Oklahoma CTE

Agriscience Principles and Applications (2014)

Adopted 2014

Animal Nutrition and Digestion	a.	Describe the functions of the animal body systems and system components. - digestion - physiology AS.02.02.06.A
	a.	Compare and contrast common types of feedstuffs and the roles they play in the diets of animals. AS.04.01.01.A
	a.	Explain the importance of a balanced ration for animals. - nutrient requirements - deficiencies AS.04.01.02.A
	b.	Appraise the adequacy of feed rations using data from the analysis of feedstuffs, animal requirements and performance. Pearson square AS.04.01.02.B
	a.	Explain the purpose and benefits of feed additives and growth promotants in animal production. AS.04.02.01.A
Animal Health	a.	Explain methods of determining animal health and disorders. AS.03.01.01.A
	b.	Perform simple health-check evaluations on animals. signs and symptoms of animal health AS.03.01.01.B
	a.	Identify common diseases, parasites and physiological disorders that affect animals. AS.03.01.02.A
	b.	Diagnose illnesses and disorders of animals based on symptoms and problems caused by diseases, parasites and physiological disorders. AS.03.01.02.B
	a.	Explain characteristics of causative agents and vectors of diseases and disorders in animals. AS.03.01.03.A
	b.	Evaluate preventive measures for controlling and limiting the spread of diseases, parasites and disorders among animals. - health management practices - medications/vaccinations - medication administration tools & methods AS.03.01.03.B
		Identify and describe zoonotic diseases. AS.03.01.05.A

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Plant Structures and Functions	**a.** Diagram a typical plant cell and identify plant cell organelles and their functions. PS.01.02.01.A
	a. Identify the components, the types and the functions of plant roots. PS.01.02.02.A
	b. Identify root tissues and explain the pathway of water and nutrients into and through the root tissues. PS.01.02.02.B
	a. Identify the components and functions of plant stems. PS.01.02.03.A
	a. Discuss leaf morphology and the functions of leaves. PS.01.02.04.A
	a. Identify the components of a flower, the functions of a flower and the functions of flower components. PS.01.02.05.A
	a. Explain the functions and components of seeds and fruit. PS.01.02.06.A
	a. Explain the basic process of photosynthesis and its importance to life on Earth. PS.01.03.01.A
	a. Identify the five groups of naturally occurring plant hormones and synthetic plant growth regulators. PS.01.03.04.A
	b. Identify the plant responses to plant growth regulators and different forms of tropism. PS.01.03.04.B
Plant Health	**a.** Identify the essential nutrients for plant growth and development and their major functions. PS.02.03.01.A
	a. Identify fertilizer sources of essential plant nutrients, explain fertilizer formulations and describe different methods of fertilizer application. PS.02.03.04.A
	b. Diagram the process of plant fertilization. PS.03.01.01.B
	a. Identify types of plant pests and disorders. PS.03.03.01.A
	b. Identify major local weeds, insect pests and infectious and noninfectious plant diseases. PS.03.03.01.B
	a. Describe damage caused by plant pests and diseases. PS.03.03.02.A
	a. Describe pest control strategies associated with integrated pest management. PS.03.03.03.A
	b. Describe types of pesticide controls and formulations. PS.03.03.03.B
Skip to main content	**Explain risks and benefits associated with the materials and methods used in plant pest management.** PS.03.03.04.A

Plant and Animal Genetics	**a.** Explain the structures of DNA and RNA and how genotype influences phenotype. BS.02.05.02.A
	a. Explain biological, social, agronomic and economic reasons for genetic modification of eukaryotes. BS.03.01.01.A
	a. Describe the selective plant breeding process. hybridization BS.03.03.01.A
	a. Explain genetic inheritance in agricultural animals. - Punnett square - dominant and recessive - phenotype and genotype genes - EPDs AS.05.03.01.A
Food Science and Technology	**a.** Discuss the history and describe and explain the components (e.g., processing, distribution, byproducts) of the food products and processing industry. FPP.01.01.01.A
	b. Evaluate changes and trends in the food products and processing industry. FPP.01.01.01.B
	a. Identify and explain environmental and safety concerns about the food supply. FPP.01.01.02.A
	a. Explain techniques and procedures for safe handling of food products. FPP.02.03.01.A
	a. Identify quality and yield grades of food products. FPP.04.01.01.A
	b. Discuss factors that affect quality and yield grades of food products. FPP.04.01.01.B
	a. Explain methods and materials for processing foods for sale as fresh-food products. FPP.04.03.02.A
Natural Resources	**b.** Identify the physical qualities of the soil that determine its use for environmental service systems. ESS.03.02.03.B
	a. Explain the importance of recycling. ESS.04.02.06.A
	a. Identify natural resources. - history - types/classifications - natural and man disturbances NRS.01.01.01.A
	b. Differentiate between renewable and nonrenewable natural resources. - conservation vs. preservation - national and global issues NRS.01.01.01.B

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Presentation Development	a.	**Use basic technical and business writing skills. - topic selection - manuscript parts and outline - researching - bibliography ** CS.03.01.01.A
	b.	**Deliver a business presentation for a peer group (e.g. class presentation). - visual aids - presentation techniques - answering questions ** CS.03.01.03.B
Financial Literacy	a.	**Maintain production and agribusiness records. checkbooks and financial accounts ** ABS.03.01.01.A
	a.	**Budget resources, as applied to the AFNR business, including capital, human, financial, and time. - income and budgets - taxes ** ABS.04.01.01.A
	b.	**Manage assets, including credit, for agribusiness goal achievement. - banks financial services - savings and investments - borrowing money - using credit ** ABS.04.01.01.B
	a.	**Identify financial concepts associated with production and profit. income and budgets ** ABS.04.01.02.A
	a.	**Determine the meaning and importance of risk and uncertainty with AFNR enterprises. insurance and managing risk ** ABS.07.04.01.A
	b.	**Describe alternative approaches to reducing risk, including the use of insurance for product liability, property, production or income loss and for personnel life and health. - insurance and managing risk - bankruptcy ** ABS.07.04.01.B
Welding, Brazing and Cutting	a.	**Use proper safety practices/personal protective equipment.** CS.06.02.01.A
	a.	**Demonstrate the importance of safety, health, and environmental practices in the workplace. - shop rules - fire prevention ** CS.06.03.01.A
	a.	**Handle chemicals and equipment in a safe and appropriate manner. - common hazards - welding safety ** CS.07.04.02.A
	a.	**Identify standard tools, equipment, and safety procedures related to a specific task. - welding tools and equipment - cutting tools and equipment ** CS.08.01.01.A
	a.	**Follow operating instructions related to specific tools and equipment needed to complete a task. operating a welder and cutting torch ** CS.08.01.02.A
	a.	**Use the appropriate procedures for the use and operation of specific tools and equipment. operating a welder and cutting torch ** CS.08.02.01.A

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	b. Distinguish welding processes, positions and materials preparation. - welding methods and equipment - cutting equipment, gasses and process PST.04.04.07.B
Land Measurement and Descriptions	**a.** Explain the importance of surveying and mapping for environmental service systems. - determining land area - legal land descriptions ESS.06.01.01.A
	b. Locate natural resources using a land survey and geographic coordinate system. - determining land area - GPS and GIS NRS.02.02.01.B