
Agri-Science

Curriculum Map

School Year: 2020-2021
School: Southern Cayuga Jr. High School
Program: Agriculture Sciences
Teacher: Ms. Wasson

Course Rationale:

This course is designed to provide students with experiences involved in the study of communication, the science of agriculture, plant, animal, and food systems. While surveying the opportunities available in agriculture, students will learn to solve problems, conduct research, analyze data, work in teams (virtually), and take responsibility for their work, actions, and learning. Students participating in the course will have experiences in various agriculture concepts with hands-on activities, projects, and problems. Students will explore problems, projects, and activities to learn the characteristics of agriculture science and work on major projects and problems similar to those facing agriculture today.

Standards:

Life Sciences

MS-LS1-5 From Molecules to Organisms: Structures and Processes
Construct a scientific explanation based on evidence for how environmental factors influence the growth of organisms.

MS-LS1-6 From Molecules to Organisms: Structures and Processes
Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.

MS-LS2-1 Ecosystems: Interactions, Energy, and Dynamics
Analyze and interpret data to provide evidence for the affects of resource availability on organisms and populations of organisms in an ecosystem.

MS-LS1-4. Growth and Development of Organisms: Use argument based on evidence and scientific reasoning to support an explanation for characteristic of animal behaviors and specialized plant structures.

English Language Arts

7R8: Trace and evaluate the development of an argument, assessing whether the reasoning is valid and the evidence is relevant and recognizing when irrelevant evidence is introduced.

7W1: Write arguments to support claims with clear reasons and relevant evidence

7W2: Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.

7W5: Draw evidence from literary or informational texts to support analysis, reflection, and research.

7W7: Gather relevant information from multiple sources; assess the credibility and accuracy of each source; quote or paraphrase the data and conclusions of others; avoid plagiarism and follow a standard format for citation.

Course Outline:

Title or Topics / Essential Questions	Content Skills (Activities to cover Essential Questions)	Vocabulary	Major Assessments	Time Frame
<p>Introduction to Agriculture What is Agriculture?</p> <p>What career opportunities are in agriculture?</p> <p>What agriculture products are produced in my state and community?</p> <p>How can I communicate a clear message and visual representation of my state's and community's agriculture industry?</p>	<p>Research and identify the importance and impact of the local agriculture industry to our community, state, and world.</p> <p>Investigate the career opportunities available in agriculture.</p> <p>Collaborate through written communication with local agribusinesses to collect physical items that showcase our agriculture industry.</p> <p>Plan, develop and construct a box that shares a visual representation of our agriculture industry with an agriculture program across the United States.</p>	<p>Agribusiness, Agriculture, Agriscience, Commodity, Community, Export, Food, Import, Industry, Local, Production, and Sector.</p> <p>Analyze, Collaborate, Compare, Describe, Determine, Develop, and Summarize.</p>	<p>Evaluation Rubric: Career Portfolio</p> <p>Evaluation Rubric: Letter to Community Donors</p> <p>Evaluation Rubric: Our Agriculture Story - Interview</p> <p>Evaluation Rubric: Agriculture Box Exchange Project</p> <p>Post-test: Agriculture's Impact</p>	<p>3-4 Weeks</p>
<p>Introduction to Food Sciences & Safety What are the sources of food that I typically consume?</p>	<p>Document the plant and animal food products consumed in a twenty-four-hour period</p> <p>Determine percentage of plant and animal food products they consume</p>	<p>Bacteria, Consumer, Coli, FDA, Food Safety, Food Science, Microorganism, Pathogenic, Producer, Regulations, Retailer, Sanitation, and USDA</p>	<p>Evaluation Rubric: Food Journal</p> <p>Evaluation Rubric: Chill to be Safe</p>	<p>3 Weeks</p>

<p>How does food get from a producer to a consumer?</p> <p>How do people get ill from food?</p> <p>Why is it important to understand how bacteria and other microorganisms cause foodborne illness?</p> <p>What preventative measures can be taken to prevent foodborne illness?</p>	<p>Conduct an experiment to determine bacterial levels of meat samples when refrigerated, stored at room temperature, and cooked.</p> <p>Observe and record growth of bacterial cultures.</p> <p>Research the path a prepared food item takes from production to processing and present their findings to the class.</p> <p>Solve a problem related to foodborne illness outbreak</p>	<p>Analyze, Collaborate, Describe, Determine, Develop, and Summarize.</p>	<p>Evaluation Rubric: From Farm to Fork</p> <p>Evaluation Rubric: Safety in Food</p> <p>Evaluation Rubric: Career Portfolio</p> <p>Post-test: Food System and Safety</p>	
<p>Introduction to Plant Science</p> <p>What are the four major parts of a plant?</p> <p>What are the steps of germination?</p>	<p>Identify and sketch the four basic plant parts.</p> <p>Describe the functions of plant parts.</p> <p>Construct a model depicting the parts of a complete flower.</p> <p>Conduct a germination trial to determine the germination rate of bean seeds.</p>	<p>Aquaponics, Aeroponics, Chlorophyll, Chloroplast, Complete Flower, Fertilization, Germination, Germination Rate, Growth, Hydroponics, Imperfect Flower, Incomplete flower, Perfect Flower, Photosynthesis, Pollination, Medium, Nutrient, Reproduction, Respiration</p>	<p>Evaluation Rubric: Build a Bloom</p> <p>Evaluation Rubric: Bean Sprouts</p> <p>Evaluation Rubric: Room to Grow - Challenge</p> <p>Evaluation Rubric: Room to Grow - Design</p>	<p>3 Weeks</p>

<p>What is the difference between photosynthesis and respiration?</p> <p>What factors contribute to the need of advancements in food production?</p> <p>How can you contribute locally to the impact problems related to plant-based food production?</p>	<p>Identify factors of plant-based food production to maximize availability and access of food.</p> <p>Design, build, and utilize a prototype of a growing structure that can be used in your location/situation assigned to grow food.</p> <p>Produce a presentation about room to Grow project and share with others.</p>	<p>Analyze, Collaborate, Create, Describe, Design, Determine, Develop, and Summarize</p>	<p>Evaluation Rubric: Career Portfolio</p> <p>Post-test: Plant Science Basics</p>	
<p>Introduction to Animal Science</p> <p>What systems functions together to maintain life?</p> <p>What are the basic needs of animals?</p> <p>Why are specialized management practices necessary for different animals?</p>	<p>Develop a concept map of the internal body systems and their relationships.</p> <p>Develop a poster of the external anatomy of an animal that will be used to teach others.</p> <p>Make decisions based on given priorities and criteria, and analyze objects as they compare ideal criteria.</p> <p>Match characteristics of various animals to specialized practices related to animals.</p> <p>Determine ethical options to form an opinion on the use of meat for human</p>	<p>Anatomy, Behavior, Capacity, Condition, Confirmation, Digestion, Dilemma, Energy, Endocrine, Ethics, Evaluation, Instinct, Management, Musculoskeletal System, Nervous System, Nutrient, Nutrition, Organ, Perception, Physiology, Reproduction System, Respiration System, Stimulus, Vegan, and Vegetarian</p>	<p>Evaluation Rubric: Internal Body Systems</p> <p>Evaluation Rubric: Animal Anthropology</p> <p>Evaluation Rubric: Priority Decisions</p> <p>Evaluation Rubric: Deception of Perception</p> <p>Evaluation Rubric: The Situation Room</p>	<p>3 Weeks</p>

What are the ethical dilemmas people eating meat might face?	consumption and related environmental impact issues.	Analyze, Collaborate, Create, Describe, Design, Determine, Develop, and Summarize	Evaluation Rubric: Career Portfolio Post-test: Animal Science & Systems	
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References (APA Format):

Agriculture, Food and Natural Resources (AFNR) Career Cluster Content Standards. (2015).

Retrieved from https://www.ffa.org/SiteCollectionDocuments/council_afnr_career_cluster_content_standards.pdf

Curriculum for Agricultural Science and Education. (2016-2020).