

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**
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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**
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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**
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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**

- 4 Use tables, graphs, diagrams, and charts to obtain or convey information AD4
 - 5 Use deductive reasoning and problem-solving in mathematics AD5
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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
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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
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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
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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
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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
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EB INTEGRITY

- 1 Abide by workplace policies and procedures EB1
- 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**
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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**
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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**
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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**
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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**
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EG CREATIVITY AND RESOURCEFULNESS

- 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**
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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**
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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**
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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**

- 7 Explain the proper procedure for leaving a job **EK7**
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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**
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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**
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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**
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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**

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

- 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 **OD3**
 - 4 Evaluate the use of quantitative breeding values in the selection of genetically superior breeding stock (e.g., EPD's) **OD4**
 - 5 Discuss the importance of efficient and economic reproduction in animals **OD5**
 - 6 Differentiate principles of animal genetics and heredity (e.g. homozygous, heterozygous, phenotype, genotype, dominance, recessive) **OD6**
 - 7 Appraise the advantages of reproductive management practices, including estrous synchronization, superovulation, flushing, and embryo transfer **OD7**
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OE 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 **OE1**
 - 2 Describe the impact of water quality on animal health **OE2**
 - 3 Describe procedures to decrease the negative effects of environmental factors on animals **OE3**
 - 4 Evaluate measures to maintain the quality of the environment in areas used to raise and house animals **OE4**
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OF 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 **OF1**
 - 2 Differentiate major animal breeds within the industry and their production strengths **OF2**
 - 3 Identify the major skeletal and external parts of production and companion species **OF3**
 - 4 Identify wholesale and retail cuts of production species **OF4**
 - 5 Evaluate desirable anatomical and physiological characteristics of animals within and between species **OF5**
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OG APPLY PRINCIPLES OF EFFECTIVE ANIMAL HEALTH CARE

- 1 Characterize common disorders, parasites, and vaccinated diseases of both production and companion animal species **OG1**
 - 2 Discuss the health risks of zoonotic diseases to humans and their historical significance **OG2**
 - 3 Select proper medical dosages and delivery methods **OG3**
 - 4 Evaluate preventative measures for controlling and limiting the spread of diseases, parasites, and disorders among animals **OG4**
 - 5 Explain common surgical and nonsurgical procedures in animal healthcare **OG5**
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OH 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