

Student name: _____

Date: _____

PROGRAM COMPETENCY PROFILE FOR CAREER TECHNICAL EDUCATION
Career Cluster: Agriculture, Food and Natural Resources

Program Name: PLANT SYSTEMS: Applied Horticulture/Horticultural Operations, General CIP: 010601

Effective: 9/2015

National Standard: National Career Clusters

Competencies (statement that provides the overview and defines the instructional area) Student will:	Knowledge, Content and Skills (what a student needs to know and be able to do and upon which they will be assessed) http://www.careertech.org/career-ready-practices http://www.education.nh.gov/career/career/aaoi.htm Student will:	NH Common Core State Standards – •English/Language Arts/Literacy: E •Mathematics: M	Rating Scale -Sample Performance Assessments (Performance tasks the student needs to demonstrate in order to be rated proficient in meeting the competency) Student will:				
Understand taxonomic and other classifications of plants to build a working understanding of functional differences.	1. Classify plants according to taxonomy systems.	ELA: 2, 4, 6, 8	<table border="1" style="width: 100px; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table> For example: You work for the county cooperative extension office, and a local resident comes in with a mystery plant that she found in her area. She asks you to help her identify the plant. Research the plant, and be prepared to contact the resident with your results. Continue to #2	1	2	3	4
	1	2	3	4			
2. Apply elements of plant anatomy, physiology and the functions of plant structures to activities associated with plant systems.		<table border="1" style="width: 100px; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table> For example:	1	2	3	4	
1	2	3	4				
Understand how the influence of environmental factors, nutrients and growing media on plant growth impacts the production and management of plants	3. Determine the influence of environmental factors on plant growth. AAI 5. Underlying Principles of Technology:	ELA: 2, 6, 8, and 9 M: 18, 19	<table border="1" style="width: 100px; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table> For example: You work in a greenhouse, and you notice that the leaves of your plants are chlorotic. You have been assigned to rehabilitate the plants. Determine potential solutions and be prepared to present your results to your supervisor. Continue to #6.	1	2	3	4
	1	2	3	4			
4. Identify the nature and properties of growing media for use in plant systems.	ELA: 2, 4, 6, 8 M: 18, 19	<table border="1" style="width: 100px; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table> For example: You work in a greenhouse and are propagating plants using a variety of media and techniques. Select the best media and techniques for the different plants for successful and healthy growth, resulting in a selection of plants for sale, and present your results to your supervisor. Continue to #5	1	2	3	4	
1	2	3	4				

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	5. Evaluate and manage soil/media nutrients using tests of appropriate materials and/or by examining data.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table> For example:	1	2	3	4
1	2	3	4				
	6. Analyze nutritional requirements to develop and implement a fertilization plan for specific crops or plants. CRP: Employ valid and reliable research strategies.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table> For example:	1	2	3	4
1	2	3	4				
Understand the fundamentals of the production, culture, harvesting and maintenance of plants to demonstrate successful plant management techniques.	7. Demonstrate plant propagation techniques. AAI 4. Technical and Production Skills CRP: Apply appropriate academic and technical skills.	ELA: 2, 7, 8, 9 M: 2, 6, 15	<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table> For example: You are a landscaper who is developing a new garden bed for a homeowner, using only existing materials onsite. Devise a plan that uses appropriate propagation methods and maintains overall plant health, and review it with the homeowner.	1	2	3	4
	1	2	3	4			
8. Develop and implement a plant management plan for plant health and productivity. CRP: Consider the environmental, social and economic impacts of decisions.	ELA: 2, 3, 4, 6, 7, 8, 9 M: 2, 6, 15	<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table> For example: You are a horticulture teacher at school who is starting a new CSA with the help of your students. Your goals are to both provide healthy, quality produce for your customers and supplement the food for the school kitchen. You need to determine what crops meet local needs and attract potential partners, and present your plan to your school administration. Continue to #9 & 10.	1	2	3	4	
1	2	3	4				

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	9. Develop and implement a plan for integrated pest management. (insects, diseases and nutrition) CRP: Utilize critical thinking to make sense of problems and persevere in solving them.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table> For example:	1	2	3	4
1	2	3	4				
	10. Apply principles and practices of sustainable agriculture to plant production. CRP: Use technology to enhance productivity		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table> For example:	1	2	3	4
1	2	3	4				
	11. Properly harvest, handle and store crops.	ELA: 3, 6, 7, 8, 9 M: 2, 6	<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table> For example: You are a worker in an orchard, and your job is to harvest and pack the fruit to ensure safe travel and maximum freshness from farm to store. Explain your plan to your supervisor.	1	2	3	4
1	2	3	4				
Understand the proper selection, use and maintenance of tools and equipment that is essential to plant systems.	12. Demonstrate proper use, maintenance, and storage of tools/equipment, to include machinery, personal protective equipment, and technology in all areas of industry.	ELA: 2, 7, 8, 9	<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table> For example: You are working for your local municipality maintaining public spaces, including parks, public buildings, and cemeteries. Demonstrate use and maintenance of the correct hand and power tools for each situation, while ensuring personal safety.	1	2	3	4
1	2	3	4				
Understand and apply safety regulations, procedures, and methods to have a safe work environment	13. Employ emergency procedures as necessary to provide aid in workplace accidents. AAI 8. Health, Safety, and Environment	ELA: 2, 4, 7, 8 M: 2, 15	<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table> For example: You are a turf specialist and are working at a site where a chemical has been spilled. Demonstrate appropriate safety practices for you and the other people on site. Continue to #14	1	2	3	4
1	2	3	4				

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Student will:	Student will:		Student will:				
	14. Implement personal and jobsite safety rules and regulations to maintain safe and healthful working conditions and environments.		<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; text-align: center;">1</td> <td style="width: 20px; text-align: center;">2</td> <td style="width: 20px; text-align: center;">3</td> <td style="width: 20px; text-align: center;">4</td> </tr> </table> <p>For example:</p>	1	2	3	4
1	2	3	4				
Understand and apply design principles to enhance an environment for a variety of purposes.	15. Create designs using plants that demonstrate an application of basic design elements and principles for: landscaping, floral, farm, and interiorscape CRP: Demonstrate creativity and innovation	ELA: 3, 4, 6, 7, 8, 9 M: 2, 15	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; text-align: center;">1</td> <td style="width: 20px; text-align: center;">2</td> <td style="width: 20px; text-align: center;">3</td> <td style="width: 20px; text-align: center;">4</td> </tr> </table> <p>For example: Your principal has requested that your horticulture class design the graduation decorations so that they are aesthetically pleasing and fit within a predetermined budget. Create a plan and be prepared to share at a faculty meeting.</p>	1	2	3	4
	1	2	3	4			
16. Discuss and be aware of advance technology in this industry (automation, climate control, CAD, industry-specific software).	ELA: 2, 3, 4, 6, 7, 8, 9 M: 2, 15	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; text-align: center;">1</td> <td style="width: 20px; text-align: center;">2</td> <td style="width: 20px; text-align: center;">3</td> <td style="width: 20px; text-align: center;">4</td> </tr> </table> <p>For example: You are a horticulture teacher with a preset amount of money available for updating your greenhouse. Work with your students to determine the best technology for your situation and budget, and be prepared to present to school administration.</p>	1	2	3	4	
1	2	3	4				
Understand and apply the concepts, techniques, and strategies of entrepreneurship/business owner to make sound business decisions	17. Identify and utilize strategies and techniques to market, price, promote, and sell quality products in order to meet customer needs.	ELA: 2, 3, 4, 6, 7, 8, 9 M: 2, 18, 19	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; text-align: center;">1</td> <td style="width: 20px; text-align: center;">2</td> <td style="width: 20px; text-align: center;">3</td> <td style="width: 20px; text-align: center;">4</td> </tr> </table> <p>For example: You work in a local flower shop and are preparing for Valentine’s Day sales. Create a plan for the purchase and production of product, and share your plan with the shop’s owner. Continue to #19</p>	1	2	3	4
1	2	3	4				

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	18. Demonstrate effective communications skills and proper etiquette while assisting customers. CRP: Communicate clearly and effectively and with reason.	ELA: 3, 4, 7, 8 M: 2, 6	<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table> For example: You are the crew chief for a local tree company. An employee calls you to say that he has damaged a customer’s car in the process of removing a diseased limb. Create a solution that resolves the plan positively for all parties, and communicate this with the customer.	1	2	3	4
1	2	3	4				
	19. Determine cost, profit margins, and financial implications of design or production decisions. AAI 2. Management:		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table> For example:	1	2	3	4
1	2	3	4				
	20. Discuss business possibilities and identify the steps in planning a business. AAI 1. Planning	ELA: 2, 3, 4, 6, 7, 8, 9 M: 2, 4, 6, 18, 19	<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table> For example: You are a new high school graduate who wants to start a small landscaping business. You need to create a business plan, acquire funding and appropriate equipment and materials, and attract new customers. Be prepared to present your plan to a local lender. Continue to 21 & 22.	1	2	3	4
1	2	3	4				
	21. Identify the resources needed for business startup and operation. AAI 3. Finance		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table> For example:	1	2	3	4
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	22. Discuss the options in planning the business future (growth, development, demise). AAI 6. Labor Issues AAI 7. Community Issues CRP: Act as a responsible and contributing citizen and employee		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table> For example:	1	2	3	4
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	23. Discuss and identify the skills and behaviors of being a business owner /entrepreneur (passion, confidence, self-motivation, tenacity, leadership, management, etc.). CRP: Model integrity, ethical leadership and effective management	ELA: 3, 4, 5, 7, 8, 9 M: 2, 6	<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table> For example: You are a successful landscaper, who is looking to expand his business. You need to hire new employees and manage them effectively. Create a set of interview questions and a probationary evaluation tool. Present your ideas to your current employees, and get their feedback.	1	2	3	4
1	2	3	4				
Understand the necessary career readiness and employability skills in order to achieve success in today’s workplace	24. Discuss and research career options and postsecondary programs within this industry to assist in developing a career plan. CRP: Plan education and career paths aligned to personal goals.	ELA: 2, , 3, 4, 6, 7, 8, 9 M: 2, 6	<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table> For example: You’re a high school student determining post-graduation plans. Evaluate your areas of interest and the available options, and create a five year plan. Share your plan with the rest of your class.	1	2	3	4
1	2	3	4				

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	25. Demonstrate personal growth, community leadership, democratic principles and social responsibility by participating in activities/events offered through FFA and other professional organizations. AAI 9. Personal Work Habits CRP: Work productively in teams while using cultural global awareness. CRP: Attend to personal health and financial well-being.	ELA: 3. 4, 7, 8, 9 M:	<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">1</td> <td style="width: 25%;">2</td> <td style="width: 25%;">3</td> <td style="width: 25%;">4</td> </tr> </table> For example: You're an FFA student officer and are part of a team that is looking to recruit new members. Create an advertising campaign to attract your target audience, and share your plan with the rest of your team.	1	2	3	4
1	2	3	4				

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