New Jersey CTE

21st Century Life and Careers: Science, Technology, Engineering & Mathematics Career Cluster

CAREER CLUSTER® : AGRICULTURE, FOOD & NATURAL RESOURCES (AG)

1. **Analyze how issues, trends, technologies and public policies impact systems in the Agriculture, Food & Natural Resources Career Cluster.** 9.3.12.AG.1
2. **Evaluate the nature and scope of the Agriculture, Food & Natural Resources Career Cluster and the role of agriculture, food and natural resources (AFNR) in society and the economy.** 9.3.12.AG.2
3. **Examine and summarize the importance of health, safety and environmental management systems in AFNR businesses.** 9.3.12.AG.3
4. **Demonstrate stewardship of natural resources in AFNR activities.** 9.3.12.AG.4
5. **Describe career opportunities and means to achieve those opportunities in each of the Agriculture, Food & Natural Resources Career Pathways.** 9.3.12.AG.5
6. **Analyze the interaction among AFNR systems in the production, processing and management of food, fiber and fuel and the sustainable use of natural resources.** 9.3.12.AG.6

PATHWAY: AGRIBUSINESS SYSTEMS (AG-BIZ)

1. **Apply management planning principles in AFNR businesses.** 9.3.12.AG-BIZ.1
2. **Use record keeping to accomplish AFNR business objectives, manage budgets and comply with laws and regulations.** 9.3.12.AG-BIZ.2
3. **Manage cash budgets, credit budgets and credit for an AFNR business using generally accepted accounting principles.** 9.3.12.AG-BIZ.3
4. **Develop a business plan for an AFNR business.** 9.3.12.AG-BIZ.4
5. **Use sales and marketing principles to accomplish AFNR business objectives.** 9.3.12.AG-BIZ.5

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PATHWAY: ANIMAL SYSTEMS (AG-ANI)	1	**Analyze historic and current trends impacting the animal systems industry.** 9.3.12.AG-ANI.1
	2	**Utilize best-practice protocols based upon animal behaviors for animal husbandry and welfare.** 9.3.12.AG-ANI.2
	3	**Design and provide proper animal nutrition to achieve desired outcomes for performance, development, reproduction and/or economic production.** 9.3.12.AG-ANI.3
	4	**Apply principles of animal reproduction to achieve desired outcomes for performance, development and/or economic production.** 9.3.12.AG-ANI.4
	5	**Evaluate environmental factors affecting animal performance and implement procedures for enhancing performance and animal health.** 9.3.12.AG-ANI.5
	6	**Classify, evaluate and select animals based on anatomical and physiological characteristics.** 9.3.12.AG-ANI.6
	7	**Apply principles of effective animal health care.** 9.3.12.AG-ANI.7
PATHWAY: ENVIRONMENTAL SERVICE SYSTEMS (AG-ENV)	1	**Use analytical procedures and instruments to manage environmental service systems.** 9.3.12.AG-ENV.1
	2	**Evaluate the impact of public policies and regulations on environmental service system operations.** 9.3.12.AG-ENV.2
	3	**Develop proposed solutions to environmental issues, problems and applications using scientific principles of meteorology, soil science, hydrology, microbiology, chemistry and ecology.** 9.3.12.AG-ENV.3
	4	**Demonstrate the operation of environmental service systems (e.g., pollution control, water treatment, wastewater treatment, solid waste management and energy conservation).** 9.3.12.AG-ENV.4
	5	**Use tools, equipment, machinery and technology common to tasks in environmental service systems.** 9.3.12.AG-ENV.5
PATHWAY: FOOD PRODUCTS & PROCESSING SYSTEMS (AG-FD)	1	**Develop and implement procedures to ensure safety, sanitation and quality in food product and processing facilities.** 9.3.12.AG-FD.1
	2	**Apply principles of nutrition, biology, microbiology, chemistry and human behavior to the development of food products.** 9.3.12.AG-FD.2
	3	**Select and process food products for storage, distribution and consumption.** 9.3.12.AG-FD.3
		xplain the scope of the food industry and the historical and current levelopments of food products and processing. 9.3.12.AG-FD.

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PATHWAY: NATURAL RESOURCES SYSTEMS (AG-NR)	**1** Plan and conduct natural resource management activities that apply logical, reasoned and scientifically based solutions to natural resource issues and goals. 9.3.12.AG-NR.1
	2 Analyze the interrelationships between natural resources and humans. 9.3.12.AG-NR.2
	3 Develop plans to ensure sustainable production and processing of natural resources. 9.3.12.AG-NR.3
	4 Demonstrate responsible management procedures and techniques to protect or maintain natural resources. 9.3.12.AG-NR.4
PATHWAY: PLANT SYSTEMS (AG-PL)	**1** Develop and implement a crop management plan for a given production goal that accounts for environmental factors. 9.3.12.AG-PL.1
	2 Apply the principles of classification, plant anatomy and plant physiology to plant production and management. 9.3.12.AG-PL.2
	3 Propagate, culture and harvest plants and plant products based on current industry standards. 9.3.12.AG-PL.3
	4 Apply principles of design in plant systems to enhance an environment (e.g., floral, forest, landscape and farm). 9.3.12.AG-PL.4
PATHWAY: POWER, STRUCTURAL & TECHNICAL SYSTEMS (AG-PST)	**1** Apply physical science principles and engineering applications to solve problems and improve performance in AFNR power, structural and technical systems. 9.3.12.AG-PST.1
	2 Operate and maintain AFNR mechanical equipment and power systems. 9.3.12.AG-PST.2
	3 Service and repair AFNR mechanical equipment and power systems. 9.3.12.AG-PST.3
	4 Plan, build and maintain AFNR structures. 9.3.12.AG-PST.4