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Goodheart-Willcox Correlation of *Horticulture Today* ©2017 to Oklahoma Academic Standards for Agricultural Education Course: Introduction to Horticulture – Grades 9-12

Standard	Correlating Textbook Pages
Students will explain the role of FFA in agricultural education.	
Discuss the history and organization of FFA as it relates to the complete program of agricultural education.	
Explain the interrelationship of classroom and laboratory instruction, supervised agricultural experience, and FFA.	11-12, 14, 16-19
Describe how, when, and why FFA was organized.	11-12
Identify key FFA historical events.	12
Identify the mission and strategies, colors, motto, emblem and parts of the emblem, and organizational structure of FFA.	11-17
Recite and explain the meaning of the FFA Creed.	12, 23
Discuss the meaning and purpose of a program of activities and its committee structure.	18-19
List FFA chapter officers, and discuss the role of each.	14-16
Identify opportunities in FFA.	
Describe FFA opportunities that develop leadership skills, personal growth, and career success.	20-23
Summarize major state and national activities available to FFA members.	20-23
Describe FFA degrees, awards, and career development events.	
List and explain the FFA degree areas.	16-17
Identify FFA proficiency awards.	16-17
List and discuss various team and individual CDEs.	22-23
Students will explain the role of supervised agricultural experience (SAE) programs in agricultural education.	
Examine the responsibilities and benefits associated with an SAE.	
Explain the meaning and benefits of supervised agricultural experience.	23-24, 32-34

Explain the characteristics of an effective SAE program and the responsibilities of those involved.	24, 32-34
Determine the types of SAE programs.	
Compare entrepreneurship and placement SAEs.	34-38
Describe research/experimentation SAEs.	38-40
Describe exploratory SAEs.	40-41
Maintain and use SAE records.	
Explain the importance of keeping records on an SAE program.	24, 49-50
Explain how SAE records are organized.	24, 49-50
Follow approved procedures to make entries in the SAE records.	24, 49-50
Students will explain the history, importance, and scope of plant science.	
Discuss the history of agriculture.	
Explain how the science of agriculture helped develop civilization, including agronomic, horticultural, and forestry plants.	11-12, 92-93, 156-157
Identify the major innovators and milestones in the advancement of agriculture.	11-12, 157, 180, 201, 633
Discuss the importance of plant science.	
Identify the various roles of plants in everyday life.	92-112
Identify agriculturally important plants, and explain their uses.	92-112
Identify career opportunities in plant science.	
Identify and describe the major areas of plant science.	92
Identify career opportunities in plant science, and determine the education and training they entail.	112-113
Students will explain soil science concepts.	
Explain the meaning and importance of soil.	
Explain the importance of soil as a life-supporting layer.	285-287
Describe the agricultural and the nonagricultural uses of soil.	280-282, 292-293

Describe basic physical, biological, and chemical properties of soil and soilless media.	
Explain soil components.	285-287
Describe the physical characteristics of soil and soilless media.	293-296
Describe the biological activity within soil and soilless media.	288-290, 275-296
Describe the chemical properties of soil and soilless media.	290-293, 295-296
Explain the characteristics of water movement in soil and soilless media.	286, 295-296
Explain soil fertility.	
Describe the meaning and importance of soil fertility.	604
Explain the role of organic matter, soil depth, surface slope, soil organisms, and nutrient balance in soil productivity.	280-293 cool
Students will describe plant anatomy and physiology concepts.	
Explain plant classification.	
Explain systems used to classify plants.	180-188
Compare and contrast the hierarchical classification of agricultural plants.	181-188
Classify plants according to life cycles, plant use, and status as monocotyledons or dicotyledons.	181-188
Explain the structures of plant cells and important cell processes.	
Describe the structures of a typical plant cell and their functions.	199-203
Compare and contrast mitosis and meiosis.	236-239
Describe the structures of a seed, the types of seeds, and the function of seeds.	
Describe the components of a root, the types of roots, and the functions of roots.	206-207
Describe the structures of a stem, the types of stems, and the functions of stems.	207-209
Describe the structures of a leaf, the types of leaves, and the functions of leaves.	210-212
Describe the major parts of a flower, their functions, and the types of flowers and flower forms.	212-213

Describe the structures of fruit, the types of fruit, and the purpose of fruit.	214-216
Determine the influence of environmental factors on plant growth.	
Describe the functions of water in plant growth.	258-271
Explain plant responses to a shortage or excess of water.	553-556
Describe efficient use of water in plant production.	553-556
Explain the qualities of light that affect plant growth, including color, intensity, and duration.	250-258
Explain plant responses to light.	250-258
Describe the effects of temperature on plant growth.	258-264
Describe plant responses to temperature extremes.	258-268
Describe the effect of diseases and insects on plant growth.	816-818, 846-852
Explain plant physiology concepts and energy conversion in plants.	
Explain the basic process of photosynthesis and its importance to life on Earth.	198, 226-229
Explain requirements necessary for photosynthesis to occur, and identify the products and byproducts of photosynthesis.	226-229
Explain cellular respiration and its importance to plant life.	230-231
Explain factors that affect cellular respiration, and identify the products and byproducts of cellular respiration.	232 – 231
Explain plant reproduction.	
Compare and contrast sexual and asexual reproduction.	235-239
Explain pollination, cross-pollination, and self-pollination of flowering plants.	608
Diagram the process of plant fertilization.	237-239
Describe the process of seed germination.	341-344
Explain the conditions required for seed germination.	342-344
Explain the importance of seed viability and vigor.	341

Describe optimal conditions for asexual propagation.	235-233
Demonstrate techniques used to propagate plants by cuttings, division, separation, and layering.	366-376, 386-398
Describe grafting techniques.	404-423
Explain the management of plant growth and development.	
Describe the role of the apical meristem in plant growth.	203, 436
Identify plant hormones and explain their functions.	377
Explain plant tropisms.	250-271
Differentiate between synthetic growth regulators and plant hormones.	377
Describe the benefits of using plant growth regulators.	377
Students will explain principles of horticulture.	
Explain plant management for food production.	
Plan and prepare a vegetable/herb garden.	94, 573-593
Describe the important techniques in producing tree fruits and small fruits.	602-616
Describe the elements of edible landscaping and limited space food production including roof top, container, and raised-bed gardening.	514 – 530
Explain the techniques involved in producing small grain and oil crops.	609-624
Discuss the importance of hay and forage production to the overall food system.	866
Explain plant management for ornamental horticulture production.	
Describe lawn establishment and care.	757-762
Plan and prepare a flower garden.	97-100
Develop a home landscape plan.	632-657
Describe the important techniques of landscape maintenance.	651-652
Describe the elements of growing plants indoors.	700-710