**AGRICULTURE, FOOD & NATURAL RESOURCES CAREER CLUSTER DESIGN:**

**Agriculture Science Pathway**

***CHECKLIST*:** ***Animal Science* (18101)**

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| --- | --- | --- | --- | --- | --- |
| **Standard** | **Dates Taught** | | | | **Notes** |
| **Animal Origin** | | | | | |
| 1. Identify the origin, significance, distribution and domestication of animal species. |  |  |  |  |  |
| 1. Define major components of the animal industry. |  |  |  |  |  |
| **Classify Animals** | | | | | |
| 1. Explain the importance of the binomial system of nomenclature. |  |  |  |  |  |
| 1. Identify major animal species by common and scientific names. |  |  |  |  |  |
| **Comparative Anatomy & Physiology** | | | | | |
| 1. Identify basic characteristics of animal cells, tissues, organs and body systems. |  |  |  |  |  |
| 1. Diagram a typical animal cell and identify the organelles. |  |  |  |  |  |
| 1. Describe the basic functions of animal cells in growth and reproduction. |  |  |  |  |  |
| 1. Describe the properties, location, functions and types of animal tissues. |  |  |  |  |  |
| 1. Describe the properties, location, functions and types of animal organs. |  |  |  |  |  |
| 1. Describe the functions of the animal body systems and system components. |  |  |  |  |  |
| **Selecting Animals** | | | | | |
| 1. Identify ways an animal’s health can be affected by anatomical and physiological disorders. |  |  |  |  |  |
| 1. Create a program to develop an animal to its highest potential performance. |  |  |  |  |  |

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| **Prevention & Treatment of Animals** | | | | | |
| 1. Explain methods of determining animal health and disorders. |  |  |  |  |  |
| 1. Identify common diseases, parasites and physiological disorders that affect animals. |  |  |  |  |  |
| 1. Explain characteristics of causative agents and vectors of diseases and disorders in animals. |  |  |  |  |  |
| 1. Explain the clinical significance of common considerations in veterinary treatments, such as aseptic techniques. |  |  |  |  |  |
| 1. Identify and describe zoonotic diseases. |  |  |  |  |  |
| **Biosecurity** | | | | | |
| 1. Explain the importance of biosecurity to the animal industry. |  |  |  |  |  |
| **Formulate Feed Rations** | | | | | |
| 1. Compare and contrast common types of feedstuffs and the roles they play in the diets of animals. |  |  |  |  |  |
| 1. Explain the importance of a balanced ration for animals. |  |  |  |  |  |
| **Feed Additives & Growth Promotants** | | | | | |
| 1. Explain the purpose and benefits of feed additives and growth promotants in animal production. |  |  |  |  |  |
| **Male & Female Reproductive Systems** | | | | | |
| 1. Explain the male and female reproductive organs of the major animal species. |  |  |  |  |  |
| **Breeding Readiness & Soundness** | | | | | |
| 1. Explain how age, size, life cycle, maturity level and health status affect the reproductive efficiency of male and female animals |  |  |  |  |  |
| 1. Discuss the importance of efficient and economic reproduction in animals |  |  |  |  |  |

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| **Scientific Principles in Breeding** | | | | | |
| 1. Explain genetic inheritance in agricultural animals |  |  |  |  |  |
| 1. Define natural artificial breeding methods |  |  |  |  |  |
| 1. Explain the use of quantitative breeding values (e.g. EPDs) in the selection of genetically superior breeding stock |  |  |  |  |  |
| 1. Explain the advantages of major reproductive management practices, including estrous synchronization, superovulation, flushing and embryo transfer |  |  |  |  |  |
| 1. Discuss the uses and advantages and disadvantages of natural breeding and artificial insemination |  |  |  |  |  |
| **Safe Animal Handling** | | | | | |
| 1. Discuss the dangers involved in working with animals |  |  |  |  |  |
| 1. Explain the implications of animal welfare and animal rights for animal agriculture |  |  |  |  |  |
| **Animal Product Safety** | | | | | |
| 1. Identify animal production practices that could pose health risks or are considered to pose risks by some |  |  |  |  |  |
| 1. Describe how animal identification systems can track an animal’s location, nutrition requirements, production progress and changes in health |  |  |  |  |  |
| **Design Animal Facilities** | | | | | |
| 1. Identify facilities needed to house and produce each animal species safely and efficiently |  |  |  |  |  |
| 1. Identify equipment and handling facilities used inmodern animal production |  |  |  |  |  |
| **Government Regulations & Standards** | | | | | |
| 1. List the general standards *(i.e. – environmental, zoning, construction)* that must be met in facilities for animal production |  |  |  |  |  |

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| **Reducing Environment Effects** | | | | | |
| 1. Evaluate the effects of animalagriculture on the environment |  |  |  |  |  |
| **Environment Conditions on Animals** | | | | | |
| 1. Identify optimal environmental conditions for animals |  |  |  |  |  |