Georgia CTAE: Agriculture, Food & Natural Resources Career Cluster

General Horticulture and Plant Science (2013)

Demonstrate employability skills required by business and industry. AFNR-GHPS-1	1 **Communicate effectively through writing, speaking, listening, reading, and interpersonal abilities.** 1.1
	2 **Demonstrate creativity by asking challenging questions and applying innovative procedures and methods.** 1.2
	3 **Exhibit critical thinking and problem solving skills to locate, analyze and apply information in career planning and employment situations.** 1.3
	4 **Model work readiness traits required for success in the workplace including integrity, honesty, accountability, punctuality, time management, and respect for diversity.** 1.4
	5 **Apply the appropriate skill sets to be productive in a changing, technological, diverse workplace to be able to work independently and apply team work skills.** 1.5
	6 **Present a professional image through appearance, behavior and language.** 1.6
Learns to work safely in the agriculture lab and work sites, demonstrates selected competencies in leadership through the FFA and agricultural industry organizations, and develops plans for a Supervised Agricultural Experience Program (SAEP). AFNR-GHPS-2	1 **Explain the role of the Agricultural Education program and the FFA in personal development.** 2.1
	2 **Demonstrate knowledge learned through a SAEP.** 2.2
	3 **Develop leadership and personal development skills through participation in the FFA.** 2.3
	4 **Explore career opportunities in horticulture-plant science through the FFA and Agricultural Education Program.** 2.4
	5 **Explore the professional agricultural organizations associated with the course content.** 2.5
Identify plant parts, growth, and reproduction processes. AFNR-GHPS-3	1 **Compare and contrast the three phases of plant life (dormancy, vegetative, reproductive).** 3.1
	2 **Describe the difference between annuals, biennials, and perennials.** 3.2

	3 Categorize vegetative structures and functions of plant parts (i.e....leaves, stems, roots). 3.3
	4 Sketch the sexual reproductive structures of plants and summarize their functions. (e.g., flower, fruit, seeds). 3.4
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Determine factors that affect plant development and growth. AFNR-GHPS-4	1 Describe the process of photosynthesis and investigate factors affecting photosynthesis in plants. 4.1
	2 Describe the process of respiration and investigate factors affecting respiration in plants. 4.2
	3 Differentiate between the growth processes of plants (e.g., germination, photosynthesis, transpiration, respiration, osmosis). 4.3
Discuss the importance of sexual reproduction in plants. AFNR-GHPS-5	1 Examine the importance of plant propagation. 5.1
	2 Compare and contrast sexual and asexual propagation. 5.2
	3 Describe the factors involved in planting seeds and demonstrate proper planting methods. 5.3
Discuss the importance of asexual reproduction in plants. AFNR-GHPS-6	1 Describe the various methods of vegetative propagation. 6.1
	2 Apply information learned to correctly demonstrate each method of vegetative propagation. 6.2
Determine the basic principles and uses of soil and plant growth media. AFNR-GHPS-7	1 Identify and sketch soil materials and structure. 7.1
	2 Evaluate the components and functions of a good growing media. 7.2
Identify macro, secondary and micro plant nutrients. AFNR-GHPS-8	1 List and discuss the nutrients needed for plant growth. 8.1
	2 Categorize common nutrient deficiency symptoms. 8.2
	3 Assess soil pH, analyze plant nutrient availability and discuss methods of pH modification. 8.3
Explore the use of plant fertilizers and proper fertilizing methods. AFNR-GHPS-9	1 Identify the components of a complete plant fertilizer. 9.1
	2 Analyze the difference between organic and inorganic fertilizers. 9.2

	3 Demonstrate proper technique for applying water soluble and granular fertilizers. 9.3
	4 Calculate accurate fertilizer ratios. 9.4
Evaluate the damage caused to plants by insects, weeds, diseases, and physiological disorders. AFNR-GHPS-10	1 Identify common insects, weeds, diseases and physiological disorders. 10.1
	2 Diagram the external structure of an insect. 10.2
	3 Illustrate the complete and incomplete life cycles of insects. 10.3
	4 Describe the damage inflicted by insects and weeds. 10.4
	5 Describe common plant diseases and compare and contrast solution methods. 10.5
	6 Identify the proper methods of controlling pests. 10.6
Compare and contrast the use of various plant growing containers. AFNR-GHPS-11	1 Describe the containers used in plant production. 11.1
	2 Analyze the advantages and disadvantages of each type of plant growing container. 11.2
Describe various plant irrigation methods. AFNR-GHPS-12	1 Explain the different types of watering methods for plants. 12.1
	2 Compare and contrast the advantages and disadvantages of each type of watering system. 12.2
Explore plant science and horticulture careers and opportunities. AFNR-GHPS-13	1 Exhibit critical thinking and problem solving skills in career planning in various plant science careers. 13.1
	2 Analyze skills, education requirements, income, and advantages and disadvantages of careers in the plant science industry. 13.2