

Student Name: _____

Date: _____

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

Program Name: Agriculture, Agriculture Operations, and Related Sciences, Other CIP: 019999

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.education.nh.gov/career/career/aaoi.htm http://www.careertech.org/career-ready-practices Student will:	NH Common Core State Standards English/Language Arts/Literacy: E Mathematics: M http://www.education.nh.gov/competencies/index.htm	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 anatomy and physiology as applied to production and/or management of animals in a domestic or natural environment.	1. Describe functional differences and classify animals according to structures and body systems. CRP: Apply appropriate academic and technical skills	ELA: 2, 4, 6-9 M:1	<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 have been assigned by your supervisor to go out and buy a performance animal or an animal to increase herd production. You will report to your supervisor your suggested purchase, and validate the selection. Include # 1-3	1	2	3	4
	1	2	3	4			
	2. Identify selected animal parts from a diagram or a real animal. CRP: Apply appropriate academic and technical skills	ELA: 2	<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				
3. Identify ways an animal's health can be affected by anatomical or physiological problems and as a result why some animals perform better than others. CRP: Apply appropriate academic and technical skills	ELA: 2,7,8	<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				

Key: Rating Scale: 1 NO EXPOSURE; 2 = NOVICE (Information was covered in class, but student cannot demonstrate skill or knowledge without significant supervision); 3 = PROFICIENT (Student regularly demonstrates the knowledge or skill); 4= MASTERY (Student demonstrates successful completion of this skill numerous times without supervision.)

Common Core: E=English/Language Arts (Reading, Writing, Research, Listening Speaking, Technology) | M=Mathematics (Numbers Quantity, Algebra, Functions, Geometry, Stat&Prob)

All Aspects of Industry (AAI) | Career Ready Practices (CRP)

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	4. Identify good performance and health traits and perform simple procedures in evaluating an animal's health status and desirable productive numbers (e.g., birth weight, rate of gain, age of maturity, and age of sexual maturity). CRP: Employ valid and reliable research strategies CRP: Apply appropriate academic and technical skills	ELA: 2,4,6-9 M:2	<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: At a production facility you must monitor the rate of weight gain versus feed consumption for an animal that is to go to market on a targeted date. As an employee, you must take and record weekly weight gains on a chart, and present it to your manager. Include #4-5 .	1	2	3	4
1	2	3	4				
	5. Recognize the different phases of an animal's life cycle. CRP: Apply appropriate academic and technical skills	ELA: 2,					
	6. Identify symptoms determine treatment and provide care of disease, illnesses, and parasites. CRP: Communicate clearly, effectively and with reason CRP: Apply appropriate academic and technical skills	ELA: 2,4,6-9 M:1, 2	<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: As a veterinary technician, you have to perform a fecal test. Upon examination under the microscope, you have to document the findings of an internal parasitic infestation and design a plan for treatment and prevention, while addressing other health problems that have developed as a result of the worms. i.e., anemic blood test or poor body conditioning scores.	1	2	3	4
1	2	3	4				

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	7. Identify the parts of male and female reproductive tracts on sample animals. CRP: Apply appropriate academic and technical skills	ELA: 2,4,7-9	<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: As a new trainee, you have been given an acquired reproductive tract of a deceased animal. It is your task to identify all the parts and, with an acquired teaching media, recreate the reproductive tract and label all the parts. <i>or</i> You are working for a company that provides informative leaflets for animal owners, and you have been asked to produce a descriptive leaflet on reproductive physiology for two different species. You should include labelled diagrams of the male and female reproductive systems and outline the stages of sexual reproduction.	1	2	3	4
1	2	3	4				
Understand animal behaviors in order to promote safety practices	8. Analyze the reproductive cycle of a given animal, and evaluate animal's readiness for breeding and heat detection. CRP: Use technology to enhance productivity.	ELA: 2, 4,6-9 M:1,2	<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: As a facility breeding manager you have to observe a specific species for an allotted period of time, and document noted signs of heat using charts corresponding with animals in the herd.	1	2	3	4
	1	2	3	4			
9. Explain the scope of normal animal behavior within a species/breed, and assess factors which serve to stimulate or discourage given types of animal behavior. CRP: Apply appropriate academic and technical skills	ELA: 7-8	<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: A guest speaker, i.e. dog trainer, comes in with an animal or two and talks to trainees about the different types of behavior being shown. A group discuss occurs on the behavior(s) being exhibited and what factors stimulated this behavior. Trainees later use this information and knowledge to analyze different videos of a variety of animal species.	1	2	3	4	
1	2	3	4				

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Student will:	Student will:		Student will:				
	10. Identify strengths and weaknesses of safe handling practices of animals, and demonstrate safe handling procedures. AAI 4. Technical and Production Skills CRP: Work productively in teams while using cultural/global awareness CRP: Critical thinking to make sense of problems and persevere in solving them. CRP: Demonstrate creativity and innovation CRP: Consider the environmental, social and economic impacts of decisions CRP: Attend to personal health and financial well-being CRP: Apply appropriate academic and technical skills CRP: Act as a responsible and contributing citizen and employee	ELA:2,6-9	<table border="1" style="margin-left: auto; margin-right: auto;"> <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> For Example: You have been hired to work at a local animal park, and, as a new trainee, you must demonstrate to the supervisor proper handling procedures.	1	2	3	4
1	2	3	4				

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Student will:	Student will:		Student will:				
	11. Operate animal facilities to ensure safety of animals and design facilities appropriate for the production of a given species of animal. AAI 8. Health, Safety, and Environment CRP: Work productively in teams while using cultural/global awareness CRP: Critical thinking to make sense of problems and persevere in solving them CRP: Demonstrate creativity and innovation CRP: Consider the environmental, social and economic impacts of decisions CRP: Apply appropriate academic and technical skills CRP: Act as a responsible and contributing citizen and employee	ELA:2,6-9 M:1,2	<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 have been hired at Pet Life and take on the position of fish room manager. As the manager, you must run and maintain an aquarium for 4 months, while documenting water quality, fish loss, feed requirements, costs, and safety of the employees.	1	2	3	4
1	2	3	4				
Understand nutritional concepts to maintain optimal animal health.	12. Explain proper nutrition to maintain animal performance. CRP: Communicate clearly, effectively and with reason CRP: Apply appropriate academic and technical skills	ELA:2,4,6-9 M:1,2	<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: Student is allowed to select a species/animal of their choice and must map out all nutritional needs and feeding requirements for all stages of life. Examples are not limited to but may include: roughage, concentrates, supplements, and wet verses dry feeds. Presentation can be in the form of a research report, powerpoint or poster. Include #12-15	1	2	3	4
1	2	3	4				

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	13. Explain the spectrum of feeds and the nutritional requirements of the animal.		<table border="1" style="display: inline-table; vertical-align: top;"> <tr> <td style="width: 25px; text-align: center;">1</td> <td style="width: 25px; text-align: center;">2</td> <td style="width: 25px; text-align: center;">3</td> <td style="width: 25px; text-align: center;">4</td> </tr> </table> For Example:	1	2	3	4
1	2	3	4				
	14. Select diets that provide the appropriate quality of nutrients for each animal's development stage, and determine appropriate feed rations. CRP: Demonstrate creativity and innovation CRP: Consider the environmental, social and economic impacts of decisions CRP: Communicate clearly, effectively and with reason CRP: Apply appropriate academic and technical skills	ELA:2,4,6-9 M:1,2	<table border="1" style="display: inline-table; vertical-align: top;"> <tr> <td style="width: 25px; text-align: center;">1</td> <td style="width: 25px; text-align: center;">2</td> <td style="width: 25px; text-align: center;">3</td> <td style="width: 25px; text-align: center;">4</td> </tr> </table> For Example:	1	2	3	4
1	2	3	4				
	15. Identify the difference between good and poor quality feeds.	ELA:2,6-9	<table border="1" style="display: inline-table; vertical-align: top;"> <tr> <td style="width: 25px; text-align: center;">1</td> <td style="width: 25px; text-align: center;">2</td> <td style="width: 25px; text-align: center;">3</td> <td style="width: 25px; text-align: center;">4</td> </tr> </table> For Example:	1	2	3	4
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Student will:	Student will:		Student will:				
Understand the fundamentals of plant production and harvesting to produce a quality product.	16. Manipulate and evaluate environmental conditions (e.g., irrigation, shading) to foster germination, growth, and development. AAI 4. Technical and Production Skills AAI 5. Underlying Principals of Technology AAI 8. Health, Safety, Environment CRP: Use technology to enhance productivity. CRP: Consider the environmental, social and economic impacts of decisions CRP: Demonstrate creativity and innovation CRP: Consider the environmental, social and economic impacts of decisions CRP: Communicate clearly, effectively and with reason	ELA:2,6-9	<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 a horticulture teacher who is starting a new CSA with the help of your students. Your goal is to provide healthy, quality produce for your customers and supplement the food needed in the school kitchen. You need to determine what crops meet local needs and attract local customers.	1	2	3	4
1	2	3	4				

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	17. Evaluate and demonstrate transplanting practices. AAI 4. Technical and Production Skills CRP: Attend to personal health and financial well-being CRP: Apply appropriate academic and technical skills	ELA:7-8	<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: As a local grower your employees are continually transplanting plant products to post for resale. You have them use a checklist to make sure they match the correct plant with the location, (sunlight, wind, water, soil type,) spacing, digging of hole, (size root ball) to yield healthy and hearty plants.	1	2	3	4
1	2	3	4				
	18. Describe and apply nutrient application methods and appropriate practices. AAI 5. Principals of Technology CRP: Use technology to enhance productivity. CRP: Consider the environmental, social and economic impacts of decisions CRP: Communicate clearly, effectively and with reason CRP: Apply appropriate academic and technical skills	ELA:2,4,6-9 M:1,2	<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 work in a greenhouse propagating plants using a variety of techniques. After evaluating the media for microorganism, soil pH, organic matter, you select the needed amendments for the soil and propagate your crop for the growing season. Include #18-20	1	2	3	4
1	2	3	4				

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	19. Evaluate and determine permeability and nutrient properties of media. CRP: Employ valid and reliable research strategies CRP: Communicate clearly, effectively and with reason CRP: Apply appropriate academic and technical skills	ELA:2,4,6-9	<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:	1	2	3	4
1	2	3	4				
	20. Identify and describe the biological functions of microorganisms of media. CRP: Use technology to enhance productivity. CRP: Apply appropriate academic and technical skills	ELA:2,4,6-9	<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:	1	2	3	4
1	2	3	4				
Understand taxonomic or other classification as it relates to basic plant anatomy and physiology in order to identify plants and their similar needs and characteristics.	21. Identify and classify plants as monocots or dicots, and identify the life cycle of the plant (annuals, biennials, or perennial). CRP: Apply appropriate academic and technical skills	ELA:2,4,6-9	<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 work for the local cooperative extension, and a local resident comes in with a local mystery plant which has been found in their yard. The homeowner asks you to identify the plant and provide findings. Your job is to conduct research and provide the homeowner with your findings.	1	2	3	4
1	2	3	4				

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Understand anatomy as applied to production and management of plants in a domesticated and a natural environment in order to produce a quality product.	22. Identify plant structures (e.g., seeds) and their functions within the plant. CRP: Apply appropriate academic and technical skills	ELA:2,4,6-9	<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: While working for a bedding plant company, you genetically develop a new color combination for bedding plants. In your findings, document plant structures, needed germination conditions, and the role of genetic selection. Include # 22-25	1	2	3	4
	1	2	3	4			
	23. Describe germination process and conditions. CRP: Apply appropriate academic and technical skills	ELA:2,4,6-9	<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:	1	2	3	4
	1	2	3	4			
24. Identify and practice methods of asexual and sexual plant propagation. CRP: Communicate clearly, effectively and with reason CRP: Apply appropriate academic and technical skills	ELA:2,4,6-9	<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:	1	2	3	4	
1	2	3	4				
25. Describe the role of genetics in plants. CRP: Apply appropriate academic and technical skills CRP: At as a responsible and contributing citizen and employee	ELA:2,4,6-9 M: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:	1	2	3	4	
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Competencies (statement that provides the overview and defines the instructional area)	Knowledge, Content and Skills (what a student needs to know and be able to do and upon which they will be assessed) http://www.education.nh.gov/career/career/aaoi.htm http://www.careertech.org/career-ready-practices	NH Common Core State Standards English/Language Arts/Literacy: E Mathematics: M http://www.education.nh.gov/competencies/index.htm	Rating Scale -Sample Performance Assessments (Performance tasks the student needs to demonstrate in order to be rated proficient in meeting the competency)				
Student will:	Student will:		Student will:				
Understand concepts, methods, and techniques related to pest management and apply safety practices to production and management of plants in a domesticated and a natural environment to insure a healthy product and working environment.	26. Identify plant pests or diseases and their life cycles and symptoms. AAI 8. Health, Safety, and Environment CRP: Apply appropriate academic and technical skills	ELA:2,4,6-9	<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 own a Christmas tree farm. While walking through the rows, you notice a group of trees with needle discoloration. You research the problem based on symptoms, identify the pest and its current life cycle, and devise a method of treatment. After applying treatment, you reevaluate the conditions of the trees and make further recommendations. All pesticide use is recorded on yearly EPA use form. Include #26-28	1	2	3	4
	1	2	3	4			
27. Determine pest management methods for pests and diseases, including the possibility of resistance to treatment methods. CRP: Apply appropriate academic and technical skills	ELA:2,5-9	<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:	1	2	3	4	
1	2	3	4				

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All Aspects of Industry (AAI) | Career Ready Practices (CRP)

PROGRAM COMPETENCY PROFILE FOR CAREER TECHNICAL EDUCATION

Career Cluster: Agriculture, Food and Natural Resources

Program Name: Agriculture, Agriculture Operations, and Related Sciences, Other CIP: 019999

Effective 9/2015

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Student will:	Student will:		Student will:				
	28. Implement and evaluate pest control plan with appropriate treatments for insects and diseases. CRP: Consider the environmental, social and economic impacts of decisions CRP: Apply appropriate academic and technical skills CRP: At as a responsible and contributing citizen and employee	ELA:2,4,6-9 M:1,2	<table border="1" style="display: inline-table; vertical-align: top;"> <tr> <td style="width: 25px; text-align: center;">1</td> <td style="width: 25px; text-align: center;">2</td> <td style="width: 25px; text-align: center;">3</td> <td style="width: 25px; text-align: center;">4</td> </tr> </table> <p>For Example:</p>	1	2	3	4
1	2	3	4				
Understand the agricultural facilities that are necessary to enhance a domesticated and natural environment for efficient and profitable business operations.	29. Conduct a site evaluation for physical condition and design implications. CRP: Consider the environmental, social and economic impacts of decisions CRP: Apply appropriate academic and technical skills	ELA:2,5-9 M:1,2	<table border="1" style="display: inline-table; vertical-align: top;"> <tr> <td style="width: 25px; text-align: center;">1</td> <td style="width: 25px; text-align: center;">2</td> <td style="width: 25px; text-align: center;">3</td> <td style="width: 25px; text-align: center;">4</td> </tr> </table> <p>For Example: As a floral consultant for a wedding or a landscape designer for a home, you need to develop a basic plan for a client that consists of evaluating the needs of the client or site and cost for work. Then, either create a landscape design plan for the client or a complete wedding piece. Include # 29-31</p>	1	2	3	4
	1	2	3	4			
30. Recognize the principles of design (e.g., space, scale, proportion) and how design tools are used in the industry. AAI 5. Underlying Principles of Technology CRP: Use technology to enhance productivity. CRP: Apply appropriate academic and technical skills	ELA:6-9 M:15	<table border="1" style="display: inline-table; vertical-align: top;"> <tr> <td style="width: 25px; text-align: center;">1</td> <td style="width: 25px; text-align: center;">2</td> <td style="width: 25px; text-align: center;">3</td> <td style="width: 25px; text-align: center;">4</td> </tr> </table> <p>For Example:</p>	1	2	3	4	
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Program Name: Agriculture, Agriculture Operations, and Related Sciences, Other CIP: 019999

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Student will:	Student will:		Student will:				
	31. Create a design that includes a financial plan and the plants, hard goods supplies, and tools to be used. CRP: Demonstrate creativity and innovation. CRP: Use technology to enhance productivity. CRP: Demonstrate creativity and innovation CRP: Consider the environmental, social and economic impacts of decisions CRP: Communicate clearly, effectively and with reason CRP: Apply appropriate academic and technical skills	ELA:6-9 M:1,2,15	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px 5px;">1</td> <td style="padding: 2px 5px;">2</td> <td style="padding: 2px 5px;">3</td> <td style="padding: 2px 5px;">4</td> </tr> </table> For Example:	1	2	3	4
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Student will:	Student will:		Student will:				
Understand the fundamental concepts of entrepreneurship and how entrepreneurship influences the economy	32. Discuss and identify the skills and behaviors of being a business owner /entrepreneur (passion, confidence, self-motivation, tenacity, leadership, management, etc.) AA 1. Planning AAI 2. Management CRP: Model integrity, ethical leadership and effective management CRP: Consider the environmental, social and economic impacts of decisions CRP: Communicate clearly, effectively and with reason CRP: Apply appropriate academic and technical skills	ELA:2,4,6-9	<table border="1" style="margin-left: auto; margin-right: auto;"> <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> For Example: You are taking a course at DEN Un. in entrepreneurship, as you are thinking of opening your own business. An assignment is to interview a local business owner (sole proprietor, partnership, LLC, Franchise Owner, etc.,) From the interview findings, you create a self-assessment chart and take the online assessment to test your entrepreneurial aptitude. http://www.forbes.com/sites/tompost/2012/06/04/are-you-an-entrepreneur-startup/	1	2	3	4
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Student will:	Student will:		Student will:				
	33. Discuss business possibilities, and identify the steps in planning a business as well as resources for a business startup and operation. AAI 1. Planning AAI 2. Management: AAI 3. Finance AAI 6. Labor Issues AAI 7. Community Issues AAI 3. Finance CRP: Apply appropriate academic and technical skills	ELA:2,4,6-9	<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 want to start your own business. You have been advised to go to see a SCORE representative (Counselors to America's Small Business) who will help you develop a business plan and provide you with information on available financial resources. Include # 33-34 http://www.nhsbdc.org/need-business-plan	1	2	3	4
1	2	3	4				
	34. Discuss and develop a rudimentary business plan. AAI 1. Planning AAI 2. Management: AAI 3. Finance AAI 6. Labor Issues AAI 7. Community Issues CRP: Communicate clearly, effectively and with reason CRP: Apply appropriate academic and technical skills	ELA:2,4-9 M:1,2	<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:	1	2	3	4
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Student will:	Student will:		Student will:				
Understand the necessary employability, career ready skills in order to achieve success in today's workplace.	35. Demonstrate personal growth, community leadership, democratic principles and social responsibility by participating in activities/events offered through FFA and other student and professional organizations. AAI 7. Community Issues AAI 9. Work Habits CRP: Attend to personal health and financial well-being. CRP: Work productively in teams while using cultural/global awareness CRP: Plan education and career path aligned to personal goals CRP: Model integrity, ethical leadership and effective management CRP: Critical thinking to make sense of problems and persevere in solving them	ELA:2,4-9	<table border="1" style="margin-left: auto; margin-right: auto;"> <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> For Example You are an FFA officer and are part of a team that needs to recruit new members. Create an advertising campaign to attract your target audience, and share your plan with your team and program advisory committee.	1	2	3	4
1	2	3	4				

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