

K to 12 TECHNOLOGY AND LIVELIHOOD EDUCATION

**AGRICULTURE/FISHERY - HORTICULTURE
(Exploratory)**

Content Standard	Performance Standard	Learning Competencies	Project/ Activities	Assessment	Duration
LESSON 1: USE FARM TOOLS AND EQUIPMENT					
<p><i>Demonstrate understanding of/on:</i></p> <ul style="list-style-type: none"> • Farm tools <ul style="list-style-type: none"> ➢ Power tools ➢ Handheld tools (ex. scythe, pruning tools, etc. • Safety practices during operations of farm equipment 	<ol style="list-style-type: none"> 1. Appropriate farm tools are identified according to requirements/use. 2. Farm tool checked for faults and defective tools are reported in accordance with farm procedures. 3. Appropriate tools and equipment are safely used according to job requirements and manufacturers' conditions. 4. Grafting knives are reconditioned oiled and properly stored. 	<p>LO1. Select and use farm tools.</p>	<ol style="list-style-type: none"> 1. Drawing the farm tools and indicating their functions. 2. Getting familiarized with tools used in land preparation, cultivation, plant propagation, and harvesting. 3. Poster making on the safety precaution on the use of farm tools. 	<ul style="list-style-type: none"> • Written test • Performance Test 	<p>5 hours</p>
<ul style="list-style-type: none"> • Manual of farm equipment and specifications • Parts and functions of equipment • Pre-operation and check-up. • Safety practices during operations of farm equipment • Calibration and use of 	<ol style="list-style-type: none"> 1. Appropriate farm equipment and facilities are identified. 2. Instructional manual of farm equipment are carefully read prior to operation. 3. Pre-operation check-up is conducted in line with manufacturers' manual. 4. Faults in farm equipment and facilities are identified and reported in line with farm 	<p>LO2. Select and operate farm equipment.</p>	<ol style="list-style-type: none"> 1. Making a scrapbook of pictures of farm equipment and writing down the functions of the farm equipment. 2. Making a report on the manufacturers' manual. 3. Conducting a slogan making contest on proper use of farm equipment. 4. Handling farm equipment 	<ul style="list-style-type: none"> • Written test • Performance Test 	<p>7 hours</p>

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farm equipment	<p>procedures.</p> <ol style="list-style-type: none"> 5. Farm equipment are used according to its function. 6. Safety procedures are followed. 		to determine if they are functional or not.		
<p><i>Demonstrate understanding of/on:</i></p> <ul style="list-style-type: none"> • Preventive maintenance <ul style="list-style-type: none"> ➤ Safety measures and practices in cleaning and storing for different farm tools, equipment and facilities. ➤ Upkeep of equipment 	<ol style="list-style-type: none"> 1. Tools and equipment are cleaned immediately after use in line with farm procedures. 2. Routine check-up and maintenance are performed. 3. Tools and equipment are stored in designated areas in line with farm procedures. 4. Farm tools and equipment are regularly sharpened and oiled from time to time. 	LO3.Perform preventive maintenance.	<ol style="list-style-type: none"> 1. Sharpening tools and equipment as the need arises. 2. Making a checklist of the conditions of the tools and equipment. 3. Doing regular inspection of the tools and the cabinet/storing places. 4. Doing an inventory of tools and equipment before and after use. 	<ul style="list-style-type: none"> • Written test • Performance Test 	5 hours
LESSON 2: PERFORMING ESTIMATION AND BASIC CALCULATION					
<ul style="list-style-type: none"> • Problem solving procedures • Basic mathematical operations • Depreciation of farm tools and implements • Simple project proposal making • Financial Statement • Pricing 	<ol style="list-style-type: none"> 1. Job requirements are identified. 2. Quantities of materials and resources required to complete a work task are estimated. 3. Time needed to complete a work activity is estimated. 4. Accurate estimate for work completion is made. 	LO1. Perform estimation.	<ol style="list-style-type: none"> 1. Making a simple project proposal to be able to determine through estimation man-hour requirement, needed input, time frame, labor requirement, etc. 2. Preparing of Financial Statement. 3. Determining the price of product. 	<ul style="list-style-type: none"> • Written test • Performance Test • Problem solving 	5 hours

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<i>Demonstrate understanding of/on:</i>	<ol style="list-style-type: none"> 5. Estimate of materials and resources are reported. 6. Determining the cost and return of producing horticultural crops. 7. Determining the profit/loss using the four fundamental operations. 8. Determining the price of a product with the use of mark up percentage. 		<ol style="list-style-type: none"> 4. Computing depreciation costs using various forms of computing depreciation. 		
<ul style="list-style-type: none"> • Basic mathematical operations • Systems of measurement • Units of measurement • Conversion of units • Fractions and decimals • Percentages and ratios • Basic record keeping 	<ol style="list-style-type: none"> 1. Calculations to be made are identified according to job requirements. 2. Correct method of calculation is determined. 3. Systems and units of measurement to be followed are ascertained. 4. Calculations needed to complete work task are performed using the four basic mathematical operations. 5. Appropriate operations are used to comply with the instruction 6. Result obtained is reviewed and thoroughly checked. 	LO2.Perform basic workplace calculations.	<ol style="list-style-type: none"> 1. Contest on reciting units of measurement and conversion tables. 2. Preparing project proposal in a magnified manner. 3. Preparing the operating statement and cash flow. 4. Computing for the total sales, total expenses and net profit or net loss. 5. Computing fertilizer amount. 	<ul style="list-style-type: none"> • Written test • Performance Test 	5 hours

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LESSON 3: INTERPRET PLANS AND DRAWINGS					
<p><i>Demonstrate understanding on:</i></p> <ul style="list-style-type: none"> • Farm plans and layout • Types of planting systems in horticultural crop production • Interpreting and reading planting system • Government plans • Staking procedures • Planting board 	<ol style="list-style-type: none"> 1. Planting system is interpreted according to established farm procedures. 2. Farm plans and layout are designed according to crop grown. 3. Site is staked according to planting plan/system. 	LO1. Interpret farm plans and layouts.	<ol style="list-style-type: none"> 1. Lay outing garden plots based on the measurement. 2. Interpreting an orchard plan and sketch. 3. Introducing the use of planting board. 4. Constructing an ideal plan for horticultural crop production field. 	<ul style="list-style-type: none"> • Written test • Performance Test • Checklist using rubrics 	3 hours
<ul style="list-style-type: none"> • Lay-out plan of irrigation system • Types of irrigation system 	<ol style="list-style-type: none"> 1. Irrigation system plan is interpreted according to established procedures. 2. Different designs of irrigation systems are enumerated according to standard procedures. 	LO2. Interpret irrigation plan and design.	<ol style="list-style-type: none"> 1. Sketching a plan on irrigation system to suit the topography of the land. 2. Creating a miniature irrigation canal based on the actual measurement and use ratio and proportion. 	<ul style="list-style-type: none"> • Written test • Performance Test 	3 hours
LESSON 4: APPLYING SAFETY PRECAUTIONS IN FARM OPERATIONS					
<ul style="list-style-type: none"> • Farm works that involves using chemicals • Personal protective equipment used in farms 	<ol style="list-style-type: none"> 1. Safety measures are applied based on work requirement and farm procedures. 2. Tools and materials are utilized in accordance with specification and procedures. 	LO1. Apply appropriate safety measures while working in	<ol style="list-style-type: none"> 1. Demonstrating proper wearing of PPE. 2. Conducting a lecture forum on first aid. 3. Showing films on safety precaution. 	<ul style="list-style-type: none"> • Written examination • Interview 	4 hours

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<p><i>Demonstrate understanding of/on:</i></p> <ul style="list-style-type: none"> • Basic first aid • Farm emergency procedures regarding safety working environment 	<ol style="list-style-type: none"> 3. Outfit is worn in accordance with farm requirements. 4. Shelf life and/or expiration of materials are effectively checked against manufacturer's specifications. 5. Hazards in the workplace are identified and reported in line with farm guidelines 6. Emergency and accidents are responded to and prevented. 	<p>thefarm.</p>	<ol style="list-style-type: none"> 4. Conducting student reporting on hazards in the farm. 5. Organizing a symposium on the prevention of accidents in the farm. 		
<ul style="list-style-type: none"> • Procedure in cleaning and storing tools and outfits • Technique in storing materials and chemicals • Government requirement regarding farm waste disposal • Waste management system (FPA laws, DENR laws, etc.) 	<ol style="list-style-type: none"> 1. Used tools and outfit are cleaned and stored in line with farm procedure. 2. Unused materials are labeled and stored according to manufacturer's recommendation and farm requirements. 3. Waste materials are disposed according to manufacturer's, government and farm requirements. 	<p>LO2.Safe keep/ dispose tools, materials and outfit.</p>	<ol style="list-style-type: none"> 1. Making posters/drawings pertaining to proper disposal of waste materials. 2. Conducting slogan making on the proper use of tools and equipment. 3. Make compost. 	<ul style="list-style-type: none"> • Written examination • Interview 	<p>4 hours</p>
					40 hours