



EXAM INFORMATION

Items

54

Points

75

Prerequisites

NONE

Grade Level

9-12

Course Length

ONE YEAR

Career Cluster

AGRICULTURE, FOOD AND NATURAL
RESOURCES
SCIENCE, TECHNOLOGY,
ENGINEERING, AND MATHEMATICS

Performance Standards

INCLUDED

Certificate Available

YES

DESCRIPTION

Students will develop knowledge and skills in a wide range of scientific principles, including genetics, anatomy, physiology, nutrition, disease, pests, and management practices. The scientific process of observation, measurement, hypothesizing, data gathering, interpretation, analysis, and application are included. Career opportunities and educational preparation are examined. Learning activities are varied, with classroom, laboratory, and field experiences emphasized.

EXAM BLUEPRINT

STANDARD	PERCENTAGE OF EXAM
1- Student Organization in Agricultural Education	5%
2- Agricultural Experience in Agricultural Education	3%
3- Scientific Principles and Animals	19%
4- Animal Breeding and Reproduction	20%
5- Animal Nutrition	24%
6- Principles for Health and Well-being	17%
7- Production from Agricultural Animals	11%
8- Trends and Career Opportunities	1%



STANDARD 1

STUDENTS WILL EXPLAIN THE ROLE OF STUDENT ORGANIZATION IN AGRICULTURAL EDUCATION

- Objective 1** Discuss the history and organization of student organizations as it relates to the complete program of agricultural education.
1. Explain the interrelationship of classroom and laboratory instruction, supervised agricultural experience, and student organizations.
 2. Describe how, when, and why student organizations were organized.
 3. Identify key student organization historical events.
 4. Identify the mission and strategies, colors, motto, emblem and parts of the emblem, and organizational structure of student organization.
 5. Recite and explain the meaning of a student organization Creed.
 6. Discuss the meaning and purpose of a program of activities and its committee structure.
 7. List student organization chapter officers and discuss the role of each.
- Objective 2** Identify opportunities in student organization.
1. Describe student organization opportunities that develop leadership skills, personal growth, and career success.
 2. Summarize major state and national activities available to student organization members.
- Objective 3** Describe student organization degrees, awards, and career development events (CDEs).
1. List and explain the student organization degree areas.
 2. Identify student organization proficiency awards.
 3. List and discuss various team and individual CDEs.

Standard 1 Performance Evaluation included below (Optional)

STANDARD 2

STUDENTS WILL EXPLAIN THE ROLE OF SUPERVISED AGRICULTURAL EXPERIENCE PROGRAMS IN AGRICULTURAL EDUCATION

- Objective 1** Examine the responsibilities and benefits associated with an agricultural experience.
1. Explain the meaning and benefits of supervised agricultural experience.
 2. Explain the characteristics of an effective agricultural experience program and the responsibilities of those involved.
- Objective 2** Determine the types of agricultural experience programs.
1. Compare entrepreneurship agricultural experience and placement agricultural experiences.
 2. Describe research/experimentation agricultural experience.
 3. Describe exploratory agricultural experience.
- Objective 3** Plan an agricultural experience program.
1. Identify the steps in planning an agricultural experience program.



2. Describe the function of a business/training plan and/or agreement in an agricultural experience program.
3. Develop a short-range plan and a long-range plan for an agricultural experience program.
4. Relate classroom and laboratory instruction to an agricultural experience program.

Objective 4 Maintain and use agricultural experience records.

1. Explain the importance of keeping records on an agricultural experience program.
2. Explain how agricultural experience records are organized.
3. Follow approved procedures to make entries in agricultural experience records.

Standard 2 Performance Evaluation included below (Optional)

STANDARD 3

STUDENTS WILL APPLY SCIENTIFIC PRINCIPLES IN THE SELECTION OF ANIMALS

Objective 1 Discuss the origin and importance of agricultural animals.

1. Explain domestication and its contributions to animal agriculture.
2. Evaluate the adaptation of animals to production practices.

Objective 2 Classify animals according to hierarchical taxonomy and agricultural use.

1. Explain the meaning and importance of the binomial system of nomenclature (animal scientific classification and naming).
2. State the scientific and common names of major animal agricultural species in your state.
3. Classify animal species based on their agricultural uses.

Objective 3 Discuss genetic inheritance in agricultural animals.

1. Explain the meaning and importance of genetics.
2. Describe and predict how traits are inherited in agricultural animals.
3. Identify common agricultural animals based on breed.

Objective 4 Select agricultural animals to fulfill production objectives.

1. Explain the importance of animal selection in the success of a production enterprise.
2. Evaluate the importance of conformation in animal selection.
3. Describe how the muscular and skeletal systems contribute to the conformation of an agricultural animal.
4. Identify major external parts of agricultural animals.
5. Utilize breed and type characteristics in animal selection.
6. Explain the use of quantitative breeding values (expected progeny differences) in animal selection.

Standard 3 Performance Evaluation included below (Optional)



STANDARD 4

STUDENTS WILL APPLY PRINCIPLES OF ANIMAL BREEDING AND REPRODUCTION TO GAIN DESIRED OFFSPRING

- Objective 1 Describe the role of animal breeding.
1. Discuss the meaning and importance of reproduction in animal agriculture.
 2. Identify important factors in breeding readiness.
 3. Explain the benefits of using genetically superior animals in the production of animals and animal products.
 4. Explain the concept of hybrid vigor as it relates to animal agriculture.
- Objective 2 Analyze the components of the animal reproductive system.
1. Identify and explain the function of the components of the female reproductive system in agricultural animals.
 2. Identify and explain the function of the components of the male reproductive system in agricultural animals.
- Objective 3 Explain animal reproductive processes.
1. Explain reproductive efficiency in agricultural animals.
 2. Describe natural and artificial breeding of agricultural animals.
 3. Relate the reproductive cycle in female animals to reproductive efficiency (i.e. estrous cycle).

Standard 4 Performance Evaluation included below (Optional)

STANDARD 5

STUDENTS WILL APPLY PRINCIPLES OF ANIMAL NUTRITION TO ENSURE THE PROPER GROWTH, DEVELOPMENT, REPRODUCTION, AND ECONOMIC PRODUCTION OF ANIMALS

- Objective 1 Compare and contrast the digestive systems of agricultural animals.
1. Describe the structure and function of the ruminant digestive system.
 2. Describe the structure and function of nonruminant digestive systems.
 3. Describe the structure and function of avian digestive systems.
- Objective 2 Explain the role of nutrition in animal productivity.
1. List essential nutrients and describe the importance of each.
 2. Compare and contrast common foodstuffs in the diets of ruminant and nonruminant animals.
 3. Discuss the meaning and use of feed additives and growth promotants.
- Objective 3 Provide appropriate nutrition for animals.
1. Relate the role of nutrition to the age, performance, and condition of animals.
 2. Determine feed rations for specific species, ages, and conditions of animals.
 3. Calculate balanced rations for agricultural animals.



STANDARD 6

STUDENTS WILL APPLY MANAGEMENT PRINCIPLES FOR MAINTAINING THE HEALTH AND WELL-BEING OF AGRICULTURAL ANIMALS

- Objective 1** Summarize the role of animal well-being in the animal industry.
1. Explain the meaning and importance of animal well-being.
 2. Utilize safe practices in working with animals.
 3. Relate concepts of animal welfare and animal rights to animal well-being.
- Objective 2** Apply animal anatomy and physiology to maintain animal health.
1. Describe the role of major organ systems (skeletal, muscular, nervous, respiratory, digestive, circulatory, excretory, and reproductive) in maintaining animal health.
 2. Discuss common diseases, parasites, and physiological disorders of animals.
- Objective 3** Provide for the health and well-being of agricultural animals.
1. Prescribe and implement prevention and treatment for animal diseases, parasites, and other disorders.
 2. Perform simple health checks on animals.
 3. Diagnose illnesses and disorders based on symptoms and problems caused by diseases, parasites, and physiological disorders.
 4. Identify and describe zoonotic diseases.
 5. Consider species-specific requirements in animal well-being.
 6. Identify and demonstrate use of equipment in animal health.

Standard 6 Performance Evaluation included below (Optional)

STANDARD 7

STUDENTS WILL EXAMINE CONSUMER PRODUCTS, SERVICES, AND BENEFITS DERIVED FROM THE PRODUCTION OF AGRICULTURAL ANIMALS

- Objective 1** Identify and evaluate consumer products that come from agricultural animals.
1. Identify and grade wholesale and retail cuts of meat.
 2. Recognize signs of meat spoilage.
 3. Describe the various carcass characteristic that determine meat grade.
 4. Describe how milk and milk products are produced, processed, and graded.
 5. Identify consumer products that are derived from byproducts of animal production.
 6. Identify and grade poultry products, including eggs.
 7. Describe the impact of food safety issues on animal production.
- Objective 2** Identify and evaluate services and benefits that come from agricultural animals.
1. Identify the benefits provided by companion animals.
 2. Describe the role of exotic pets in the animal industry.
 3. Compare and contrast the use of agricultural animals in recreational activities, including racing, showing, and power.
 4. Describe the use of animals in therapy programs.



STANDARD 8

STUDENTS WILL EXAMINE TRENDS AND CAREER OPPORTUNITIES IN THE ANIMAL INDUSTRY, INCLUDING THOSE RELATED TO AGRICULTURAL ANIMALS

Objective 1 Interpret trends in the animal industry.

1. Identify trends in the animal industry.
2. Determine the implications of trends on animal production.

Objective 2 Determine career opportunities in the animal industry.

1. Identify the nature of career opportunities in the animal industry.
2. Develop a career plan to acquire needed education and skills for entering a career in the animal industry.
3. Demonstrate personal job skills for success in advancing in a career in the animal industry.

Standard 8 Performance Evaluation included below (Optional)



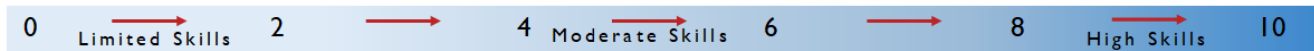
Animal Science I Performance Standards (Optional)

Performance assessments may be completed and evaluated at any time during the course. The following performance skills are to be used in connection with the associated standards and exam. To pass the performance standard the student must attain a performance standard average of **8 or higher** on the rating scale. Students may be encouraged to repeat the objectives until they average **8 or higher**.

Students Name _____

Class _____

PERFORMANCE RATING SCALE



STANDARD 1 Student Organization in Agricultural Education

Score:

- Explain a student organization Creed (optional)
- Identify key components of a student organization (optional)

STANDARD 2 Agricultural Experience in Agricultural Education

Score:

- Prepare a plan for a agricultural experience (optional)
- Record all transactions and activities for an agricultural experience, using an approved record book (optional)

STANDARD 3 Scientific Principles and Animals

Score:

- Demonstrate reproductive technologies

STANDARD 4 Animal Breeding and Reproduction

Score:

- Utilize livestock management practices
- Identify breeds of beef, dairy, swine, and sheep

STANDARD 6 Health and Well-being

Score:

- Utilize livestock management practices
- Research and debate a current animal welfare and animal rights issue

STANDARD 8 Trends and Career Opportunities

Score:

- Identify a career opportunity in animal science
- Demonstrate occupational competencies associated with an animal science career

PERFORMANCE STANDARD AVERAGE SCORE: