Revised: 05/29/19
Board Approved: June 2019

JC Schools Exploring Agriculture Yearly Standards

Overarching Standards

CRP.02.01
Use strategic thinking to connect and apply academic learning, knowledge and skills to solve problems in the workplace and community.

CRP.04.01
Speak using strategies that ensure clarity, logic, purpose and professionalism in formal and informal settings.

CRP.04.02
Produce clear, reasoned and coherent written and visual communication in formal and informal settings.

CRP.04.03
Model active listening strategies when interacting with others in formal and informal settings.

CRP.08.01.01.b
Apply steps for critical thinking to a variety of workplace and community situations.

CRP.08.03.01.b
Analyze and determine the best problem-solving model to apply to workplace and community problems.

CRP.12.01
Contribute to team-oriented projects and builds consensus to accomplish results using cultural global competence in the workplace and community.

CRP.12.02
Create and implement strategies to engage team members to work toward team and organizational goals in a variety of workplace and community situations (e.g., meetings, presentations, etc.).

CS.01.02
Examine technologies and analyze their impact on AFNRsystems.

Units	Priority Standards	Supporting Standards
Unit 1 **Introduction to Agriculture** 20 Days	**8.EA.LO.01** Define agriculture and describe the scope, roles, and trends of agriculture in your local community. **8.EA.LO.02** Describe the importance of agriculture in the local community. **8.EA.LO.03** Describe the importance of agriculture in Missouri. **8.EA.LO.04** Describe the scope, roles, and trends of agriculture in Missouri. **8.EA.LO.05** Describe the importance of agriculture in the United States. **8.EA.LO.06** Describe the scope, roles, and trends of agriculture in the United States. **8.EA.LO.07** Describe the importance of agriculture in the world. **8.EA.LO.08** Describe the scope, roles, and trends of agriculture around the world. **8.EA.LO.09** Recommend joining the National FFA Organization to others and explain why joining is beneficial.	**CRP.10.01** Identify career opportunities within a career cluster that match personal interests, talents, goals and preferences. **CS.05.02** Examine and choose career opportunities that are matched to personal skills, talents, and career goals in an AFNR pathway of interest. **CS.01.01** Research, examine and discuss issues and trends that impact AFNR systems on local, state, national and global levels. **CS.02.02** Examine the components of the AFNR systems and assess their impact on the local, state, national and global society and economy. **CRP.01.03** Identify and act upon opportunities for professional and civic service at work and in the community.

Unit 2 **Introduction to Plant Science** 20 Days	**8.EA.LO.10** Describe the techniques of plant and crop production and care. **8.EA.LO.11** Describe how plants affect our lives. **8.EA.LO.12** Describe the parts of the plant, major processes in plant growth and development, and the categories of plants. **8.EA.LO.13** Describe the importance of different growing mediums and nutrients for plant growth and development. **8.EA.LO.14** Identify the important factors to consider in caring for plants. **8.EA.LO.15** Describe current and emerging technologies in plant agriculture. **8.EA.LO.16** Identify current and emerging technologies in plant agriculture and examine their risks and benefits. **8.EA.LO.17** Given a new plant technology, assess the factors that might influence the adoption of the technology and its potential impact.	**BS.01.01** Investigate and explain the relationship between past, current and emerging applications of biotechnology in agriculture (e.g., major innovators, historical developments, potential applications of biotechnology, etc.). **BS.03.05** Apply biotechnology principles, techniques and processes to produce biofuels (e.g., fermentation, transesterification, methanogenesis, etc.). **ESS.05.02.02.b** Assess different measurements of soil quality (e.g., soil horizons, soil texture, organic matter, soil respiration, etc.) to determine their effectiveness and limitations. **NRS.01.05.04.a** Compare and contrast techniques associated with soil management (e.g., soil survey and interpretation, erosion control, etc.). **PS.01.01** Determine the influence of environmental factors on plant growth. **PS.01.02.01.a** Identify the major components of growing media and describe growing media **PS.01.03.01.a** Identify the essential nutrients for plant growth and development and their major functions (e.g., nitrogen, phosphorous, potassium, etc.). support plant growth. **PS.01.03.04.a** Identify fertilizer sources of essential plant nutrients; explain fertilizer formulations, including organic and

		inorganic; and describe different methods of fertilizer application. **PS.02.01.02.a** Describe the morphological characteristics used to identify agricultural and herbaceous plants (e.g., life cycles, growth habit, plant use and as monocotyledons or dicotyledons, woody, herbaceous, etc.). **PS.02.02** Apply knowledge of plant anatomy and the functions of plant structures to activities associated with plant systems. **PS.02.02.05.a** Identify and summarize the components of a flower, the functions of a flower and the functions of flower components. **PS.02.03** Apply knowledge of plant physiology and energy conversion to plant systems. **PS.03.01** Demonstrate plant propagation techniques in plant system activities. **PS.03.01.02.a** Demonstrate sowing techniques for providing favorable conditions to meet the factors of seed germination. **PS.03.01.02.c** Conduct tests associated with seed germination rates, viability and vigor. **PS.03.01.05.b** Compare and contrast the potential risks and advantages associated with genetically modified plants.

		PS.03.02.02.b Prepare soil and growing media for planting with the addition of amendments. **PS.03.02.02.c** Analyze how mechanical planting equipment performs soil preparation and seed placement. **PS.03.02.06.a** Identify and categorize structures and technologies used for controlled atmosphere production of plants. **PS.03.03** Develop and implement a plan for integrated pest management for plant production. **PS.03.03.03.a** Identify and summarize pest control strategies associated with integrated pest management and the importance of determining economic threshold. **PST.05.03.02.a** Examine and summarize the specific intent of technologies used to solve problems and increase the efficiency of AFNR systems (e.g., robotics, UAS, CNC, etc.).
Unit 3 **Unit Name Introduction to Animal Science** 17 Days	**8.EA.LO.18** Students understand the techniques of animal classification and selection. **8.EA.LO.19** Describe the importance of animals. **8.EA.LO.20** Classify and describe animals using accurate terminology.	**AS.01.02** Assess and select animal production methods for use in animal systems based upon their effectiveness and impacts. **AS.01.02.01.c** Evaluate the effectiveness of different production methods and defend the use of selected methods using data and evidence.

	8.EA.LO.21 Identify factors in selecting an animal. **8.EA.LO.22** Identify current and emerging technology that is influencing animal selection. **8.EA.LO.23** Describe the techniques of animal care and production. **8.EA.LO.24** Describe best practices for promoting and maintaining animal well-being. **8.EA.LO.25** Evaluate the ethics of common animal production practices and select appropriate methods for a givens species. **8.EA.LO.26** Examine emerging technologies involved in animal production practices.	**AS.02.01** Demonstrate management techniques that ensure animal welfare. **AS.02.01.01.a** Explain the implications of animal welfare and animal rights for animal systems. **AS.02.02.01.c** Select, evaluate and defend the use of specific tools, technology or equipment used to perform animal husbandry and welfare tasks. **AS.04.03.01.a** Identify and categorize natural and artificial breeding methods (e.g., natural breeding, artificial insemination, estrous synchronization, flushing, cloning, etc.). **AS.05.01** Design animal housing, equipment and handling facilities for the major systems of animal production. **AS.06.01** Classify animals according to taxonomic classification systems and use (e.g. agricultural, companion, etc.). **AS.06.02.03c** Apply knowledge of anatomical and physiological characteristics of animals to make production and management decisions. **AS.07.01** Design programs to prevent animal diseases, parasites and other disorders and ensure animal welfare. **AS.08.01** Design and implement methods to reduce the effects of animal production on the environment.

		CS.02.01 Research and use geographic and economic data to solve problems in AFNR systems.
Unit 4 **Unit Name** **Products from Agriculture** 18 Days	**8.EA.LO.27** Describe the role of agriculture in the food chain. **8.EA.LO.28** Identify food from plants. **8.EA.LO.29** Identify food from animals. **8.EA.LO.30** Describe the importance of food processing and safety. **8.EA.LO.31** Identify fiber products from agriculture. **8.EA.LO.32** Describe non-food products from agriculture.	**NRS.01.01.02.b** Analyze the interdependence of organisms within an ecosystem (e.g., food webs, niches, impact of keystone species, etc.) and assess the dependence of organisms on non-living components (climate, geography, energy flow, nutrient cycling, etc.). **FPP.03.01.04.a** Identify and describe foods derived from different classifications of food products (e.g., meat, egg, poultry, fish, dairy, fruits, vegetables, grains, legumes, oilseeds, etc.). **FPP.02.03.01.a** Examine and explain the importance of food labeling to the consumer. **FPP.02.03.01.b** Examine, interpret and explain the meaning of required components on a food label. **FPP.03.01.04.b** Examine and summarize desirable qualities of food products derived from different classifications of food products. **FPP.01.01.01.b** Analyze and document attributes and procedures of current safety programs in food products and processing facilities. **FPP.01.02.04.a**

		Describe the effects foodborne pathogens have on food products and humans. **FPP.03.02.02.a** Differentiate between methods and materials used for processing food for different markets (e.g., fresh food products, ready to eat food products, etc.). **CS.06.a** Analyze the interaction among AFNR systems in the production, processing and management of food, fiber and fuel and the sustainable use of natural resources. **AS.06.03.03.a** Research and summarize the use of products and by-products derived from animal and plants.
Unit 5 **Hunter Education** 9 Days	**8.EA.LO.33** Describe the importance of hunter education. **8.EA.LO.34** Identify the purpose of the Missouri Department of Conservation **8.EA.LO.35** Describe how Missouri Wildlife is conserved and managed **8.EA.LO.36** Describe safety procedures for outdoor recreational activities. **8.EA.LO.37** Identify the basic skills used when handling and using firearms/archery. **8.EA.LO.38**	

	List the proper techniques for hunting based on Missouri Conservation laws. **8.EA.LO.39** Classify alternative hunting equipment & Describe how they can be used. **8.EA.LO.40** Demonstrate how to properly handle hunting equipment to ensure safe usage. **8.EA.LO.41** Distinguish the differences of safe hunting and unsafe hunting practices.	