Nebraska CTE

Plant Science

Synthesize the principles of taxonomic systems to classify plants. AFNR.HS.25.1	**a** Classify plants according to the hierarchical classification system, life cycles, plant use, and as monocotyledons or dicotyledons. AFNR.HS.25.1.A
	b Describe how classification is used globally in plant identification. AFNR.HS.25.1.B
	c Demonstrate the hierarchical classification of an agronomic plant and an ornamental plant. AFNR.HS.25.1.C
	d Describe the importance of scientific nomenclature when identifying plants and give an example of a scientific name in association with its common name. AFNR.HS.25.1.D
Summarize principles of plant anatomy to plant production and management. AFNR.HS.25.2	**a** Compare and contrast morphological characteristics of different plant types (e.g., woody and herbaceous plants). AFNR.HS.25.2.A
	b Identify role of seed and fruit structures in plant culture and use. AFNR.HS.25.2.B
	c Compare the functions, types, and parts of plant roots and stems. AFNR.HS.25.2.C
	d Identify and describe the morphological characteristics and functions of different types of leaves. AFNR.HS.25.2.D
	e Identify role of flower structures to plant breeding, production, and use. AFNR.HS.25.2.E
	f Describe the structures and functions of plant cells and cell organelles. AFNR.HS.25.2.F
Evaluate knowledge of photosynthesis and respiration to make decisions on plant production and management. AFNR.HS.25.3	**a** Identify the processes of photosynthesis and its significance to plant life. AFNR.HS.25.3.A
	b Summarize the stages of cellular respiration and the resulting products and byproducts. AFNR.HS.25.3.B
	c Explain the pathway of water and nutrients entering and within plants. AFNR.HS.25.3.C
	d Describe the role of plant structures in primary plant growth (e.g., apical neristem). AFNR.HS.25.3.D

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	e Identify and categorize the five groups of naturally occurring plant hormones and synthetic growth regulators. AFNR.HS.25.3.E
	f Compare and contrast the effects of transpiration and translocation on plants within different plant species. AFNR.HS.25.3.F
Analyze sexual and asexual plant propagation techniques to successfully grow and propagate plants. AFNR.HS.25.4	a Determine the purpose of and types of reproduction methods within the production of specific plants. AFNR.HS.25.4.A
	b Contrast types of pollination and/or fertilization of flowering plants. AFNR.HS.25.4.B
	c Demonstrate various planting techniques for providing favorable conditions for seed germination. AFNR.HS.25.4.C
	d Summarize optimal conditions for asexual propagation and demonstrate different techniques used to propagate plants. AFNR.HS.25.4.D
	e Describe environmental conditions and types of growing media conducive to optimal plant growth and development. AFNR.HS.25.4.E
	f Identify structures and technologies used for controlled atmosphere plant production. AFNR.HS.25.4.F
Summarize management of plant development through the selection, planting, and growing of seeds and plants based on global demand, economic importance, and growing conditions. AFNR.HS.25.5	a Summarize the benefits of preparing growing media prior to planting. AFNR.HS.25.5.A
	b Summarize the stages of plant growth and benefits of controlling plant growth. AFNR.HS.25.5.B
	c Summarize the uses of different growing methods for plant production (e.g., vertical farming, soil grown, container gardening, hydroponics, and aquaponics). AFNR.HS.25.5.C
Summarize harvest, transporting, and storage of crops according to current industry standards. AFNR.HS.25.6	a Identify harvesting methods and equipment, incorporating safety measures. AFNR.HS.25.6.A
	b Identify plant preparation methods for storing and shipping plants and plant products. AFNR.HS.25.6.B
	c Assess the stage of growth to determine crop maturity or marketability and demonstrate proper harvesting techniques. AFNR.HS.25.6.C