Nebraska CTE

Diversified Agriculture (2021-)

Analyze the interrelationships of natural resources and humans. AFNR.HS.13.1	**a** Describe the relationship between natural resources, ecosystems, and human activity. AFNR.HS.13.1.A
	b Compare and contrast nonrenewable and renewable natural resources. AFNR.HS.13.1.B
	c Explain how human activity affects the use and availability of natural resources (e.g., agriculture, industry, transportation). AFNR.HS.13.1.C
	d Identify technologies used in harvesting, managing, improving, enhancing, and conserving natural resources. AFNR.HS.13.1.D
Differentiate animal production methods for use in animal systems based upon their effectiveness and impacts. AFNR.HS.13.2	**a** Investigate fundamental biological processes in animals (e.g., digestion, reproduction, growth). AFNR.HS.13.2.A
	b Apply principles of genetics to breeding and reproductive technology in animal systems (e.g., pure breeding, crossbreeding, grading) . AFNR.HS.13.2.B
	c Analyze essential nutrient's role in animal growth and performance. AFNR.HS.13.2.C
	d Explain the implications of animal welfare and animal rights for animal systems and distinguish between animal production practices (e.g., handling procedures, tools, facilities) that promote animal welfare and those that do not. AFNR.HS.13.2.D
Analyze the influence of environmental factors on plant growth and propagation. AFNR.HS.13.3	**a** Summarize the sources and effects of plant-growing media, water, air, and light on plant growth. AFNR.HS.13.3.A
	b Analyze factors that affect photosynthesis, respiration, transpiration, translocation, and assimilation rates in plants. AFNR.HS.13.3.B
	c Identify the essential nutrients for plant growth and development and the correction of nutrient deficiencies. AFNR.HS.13.3.C
	d Characterize plant diseases, pests, disorders, and control measures. AFNR.HS.13.3.D
	e Demonstrate techniques used to propagate plants sexually and asexually (e.g., seeds, cuttings, grafting). AFNR.HS.13.3.E

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Investigate modern biotechnology applications, processes, scientific procedures, and ethical considerations. AFNR.HS.13.4	**a** Compare and contrast common applications and methods of modern biotechnology (e.g., foods, fuels, pharmaceuticals, environmental). AFNR.HS.13.4.A
	b Investigate ethical considerations for the application of biotechnology within several fields (e.g., animal, plant, biofuels, natural resources). AFNR.HS.13.4.B
	c Design a communications plan to inform consumers about modern biotechnological applications. AFNR.HS.13.4.C
Examine and explain the historical and current development of food products and processing. AFNR.HS.13.5	**a** Examine consumer trends in food products and processing. AFNR.HS.13.5.A
	b Analyze strategies to create food products meeting and developing consumer trends. AFNR.HS.13.5.B
	c Assess industry standards in food products and processing. AFNR.HS.13.5.C
Utilize record keeping to accomplish business objectives in AFNR systems. AFNR.HS.13.6	**a** Utilize financial reports to guide decision making. (e.g., break even, income statements, equity statements, budgets, cash flow, taxes). AFNR.HS.13.6.A
	b Apply risk management strategies. AFNR.HS.13.6.B
	c Analyze essential human resources within business enterprises. AFNR.HS.13.6.C
Investigate and apply modern science and engineering principles for the use and maintenance of agricultural structures and equipment to improve performance. AFNR.HS.13.7	**a** Determine structural requirements and specifications for agricultural structures. AFNR.HS.13.7.A
	b Develop maintenance plans for structures and equipment. AFNR.HS.13.7.B
	c Apply technology to improve efficiency in agricultural systems. AFNR.HS.13.7.C
	d Understand the operation and maintenance of agricultural equipment and power systems. AFNR.HS.13.7.D