers. ▪ Hardening Off The gradual exposure of seedlings to outdoor conditions before transplanting to reduce transplant shock. ▪ Sanitation Keeping the nursery clean and free from weeds, debris, and diseased plants to prevent pest and disease outbreaks. B. Discussion Key Concepts and Discussion 1. Water Management • Water seedlings regularly but avoid overwatering. • Use clean, non-contaminated water. • Best practice: Water early in the morning or late afternoon. • Ensure proper drainage to prevent damping-off disease. 2. Shade and Light Regulation • Provide partial shades using net or banana leaves. • Gradually expose seedlings to sunlight (hardening-off process).	

	• Prevent excessive heat stress and wilting. 3. Weeding and Sanitation • Remove weeds manually to reduce competition for nutrients. • Keep nursery area clean and free from plant debris. • Regular sanitation prevents pest breeding and disease spread. 4. Organic Fertilization • Apply compost tea, vermicompost extract, or fermented plant juice (FPJ). • Avoid synthetic fertilizers. • Apply in small, controlled amounts to prevent seedling burn. 5. Pest and Disease Management (Organic Methods) • Use botanical pesticides (e.g., neem extract, chili-garlic spray). • Practice crop rotation in nursery trays if reusable. • Inspect seedlings regularly for early detection. • Remove and isolate infected seedlings immediately. 6. Thinning and Pricking Out • Thin overcrowded seedlings to reduce competition. • Transfer healthy seedlings to individual containers when needed. • Handle seedlings carefully to avoid root damage. 7. Hardening Off • Gradually reduce shade and water before transplanting. • Expose seedlings to outdoor conditions for 5–7 days. • Strengthen plants for field survival. 8. Monitoring and Record Keeping • Observe seedling growth daily.	

	• Record germination rate, pest incidence, and growth progress. • Helps in evaluating nursery performance. **DEVELOPING MASTERY** A. Activity 1: "Identify and Correct" The teacher presents situations, and learners identify the problem and suggest the correct practice. Example Situations: 1. Seedlings are turning yellow and weak because the nursery is always flooded with water. 2. Weeds are growing around seedlings, competing for nutrients. 3. Seedlings are exposed to very strong sunlight without any shade. 4. Insects are eating the leaves of young plants, and no action is taken. Guide Questions: • What is the problem in the situation? • What nursery care practice should be done to fix it? B. Activity 2: Group Task – "Nursery Care Plan" Divide learners into small groups. Each group will create a simple care plan for a nursery. Guide Format: • Watering schedule • Shading method • Organic pest control method • Weeding and sanitation plan Output: Short poster or written plan C. Activity 3: Demonstration (Teacher-Led with Learners Participation) The teacher demonstrates and learners imitate:	

	• Proper watering technique (light watering, not flooding) • Removing weeds carefully • Applying simple organic pest control (e.g., simulated neem spray) • Proper handling of seedlings during transfer D. Activity 4: Think and Explain Ask learners to answer orally: • Why is overwatering harmful to seedlings? • Why should we use organic methods in nursery care? • How does hardening off help seedlings survive transplanting? E. Teacher's Reinforcement Emphasize: "Proper care and maintenance are not separate steps—they work together to ensure strong, healthy seedlings. Every action in the nursery affects the success of transplanting in the field."	
C. Demonstrating Knowledge and Skills	**FINDING PRACTICAL APPLICATION** At this stage, learners apply what they have learned to real-life or simulated situations to demonstrate understanding and relevance of nursery care practices. A. Activity: "My Home Nursery Challenge" Learners are tasked to imagine or observe a small nursery at home or school and answer the following: • What vegetables can be grown in a simple nursery setup? • What materials can you use if commercial tools are not available? • How will you ensure proper care and maintenance using organic methods? Output: Short written plan or oral sharing.	

	B. Activity: "Problem Solver in the Nursery" Present a real-life scenario: "A farmer notices that seedlings in the nursery are wilting, pests are increasing, and weeds are growing rapidly. The farmer only uses organic farming methods." Learners will answer: • What immediate action should be taken? • What long-term care practices should be improved? • What organic solutions can be applied to? C. Activity: Community Connection (Optional Field Task) Learners may: • Visit a school or community nursery • Observe actual care and maintenance practices • Interview a gardener or farmer about their nursery management Guide Questions: • What care practices are being used? • Are they using organic methods? How? • What improvements can you suggest? D. Reflection Question Ask learners: • How can proper nursery care help farmers produce better vegetables? • How can you apply these practices in your own home or community garden? E. Teacher's Emphasis "Proper care and maintenance in the nursery are not just school lessons—they are real skills that can help families grow healthy vegetables and support sustainable organic farming."	

	MAKING GENERALIZATION Activity Title: "Complete the Concept Map" A. Instructions to Learners Provide learners with a partially completed concept map (on paper or board). They will complete it by summarizing what they have learned about nursery care and maintenance. B. Concept Map Guide Branches to Complete: • Watering • Shading • Weeding and Sanitation • Organic Pest Control • Organic Fertilization • Hardening Off Learners will fill in each branch with a short phrase describing its importance or practice. C. Example Output (Guide for Teacher) • Watering – "Keeps soil moist but not flooded" • Shading – "Protects seedlings from too much heat" • Weeding – "Removes competition for nutrients" • Pest Control – "Uses natural solutions like neem or garlic spray" • Fertilization – "Uses compost or organic materials" • Hardening Off – "Prepares seedlings for transplanting" D. Pair Sharing After completing the concept map, learners will pair up and answer: • What is the most important nursery care practice for you? Why? • What happens if one of these practices is ignored?	

	E. Generalization Question (For the whole class) Ask: "If you will summarize everything we learned today, how would you describe proper care and maintenance in an organic nursery?" F. Expected Learner Generalization Guide learners toward this idea: "Proper care and maintenance in an organic nursery involve regular watering, proper shading, weeding, organic pest control, and hardening off to ensure healthy seedlings ready for transplanting without using harmful chemicals." **EVALUATING LEARNING** Part I: Multiple Choice. Choose the letter of the correct answer. 1. Which practice helps prevent seedlings from getting too much heat? A. Overwatering B. Shading C. Fertilizing heavily D. Ignoring weeds 2. What is the best organic way to control pests in the nursery? A. Chemical spray B. Burning plants C. Neem or garlic extract D. No action needed 3. Why is weeding important in the nursery? A. To make plants taller B. To add more pests C. To reduce competition for nutrients D. To increase water level	

	Part II: Identification. Identify what nursery practice is being described. 4. Gradually exposing seedlings to outdoor conditions before transplanting. → _____ 5. Removing excess seedlings to give space for others. → _____ 6. Using compost or natural materials to enrich soil. → _____ Part III: Short Answer. Answer briefly: 7. Why should overwatering be avoided in a nursery? 8. How does proper nursery care affect transplant success? Performance Check (Optional Practical Evaluation) Learners will demonstrate: • Proper watering technique • Identifying healthy vs. unhealthy seedlings • Applying a simple organic pest control method **ADDITIONAL ACTIVITIES** Activity Title: "My Mini Nursery Diary" A. Instructions to Learners Learners will keep a simple daily record of a seedling (real or imagined) for 3–5 days. They will observe and note how proper care affects plant growth. B. Guide Format (Learners' Output) Day 1: • What I did (watering, shading, etc.): _____ • Observation: _____ Day 2: • What I did: _____ • Observation: _____	

	Day 3: • What I did: _____ • Observation: _____ C. Reflection Questions After completing the diary, learners will answer: • What care practice helped your seedling grow well? • What problems did you notice when care was not consistent? • What did you learn about taking care of seedlings in a nursery? D. Output Submission • Written diary (notebook or worksheet) • Optional drawing of seedling growth stages E. Teacher's Note This activity helps learners connect daily responsibility with plant growth and strengthens their understanding of proper nursery care in organic vegetable production. .	
VI. ASSESSMENT	**ASSESSMENT:** A. Part I: Multiple Choice. *Choose the letter of the correct answer.* 1. Which practice helps seedlings grow healthy in a nursery? A. Overwatering B. Proper shading C. Ignoring weeds D. Using dirty water 2. What is the main purpose of weeding in the nursery? A. To decorate the area B. To compete with seedlings C. To remove plants that compete for nutrients D. To increase pests 3. Which is an organic method of pest control? A. Chemical spray B. Neem extract C. Synthetic fertilizer D. Burning seedlings	

4. Why is hardening off important?
   A. To weaken seedlings
   B. To prepare seedlings for field conditions
   C. To increase pests
   D. To stop growth
5. What happens when seedlings are overwatered?
   A. They grow faster always
   B. They become stronger
   C. They may rot or die
   D. They need no sunlight
6. Which material is best for organic fertilization?
   A. Compost
   B. Plastic waste
   C. Chemical fertilizer
   D. Paint
7. What is the purpose of shading seedlings?
   A. To block all light
   B. To protect from excessive heat
   C. To increase weeds
   D. To reduce growth

8. What should be removed to maintain nursery sanitation?
   A. Healthy seedlings
   B. Tools only
   C. Weeds and plant debris
   D. Water supply
9. Which is a sign of healthy seedlings?
   A. Wilting leaves
   B. Yellowing leaves
   C. Green and upright stems
   D. Rotten roots
10. What is transplanting?
   A. Planting seeds in trays
   B. Moving seedlings to the field
   C. Watering plants
   D. Removing pests

	Part II: Identification. 11. Gradual exposure of seedlings to outdoor conditions → Hardening off 12. Natural fertilizer made from decomposed organic matter → Compost 13. Removal of excess seedlings to give space → Thinning 14. Natural spray made from plants like garlic or chili → Botanical pesticide 15. Area where seedlings are grown before transplanting → Nursery Part III: Short Answer 16. Why is proper watering important in nursery operations? (2 points) Answer: Proper watering maintains soil moisture needed for seedling growth and prevents problems like drying out or root rot caused by overwatering. 17. Give one reason why organic pest control is preferred in nursery management. (2 points) Answer: It protects seedlings and the environment from harmful chemicals and promotes safe, sustainable farming. 18. What is the importance of nursery care before transplanting? (1 point) Answer: It ensures seedlings are strong and healthy for successful growth in the field.
VII. REFLECTION	**REFLECTION QUESTIONS** A. Ask learners to answer in 3–5 sentences each: 1. What important lesson did you learn about caring for seedlings in a nursery? 2. Which nursery care practice do you think is the most important? Why? 3. How can you apply what you learned today in your home or community garden? 4. What challenges might farmers face in maintaining a nursery, and how can they solve them using organic methods? B. Reflection Statement (Sentence Completion) Learners complete the statements: • "I realized that caring for seedlings is important because _____." • "I will apply what I learned by _____." • "One thing I should improve in taking care of plants is _____." C. Teacher's Closing Message "Proper care and maintenance in nursery operations is not just a farming skill—it is a responsibility. Healthy seedlings begin with careful hands and consistent effort. What you learned today can help you become more responsible growers and stewards of nature."
VIII. USE OF GENERATIVE AI	In preparing this Learning Exemplar (LE), the author used Generative AI tool in order to generate activities, reflective questions, individual and group performance tasks, and evaluation tools to support the teaching of Farm Nursery Operations. These include activities on care and maintenance in nursery operations. the author(s) reviewed and finalized the writing of the content. The author(s) take(s) full responsibility for the content of this LE.