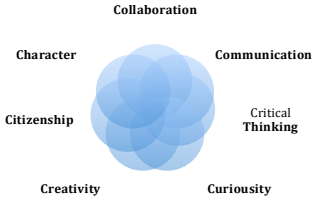
Content Area: Agriscience and Technology	Nursery/Landscape Year B	Grade Level: 11/12
	**R14 The Seven Cs of Learning** 	

Unit Titles	Length of Unit
• *Turf Grass Management*	4-5 Weeks
• *Plant Identification*	4-6 Weeks
• *Pest and Diseases*	2-4 Weeks
• *Weed Identification*	2-3 Weeks
• *Supervised Agricultural Experience (SAE) Proficiencies*	2-3 Weeks
• *Landscape Design (Hand Drawing)*	4-6 Weeks
• *Botany*	4-5 Weeks
• *Soil Science/Nutrition*	2-4 Weeks
• *Plant Needs/Growing Conditions*	2-4 Weeks

Strands	Course Level Expectations
Safety	• Design, operate and maintain landscape equipment, tools, hardscapes, and plantscapes in a safe and efficient manner
Design	• Analyze, plan, outline, and create landscape concepts through the use of hand sketches and computer drawings
Build	• Determine the proper use and amount of materials to be use to construct both plantscapes and hardscapes.
Maintain	• Troubleshoot and use the proper equipment to keep a landscape performing at the highest level of aesthetics and beautification

Unit Title	Turf Grass Management	**Length of Unit**	4-5 Weeks

Inquiry Questions (Engaging & Debatable)	● Why is turf grass an essential part of the Landscaping industry? ● How does proper turf grass maintenance promote a grass health? ● What are the major factors in maintaining turf grass?
Unit Strands & Standards	**Plant Systems (PS):** **PS.04.01.** Evaluating, identifying and preparing plants to enhance an environment **PS.04.02.02.c.** Choose and properly use appropriate tools to create a desired design. **PS.01** Develop and implement a crop management plan for a given production goal that accounts for environmental factors. **PS.01.01.03.c** Analyze plant responses to water conditions and recommend modifications for desired plant growth.
Unit Strands & Concepts	Types of grass, turf grass needs, maintenance practices, installing and establishing new turf grass
Key Vocabulary	Turf grass, aeration, topdressing, cool season grass, warm season grass, spreader, lime, and granular fertilizer.

Unit Title	Turf Grass Management	**Length of Unit**	4-5 Weeks

Critical Content: **My students will Know…**	**Key Skills:** **My students will be able to (Do)…**
• the difference between cool and warm season grasses. • the proper time of year and height to cut turf grass • the ideal temperature for both cool and warm season grasses. • the different types of stress and damage that can occur to turf grass • the benefits of aerating the grass	• identify the basic parts of grass and to tell different grasses apart • demonstrate the proper and safe way to mow the grass • use the aerator to aerate the grass • top dress and help install a new plot of grass through a grass renovation.

Assessments:	● Formative and Interim Assessments ● Performance Assessment
Teacher Resources:	❖ Local Sales and Repair Dealers (i.e. Chainsaws Unlimited & Woodbury Saw and Mower) ❖ Equipment operation and owner's manuals ❖ Various Primary and Industry Resources

Unit Title	Plant Identification	**Length of Unit**	4-6 weeks

Inquiry Questions **(Engaging & Debatable)**	● Why is it important to know both the common and botanical names of plants? ● How are you able to identify plants without any leaves?
Standards	**Plant Systems (PS):** **PS.04.01.** Evaluating, identifying and preparing plants to enhance an environment **PS.01.01.03.c** Analyze plant responses to water conditions and recommend modifications for desired plant growth. **PS.01.02:** Apply knowledge of plant anatomy and the functions of plant structures to activities associated with plant systems.
Unit Strands & Concepts	Common ornamental landscape plants, cultural requirements, landscape uses
Vocabulary	Ornamental landscape plant, genus, species, variety, cultivar, common name, dichotomous key, evergreen, leaf, stem.

Unit Title	Plant Identification	**Length of Unit**	4-6 Weeks

Critical Content: **My students will Know…**	**Key Skills:** **My students will be able to (Do)…**
• a process to read and write proper scientific names • ways to identify plants by using their key characteristics • a process to identify plants when their major key feature is missing by using supplemental characteristics.	• identify both the common and botanical names of the selected list of plant material • determinate whether the plants are evergreen or desitus. • identify plants by using their key characteristics • identify plants when their major key feature is missing by using supplemental characteristics.

Assessments:	● Formative and Interim Assessments ● Performance Assessment -
Teacher Resources:	❖ Parker, Rick. Plants and Soils Science: Fundamentals and Applications. Delmar Cengage Learning. 2010 ❖ Various Primary and Industry Resources

Unit Title	Pest and Diseases	**Length of Unit**	2-4weeks

Inquiry Questions (Engaging & Debatable)	● What can be done to prevent/stop pest and diseases from harming plants? ● What is the safest and more environmentally conscious way to apply pesticides? ● What is the most common types of pest and diseases that attack ornamental landscape plants?
Standards	**Plant Systems (PS):** **PS.03.03.** Develop and implement a plan for integrated pest management for plant production. **PS.03.03.01.b.** Identify and analyze major local weeds, insect pests and infectious and noninfectious plant diseases.
Unit Strands & Concepts	Laws regulations and certification, pesticide application, safety and personal protection, IPM, common pests, common diseases, reading a label, calibration of equipment
Key Vocabulary	Applicators certificate, toxicity, residue, tolerance, PPE, IPM, EPA registration number, and signal words

Unit Title	Pest and Diseases	**Length of Unit**	2-4 weeks

Critical Content: **My students will Know…**	**Key Skills:** **My students will be able to (Do)…**
• the different types of pesticide certifications required by law to use pesticides • the hazards and effective uses of pesticides to treat pest and diseases • the proper and required safety gear that is needed to apply certain pesticides • how to identify different categories of insects and pests • students will properly know how to fill mix and calculate pesticides to be used.	• interprate and post re-entry intervals for treated areas • identify and use appropriate personal protective equipment when it comes to pesticides. • identify signs of pesticide poisoning and be able to treat with basic first aid. • implement and explain how an IPM program would work for a selected crop • identify problematic insects and pest common to ornamental landscapes • read and understand the information given on a pesticide label and from it be able to safely and appropriately apply the pesticide.

Assessments:	● Formative and Interim Assessments ● CT Private Applicator's Certification Test
Teacher Resources:	❖ CT DEEP resources from www.ct.gov/deep ❖ Various Primary and Industry Resources

Unit Title	Weed Identification	**Length of Unit**	2-3 weeks

Inquiry Questions (Engaging & Debatable)	● What is a weed? ● Why is it important to know the difference between a weed and a non-weed?
Standards	**Plant Systems (PS):** **PS.03.03.01.a.** Identify and categorize plant pests, diseases and disorders. **PS.03.03.01.b.** Identify and analyze major local weeds, insect pests and infectious and noninfectious plant diseases
Unit Strands & Concepts	Types of weeds, plant resilience, method of seed dispersal, type of weed control
Vocabulary	Herbicide, weed, annual, perennials, cultivator, mechanical control, biological control, invasive plant, pre-emergence, noxious weed

Unit Title	Weed Identification	**Length of Unit**	2-3 weeks

Critical Content: **My students will Know…**	**Key Skills:** **My students will be able to (Do)…**
• ways to identify what is a weed and what is not • a selected weeds lifecycle and how its spreads • the difference between biological and mechanical controls for weeds	• identify common weeds by common name from a selected list of plants • apply both mechanical and biological controls to a landscape • explain a selected weeds lifecycle and how its spreads

Assessments:	● Formative and Interim Assessments ● Performance Assessment
Teacher Resources:	❖ Parker, Rick. Plants and Soils Science: Fundamentals and Applications. Delmar Cengage Learning. 2010 ❖ Various primary and industry resources

Unit Title	SAE Proficiencies	**Length of Unit**	1 to 2 weeks

Inquiry Questions (Engaging & Debatable)	● How does record keeping relate to evaluation of goals? ● How does a student quality growth? ● How does a student describe and document success?
Standards	**Career Ready Practices (CRP):** **CRP.01**. Act as a responsible and contributing citizen and employee. **CRP.01.01**. Model personal responsibility in the workplace and community **CRP.01.02** Evaluate and consider the near-term and long-term impacts of personal and professional decisions on employers and community before taking action. **CRP.01.03.** Identify and act upon opportunities for professional and civic service at work and in the community. **CRP.02.** Apply appropriate academic and technical skills. **CRP.02.01.** Use strategic thinking to connect and apply academic learning, knowledge and skills to solve problems in the workplace and community. **CRP.02.02.** Use strategic thinking to connect and apply technical concepts to solve problems in the workplace and community.
Unit Strands & Concepts	Learn the importance of accurate record keeping, personal responsibility, descriptive writing, and goal planning. Record keeping, Descriptive writing, Evaluation of goals and success.
Vocabulary	Proficiency, financial report, income, expenses, career success, placement, scope, expenditures, gross earnings, net earnings, liabilities, net worth

Unit Title	SAE Proficiencies	**Length of Unit**	1 to 2 weeks

Critical Content: **My students will Know…**	**Key Skills:** **My students will be able to (Do)…**
• utilize AET • describe and explain the student's' SAE • calculate hours worked and money earned • list skills and identify growth • calculate gross and net income • evaluate goals	• create a comprehensive PowerPoint presentation • create a expense report and earning report • write descriptive paragraphs • assemble a collage • create a resume • describe and quality success

Assessments:	• **Formative and Interim Assessments** • **Summative:** Submission of Proficiency Application (National FFA Proficiency Rubric) • **Performance Assessment:** SAE Presentation
Teacher Resources:	❖ www.theaet.com and various other primary and industry sources.

Unit Title	Landscape Design (Hand Drawing)	**Length of Unit**	4-6weeks

Inquiry Questions (Engaging & Debatable)	● How does design enhance a landscape? ● Why is it important to know your client? ● How does computer-drafting aid in the design process?
Unit Strands & Standards	**Plant Systems (PS):** **PS.04.01.** Evaluating, identifying and preparing plants to enhance an environment **PS.04.02.** Create designs using plants. **PS.04.02.02.c.** Choose and properly use appropriate tools to create a desired design.
Concepts	Importance of landscapes, site assessment, site requirements, client interviews, principles of design, outdoor room concept, hand drawing, color rendering, plant selection
Vocabulary	Site analysis, preliminary design, plan view, elevation view, perspective view, principle of design, outdoor room, scale, drafting tools, drawing symbols

Unit Title	Landscape Design (Hand Drawing)	**Length of Unit**	4-6 weeks

Critical Content: **My students will Know…**	**Key Skills:** **My students will be able to (Do)…**
• importance of landscaping based on the benefits and function of a space • importance of a client's needs and wants when it come to design • importance of a client interview and how it affects the end result of a design • properly use and identify outdoor rooms and principles of design. • to come up with an appropriate list of plant material to be used in a design. • how when to use proper landscape design symbols	• evaluate the needs and requirements of a space based on site assessment and client interviews • assess the needs and requirements of a site that is to have a landscape installation • assess the needs and requirements of a client seeking landscape services by performing a client interview • create a landscape design by incorporating the principals of design, and the outdoor room concept • create a hand drawn landscape design in plan view using appropriate hand drafting tools.

Assessments:	● Formative and Interim Assessments ● Performance Assessment - Hand Drawn design, graded using a rubric
Teacher Resources:	● Ingels, Jack E. Landscaping: Principles and Practices. 6th Edition. Thomson Delmar Learning, Inc. 2004 ● Various primary and industry resources

Unit Title	**Botany**	**Length of Unit**	4-5 weeks

Inquiry Questions **(Engaging & Debatable)**	● How do plant function? ● What do the parts of a plant do for the plant? ● How do the part of the plant work together?
Standards	**Plant Systems (PS):** **PS.02**. Apply principles of classification, plant anatomy, and plant physiology to plant production and management. **PS.02.02**. Apply knowledge of plant anatomy and the functions associated with plant systems. **PS.02.03.** Apply knowledge of plant physiology and energy conversion to plant systems.
Unit Strands & Concepts	Root systems, stems, leaves, flowers, fruit, seeds, plant cells, photosynthesis, respiration
Key Vocabulary	Roots, stems, leaves, flower, cells, photosynthesis, respiration, xylem, phloem, meristem

Unit Title	Botany	**Length of Unit**	4-5 weeks

Critical Content: **My students will Know…**	**Key Skills:** **My students will be able to (Do)…**
• the different parts of a plant and how they are connected to make systems within the plant • that the plant makes it own food and converts that food into usable energy • the process of how plants reproduce sexually	• Identify the parts of a plant • Make connections of parts of a plant to its function within the plant

Assessments:	● Formative and Interim Assessments ● Performance Assessment
Teacher Resources:	❖ Parker, Rick. Plants and Soils Science: Fundamentals and Applications. Delmar Cengage Learning. 2010 ❖ Various primary and industry resources

Unit Title	Soil Science/Nutrition	**Length of Unit**	2-4 weeks

Inquiry Questions (Engaging & Debatable)	● What are the basic elements that plants need to grow? ● Why is soil important to plant?
Standards	**Plant Systems (PS):** **PS. 01:** Apply knowledge of plant classification, plant anatomy and plant physiology to the production and management of plants. **PS.01.02**: Apply knowledge of plant anatomy and the functions of plant structures to activities associated with plant systems. **PS.02**. Apply principles of classification, plant anatomy, and plant physiology to plant production and management. **PS.02.02**. Apply knowledge of plant anatomy and the functions associated with plant systems.
Unit Strands & Concepts	Soil testing and sampling, amendment of soil, soil factors that influence plant growth, physical and chemical properties of soil, nutrient deficiencies
Key Vocabulary	Sand, silt, clay, loam, soil horizons, organic layer, soil structure, macronutrients, micronutrients, deficiency

Unit Title	Soil Science/Nutrition	**Length of Unit**	2-4 weeks

Critical Content: **My students will Know…**	**Key Skills:** **My students will be able to (Do)…**
• ways to read and interpret a soil test result sheet • a process to analyze the makeup of soil and profile its characteristics. • what plants need from soil in order to grow healthy	• collect and perform a basic soil test using a home testing kit • add amendments to soil to improve it nutritional value for plant growth • identify and correct nutrient deficiencies found in plant related to soil

Assessments:	● Formative and Interim Assessments ● Performance Assessment
Teacher Resources:	❖ Parker, Rick. Plants and Soils Science: Fundamentals and Applications. Delmar Cengage Learning. 2010 ❖ Various primary and industry resources

Unit Title	Plant Needs/Growing Conditions	Length of Unit	2-4 weeks

Inquiry Questions (Engaging & Debatable)	● What do all plants need to grow? ● Why do some plant require more or less care than others?
Standards	**Plant Systems (PS):** **PS. 01:** Apply knowledge of plant classification, plant anatomy and plant physiology to the production and management of plants. **PS.01.02**: Apply knowledge of plant anatomy and the functions of plant structures to activities associated with plant systems. **PS.02**. Apply principles of classification, plant anatomy, and plant physiology to plant production and management.
Unit Strands & Concepts	Temperature, light, water, air, nutrients, and support, signs of stress
Vocabulary	Media, growing conditions, Growing Degree Days, Hardiness Zone, phototropism, photoperiod, wilt, stress,

Unit Title	Plant Needs/Growing conditions	**Length of Unit**	2-4 weeks

Critical Content: **My students will Know…**	**Key Skills:** **My students will be able to (Do)…**
● What the basic needs are for all plants to live and survive ● The most ideal conditions for their nursery crops to produce a high yield	● test the extremes of a plant's basic needs to see when it get stressed out ● analyze a plant's condition to see what can be done to maximize its production ● point out a plant that is stressed

Assessments:	● Formative and Interim Assessments ● Performance Assessment
Teacher Resources:	● Parker, Rick. Plants and Soils Science: Fundamentals and Applications. Delmar Cengage Learning. 2010 ● Various primary and industry resources