

AFNR - Cluster Skills

Analyze how issues, trends, technologies and public policies impact systems in the Agriculture, Food & Natural Resources Career Cluster. **CS.01.**

1 Research, examine and discuss issues and trends that impact AFNR systems on local, state, national and global levels. **CS.01.01.**

- 1a** Examine historical and current data to identify issues impacting AFNR systems. **CS.01.01.01.A.**
- 1b** Analyze and summarize AFNR issues and their impact on local, state, national and global levels. **CS.01.01.01.B.**
- 1c** Evaluate and explain AFNR issues and their impacts to audiences with limited AFNR knowledge. **CS.01.01.01.C.**
- 2a** Research and summarize trends impacting AFNR systems. **CS.01.01.02.A.**
- 2b** Analyze current trends in AFNR systems and predict their impact on local, state, national and global levels. **CS.01.01.02.B.**
- 2c** Evaluate and explain emerging trends and the opportunities they may create within the AFNR systems. **CS.01.01.02.C.**

2 Examine technologies and analyze their impact on AFNR systems. **CS.01.02.**

- 1a** Research technologies used in AFNR systems. **CS.01.02.01.A.**
- 1b** Apply appropriate use of technologies in AFNR workplace scenarios. **CS.01.02.01.B.**
- 1c** Solve problems in AFNR workplaces or scenarios using technology. **CS.01.02.01.C.**
- 2a** Compare and contrast AFNR systems before and after the integration of technology. **CS.01.02.02.A.**
- 2b** Analyze how technology is used in AFNR systems to maximize productivity **CS.01.02.02.B.**
- 2c** Evaluate the importance of technology use and how it impacts AFNR systems **CS.01.02.02.C.**

3 Identify public policies and examine their impact on AFNR systems. **CS.01.03.**

- 1a** Summarize public policies affecting AFNR systems. **CS.01.03.01.A.**
- 1b** Analyze and assess at least two public policies that impact each AFNR system. **CS.01.03.01.B.**
- 1c** Evaluate a public policy within AFNR systems and defend or challenge it. **CS.01.03.01.C.**
- 2a** Identify influential historical and current public policies that impact AFNR systems. **CS.01.03.02.A.**

- 2b Create and propose a hypothetical policy that will impact current AFNR systems. CS.01.03.02.B.
 - 2c Create a plan for implementing a new public policy that will positively impact AFNR systems. CS.01.03.02.C.
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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. CS.02.

1 Research and use geographic and economic data to solve problems in AFNR systems. CS.02.01.

- 1a Research and describe different types of geographic data used in AFNR systems. CS.02.01.01.A.
 - 1b Analyze and interpret AFNR related geographic data using a variety of systems and technologies (e.g., GIS, GPS, etc.). CS.02.01.01.B.
 - 1c Evaluate geographic data and select necessary data sets to solve problems within AFNR systems CS.02.01.01.C.
 - 2a Identify and examine economic data related to AFNR systems (e.g., commodity markets, food marketing, food and nutritional assistance programs, etc.). CS.02.01.02.A.
 - 2b Analyze and interpret a set of economic data and explain how it impacts an AFNR system. CS.02.01.02.B.
 - 2c Devise a strategy to solve a problem in an AFNR system using a set of economic data. CS.02.01.02.C.
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2 Examine the components of the AFNR systems and assess their impact on the local, state, national and global society and economy. CS.02.02.

- 1a Identify and summarize the components within AFNR systems (e.g., Animal Systems: health, nutrition, genetics, etc.; Natural Resources Systems: soil, water, etc.). CS.02.02.01.A.
 - 1b Assess components within AFNR systems and analyze relationships between systems. CS.02.02.01.B.
 - 1c Devise and implement a strategy for explaining components of AFNR systems to audiences with limited knowledge. CS.02.02.01.C.
 - 2a Define and summarize societies on local, state, national and global levels and describe how they relate to AFNR systems. CS.02.02.02.A.
 - 2b Assess how people within societies on local, state, national and global levels interact with AFNR systems on daily, monthly or yearly basis. CS.02.02.02.B.
 - 2c Evaluate how society traditions, customs or policies have resulted from practices with AFNR systems. CS.02.02.02.C.
 - 3a Examine and summarize the components of the agricultural economy (e.g., environmental, crops, livestock, etc.). CS.02.02.03.A.
 - 3b Assess the economic impact of an AFNR system on a local, state, national and global level CS.02.02.03.B.
 - 3c Evaluate how positive or negative changes in the local, state, national or global economy impacts AFNR systems. CS.02.02.03.C.
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Examine and summarize the importance of health, safety and environmental management systems in AFNR workplaces. CS.03.

1 Identify and explain the implications of required regulations to maintain and improve safety, health and environmental management systems. CS.03.01.

- 1a Research and explain the implications of regulatory, safety and health standards on AFNR systems (e.g., SDS, bioterrorism, etc.) CS.03.01.01.A.
- 1b Execute health, safety and environmental procedures to comply with regulatory and safety standards. CS.03.01.01.B.
- 1c Evaluate how AFNR organizations/businesses promote improved health, safety and environmental management and determine steps to maintain compliance with regulatory and safety standards in AFNR situations. CS.03.01.01.C.
- 2a Summarize the importance of safety, health and environmental management in the workplace. CS.03.01.02.A.
- 2b Analyze existing required regulations within an AFNR workplace. CS.03.01.02.B.
- 2c Construct and implement methods to evaluate compliance with required safety, health and environmental management regulations. CS.03.01.02.C.

2 Develop and implement a plan to maintain and improve health, safety and environmental compliance and performance. CS.03.02.

- 1a Research and identify components required in health and safety performance plans. CS.03.02.01.A.
- 1b b. Analyze the effectiveness of health and safety performance plans of an AFNR workplace. CS.03.02.01.B.
- 1c Create and implement a plan to improve safety, health and environmental management regulations in an AFNR workplace. CS.03.02.01.C.
- 2a Examine and categorize examples of environmental compliance plans from AFNR workplace. CS.03.02.02.A.
- 2b Develop plans to improve environmental compliance and performance within an AFNR system. CS.03.02.02.B.
- 2c Devise and implement a strategy to educate employees on environmental compliance and performance in an AFNR workplace. CS.03.02.02.C.

3 Apply health and safety practices to AFNR workplaces. CS.03.03.

- 1a Research and summarize the purposes and objectives of health and safety policies and procedures relevant to AFNR careers. CS.03.03.01.A.
- 1b Analyze and evaluate the impact of current health and safety practices of AFNR workplaces CS.03.03.01.B.
- 1c Create and implement a health and safety policy plan for AFNR workplaces. CS.03.03.01.C.
- 2a Identify emergency response procedures for health and safety issues at AFNR workplaces CS.03.03.02.A.
- 2b Assess various emergency response plan requirements for an AFNR workplaces and/or facility. CS.03.03.02.B.

- 2c Create and implement a plan to communicate appropriate responses for health and safety situations within an AFNR workplace. CS.03.03.02.C.
- 3a Examine and categorize examples of how to avoid health or safety risks in AFNR workplaces. CS.03.03.03.A.
- 3b Assess and apply first aid knowledge and procedures relevant to AFNR workplaces. CS.03.03.03.B.
- 3c Conduct a survey and evaluate results of AFNR workplaces to identify structure of health and safety practices and number of employees certified in first aid training. CS.03.03.03.C.
- 4a Examine and categorize the risk level of contamination or injury as associated with AFNR tasks in the workplace. CS.03.03.04.A.
- 4b Assess the safety priorities and select appropriate responses for different levels of contamination or injury at an AFNR workplace. CS.03.03.04.B.
- 4c Create a plan to mitigate the level of contamination or injury identified as a risk in the workplace. CS.03.03.04.C.

4 Use appropriate protective equipment and demonstrate safe and proper use of AFNR tools and equipment. CS.03.04.

- 1a Identify and differentiate the appropriate protective equipment for the safe use and operation of specific tools and equipment (e.g. PPE, etc.). CS.03.04.01.A.
- 1b Analyze and demonstrate adherence to protective equipment requirements when using various AFNR tools and equipment. CS.03.04.01.B.
- 1c Design and implement plans to ensure the use of appropriate protective equipment when using various AFNR tools and equipment. CS.03.04.01.C.
- 2a Identify standard tools, equipment and safety procedures related to AFNR tasks. CS.03.04.02.A.
- 2b Complete the set up and adjustment for tools and equipment related to AFNR tasks. CS.03.04.02.B.
- 2c Evaluate and select appropriate tools and equipment to complete AFNR tasks. CS.03.04.02.C.
- 3a Read and interpret operating instructions related to operation, storage and maintenance of tools and equipment related AFNR tasks. CS.03.04.03.A.
- 3b Assess and demonstrate appropriate operation, storage and maintenance techniques for AFNR tools and equipment. CS.03.04.03.B.
- 3c Devise and implement operation, storage and maintenance plans or schedules for AFNR tools and equipment. CS.03.04.03.C.

Demonstrate stewardship of natural resources in AFNR activities. CS.04.

1 Identify and implement practices to steward natural resources in different AFNR systems. CS.04.01.

- 1a Define stewardship of natural resources and distinguish how it connects to AFNR systems. CS.04.01.01.A.

- 1b Analyze available practices to steward natural resources in AFNR systems (e.g., wildlife and land conservation, soil and water practices, ecosystem management, etc.). CS.04.01.01.B.
- 1c Devise strategies for stewarding natural resources at home and within community CS.04.01.01.C.
- 2a Read and interpret the definition of sustainability and summarize how it relates to AFNR activities. CS.04.01.02.A.
- 2b Analyze and assess sustainability practices that can be applied in AFNR systems (e.g., energy efficiency, recycle/reuse/repurpose, green resources, etc.). CS.04.01.02.B.
- 2c Evaluate sustainability policies and plans and prepare summary of potential improvements for AFNR businesses or organizations. CS.04.01.02.C.

2 Assess and explain the natural resource related trends, technologies and policies that impact AFNR systems. CS.04.02.

- 1a Research and examine historical and current natural resources trends and technologies. CS.04.02.01.A.
- 1b Analyze natural resources trends and technologies and explain how they impact AFNR systems (e.g., climate change, green technologies, water resources, etc.). CS.04.02.01.B.
- 1c Defend or challenge natural resources trends and technologies based upon an assessment of their impact on AFNR systems. CS.04.02.01.C.
- 2a Research and summarize influential historical and current natural resources policies that impact AFNR systems. CS.04.02.02.A.
- 2b Create and defend a hypothetical natural resources policy that will impact current AFNR systems (e.g., for water resources, land use, air quality, etc.). CS.04.02.02.B.
- 2c Design and implement strategies for implementing a new natural resources policy that will positively impact AFNR systems. CS.04.02.02.C.

Describe career opportunities and means to achieve those opportunities in each of the Agriculture, Food & Natural Resources career pathways. CS.05.

- 1 **Evaluate and implement the steps and requirements to pursue a career opportunity in each of the AFNR career pathways (e.g., goals, degrees, certifications, resumes, cover letter, portfolios, interviews, etc.). CS.05.01.**
 - 1a Identify and summarize the steps to pursue a career in an AFNR pathway (e.g., self-assessment, set goals, etc.). CS.05.01.01.A.
 - 1b Create a personal plan outlining goals and steps to obtain a career in an AFNR pathway. CS.05.01.01.B.
 - 1c Evaluate progress toward AFNR career goals and identify opportunities for improvement and necessary adjustments to one's plan of action CS.05.01.01.C.
 - 2a Examine the educational, training and experiential requirements to pursue a career in an AFNR pathway (e.g., degrees, certifications, training, internships, etc.). CS.05.01.02.A.

- 2b Analyze personal skillset and create a plan for obtaining the required education, training and experiences to obtain a career in an AFNR pathway [CS.05.01.02.B.](#)
 - 2c Implement one's personal plan of action for obtaining the required education, training and experiences and evaluate progress to identify opportunities for improvement and necessary adjustments. [CS.05.01.02.C.](#)
 - 3a Research and summarize specific tools (e.g., resumes, portfolios, cover letters, etc.) and processes (e.g., interviews, applications, etc.) needed to pursue a career in an AFNR pathway. [CS.05.01.03.A.](#)
 - 3b Assess personal goals, experiences, education and skillsets and organize them to produce the appropriate tools and develop the skills to effectively communicate about one's qualifications for an AFNR career [CS.05.01.03.B.](#)
 - 3c Evaluate, update and improve a set of personal tools to reflect current skills, experiences, education, goals, etc. and complete the processes needed to pursue and obtain a career in an AFNR pathway [CS.05.01.03.C.](#)
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2 Examine and choose career opportunities that are matched to personal skills, talents, and career goals in an AFNR pathway of interest. [CS.05.02.](#)

- 1a Examine and categorize careers in each of the AFNR pathways. [CS.05.02.01.A.](#)
 - 1b Assess personal skills and align them with potential career opportunities in AFNR pathways. [CS.05.02.01.B.](#)
 - 1c Interpret and evaluate the results of a personal career assessment and connect them to potential careers in AFNR pathways. [CS.05.02.01.C.](#)
 - 2a Research and describe careers in each of the AFNR pathways and choose potential careers connecting to personal interests and skills. [CS.05.02.02.A.](#)
 - 2b Assemble and analyze examples of careers and related statistics on a local, state, national and global level. [CS.05.02.02.B.](#)
 - 2c Conduct interviews with career professionals within AFNR pathways and summarize the results. [CS.05.02.02.C.](#)
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Analyze the interaction among AFNR systems in the production, processing and management of food, fiber and fuel and the sustainable use of natural resources. [CS.06.](#)

1 Examine and explain foundational cycles and systems of AFNR. [CS.06.01.](#)

- 1a Research and explain the foundational cycles in AFNR (e.g., water cycle, nutrient cycle, carbon cycle, etc.). [CS.06.01.01.A.](#)
- 1b Analyze and explain how foundational cycles affect production, processing and management of food, fiber and fuel. [CS.06.01.01.B.](#)
- 1c Teach others about the impact of foundational cycles within AFNR systems [CS.06.01.01.C.](#)
- 2a Examine and describe examples of systems within AFNR (e.g., sustainability, gate-to-plate, etc.). [CS.06.01.02.A.](#)
- 2b Analyze AFNR systems and determine their impact on producing and processing food, fiber and fuel. [CS.06.01.02.B.](#)

- 2c Evaluate AFNR systems and predict how the systems may change or adapt in the future of food, fiber and fuel production based on current trends and data. CS.06.01.02.C.
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2 Analyze and explain the connection and relationships between different AFNR systems on a national and global level. CS.06.02.

- 1a Summarize how AFNR systems connect and relate on a national and global level (e.g., soil, water, economic, etc.). CS.06.02.01.A.
- 1b Analyze differences between AFNR systems on a national and global scale. CS.06.02.01.B.
- 1c Evaluate how AFNR systems impact each other on a national and global level. CS.06.02.01.C.
- 2a Examine and summarize changes that happen in AFNR systems on a national and global level (e.g., using less irrigation water, reduction of inputs, etc.). CS.06.02.02.A.
- 2b Analyze the connections and relationships impacted when there is a change in an AFNR system on a national and global level. CS.06.02.02.B.
- 2c Evaluate how changes in one AFNR system can benefit cost components of other systems on a national and global level. CS.06.02.02.C.