Kansas Agriculture Education
COMPETENCY INDEX

VE352X/357X – Landscape Science II - 18061

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. Describe the history of the FFA organization and the role it plays today in developing student career paths. (L)
3 2 1 0 2. List and explain the application process for all the different awards, honors, degrees, scholarships and opportunities available. (L)
3 2 1 0 3. Develop competent and assertive leadership. (L) (CD)
3 2 1 0 4. Develop acceptable character, citizenship and foster patriotism. (L) (W)
3 2 1 0 5. Practice scholarship through improved academics at all levels and areas of education. (L)
3 2 1 0 6. Develop personal programs and goals to continue FFA achievements. (L)
3 2 1 0 7. Present a 10 minute speech/presentation. (L) (C)
3 2 1 0 8. Participate in career development events. (CD) (L)
3 2 1 0 9. Participate in and manage student development activities. (L)
3 2 1 0 10. Participate in and manage community development activities. (L)
3 2 1 0 11. Compete computerized proficiency, award and degree applications. (L)
3 2 1 0 12. Evaluate and describe the overall personal development skills available through FFA activities. (L)

II. HORTICULTURE SCIENCE AND INDUSTRIES

3 2 1 0 1. Analyze career and occupational information. (L) (E)
3 2 1 0 2. Identify personal career goals and objectives. (L) (W)
3 2 1 0 3. Identify and describe fifteen local horticultural career opportunities. (L) (E)
3 2 1 0 4. Understand the importance of finance in career choice.(L)
3 2 1 0 5. Construct and explain a personal resume. (E) (W)
3 2 1 0 6. Construct and explain a personal cover letter. (E) (W)
3 2 1 0 7. Develop a presentation for a job interview. (W) (C)
3 2 1 0 8. Complete a job application. (E) (W) (L)
3 2 1 0 9. Study the availability of a part-time SAE job placement in the local horticultural industries. (L) (E)
3 2 1 0 10. Research and develop a presentation on the complete operations of a local horticulture business organization. (E) (W)
3 2 1 0 11. Discuss the scope, size and economic importance of the horticulture industries in the United States of America. (L)
3 2 1 0 12. Discover emerging horticultural technologies and forecast possible problems and benefits. (L) (E)

III. ADVANCED PLANT SCIENCE

3 2 1 0 1. Understand terms and concepts associated with plant growth, functions and physiology. (S)

3 2 1 0 2. Define and understand terms associated with plant parts, cells and functions. (S)
3 2 1 0 3. Define plant morphology. (S)
3 2 1 0 4. Label and understand the functions of various plant parts, flowers and seeds. (S)
3 2 1 0 5. Describe and understand the terms associated with biotechnology. (S)
3 2 1 0 6. Describe biotechnology applications for plants. (S)
3 2 1 0 7. Describe and understand the basic concepts of genetics. (S)
3 2 1 0 8. Identify new technological careers. (S) (L)
3 2 1 0 9. Describe and understand the concepts of genetic engineering. (S) (L)
3 2 1 0 10. Discover new alternatives for plant management and products. (S)
3 2 1 0 11. Understand general terms and concepts of science studies. (S)
3 2 1 0 12. Identify the learning phases and levels of science theory. (S)
3 2 1 0 13. Develop safety practices used in science/lab activities. (S) (W)
3 2 1 0 14. Develop scientific skills, measurements and lab activities. (S) (M)
3 2 1 0 15. Calculate lab data into useful statistical information. (S) (M)
3 2 1 0 16. Determine the requirements of an experiment. (S)
3 2 1 0 17. Develop a horticultural based experiment that will test a hypothesis. (S) (L)
3 2 1 0 18. Understand the importance and benefits derived from agricultural science. (S)
3 2 1 0 Present and explain the results of a plant science based experiment. (S) (L) (C)
3 2 1 0 20. Summarize future benefits derived from agricultural science. (S) (L) (C)

IV. ECOLOGY AND THE ENVIRONMENT

3 2 1 0 1. Define ecology and environment. (S)
3 2 1 0 2. Analyze the importance of natural resources. (S)
3 2 1 0 3. Analyze environmental issues from political and scientific perspectives. (S) (L)
3 2 1 0 4. Assess public sensitivity to environmental issues. (S) (L)
3 2 1 0 5. Describe how humans are a part of biotic communities. (S)
3 2 1 0 6. Assess factors that limit the life forms (biota) of the environment. (S) (L)
3 2 1 0 7. Analyze the internal consequences of human alterations to an ecosystem. (S)
3 2 1 0 8. Assess how human influence ecological succession. (S)
3 2 1 0 9. identify how the human population has affected and is affecting the environment. (S)
3 2 1 0 10. Analyze how humans and the environment are dependent on each other. (S)
3 2 1 0 11. Assess the significance of agricultural production to human needs and the needs of society. (S) (L)
3 2 1 0 12. Analyze the impact of agriculture production practices on the environment. (S) (L)
3 2 1 0 13. Evaluate the impact of deforestation and reforestation has on the environment. (S) (L)
3 2 1 0 14. Discuss the differences between waste in natural environments and waste created by humans. (S) (L)
3 2 1 0 15. Identify the criteria used for classifying materials as “hazardous” and discuss the health/safety risks in improper hazardous waste disposal. (S) (W)
3 2 1 0 16. Specify the hazards/problems associated with improper waste disposal. (S) (W)
3 2 1 0 17. Explain the land-use planning and reasons for planning land use. (E) (W) (L)
3 2 1 0 18. Understand the relationship between land use and population growth. (E) (W) (L)
3 2 1 0 19. Identify, understand and evaluate the implications of chemical use in the horticultural industries and societies. (S) (L)

V. ADVANCED PLANT IDENTIFICATION

3 2 1 0 1. Describe and understand the binomial system of classification. (S)
3 2 1 0 2. Explain the difference between agricultural, horticultural, biology, and botany classification naming systems. (common vs. Scientific) (S)
3 2 1 0 3. Explain the difference between genus, species and variety. (S)
3 2 1 0 4. Write ten examples of names, both Latin and common. (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) (W)
3 2 1 0 7. Review, identify, and describe 150 common plant types to Kansas. (S) (W) (E)
3 2 1 0 8. Identify and describe 150 tropical, non-native, and various varieties of common horticultural plants. (S) (W) (E)
3 2 1 0 9. Demonstrate the ability to classify unknown plants based

on plant structure. (S) (W)

VI. INTEGRATED PEST MANAGEMENT

3 2 1 0 1. Understand terms associated with pest, disease and control methods. (S)
3 2 1 0 2. Explain and understand what biological and integrated pest management controls means. (S) (W)
3 2 1 0 3. Describe a pest control program, explaining when biological controls or chemicals should be used. (S) (W)
3 2 1 0 4. Identify common insect pests and select an effective control method. (S) (W)
3 2 1 0 5. Identify the names and characteristics of major groups of insecticides. (S) (W)
3 2 1 0 6. Compare ways in which insecticides are safely applied. (S) (W)
3 2 1 0 7. Identify fungus diseases on plants and develop an effective control program. (S) (W)
3 2 1 0 8. Recognize at least two types of rodents and apply a rodenticide for an effective control program. **(**S) (W)
3 2 1 0 9. Recognize slugs and snails on sight and develop an effective control program. (S) (W)
3 2 1 0 10. Identify common nematodes and develop an effective control program. (S) (W)
3 2 1 0 11. Identify a weed problem and select a herbicide to effectively control the problem. (S) (W)
3 2 1 0 12. Describe the difference between selective and non-selective herbicides in destroying weeds. (S) (W)
3 2 1 0 13. Discuss reasons for failure of a herbicide to work. (S) (W)
3 2 1 0 14. identify and understand chemical labels. (S) (W)
3 2 1 0 15. Demonstrate safety practices when working with chemicals**.** (S) (W) (L)

VII. ADVANCED GREENHOUSE MANAGEMENT

3 2 1 0 1. Understand terms associated with greenhouse management applications. (S) (W)
3 2 1 0 2. Describe the different types of horticulture businesses in the United States. (W) (L)
3 2 1 0 3. Design and describe a greenhouse management production program in terms of general daily operations. (E) (W)
3 2 1 0 4. Demonstrate basic skills in greenhouse management production. . (S) (E) (W)
3 2 1 0 5. Identify and understand the different types of greenhouse production sales. (E) (W)
3 2 1 0 6. Discuss and understand different business systems and records associated with greenhouse production programs. (W) (L)
3 2 1 0 7. Understand the basic economic factors associated with greenhouse production programs. (W) (L)
3 2 1 0 8. Develop an advertising program for greenhouse production products. (W) (L)
3 2 1 0 9. Develop a marketing program for greenhouse production products. (W) (L)
3 2 1 0 10. Develop personal salesperson skills associated with greenhouse production programs. (W) (L)
3 2 1 0 11. develop and manage a greenhouse management production program based on the needs and wants of the local community. (W) (L)
3 2 1 0 12. Describe how a greenhouse entrepreneurship program can develop into a life long career. (W) (L)

VIII. NURSERY MANAGEMENT AND OPERATIONS

3 2 1 0 1. Understand terms associated with trees, shrubs and ornamentals. (W) (S)
3 2 1 0 2. Identify and safely use horticultural tools and equipment. (E) (W)
3 2 1 0 3. Identify types of trees and shrubs for landscaping management. (S) (E) (W)
3 2 1 0 4. Select trees and shrubs for their landscape characteristics. (S) (E) (W)
3 2 1 0 5. Develop a site selection for three and shrub layout according to landscape design. (E) (W)
3 2 1 0 6. Identify the different forms of installing trees/shrubs and their requirements. (E) (W)
3 2 1 0 7. Identify sources for quality trees and ornamentals. (E) (W)
3 2 1 0 8. Demonstrate skills in establishing trees and shrubs. (E) (W)
3 2 1 0 9. Demonstrate skills in maintenance and pruning of trees/shrubs in the renovation process of landscape management. (E) (W)
3 2 1 0 10. Develop a maintenance plan for tree/shrub production. (E) (W)
3 2 1 0 11. Develop a water and fertilization program for three/shrubs. (E) (W)
3 2 1 0 12. Develop a pest and disease program for trees/shrubs. (E) (W)
3 2 1 0 13. Implement and demonstrate how to establish a tree and ornamental management program. (E) (W)

IX. GARDENING

3 2 1 0 1. Understand terms associated with gardening production activities. (S) (E) (W)
3 2 1 0 2. Understand climatic factors in producing floral and garden type crops. (S) (E) (W)
3 2 1 0 3. Develop site selection skills for gardening activities. (S) (E) (W)
3 2 1 0 4. Develop long term plans for perennial type garden crops. (S) (E) (W)
3 2 1 0 5. Understand the different types of garden bed types. (S) (E) (W)
3 2 1 0 6. Determine the size and layout for gardening forms. (M) (W)
3 2 1 0 7. Select correct varieties and types of garden plants. (S) (E) (W)
3 2 1 0 8. Discuss options in buying or developing seeds and transplants. (S) (E) (W)
3 2 1 0 9. Demonstrate how to sow seeds, bulbs and transplant seedlings. (S) (E) (W)
3 2 1 0 10. Develop a floral/crop rotation program. (S) (E) (W)
3 2 1 0 11. Develop a complete management/maintenance program. (S) (E) (W)
3 2 1 0 12. Implement and demonstrate a garden production activity. (W) (L)

X. FLORICULTURE

3 2 1 0 1. Understand terms associated with floriculture. (S)
3 2 1 0 2. Discuss and understand the economical impact of the floral industry in the United States. (W) (L)
3 2 1 0 3. Identify floriculture plants and materials. (S)
3 2 1 0 4. Identify and safely use trade tools and equipment. (E) (W)
3 2 1 0 5. Develop harvesting techniques for floral products. (E) (W)
3 2 1 0 6. Identify resources for floral products. (S) (E) (W)
3 2 1 0 7. Design and construct fresh, dried, and artificial flower floral arrangements. (S) (E) (W)
3 2 1 0 8. Design and construct wreaths, swags, and centerpieces. (E) (W)
3 2 1 0 9. Develop business management skills for the floriculture industries. (E) (W) (L)

XI. ADVANCED LANDSCAPE DESIGN

3 2 1 0 1. Understand terms and concepts associated with landscaping designing. (W) (L)
3 2 1 0 2. Discuss the historical perspective and industries of landscaping. (W) (L)
3 2 1 0 3. Identify landscaping plants and materials. (S) (W) (L)
3 2 1 0 4. Explain the purpose of designing a landscape. (W) (L)
3 2 1 0 5. Describe the major objectives of landscaping. (W) (L)
3 2 1 0 6. Demonstrate site analysis skills of landscaping. (W) (L) (M)
3 2 1 0 7. Describe the economic aspects of a landscape design. (W) (L)
3 2 1 0 8. Design and complete a landscape design-using computer generated software and activities. (W) (L)
3 2 1 0 9. Identify and develop a maintenance program for a landscape design. (S) (W) (L)
3 2 1 0 10. Demonstrate and implement a major residential project. (W) (L) (E)

XII. HORTICULTURE BUSINESS

3 2 1 0 1. Understand the differences between entrepreneurship and employment. (W) (L)
3 2 1 0 2. Demonstrate math calculations used in the horticultural industries. (W) (L) (M)
3 2 1 0 3. Develop business management skills. (W) (L)
3 2 1 0 4. Develop salesmanship skills. (W) (L)
3 2 1 0 5. Describe a horticultural sales and marketing program. (W) (L)
3 2 1 0 6. Describe the benefits derived from a entrepreneurship activity vs. employment. (W) (L)
3 2 1 0 7. Describe and develop a set of business records. (W) (L) (M)
3 2 1 0 8. Describe and complete a set of daily business forms. (W) (L) (M)
3 2 1 0 9. Develop a life long appreciation for horticultural knowledge and skills. (W) (L)

XIII. SAE AND RECORDS

3 2 1 0 1. Identify and explain the SAE. (L)
3 2 1 0 2. Understand and explain the importance of record keeping. (L) (W)
3 2 1 0 3. Develop competencies in communication, human relations and social abilities. (W) (L)
3 2 1 0 4. Analyze your SAE activity and records. (W) (L)
3 2 1 0 5. Develop an improved SAE activity. (W) (L)
3 2 1 0 6. Evaluate your SAE activity based on educational and career goals. (W) (L)
3 2 1 0 7. Analyze your past, present and future financial status based on your SAE goals. (W) (L)
3 2 1 0 8. Develop and implement a SAE activity, reevaluate periodically. (W) (L)

XIV. CAREER AND WORKPLACE SKILLS

3 2 1 0 1. Read trade journals and periodicals related to career topics. (W) (L)
3 2 1 0 2. Analyze career and occupational information. (W) (L)
3 2 1 0 3. Operate microcomputer, computer terminal and apply computer. . (W) (L)
3 2 1 0 4. Use neat handwriting in completing paper work. . (W) (L)
3 2 1 0 5. Read and understand data and information from resource materials. . (W) (L)
3 2 1 0 6. Communicate effectively with customers, co-workers and supervisors. . (W) (L) (C)
3 2 1 0 7. Compose business correspondence and reports. . (W) (L)
3 2 1 0 8. Ask appropriate questions to clarify communication. . (W) (L) (C)
3 2 1 0 9. Utilize telephone in efficient and business-like manner. . (W) (L) (C)
3 2 1 0 10. Demonstrate responsible work habits. . (W) (L)
3 2 1 0 11. Check or inspect results to ensure accuracy. . (W) (L)
3 2 1 0 12. Display courtesy, tactfulness and patience. . (W) (L)
3 2 1 0 13. Control emotions under demands, time, pressure and opposition. . (W) (L)
3 2 1 0 14. Demonstrate proper ethical behavior. . (W) (L)
3 2 1 0 15. Demonstrate honesty and integrity. . (W) (L)
3 2 1 0 16. Demonstrate time management skills. . (W) (L)
3 2 1 0 17. Describe the purpose of work. . (W) (L)
3 2 1 0 18. Describe what is meant by “job satisfaction”. . (W) (L)
3 2 1 0 19. Define the term “self-concept” and how it changes over time. . (W) (L)
3 2 1 0 20. Demonstrate the operational functions of business devices (ex. Fax machine, calculators, printers, etc…) . (W) (L)
3 2 1 0 21. Recognize the necessity and effectiveness in teamwork. . (W) (L)
3 2 1 0 22. Distinguish fact, opinion and inference. . (W) (L)
3 2 1 0 23. Identify different team task. . (W) (L)
3 2 1 0 24. Utilize problem-solving skills through group work. . (W) (L)
3 2 1 0 25. Maintain a learning-process consciousness. . (W) (L)
3 2 1 0 26. Transfer learning strategies. . (W) (L)
3 2 1 0 27. Develop research and assessment skills. . (W) (L) (S)
3 2 1 0 28. Develop and display decision making and implementation ability. . (W) (L)
3 2 1 0 29. Demonstrate openness to new ideas and new experiences. . (W) (L)
3 2 1 0 30. Evaluate the benefits of risk taking. . (W) (L)
3 2 1 0 31. Formulate long-term goals by assessing success “fantasies”. . (W) (L)
3 2 1 0 32. Recognize and reevaluate viewpoints based on experiences. . (W) (L)
3 2 1 0 33. Perform a self-assessment of personal traits. . (W) (L)
3 2 1 0 34. Describe the life changes in degree of responsibilities. . (W) (L)
3 2 1 0 35. Develop integrated academic skills in all areas of life. . (W) (L)

XV. TEAMWORK

1. Participate in team tasks: **.** (W) (L) (E) (CD)
   - 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