Animal Science
Curriculum Crosswalk
National Agriculture, Food and Natural Resources (AFNR) Career Cluster Content Standards

Unit 1
Livestock Safety
AS.06.01.01.a — Discuss the dangers involved in working with animals.
AS.06.01.01.b — Outline safety procedures for working with animals by species.
AS.06.01.02.a — Explain the implications of animal welfare and animal rights for animal agriculture.

Unit 2
Animal Genetics and Selection
AS.02.02.01.a — Identify basic characteristics of animal cells, tissues, organs and body systems.
AS.02.02.02.a — Diagram a typical animal cell and identify the organelles.
AS.02.02.03.a — Describe the basic functions of animal cells in growth and reproduction.
AS.02.02.03.b — Detail the processes of meiosis and mitosis in animal growth, development, health and reproduction.
AS.05.03.01.a — Explain genetic inheritance in agricultural animals.
AS.05.03.01.b — Explain the advantages of using genetically superior animals in the production of animals and animal products.
AS.05.03.03.a — Explain the use of quantitative breeding values (e.g. EPDs) in the selection of genetically superior breeding stock.
AS.05.03.03.b — Compare and contrast quantitative breeding value differences between genetically superior animals and animals of average genetic value.

Unit 3
Nutrition, Feeds and Additives
AS.04.01.01.a — Compare and contrast common types of feedstuffs and the roles they play in the diets of animals.
AS.04.01.02.a — Explain the importance of a balanced ration for animals.
AS.04.01.02.b — Appraise the adequacy of feed rations using data from the analysis of feed stuffs, animal requirements and performance.
AS.04.02.01.a — Explain the purpose and benefits of feed additives and growth promotants in animal production.
AS.04.02.01.b — Discuss how feed additives and growth promotants are administered and the precautions that should be taken.

Unit 4
Reproductive Anatomy and Fertility
AS.05.01.01.a — Explain the male and female reproductive organs of the major animal species.
AS.05.01.01.b — Describe the functions of major organs in the male and female reproductive systems.
AS.05.02.01.a — Explain how age, size, life cycle, maturity level and health status affect the reproductive efficiency of male and female animals.
AS.05.02.02.a — Discuss the importance of efficient and economic reproduction in animals.
AS.05.03.02.a — Define natural and artificial breeding methods.
AS.05.03.02.b — Explain the processes of natural and artificial breeding methods.
AS.05.03.04.a — Explain the advantages of major reproductive management practices, including estrous synchronization, superovulation, flushing and embryo transfer.
AS.05.03.04.b — Explain the processes of major reproductive management practices, including estrous synchronization, superovulation, flushing and embryo transfer.
AS.05.03.05.a — Discuss the uses and advantages and disadvantages of natural breeding and artificial insemination.
AS.05.03.05.b — Explain the materials, methods and processes of artificial insemination.
BS.03.02.01.a — Explain the functions of hormones in animals.

Unit 5
Breeding Management
AS.05.03.02.a — Define natural and artificial breeding methods.
AS.05.03.02.b — Explain the processes of natural and artificial breeding methods.
AS.05.03.03.a — Explain the use of quantitative breeding values (e.g. EPDs) in the selection of genetically superior breeding stock.
AS.05.03.04.a — Explain the advantages of major reproductive management practices, including estrous synchronization, superovulation, flushing and embryo transfer.
AS.05.03.04.b — Explain the processes of major reproductive management practices, including estrous synchronization, superovulation, flushing and embryo transfer.
AS.05.03.05.a — Discuss the uses and advantages and disadvantages of natural breeding and artificial insemination.
AS.05.03.05.b — Explain the materials, methods and processes of artificial insemination.
Unit 6
Parturition and Newborn Care
AS.02.02.06.a — Describe the functions of the animal body systems and system components.
AS.03.01.04.a — Explain the clinical significance of common consideration in veterinary treatments, such as aseptic techniques.
AS.03.01.01.a — Explain methods of determining animal health and disorders.
BS.03.02.01.a — Explain the functions of hormones in animals.

Unit 7
Livestock Health Fundamentals
AS.03.01.01.a — Explain methods of determining animal health and disorders.
AS.03.01.01.b — Perform simple health-check evaluations on animals.
AS.06.01.02.a — Explain the implications of animal welfare and animal rights for animal agriculture.
AS.07.01.02.a — Identify facilities needed to house and produce each animal species safely and efficiently.
AS.07.01.02.b — Explain how modern equipment and handling facilities enhance the safe and economic production of animals.

Unit 8
Livestock Diseases and Parasites
AS.03.01.02.a — Identify common diseases, parasites and physiological disorders that affect animals.
AS.03.01.02.b — Diagnose illnesses and disorders of animal based on symptoms and problems caused by diseases, parasites and physiological disorders.
AS.03.01.03.a — Explain characteristics of causative agents and vectors of diseases and disorders in animals.
AS.03.01.05.a — Identify and describe zoonotic diseases.

Unit 9
Vaccinations and Medications
AS.03.01.03.b — Evaluate preventative measures for controlling and limiting the spread of diseases, parasites and disorders among animals.

Unit 10
Livestock Management Practices
AS.03.01.04.a — Explain the clinical significance of common consideration in veterinary treatments, such as aseptic techniques.
- dehorning
- docking
- castration
- hoof trimming
AS.06.02.02.a — Describe how animal identification systems can track an animal’s location, nutrition requirements, production progress and changes in health.

Unit 11
Market Grades and Classes
FPP04.01.01.a — Identify quality and yield grades of food products.
FPP04.01.01.b — Discuss factors that affect quality and yield grades of food products.

Unit 12
Livestock Marketing
ABS.05.01.02.a — Name and explain the impact of external economic factors on an AFNR business.
ABS.05.01.02.b — Recognize how changes in prices of inputs and/or outputs influence the financial statements of an AFNR business.
ABS.06.01.01.a — Investigate the meaning and methods of marketing in AFNR as related to agricultural commodities, products and services ant to agricultural goods in domestic and international markets.
ABS.06.01.02.a — Described functions in agricultural marketing.