

Standards Based Assessment and Grading Plant Science

Quarter 1

<i>Unit</i>	<i>Section</i>	<i>Learning Outcome / Objective "What Students Should Know"</i>	<i>Process Skills "What Students Should Be Able to Do"</i>	<i>Assessment</i>
Plant Science and Plant Propagation	Introduction to Horticulture	<ul style="list-style-type: none"> ✓ Exploring the Horticulture and Plant Science Fields – size & scope, job descriptions, working conditions 	<ul style="list-style-type: none"> ✓ Define Plant Science. ✓ Define Horticulture ✓ Identify the size & scope of the industry. ✓ Identify job descriptions and related working conditions. 	<ul style="list-style-type: none"> ✓ Work with a partner to determine job description, work condition, and education needed for a given job in the horticulture field ✓ Be able to explain the scope of the horticulture industry and opportunities for employment ✓ Entrance Card – Definition of Plant Science & Industry Basics ✓ Exit Card – Importance of Plant Science Industry ✓ Entrance Card – Definition of Plant Science & Industry Basics
		<ul style="list-style-type: none"> ✓ Understand plant taxonomy to know: <ul style="list-style-type: none"> - Need for classification. - Development of the present classification system. - Common & scientific names. - Important families of agricultural plants. - Agricultural crops belonging to the Gramineae family. 	<ul style="list-style-type: none"> ✓ Explain the binomial classification system. ✓ Name the founding father of the classification system. ✓ List 10 common and scientific plant names. 	<ul style="list-style-type: none"> ✓ Plant Taxonomy Worksheet ✓ Plant Taxonomy Quiz

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Plant Science and Plant Propagation	Plant Science	<ul style="list-style-type: none"> ✓ Plant composition. - Makeup of cells. - Purpose of plant roots. - Types of plant roots. - Purpose of plant stems. - Difference between herbaceous and woody stem. - Purpose of plant leaves. - Type of leaves. - Three main leaf arrangements - Purpose of the xylem and the phloem. 	<ul style="list-style-type: none"> ✓ Label the main parts to a tap and non-tap root. ✓ Describe the functional difference between tap and non-tap roots. ✓ Label the main parts to herbaceous and woody stems. ✓ Describe the functional difference between herbaceous and woody stems. ✓ Dissect and label the main parts of a leaf. ✓ Describe the functional difference the xylem and the phloem. ✓ Create a leaf collection of specified leaf types, arrangements and margins. 	<ul style="list-style-type: none"> ✓ Leaf Collection & Labeling ✓ Leaf Dissection ✓ Plant Parts and Functions Packet ✓ Cell Biology Quiz ✓ Flower Dissection ✓ Cell Biology Packet ✓ Stem Dissection ✓ Root Dissection ✓ Stem Quiz ✓ Root Quiz ✓ Flower Quiz ✓ Plant Parts and Functions Self-Evaluation Questions – Textbook ✓ Plant Anatomy and Physiology Quiz
		<ul style="list-style-type: none"> ✓ Environmental Requirements for Good Plant Growth - <i>Water</i> <ul style="list-style-type: none"> - Its functions in the life of a plant. - Meaning of the term "water requirement." - Amount required by different species. - The process of transpiration. - Factors affecting the water requirement of plants. - <i>Light</i> <ul style="list-style-type: none"> - Its functions in the life of a plant. ✓ Sources and quality for plant usage. 	<ul style="list-style-type: none"> ✓ Water a plant from top down. ✓ Water a plant from bottom up. ✓ Explain the concept of transpiration. ✓ Select the proper place to grow a plant, based on lighting requirements. ✓ Explain the difference between "day long" and "day short" plants. 	<ul style="list-style-type: none"> ✓ Design and conduct an experiment to test the different requirements for plant growth

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Plant Science and Plant Propagation	Plant Propagation	✓ Principles and practices of : - Separation - Division - Cutting - Grafting - Layering	✓ Asexually propagate two different plants by means of: - Separation - Division - Layering ✓ Asexually propagate four different plants by means of: - Cutting (root and stem) ✓ Explain the process of grafting - Describe two examples of effective plant grafting. ✓ Sexually propagate plants	✓ Entrance Card – Seed Propagation ✓ Seed Propagation Quiz ✓ Propagation Presentations ✓ Seed Propagation Lab – Planting Seeds ✓ Exit Card – Propagation Through Cuttings ✓ Propagation Through Cuttings – Lab ✓ Propagation Through Cuttings – Textbook Questions ✓ Propagation Through Separation – Lab ✓ Propagation Through Division – Lab
Vegetable, Fruit, & Bedding Plant Production	Small Fruit Garden & Orchard Operations	✓ Orchard Production Techniques and Management	✓ Prune plants ✓ Identify fruit trees using fruit and leaves	✓ Apple Identification & Questions ✓ Orchard Pruning Lab

Quarter 2

<i>Unit</i>	<i>Section</i>	<i>Learning Outcome / Objective "What Students Should Know"</i>	<i>Process Skills "What Students Should Be Able to Do"</i>	<i>Assessment</i>
Soils	Soil Composition	✓ Importance of Soil Composition	<ul style="list-style-type: none"> ✓ Identify soil textures ✓ Identify soil structure ✓ Label a soil profile ✓ Collect a soil sample and test for nutrients and pH 	<ul style="list-style-type: none"> ✓ Lab – Soil Texture and Structure ✓ LAB – Soil Testing ✓ QUIZ – Soil Profiles ✓ LAB – Edible Soil Profiles ✓ QUIZ – Soil Texture, Structure & Triangle ✓ Nature of Soil Worksheet ✓ Soil: The Source of Life packet ✓ LAB – Soil – Order of Best ✓ C6-5: Understanding Soil Texture & Structure Worksheet ✓ Soil Characteristics – Word Search & Fill in the Blank ✓ Soils Test ✓ Properties of Soils Crossword ✓ Entrance Card – Plant Anatomy and Soils
	Soil Conservation	✓ Process and Prevention of Soil Erosion and Degradation	<ul style="list-style-type: none"> ✓ Define soil erosion ✓ Identify common causes of soil erosion ✓ Describe the types of soil erosion and their effects 	<ul style="list-style-type: none"> ✓ LAB – Soil Erosion ✓ Properties of Soils Crossword ✓ Entrance Card – Plant Anatomy and Soils
	Soil Color and Classification	✓ Characteristics of Soil Classes and Colors	<ul style="list-style-type: none"> ✓ Describe the meaning of soil color ✓ Identify the characteristics of each class of soil 	<ul style="list-style-type: none"> ✓ C6-3: Understanding Soil Color ✓ Exit Card – Soil Class ✓ Soils Test ✓ C6-1: Determining the Nature of Soil – Worksheet ✓ Properties of Soils Crossword ✓ Entrance Card – Plant Anatomy and Soils
Floral Arrangements and Centerpieces	Holiday Centerpieces	✓ Principles of Floral Design	<ul style="list-style-type: none"> ✓ Demonstrate proper centerpiece form ✓ Create a finished holiday centerpiece 	<ul style="list-style-type: none"> ✓ LAB – Wreath Making

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Hydroponics	Introduction to Hydroponics	✓ Types of Hydroponics Systems	✓ Explain the history of hydroponics ✓ Describe the different types of hydroponics systems	✓ Hydroponics Questions ✓ Hydroponics Presentations

Quarter 3

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Integrated Pest Management	Pest Management	✓ Importance of Integrated Pest Management	<ul style="list-style-type: none"> ✓ Define Integrated Pest Management ✓ Describe the safe use of pesticides ✓ Read a pesticide label for safe use ✓ Explain the types of pesticides and how they are different 	<ul style="list-style-type: none"> ✓ Pg 160-161 – IPM Assignment #1 ✓ Pesticide Safety – Sample Test ✓ Using Pesticides Safely Sample Test/Worksheet ✓ Economic Injury Level Worksheet ✓ IPM – Sample Test ✓ IPM Word Search & Definitions ✓ Pesticide Labels – Sample Test ✓ Reading a Pesticide Label – Worksheet ✓ Pg 170 – IPM Assignment #2 ✓ IPM Projects ✓ IPM Test
	Plant Diseases	✓ Symptoms and Treatments of Common Plant Diseases	<ul style="list-style-type: none"> ✓ Describe the common symptoms of plant disease ✓ Identify common plant diseases ✓ Explain how plant diseases spread ✓ Provide explanation of how to treat plant diseases ✓ Identify favorable conditions for plant diseases 	<ul style="list-style-type: none"> ✓ Managing Plant Diseases – Chart ✓ Plant Diseases – Definitions ✓ IPM Projects ✓ IPM Test ✓ IPM Word Search & Definitions

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Floral Arrangements and Centerpieces	Floral Designs	✓ Principles of Floral Design	<ul style="list-style-type: none"> ✓ Demonstrate proper centerpiece form ✓ Create a finished centerpiece ✓ Describe the types of flowers used in floral designs and give their purpose 	✓ Types of Flowers for Floral Designs
Fruits and Vegetables	Fruit Production and Classification	✓ Proper classification of fruits	✓ Classify common fruits based on their characteristics	<ul style="list-style-type: none"> ✓ Exit Card – Fruits ✓ LAB – Fruit Classifications ✓ Fruit & Veggie Test ✓ Small Fruit Gardens – Chart ✓ Small Fruit Garden Questions ✓ Cranberry Production Questions
		✓ Maintenance of Fruit Crops	<ul style="list-style-type: none"> ✓ Describe proper pruning for fruit trees ✓ Explain how to properly maintain a fruit crop for profit 	<ul style="list-style-type: none"> ✓ Exit Card – Fruits ✓ Fruit & Veggie Test ✓ Small Fruit Gardens – Chart ✓ Small Fruit garden Questions ✓ VIDEO – Grape Production ✓ Cranberry Production Questions ✓ LAB – Fruit Tree Pruning
		✓ Fruit Crop Production Methods	<ul style="list-style-type: none"> ✓ Explain the various ways fruits can be produced ✓ Identify the advantages and disadvantages of various production methods 	<ul style="list-style-type: none"> ✓ Exit Card – Fruits ✓ Fruit & Veggie Test ✓ Small Fruit Gardens – Chart ✓ Small Fruit garden Questions ✓ VIDEO – Grape Production ✓ Cranberry Production Questions
	Vegetable Production and Classification	✓ Planning and Preparing a Vegetable Garden	<ul style="list-style-type: none"> ✓ Create a blueprint for a vegetable garden prior to planting ✓ Explain the factors that need to be considered when planning a vegetable garden ✓ Identify a variety of vegetables in order to determine what to plant in a garden 	<ul style="list-style-type: none"> ✓ Planning a Vegetable Garden – Questions ✓ LAB – Vegetables ✓ Garden Plan ✓ Vegetable Garden – Questions ✓ Fruit & Veggie Test

Quarter 4

<i>Unit</i>	<i>Section</i>	<i>Learning Outcome / Objective "What Students Should Know"</i>	<i>Process Skills "What Students Should Be Able to Do"</i>	<i>Assessment</i>
Landscape Design & Greenhouse Management	Landscape Design Basics	✓ Definition of Landscape Design and Basic Tools	<ul style="list-style-type: none"> ✓ Properly use an architects scale to draw and measure lines ✓ Calculate mulch requirements for a given area ✓ Identify the components of a landscape 	<ul style="list-style-type: none"> ✓ Mulch Calculations ✓ Using an Architects Scale ✓ QUIZ – Landscape Design ✓ Annual Flower Garden ✓ House Rough Draft
	Designing a Landscape	✓ How to design a basic landscape	<ul style="list-style-type: none"> ✓ Describe the basic principles of design ✓ Apply the principles of design to a simple area ✓ Describe the advantages and disadvantages of the different types of plants available for landscapes ✓ Create basic flower gardens using the principles of design 	<ul style="list-style-type: none"> ✓ Mulch Calculations ✓ Using an Architects Scale ✓ QUIZ – Landscape Design ✓ Annual Flower Garden ✓ House Rough Draft ✓ QUIZ – Broadleaf vs Narrowleaf Evergreens ✓ QUIZ – Annual Bedding Plants ✓ Perennial Flower Garden ✓ Mixed Garden Design
	Careers in the Landscape & Greenhouse Industries	✓ Careers in the Landscape Industry	<ul style="list-style-type: none"> ✓ Identify the careers within the landscape industry ✓ Describe the job duties and skills needed to perform various job duties within the landscape industry 	<ul style="list-style-type: none"> ✓ LAB – Landscape Maintenance ✓ LAB – Landscape Contracting ✓ Greenhouse Crop Questions ✓ QUIZ – Landscape Design ✓ LAB – Flower Planting ✓ LAB – Rock Planting ✓ LAB – Greenhouse Transplanting
Turfgrass Management	Growing and Maintaining Turfgrass	✓ Proper Care and Maintenance of Turfgrass	<ul style="list-style-type: none"> ✓ Explain the steps for establishing turfgrass ✓ Identify problems with turfgrass ✓ Explain how to properly maintain turfgrass 	<ul style="list-style-type: none"> ✓ Unit 34 – Self Evaluation Questions ✓ Pg 384-385 – Establishing the Lawn ✓ LAB – Lawn Problems ✓ QUIZ – Lawn Maintenance ✓ Yard Tech Video