Kansas CTE

Horticulture (2018)

Post-Secondary Education Preparation	1	Identify career opportunities in horticulture and the plant systems pathway 1
	2	Research and compare three different colleges or technical programs with programs in Horticulture or the plant systems pathway 2
	3	Describe how interest, training, and skills in ornamental horticulture can be adapted to a variety of career fields 3
Employability Skills	4	Prepare and revise a resume 4
	5	Write and revise a cover letter 5
	6	Complete a job application 6
	7	Participate in a Job interview with a local agricultural employer 7
	8	Write a follow up letter 8
	9	Practice proper telephone etiquette 9
	10	Accept and provide criticism in an appropriate manner 10
Plant Taxonomy	11	List the important roles played by green plants in our lives and the earth's ecosystem 11
	12	Explain why scientific plant names are used 12
	13	Explain the difference between genus, species, and variety 13
	14	Identify at least 30 plants by their common and scientific binomial name 14
Plant Structures	15	Identify parts of a cell. 15
	16	Differentiate between monocot and dicot seeds. 16
	17	List and describe the purpose of the four main parts of the plant. 17
	18	Explain the functions of each part of a flower. 18
		Explain the functions of a fruit. 19

Skip to main content

Plant Growth Processes	**20**	**Explain and describe the processes of photosynthesis, respiration, translocation, and transpiration.** 20
	21	**Describe the aboveground requirements needed for good plant growth.** 21
	22	**Describe the differences between clay, sandy, and loamy soils and identify a sample of each.** 22
	23	**Explain three ways to improve soil drainage and two ways to increase moisture retention of soil.** 23
	24	**List the three major plant food elements and two functions of each.** 24
	25	**Analyze the use of growth stimulants, retardants, and rooting hormones in the horticulture industry.** 25
	26	**Evaluate a soil sample and make fertilizer recommendations.** 26
Plant Propagation	**27**	**Diagram the similarities and differences between asexual and sexual propagation.** 27
	28	**Compare and Contrast self-fertilization and cross-fertilization.** 28
	29	**Describe the requirements for seed germination and growth.** 29
	30	**Test and calculate seed germination percentage.** 30
	31	**Perform Asexual Propagation by the following methods: Leaf and Bud cuttings, Herbaceous, softwood, semihardwood and hardwood stem cuttings, root cuttings, and separation of bulbs, corms, tubers, tuberous roots, and rhizomes.** 31
	32	**Describe the application of advanced propagation techniques: grafting, patch and T budding, mound and air layering, micro propagation, and tissue culture** 32
Integrated Pest Management	**33**	**Explain what integrated pest management means** 33
	34	**Outline a pest control program, explaining when biological control should be used and at what point chemicals must be used.** 34
	35	**Examine five pesticide labels and identify the types of each and the degree of toxicity of each and demonstrate the recommended precautions in the mixing and handling of each.** 35
	36	**Summarize the impact of insecticides, pesticides, fungicides, rodenticides, molluscicides, nematocides, and herbicides in an integrated pest management program.** 36
Gr		**Compare and Contrast the different types of growing structures.** 37

Skip to main content

38 List the characteristics of various greenhouse and shade house coverings 38

39 Diagram three common methods of arranging greenhouse benches. 39

40 Construct a greenhouse crop production schedule 40

41 Compare and contrast the various types of media 41

42 Describe methods of spacing, watering, and fertilizing greenhouse crops 42

43 Demonstrate proper methods of potting and transplanting mature plants 43

44 Demonstrate proper methods of using rooting hormones 44

45 Demonstrate proper methods of sowing seeds 45

46 Demonstrate proper methods of transplanting seedlings or cuttings 46

47 Demonstrate proper methods of pinching of plants and flowers 47

48 Demonstrate proper methods of fertilizer applications 48

49 Demonstrate proper methods of watering 49

50 Identify 20 plants typically grown in a greenhouse. 50

51 Compare and Contrast different hydroponic systems. 51

52 Produce a crop in a greenhouse. 52

Nursery and Landscape Industry

53 Describe the nursery industry in the United States 53

54 Compare the different types of nurseries 54

55 Compare the relationship of the nursery industry to the landscape industry. 55

56 Identify 10 trees used in the landscape industry. 56

57 Identify 10 shrubs used in the landscape industry. 57

58 Identify 3 turf grasses. 58

59 Identify 3 ornamental grasses. 59

60 Identify 5 groundcovers used in the landscape industry. 60

61 List the five principles of landscape design and examples of an application of each principle. 61

Skip to main content

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Identify 10 foliage plants 62

	63 Identify 20 florists crops 63
	64 List and describe the basic principles of floral design 64
	65 Identify the Basic floral design shapes 65
	66 Design a circular floral arrangement 66
	67 Identify basic tools and materials used in floral design 67
	68 Demonstrate the four wiring procedures used with the appropriate flowers 68
	69 Design a corsage and a boutonniere 69
Vegetable Gardening	**70** Draw to scale a garden plan that includes at least ten vegetables and varieties that meet your areas USDA Hardiness Zone. 70
	71 Determine the type and amount of fertilizer for a specific crop by using a soil test recommendation 71
	72 Establish weed control programs using mulches, cultivation, and herbicides. 72
	73 Construct a vegetable garden 73