

# Kansas Agriculture Skills & Competencies Certificate – Support Document

## Examples of Pathway Skills

This list is not exhaustive

Below are examples of the application-level skills applicants describe when completing the Skills & Competencies Gained portion of the certificate application.

### Agriculture, Food & Natural Resources Pathways

#### College and Career Ready

- Develop a plan that includes specific goals for leadership and personal growth.
- Evaluate personal lifestyle as related to long-term health.
- Implement appropriate preparation plans for a career path based on passion, abilities, aptitude, opportunities.

#### Agribusiness Systems

- Differentiate types of ownership and outline the structure of AFNR businesses in a capitalistic economic system.
- Demonstrate entrepreneurship, including idea generation, opportunity analysis and risk assessment.
- Maintain accounting information needed to prepare an income statement, balance sheet and cash-flow analysis for an AFNR business.

#### Agriculture Science

- Compare ingredient tags from several different feeds and determine which feed is the best for certain situations
- Identify career options in agricultural sales and determine the specific entry requirements for a chosen field.
- Predict and manipulate the results of photoperiodism and plant growth regulators

#### Animal Science

- Diagnose illnesses and disorders of animals based on symptoms and problems caused by diseases, parasites and physiological disorders.
- Discuss procedures at the local, state and national levels to ensure biosecurity of the animal industry.
- Design programs that assure the welfare of animals and prevent abuse or mistreatment.

#### Biotechnology in Agriculture

- Assess the future impact agricultural biotechnology could have on world populations.
- Demonstrate advanced aseptic techniques in the biotechnology laboratory.
- Compare and contrast bioengineering and conventional pathways used in food processing.

#### Food Products & Processing Systems

- Perform basic equipment and facility maintenance in a food products and processing operation.
- Implement an HACCP program for a food products and processing facility.
- Perform sensory-testing and marketing functions to characterize and determine consumer preference and market potential.

#### Natural Resources & Environmental Systems

- Employ Global Positioning System and Geographic Information Systems technologies to inventory features in natural resource management.
- Evaluate the impact of recreational activities on natural resources and create an improvement plan.
- Explain management techniques used to reduce infection and spread of plant diseases in natural resources.

#### Plant Systems

- Perform soil tests and interpret results
- Describe the application of advanced propagation techniques: grafting, patch and T budding, mound and air layering, micro propagation and tissue culture
- Demonstrate proper methods of using rooting hormones

#### Power, Structural & Technical Systems

- Identify the basic components of a small engine and describe the function of each part.
- Demonstrates proper inspection and operation of equipment for each welding or thermal cutting process used.
- Calculate amperage, voltage, resistance, and power of series, parallel, and combination circuits

Complete lists of Pathway Knowledge and Skills for each pathway can be found at

[ksde.org/default.aspx?tabid=449](http://ksde.org/default.aspx?tabid=449) under the title

“Agriculture, Food, and Natural Resources Pathway Design Sheets with Competencies”.

Please refer to these lists when completing the Skills & Competencies Gained portion of the certificate application.