Kansas Agriculture Education
COMPETENCY INDEX

VE350X/355X – Landscape Science I - 18059

Name: _____ **Student ID#** _____

School _____ **Instructor** _____

RATING SCALE:
3 Skilled..Works independently
2 Limited Skill..requires assistance to perform task
1 Skill Undeveloped..Received instruction but has not developed skill
0 No Exposure..No instruction or training in this area

Key to Integrated Competencies: (CD)-Career Development (L)-Leadership (E)-Experienced Based (C)-Communications (M)-Math (S)-Science (W) Workplace skills

DIRECTIONS: Evaluate the student by checking the appropriate number to indicate the degree of competency reached. Rate each task to reflect employability readiness.

GRADUATION YEAR_____

ENROLLMENT DATE _____ COMPLETION Date _____ HOURS COMPLETED _____

I certify that the student received training in the areas indicated.

Student Signature _____ Date _____

Instructor Signature _____ Date _____

I. FFA ORGANIZATION

3 2 1 0 1. Understand the operations and organizational levels on the local, district, state and national levels. (CD)
3 2 1 0 2. Develop competent and assertive leadership. (CD) (L)
3 2 1 0 3. Develop acceptable character, citizenship and foster patriotism. (L)
3 2 1 0 4. Practice scholarship through improved academics at all levels and areas of education. (CD) (L)
3 2 1 0 5. Distinguish between the requirements for each degree of the FFA. (L)
3 2 1 0 6. Develop personal programs and goals to continue FFA achievements. (CD) (L)
3 2 1 0 7. Present a five minute speech. (L) (C)
3 2 1 0 8. Participate in career development events. (CD)
3 2 1 0 9. Participate in and manage student development activities. (L) (E)
3 2 1 0 10. Participate in and manage chapter development activities. (L) (E)
3 2 1 0 11. Participate in and manage community development activities (L) (E)
3 2 1 0 12. Complete computerized proficiency and degree applications. (L) (M)

II. PLANT SCIENCE

3 2 1 0 1. Understand terms associated with plant growth, functions and physiology. (S)
3 2 1 0 2. Discuss the contributions of plants to the life cycle on earth. (S)
3 2 1 0 3. Identify the parts of different seed types. (S)
3 2 1 0 4. Understand the functions of the seed parts. (S)
3 2 1 0 5. Describe the process of germination. (S)
3 2 1 0 6. Identify the parts of the monocot/dicot seedlings. (S)
3 2 1 0 7. Identify the pats of mature plant types. (S)
3 2 1 0 8. Understand the functions of the mature plant types. (S)
3 2 1 0 9. Identify and understand the different plant cells. (S)
3 2 1 0 10. Describe the stages of plant growth. (S)
3 2 1 0 11. Identify and describe the types and parts of flowers. (S)
3 2 1 0 12. Explain the processes of pollination. (S)
3 2 1 0 13. Describe the processes of plant reproduction. (S)
3 2 1 0 14. Describe the processes of fruit and seed formations. (S)
3 2 1 0 15. Explain and understand the process of photosynthesis. (S)
3 2 1 0 16. Explain and understand the process of respiration. (S)
3 2 1 0 17. Understand how plant products move (translocation/absorption). (S)
3 2 1 0 18. Describe the effects of light on plants. (S)
3 2 1 0 19. Describe the influence of temperature on plants. (S)
3 2 1 0 20. Understand the functions and importance of plant

hormones. (S)

3 2 1 0 21. Describe the effects of evapotranspiration. (S)

3 2 1 0 22. Explain how plants interact with soils and the environment. (S)

3 2 1 0 23. Summarize the life processes of plants. (S)

III. SOIL SCIENCE

3 2 1 0 1. Understand terms associated with soils. (S)

3 2 1 0 2. List five reasons why soils are important. (S)

3 2 1 0 3. Distinguish between chemical/physical weathering of soils. (S)

3 2 1 0 4. List five benefits of organic matter. (S)

3 2 1 0 5. List three soil particles. (S)

3 2 1 0 6. Distinguish the different layers of a soil structures. (S)

3 2 1 0 7. Identify and describe different soil structures. (S)

3 2 1 0 8. Explain the processes of soil formations. (S)

3 2 1 0 9. Determine soil textures through physical and lab techniques. (S)

3 2 1 0 10. Describe water movement in soils based on pore space. (S)

3 2 1 0 11. Explain how soils influence plant growth. (S)

3 2 1 0 12. Outline the various soil regions in the local area. (S)

3 2 1 0 13. Demonstrate the ability to check soil pH and soil nutrients by using various lab techniques. (S) (E)

3 2 1 0 14. Describe the methods of building soil fertility. (S)

3 2 1 0 15. Understand the importance of soil microbes/life forms. (S)

3 2 1 0 16. List and explain the purposes of the macro/micro/nutrients. (S)

3 2 1 0 17. Collect and prepare soil samples for evaluation and lab test. (S) (E)

3 2 1 0 18. Identify and describe the different types of erosion control and water conservation methods. (S)

3 2 1 0 19. Identify and describe different types of erosion control and water conservation methods. (S)

3 2 1 0 20. Summarize the importance of soils to plant growth and production. (S)

IV. CONTAINERS, POTTING AND ENVIRONMENTS

3 2 1 0 1. Understand the different types of containers and their requirements for environmental conditions. (W) (E)

3 2 1 0 2. Describe the different types of soil and medium mixes. (S)

3 2 1 0 3. Determine type of premixed media to use for plant types. (S) (E)

3 2 1 0 4. Understand the different components of media. **(S)**

3 2 1 0 5. Demonstrate how to make and store different types of growing media. (E) (W)

3 2 1 0 6. Discuss and demonstrate how to transplant plants and materials in growing containers. (E) (W)

3 2 1 0 7. Discuss and demonstrate how to maintain growing containers in controlled environments. (E) (W)

V. PLANT IDENTIFICATION

3 2 1 0 1. Understand the development of plant nomenclature and classification systems. **(S)**

3 2 1 0 2. Explain why scientific plant names are used. (S)

3 2 1 0 3. Describe the origin and construction of botanical names. (S)

3 2 1 0 4. Explain and demonstrate how to write botanical names. (S)

3 2 1 0 5. Demonstrate how to identify and classify plants. (S) (W)

3 2 1 0 6. Identify the different parts of plants and its structure to classify its name. (S)

3 2 1 0 7. Identify and describe 150 plant types common to the Kansas Horticulture industries. **(S) (E) (W)**

VI. PLANT PROPAGATION

3 2 1 0 1. Describe terms associated with plant propagation. (S)

3 2 1 0 2. Describe the difference between sexual and asexual reproduction. (S)

3 2 1 0 3. Prepare a media for seed germination and seedling growth. (S) (E) (W)

3 2 1 0 4. Prepare a media for asexual plant propagation. (S) (E) (W)

3 2 1 0 5. Demonstrate how to water, fertilize, and harden off seedlings before transplanting. **(S) (E) (W)**

3 2 1 0 6. Demonstrate how to transplant seedlings into flats or containers. (E) (W)

3 2 1 0 7. Demonstrate and explain how to select plants suitable for asexual plant propagation. (E) (W)

3 2 1 0 8. Demonstrate and explain how to prepare a rooting media and care for the cuttings after placement. (E) (W)

3 2 1 0 9. Describe the difference between separation and division **(S)**

3 2 1 0 10. Identify and describe the different types of grafting methods. **(S)**

3 2 1 0 11. Describe and understand how to propagate by the budding process. **(S)**

3 2 1 0 12. Describe and understand how to propagate by the layering process. **(S)**

3 2 1 0 13. Describe and understand how to propagate plants through tissue cultures. **(S)**

3 2 1 0 14. Identify plants commercially propagated for horticulture businesses. (E) (W)

VII. GREENHOUSE MANAGEMENT

3 2 1 0 1. Understand terms associated with greenhouse management

applications. (E) (W)

3 2 1 0 2. Describe technologies used in greenhouse management production. (E) (W)

3 2 1 0 3. Design and describe a greenhouse management production operation in physical terms. (W) (M)

3 2 1 0 4. Design and describe a greenhouse management production operation in environmental terms. (W) (M)

3 2 1 0 5. Design and describe a greenhouse management production operation in maintenance terms of the physical facilities. (W) (M)

3 2 1 0 6. Design and describe a greenhouse management production operation in maintenance terms of plant growth. (S) (W)

3 2 1 0 7. Design and describe a greenhouse management production operation in the control of pest. (S) (W)

3 2 1 0 8. Demonstrate basic skills in greenhouse management production. (E) (W)

3 2 1 0 9. Identify and explain different greenhouse structures and operations. (E) (W) (L)

VIII. LANDSCAPING DESIGN

3 2 1 0 1. Understand terms associated with landscaping and designing. (W)

3 2 1 0 2. Explain the decorative and functional uses of interior and exterior landscaping. (S) (E) (W)

3 2 1 0 3. Describe the main objectives of a landscaping design. (W)

3 2 1 0 4. Identify the areas of concern in a landscape. (E) (W)

3 2 1 0 5. List the factors of preparing a landscape design. (E) (W)

3 2 1 0 6. Develop and interpret a landscape design. (E) (W) (C)

3 2 1 0 7. Develop a plant list for a landscape design. **(**S) (E) (W)

3 2 1 0 8. Identify the structures and terrain of a landscape design. (E) (W)

3 2 1 0 9. Identify the methods and styles of landscaping design lettering. (E) (W)

3 2 1 0 10. Identify and demonstrate landscaping drawing instruments. (W) (E)

3 2 1 0 11. Draw a landscape plan using scale. (E) (W) (M)

3 2 1 0 12. Develop a individual landscape project. (E) (W) (M) (L)

3 2 1 0 13. Analyze and interpret the individual landscape project. (E) (W) (L) (C)

3 2 1 0 14. Discuss the principles and elements of a landscape design. (W) (C)

3 2 1 0 15. Describe the natural and manufactured enrichments of a landscape design. (E) (W)

3 2 1 0 16. Select and figure cost for landscape design. (E) (M) (W)

3 2 1 0 17. Evaluate landscape cost based on design and material selection. (L) (W) (M)

3 2 1 0 18. Identify and describe the use of all tools and equipment in developing a landscape project. (E) (W) (CD)

IX. TURF AND LAWN DEVELOPMENT

3 2 1 0 1. Understand terms associated with turf and lawn management. (S) (W)

3 2 1 0 2. Describe five reasons for establishing and maintaining a lawn. (S) (W)

3 2 1 0 3. Identify and classify turfgrasses. (S) (W)

3 2 1 0 4. Describe and prepare methods in a turfgrass seedbed. (S) (W) (E)

3 2 1 0 5. Select proper seed for a given location based on seed label information. (S) (E) (W)

3 2 1 0 6. Demonstrate procedures in seeding a lawn. (E) (W)

3 2 1 0 7. Demonstrate procedures installing mature turfgrass. (E) (W)

3 2 1 0 8. Explain the best time of year to establish a lawn based on region. (S) (W)

3 2 1 0 9. Describe lawn renovation practices. (C) (W)

3 2 1 0 10. Analyze turfgrass to determine proper mowing practices. (E) (W)

3 2 1 0 11. Demonstrate and explain fertilization techniques. (E) (W)

3 2 1 0 12. Demonstrate and explain water techniques. (E) (W)

3 2 1 0 13. Design a lawn irrigation system. (E) (M) (W)

3 2 1 0 14. Identify and design controls for weed and insect damage. **(**S) (E) (W)

3 2 1 0 15. Develop and discuss a maintenance program for all lawn pests. **(S)** (E) (W)

3 2 1 0 16. Calibrate turfgrass equipment. (E) (W)

3 2 1 0 17. Develop and discuss a safety program for turfgrass equipment. (E) (W)

3 2 1 0 18. Develop and discuss a maintenance program for all turfgrass equipment. (E) (W)

3 2 1 0 19. Develop and explain a complete lawn management program. (E) (W) (L) (C)

3 2 1 0 20. Implement and demonstrate establishing and maintaining a lawn. (E) (W)

X. SAE AND RECORDS

3 2 1 0 1. Identify and explain the SAE. (L)

3 2 1 0 2. Explain the importance of planning. (L)

3 2 1 0 3. List steps in developing and improving a personal program. (L)

3 2 1 0 4. Understand and explain the importance of record keeping.

3 2 1 0 5. Develop a personal set of records. (L) (M)

3 2 1 0 6. Analyze SAE records for maximum profitability and rewards. (L)

3 2 1 0 7. Develop career, educational and SAE goals and reevaluate periodically. (L)
3 2 1 0 8. Develop and implement a SAE activity. (L)

XI. CAREER AND WORKPLACE SKILLS

3 2 1 0 1. Operate and understand microcomputer or computer terminal. (E) (W)
3 2 1 0 2. Install and utilize computer software. (E) (W)
3 2 1 0 3. Understand the ethical considerations, licensing agreements and computer crimes of today's technology. (W)
3 2 1 0 4. Identify styles of decision making. (L) (W)
3 2 1 0 5. Identify the steps in the decision making process. (L) (W)
3 2 1 0 6. Distinguish between levels and types of decisions. (L) (W)
3 2 1 0 7. Make decisions and select alternatives for a given situation. (L) (W)
3 2 1 0 8. Demonstrate regular attendance and punctuality. (L) (W)
3 2 1 0 9. Accomplish tasks without need for immediate supervision. (L) (W)
3 2 1 0 10. Display courtesy, tactfulness and patience. (L) (W)
3 2 1 0 11. Control emotions under demands, time, pressure, opposition. (L) (W)
3 2 1 0 12. Recognize the accomplishments of others. (L) (W)
3 2 1 0 13. Discuss the relationship between speaking skills and making an impression. (L) (W)
3 2 1 0 14. analyze the effect of an individual's communication process. (L) (W)
3 2 1 0 15. Analyze the effect of body language. (L) (W)
16. Describe and present an effective interview. (L) (W)
17. Discuss general reasons for listening. (L) (W)
3 2 1 0 18. Follow oral instructions. (L) (W)
3 2 1 0 19. Identify and develop interpersonal skills related to self-initiative. (L) (W)
3 2 1 0 20. Demonstrate interpersonal skills relevant to professional relationships. (L) (W)
3 2 1 0 21. Explain the relationship of rapidly changing technology to global completion and job. (L) (W)
3 2 1 0 22. Describe how emerging technologies have created new jobs and made others obsolete. (L) (W)
3 2 1 0 23. Explain the legal and professional ramifications a job application form has for the applicant/employer. (L) (W)
3 2 1 0 24. Explain the value of work. (L) (W)
3 2 1 0 25. Identify personal characteristics that lead to job satisfaction. (L) (W)
3 2 1 0 26. List reasons why people lose jobs. (L) (W)
3 2 1 0 27. Develop and display decision making and implementation ability. (L) (W)

XII. CAREERS AND INDUSTRIES

3 2 1 0 1. List 10 career opportunities available in the horticultural industries. (L) (W)
3 2 1 0 2. Explain the impact of horticulture on the local economy. (L) (W)
3 2 1 0 3. List the level of education required for five careers in the horticulture world. (L) (W)
3 2 1 0 4. Differentiate between work, job, occupation, and career. (L) (W)
3 2 1 0 5. Discuss career planning. (L) (W)
3 2 1 0 6. Identify local career opportunities. (L) (W) (E)
3 2 1 0 7. Explain how to match jobs with personal characteristics. (L) (W)
3 2 1 0 8. Identify five sources of information on horticulture careers (E) (W)
3 2 1 0 9. Describe the steps in applying for a job. (L) (W) (E)
3 2 1 0 10. List and describe the skills needed for a select horticulture job. **(L) (W)**
3 2 1 0 11. Summarize consumer benefits derived from the horticulture industries. **(L) (W)**

XIII. TEAMWORK

3 2 1 0 1. Participate in team tasks: (L) (W) (CD) (E)
3 2 1 0 a. Establish team goals
3 2 1 0 b. Establish team standards
3 2 1 0 c. Receive and give information
3 2 1 0 d. Process information
3 2 1 0 e. Plan for action
3 2 1 0 f. Complete team task on time