Kentucky CTE

# Animal Science: High School (9-12)

## ACADEMIC SKILLS

### AA SPEAKING AND LISTENING

1. Utilize effective verbal and non-verbal communication skills AA1
2. Participate in conversation, discussion, and group presentations AA2
3. Communicate and follow directions/procedures AA3
4. Communicate effectively with customers and co-workers AA4

### AB READING AND WRITING

1. Locate and interpret written information AB1
2. Read and interpret workplace documents AB2
3. Identify relevant details, facts, and specifications AB3
4. Record information accurately and completely AB4
5. Demonstrate competence in organizing, writing, and editing using correct vocabulary, spelling, grammar, and punctuation AB5
6. Demonstrate the ability to write clearly and concisely using industry specific terminology AB6

### AC CRITICAL THINKING AND PROBLEM SOLVING

1. Utilize critical-thinking skills to determine best options/outcomes (e.g., analyze reliable/unreliable sources of information, use previous experiences, implement crisis management, develop contingency planning) AC1
2. Utilize innovation and problem-solving skills to arrive at the best solution for current situation AC2
3. Implement effective decision-making skills AC3

### AD MATHEMATICS

1. Perform basic and higher level math operations (e.g., addition, subtraction, multiplication, division, decimals, fractions, units of conversion, averaging, percentage, proportion, ratios) AD1
2. Solve problems using measurement skills (e.g., distance, weight, area, volume) AD2
3. Make reasonable estimates AD3

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4 Use tables, graphs, diagrams, and charts to obtain or convey information AD4

5 Use deductive reasoning and problem-solving in mathematics AD5

### AE FINANCIAL LITERACY

1 Locate, evaluate, and apply personal financial information AE1

2 Identify the components of a budget and how one is created AE2

3 Set personal financial goals and develop a plan for achieving them AE3

4 Use financial services effectively AE4

5 Demonstrate ability to meet financial obligations AE5

### AF INTERNET USE AND SECURITY

1 Recognize the potential risks associated with Internet use AF1

2 Identify and apply Internet security practices (e.g., password security, login, logout, log off, lock computer) AF2

3 Practice safe, legal, and responsible use of technology in the workplace AF3

### AG INFORMATION TECHNOLOGY

1 Use technology appropriately to enhance professional presentations AG1

2 Demonstrate effective and appropriate use of social media AG2

3 Identify ways social media can be used as marketing, advertising, and data gathering tools AG3

### AH TELECOMMUNICATIONS

1 Select and use appropriate devices, services, and applications to complete workplace tasks AH1

2 Demonstrate appropriate etiquette when using e-communications (e.g., cell phone, e-mail, personal digital assistants, online meetings, conference calls) AH2

## EMPLOYABILITY SKILLS

### EA POSITIVE WORK ETHIC

1 Demonstrate enthusiasm and confidence about work and learning new tasks EA1

2 Demonstrate consistent and punctual attendance EA2

3 Demonstrate initiative in assuming tasks EA3

4 Exhibit dependability in the workplace EA4

5 Take and provide direction in the workplace EA5

6 Accept responsibility for personal decisions and actions EA6

### EB INTEGRITY

1 Abide by workplace policies and procedures EB1

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2 Demonstrate honesty and reliability EB2

3 Demonstrate ethical characteristics and behaviors EB3

4 Maintain confidentiality and integrity of sensitive company information EB4

5 Demonstrate loyalty to the company EB5

**EC SELF-REPRESENTATION**

1 Demonstrate appropriate dress and hygiene in the workplace EC1

2 Use language and manners suitable for the workplace EC2

3 Demonstrate polite and respectful behavior toward others EC3

4 Demonstrate personal accountability in the workplace EC4

5 Demonstrate pride in work EC5

**ED TIME, TASK, AND RESOURCE MANAGEMENT**

1 Plan and follow a work schedule ED1

2 Work with minimal supervision ED2

3 Work within budgetary constraints ED3

4 Demonstrate ability to stay on task to produce high quality deliverables on time ED4

**EE DIVERSITY AWARENESS**

1 Recognize diversity, discrimination, harassment, and equity EE1

2 Work well with all customers and co-worker EE2

3 Explain the benefits of diversity within the workplace EE3

4 Explain the importance of respect for feelings, values, and beliefs of others EE4

5 Identify strategies to bridge cultural/generational differences and use differing perspectives to increase overall quality of work EE5

6 Illustrate techniques for eliminating gender bias and stereotyping in the workplace EE6

7 Identify ways tasks can be structured to accommodate the diverse needs of workers EE7

8 Recognize the challenges and advantages of a global workforce EE8

**EF TEAMWORK**

1 Recognize the characteristics of a team environment and conventional workplace EF1

2 Contribute to the success of the team EF2

3 Demonstrate effective team skills and evaluate their importance in the workplace (e.g., setting goals, listening, following directions, questioning, dividing work) EF3

**EG CREATIVITY AND RESOURCEFULNESS**

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1 Contribute new ideas EG1

2 Stimulate ideas by posing questions EG2

3 Value varying ideas and opinions EG3

4 Locate and verify information EG4

## EH CONFLICT RESOLUTION

1 Identify conflict resolution skills to enhance productivity and improve workplace relationships EH1

2 Implement conflict resolution strategies and problem-solving skills EH2

3 Explain the use of documentation and its role as a component of conflict resolution EH3

## EI CUSTOMER/CLIENT SERVICE

1 Recognize the importance of and demonstrate how to properly acknowledge customers/clients EI1

2 Identify and address needs of customers/clients EI2

3 Provide helpful, courteous, and knowledgeable service EI3

4 Identify appropriate channels of communication with customers/clients (e.g., phone call, face-to-face, e-mail, website) EI4

5 Identify techniques to seek and use customer/client feedback to improve company services EI5

6 Recognize the relationship between customer/client satisfaction and company success EI6

## EJ ORGANIZATIONS, SYSTEMS, AND CLIMATES

1 Define profit and evaluate the cost of conducting business EJ1

2 Identify "big picture" issues in conducting business EJ2

3 Identify role in fulfilling the mission of the workplace EJ3

4 Identify the rights of workers (e.g., adult and child labor laws and other equal employment opportunity laws) EJ4

5 Recognize the chain of command, organizational flow chart system, and hierarchy of management within an organization EJ5

## EK JOB ACQUISITION AND ADVANCEMENT

1 Recognize the importance of maintaining a job and pursuing a career EK1

2 Define jobs associated with a specific career path or profession EK2

3 Identify and seek various job opportunities (e.g., volunteerism, internships, co-op, part-time/full-time employment) EK3

4 Prepare a resume, letter of application, and job application EK4

5 Prepare for a job interview (e.g., research company, highlight personal strengths, prepare questions, set-up a mock interview, dress appropriately) EK5

6 Participate in a job interview EK6

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7 Explain the proper procedure for leaving a job EK7

### EL LIFELONG LEARNING

1 Acquire current and emerging industry-related information EL1

2 Demonstrate commitment to learning as a life-long process and recognize learning opportunities EL2

3 Seek and capitalize on self-improvement opportunities EL3

4 Discuss the importance of flexible career planning and career self-management EL4

5 Employ leadership skills to achieve workplace objectives (e.g., personal vision, adaptability, change, shared vision) EL5

6 Recognize the importance of job performance evaluation and coaching as it relates to career advancement EL6

7 Accept and provide constructive criticism EL7

8 Describe the impact of the global economy on jobs and careers EL8

### EM JOB SPECIFIC TECHNOLOGIES

1 Identify the value of new technologies and their impact on driving continuous change and the need for life-long learning EM1

2 Research and identify emerging technologies for specific careers EM2

3 Select appropriate technological resources to accomplish work EM3

### EN HEALTH AND SAFETY

1 Assume responsibility for safety of self and others EN1

2 Follow safety guidelines in the workplace EN2

3 Manage personal health and wellness EN3

## OCCUPATIONAL SKILLS

### OA ANALYZE HISTORIC AND CURRENT TRENDS IMPACTING THE ANIMAL SYSTEMS INDUSTRY

1 Discuss the interrelationships between agriculture commodities based on economic, geographic, and production factors OA1

2 Analyze changes in food consumption throughout history OA2

3 Describe the relationship between consumer demands and animal production OA3

4 Evaluate current trends in animal science through industry associations, trade journals, and reliable electronic resources OA4

5 Describe agricultural practices that ensure a safe and reliable food supply OA5

6 Discuss the benefits of utilizing best practice production systems in animal science OA6

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7 Evaluate the impact of world trade issues (e.g., diseases, imports/exports, drought, trade agreements) on animal science OA7

8 Summarize agricultural laws impacting animal science (e.g., property, incorporation, liability issues, animal husbandry, labor, farming in populated areas) OA8

9 Identify related government agencies, their functions and programs, as they relate to animal science OA9

10 Describe the implications of state and federal agricultural legislation (e.g., farm bill) OA10

11 Compare and contrast marketing opportunities for animal commodities (e.g., terminal, direct, niche, local) OA11

12 Analyze the benefits of risk management practices (futures, forward contracts, diversification, insurance) OA12

13 Summarize the benefits of electronic technology in animal science (e.g., electronic record keeping, ultrasound, electronic identification, computer feeding) OA13

**OB UTILIZE BEST-PRACTICE PROTOCOLS BASED ON ANIMAL BEHAVIORS FOR ANIMAL HUSBANDRY AND WELFARE**

1 Describe characteristics of effective animal care facilities OB1

2 Recommend safe handling techniques and equipment when working with animals OB2

3 Differentiate between animal welfare and animal rights OB3

**OC DESIGN AND PROVIDE PROPER ANIMAL NUTRITION TO ACHIEVE DESIRED OUTCOMES FOR PERFORMANCE DEVELOPMENT, REPRODUCTION, AND/OR ECONOMIC PRODUCTION**

1 Describe the anatomy and physiology of digestive systems (monogastric, ruminant, hind gut fermenters, avian) OC1

2 Discuss the function of the six classes of nutrients in regards to animal nutrition OC2

3 Compare common types of feedstuffs and the role they play in the diets of animals OC3

4 Explain the purpose of feed additives and growth promotants in animal production OC4

5 Formulate animal feeds based on nutritional requirements using feed ingredients for maximum nutrition and optimal economic production OC5

**OD APPLY PRINCIPLES OF ANIMAL REPRODUCTION TO ACHIEVE DESIRED OUTCOMES FOR PERFORMANCE, DEVELOPMENT, AND ECONOMIC PRODUCTION**

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1 Describe the functions of major reproductive organs and hormones in the male and female reproductive systems OD1

2 Contrast the processes of natural and artificial breeding methods OD2

3 Infer how age, size, life cycle, maturity level, gestation, and health status affect the reproductive efficiency of male and female animals 0D3

4 Evaluate the use of quantitative breeding values in the selection of genetically superior breeding stock (e.g., EPD's) 0D4

5 Discuss the importance of efficient and economic reproduction in animals 0D5

6 Differentiate principles of animal genetics and heredity (e.g. homozygous, heterozygous, phenotype, genotype, dominance, recessive) 0D6

7 Appraise the advantages of reproductive management practices, including estrous synchronization, superovulation, flushing, and embryo transfer 0D7

## 0E EVALUATE ENVIRONMENTAL FACTORS AFFECTING ANIMAL PERFORMANCE AND IMPLEMENT PROCEDURES FOR ENHANCING PERFORMANCE AND ANIMAL HEALTH

1 Select best practices to enhance soil and water quality 0E1

2 Describe the impact of water quality on animal health 0E2

3 Describe procedures to decrease the negative effects of environmental factors on animals 0E3

4 Evaluate measures to maintain the quality of the environment in areas used to raise and house animals 0E4

## 0F CLASSIFY, EVALUATE AND SELECT ANIMALS BASED ON ANATOMICAL AND PHYSIOLOGICAL CHARACTERISTICS

1 Classify animals according to the taxonomical classification system and species-specific terminology related to age and gender 0F1

2 Differentiate major animal breeds within the industry and their production strengths 0F2

3 Identify the major skeletal and external parts of production and companion species 0F3

4 Identify wholesale and retail cuts of production species 0F4

5 Evaluate desirable anatomical and physiological characteristics of animals within and between species 0F5

## 0G APPLY PRINCIPLES OF EFFECTIVE ANIMAL HEALTH CARE

1 Characterize common disorders, parasites, and vaccinated diseases of both production and companion animal species 0G1

2 Discuss the health risks of zoonotic diseases to humans and their historical significance 0G2

3 Select proper medical dosages and delivery methods 0G3

4 Evaluate preventative measures for controlling and limiting the spread of diseases, parasites, and disorders among animals 0G4

5 Explain common surgical and nonsurgical procedures in animal healthcare 0G5

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## 0H PRACTICE SOUND AGRICULTURAL FINANCE IN ANIMAL SCIENCE

1. Identify requirements for and sources of credit OH1
2. Compare the benefits related to buying, leasing, renting land and/or equipment OH2
3. Describe how various forms of taxes impact the animal science industry (income, sales, property, inheritance) OH3
4. Calculate break-even prices in an animal science business to maximize profit OH4