Kansas Agriculture Education

Advanced Plant and Animal Science - 18311

Name_____

School_____Instructor_____

Verification Signatures HOURS COMPLETED_____

Student signature_____ Date_____

Instructor signature_____Date_____

Circle to indicate level of competency achieved:
3 Skilled – works independently
2 Limited skill – needs assistance
1 Skill undeveloped – but received instruction
0 No exposure

Key to Integrated Competencies/Foundation Skills
(CD) – Career Development (L) – Leadership (C) - Communications
(M) – Math (S) – Science (PS) Problem Solving (SA) Safety (E) Employability

I. FFA and Leadership (L)

3 2 1 0 1) Assist in the planning of the program of activities
3 2 1 0 2) Maintain a record of Leadership Activities in Record Book
3 2 1 0 3) Participate in chapter meetings
3 2 1 0 4) Plan, organize, and oversee chapter fund raising activities
3 2 1 0 5) Organize and submit a chapter proficiency application
3 2 1 0 6) Assist in filling out chapter award applications
3 2 1 0 7) Participate in an FFA Contest
3 2 1 0 8) Assist in developing FFA programs for the chapter
3 2 1 0 9) Develop human relation competencies
3 2 1 0 10) Develop communication competencies

II. SAE

3 2 1 0 1) Record and evaluate recordbook in the following areas: SAE Plans and Accomplishments, Ag Mechanics Activities, Ag Science Activities, Ag Business Activities, Income, Business Expense, Cash Flow, Inventories, and Enterprises records (access available to put on computer)
3 2 1 0 2) Examine goals and future SAE plans
3 2 1 0 3) Identify and evaluate career opportunities and possibilities
3 2 1 0 4) Make arrangements for a SAE visitation by the instructor

III. SOILS

Soils and Land

3 2 1 0 1) Identify soil types and profiles (S,L)
3 2 1 0 2) Utilize soil survey and (M,L,S)
3 2 1 0 3) Explain land classes 1-8 (S)
3 2 1 0 4) Illustrate the water cycle (S)
3 2 1 0 5) Analyze types of erosion (S)
3 2 1 0 6) Apply knowledge in contest (L,S)

Legal Land Description

3 2 1 0 7) Define terms associated with legal land description
3 2 1 0 8) Locate the principal meridians and base lines when drawn on a map of Kansas
3 2 1 0 9) Identify the proper section number within a township
3 2 1 0 10) Interpret a legal land description by determining the number of acres involved (M)
3 2 1 0 11) Identify the exact location of a given piece of rural property using legal description

Conservation Planning, Lane Use, Measurement and Leveling

3 2 1 0 12) Set up and level the instrument
3 2 1 0 13) Use the hand level
3 2 1 0 14) Take rod readings (M)
3 2 1 0 15) Measure distance with tape instruments (M)
3 2 1 0 16) Lay out contour lines (M)
3 2 1 0 17) Determine direction by use of a compass (M)
3 2 1 0 18) Record field notes for differential, profile, and topographic leveling (M)
3 2 1 0 19) Lay out grade stakes for cut/fills (M)
3 2 1 0 20) Determine soil types and select appropriate structures or practices

IV. MEAT and CARCASS EVALUATION

Introduction

3 2 1 0 1) Distinguish between inspection and grading
3 2 1 0 2) List sequences of fat deposition (S)
3 2 1 0 3) Correlate fat deposition to growth curve (S)
3 2 1 0 4) Compare the purposes of quality and yield grades (S)
3 2 1 0 5) Identify factors used to calculate quality and yield grades of beef, lamb and port (M,L)
3 2 1 0 6) Correlate values to yield and quality grades (M,L)

Yield Grading Beef Carcasses

3 2 1 0 7) Measure backfat thickness (M,L)
3 2 1 0 8) Convert backfat thickness to PYG (M,L)
3 2 1 0 9) Adjust PYG for unusual amounts of fat (M,L)
3 2 1 0 10) Measure rib-eye area with dog grid (M,L)
3 2 1 0 11) Estimate rib-eye area within 1" (M,L)
3 2 1 0 12) Determine carcass weight (M,L)
3 2 1 0 13) Determine required rib-eye area (M,L)
3 2 1 0 14) Calculate internal fat adjustment to PYG (M,L)
3 2 1 0 15) Determine final yield grade
3 2 1 0 16) Sight grade carcasses to nearest full grade (M,L)

Quality Grading Beef Carcasses

3 2 1 0 17) Identify marbling degrees in each grade (M,L)
3 2 1 0 18) Determine marbling scores (M,L)

3 2 1 0 19) Determine skeletal maturity (S,L)
3 2 1 0 20) Determine lean maturity (L)
3 2 1 0 21) Balance skeletal and lean maturity (S,L)
3 2 1 0 22) Apply maturity and marbling scores to quality grade chart (M,L)
3 2 1 0 23) Determine final quality grade to nearest 1/3 grade (M,L)

Wholesale Cut Evaluation

3 2 1 0 24) Identify Primals of beef, port, and lamb (L,S)
3 2 1 0 25) Identify visible bones and major muscles (S,L)
3 2 1 0 26) Identify yield factors that influence value (M,L)
3 2 1 0 27) Identify quality factors that influence value (M,L)
3 2 1 0 28) Rank primals by yield and quality criteria (M,L)

Retail Cut Utilization

3 2 1 0 29) Identify meat palpability factors (S,L)
3 2 1 0 30) Identify variations in palpability
3 2 1 0 31) Identify methods of handling collagen (S,L)
3 2 1 0 32) Identify major cooking methods

Retail Cut Identification

3 2 1 0 33) Identify major round bones of skeleton (S,L)
3 2 1 0 34) Identify major flat bones of skeleton (S,L)
3 2 1 0 35) Identify major irregular bones and skeleton (S,L)
3 2 1 0 36) Identify unique muscle patterns (S,L)
3 2 1 0 37) Identify unique fat characteristics (S,L)

Determine how major retail cuts are taken from:

3 2 1 0 38) Beef chuck
3 2 1 0 39) Beef rib
3 2 1 0 40) Beef loin
3 2 1 0 41) Beef round
3 2 1 0 42) Beef flank
3 2 1 0 43) Beef plate
3 2 1 0 44) Beef brisket
3 2 1 0 45) Port Boston butt
3 2 1 0 46) Pork picnic
3 2 1 0 47) Pork loin
3 2 1 0 48) Pork ham
3 2 1 0 49) Lamb shoulder
3 2 1 0 50) Lamb rack
3 2 1 0 51) Lamb loin
3 2 1 0 52) Lamb leg
3 2 1 0 53) Distinguish between species (S,L)
3 2 1 0 54) Identify variety meats

V. Ag Sales

3 2 1 0 1. Understand the sales process as it relates to agribusiness.
3 2 1 0 2. Develop the ability to use advertising and promotion to sell agriculture products.
3 2 1 0 3. Develop the ability to build customer confidence- in the sales person, the product, and the business.
3 2 1 0 4. Use market research data to set realistic goals for reaching the right customers.
3 2 1 0 5. Develop the skills necessary to conduct research on agriculture sales careers and to develop strategies for seeking employment.
3 2 1 0 6. Demonstrate the ability to set up and handle an interview for a professional position in the agricultural sales field.
3 2 1 0 7. Identify career options in agricultural sales and determine the specific entry requirements for a chosen field.
3 2 1 0 8. Develop skills in working as part of a team or a group. (C)
3 2 1 0 9. Develop an overview of the vast field of agricultural product marketing.
3 2 1 0 10. Improve written communication skills. (C)
3 2 1 0 11. Improve oral presentation skills. (C)
3 2 1 0 12. Develop computer skills.
3 2 1 0 13. Bring it all together by going on to compete in the FFA Agricultural Sales Career Development Event. (C)

VI. Plant Growth Processes

3 2 1 0 1. Explain and describe the process of photosynthesis (S: 3.1.4)
3 2 1 0 2. Explain the environmental factors that affect photosynthesis (S: 3.5.2)
3 2 1 0 3. Describe the process of respiration (S: 3.5.3)
3 2 1 0 4. Explain the environmental factors that affect respiration (S)
3 2 1 0 5. Explain the processes of translocation and transpiration (S)
3 2 1 0 6. Explain the environmental factors that affect transpiration (S)
3 2 1 0 7. Discuss the process of nutrient absorption (S)
3 2 1 0 8. Relate environmental factors that affect plant growth (S)
3 2 1 0 9. Describe geotropism and photoperiodism in horticulture (S)
3 2 1 0 10. List plant growth regulators used in horticulture (S)
3 2 1 0 11. Explain how plant growth regulators affects the activity of plant metabolism (S)
3 2 1 0 12. Predict and manipulate the results of photoperiodism and plant growth regulators (S)
3 2 1 0 13. Utilize USDA Hardiness Zones in plant selection

VII. Plant Genetics

3 2 1 0 1. Explain the relationship between DNA, genes and alleles (S:3.2.1)
3 2 1 0 2. Identify dominant and recessive genes and homozygous and heterozygous combinations (S:3.2.1, 3.2.3)
3 2 1 0 3. Apply fundamentals of Mendalian genetics (S: 3.2.1, 3.2.3)
3 2 1 0 4. Predict genotypic and phenotypic combinations using a punnet square (S: 3.2.1, 3.2.3)
3 2 1 0 5. Identify biotechnology applications in the Horticulture industry (M, S: 5.1.1)
3 2 1 0 6. Differentiate between mitosis and meiosis cell division (S: 3.2.4)

ACADEMIC COMPETENCIES

LANGUAGE ARTS

ALL (C)

VIII. Oral Communications

3 2 1 0 1) Answer questions in formal and informal situations

3 2 1 0 2) Present findings of capstone projects in a formal presentation using appropriate graphics, media, and support materials.

IX. Written Communications

3 2 1 0 1) Use a wide variety of references and resources (both electronic and printed) for the purpose of writing business documents

3 2 1 0 2) Write formal and informal reports using suitable format supported by appropriate graphic aids

3 2 1 0 3) Prepare industry-specific technical reports which incorporate graphic aids

Mathematical Skills and Concepts (All M)

X. STATISTICS & PROBABILITY

3 2 1 0 1) Construct, read, and interpret tables, charts, and graphs

3 2 1 0 2) Make inferences about data from tables, harts, and graphs

3 2 1 0 3) Estimate and calculate measures of central tendency (mean, median, mode)

3 2 1 0 4) Use probability concepts to represent and solve problems involving uncertainty

XI. MATH APPLICATIONS

3 2 1 0 5) Calculate gross earnings (e.g., salary , hourly rate, commission, or production)

3 2 1 0 6) Calculate income and expenses for a given time period

3 2 1 0 7) Calculate inventory turnover at cost and at retail for a given period.

CAREER DEVELOPMENT SKILLS (CD, E)

XII. Listening Skills

3 2 1 0 1) Draw conclusions or make generalizations from another's oral communication

3 2 1 0 2) Analyze a speaker's point of view

3 2 1 0 3) Restate or paraphrase a conversation to confirm what was said

3 2 1 0 4) Reduce barriers (or interference) that may impede effective listening

XIII. Teamwork

1) Build group consensus:

3 2 1 0 a. Clarify statements

3 2 1 0 b. Reconcile disputes and disagreements

3 2 1 0 c. Propose alternative plans for action

3 2 1 0 d. Respond positively to ideas and suggestions

3 2 1 0 e. Express agreement or neutrality

3 2 1 0 f. Demonstrate conflict resolution skills

3 2 1 0 g. Express disagreement diplomatically

XIV. Time Management

3 2 1 0 1) Identify influences on use of time

3 2 1 0 2) Set priorities or the order in which several tasks will be accomplished

3 2 1 0 3) Identify and control personal "time wasters"

3 2 1 0 4) Develop strategies to overcome procrastination and meet deadlines

3 2 1 0 5) Estimate the time required to perform activities needed to accomplish a specific task

3 2 1 0 6) Create a time plan for solving a problem

XV. Work Ethics

1) Apply employee rules, regulations, and policies in a given occupational area, including:

3 2 1 0 a. Punctuality and dependability

3 2 1 0 b. Responsibility for position

3 2 1 0 c. Accuracy

3 2 1 0 d. Cost effectiveness

2) Understand and value effective work ethic attitudes:

3 2 1 0 a. Acceptance of the job requirements

3 2 1 0 b. A willingness to take initiative with new challenges

3 2 1 0 c. Take responsibility for decisions and actions

3) Interpret standard workplace policies related to:

3 2 1 0 a. safety

3 2 1 0 b. personal hygiene

3 2 1 0 c. personal discipline (personal leave and absence)

3 2 1 0 d. substance abuse

3 2 1 0 e. employee theft

3 2 1 0 f. sexual harassment

3 2 1 0 g. causes for termination/legal actions

3 2 1 0 4) Demonstrate personal characteristics that lead to job satisfaction.

3 2 1 0 5) Maintain an openness to lifelong learning

XVI. CAREER PLANNING (CD, E)

3 2 1 0 1) Access and use information to develop educational and career options

3 2 1 0 2) Participate in career exploration activities

3 2 1 0 3) Recognize potential impact of career choice on family and personal life

3 2 1 0 4) Identify roles and responsibilities of a leader in relation to one's own

STUDENT NAME: _____

Have 80% of these competencies been mastered? Y N

Teacher signature: