

Course Title:	Agriculture I
Grade(s):	9th

Course Description	
Required for all students in Grade 9	Credit 1.0
Prerequisite: Acceptance into the Agriscience Program	
This survey course provides students with a foundational immersion into the diverse sectors of modern Agriscience. Students will engage in technical skill-building and knowledge acquisition across five primary pillars: Plant Science, Animal Science, Natural Resources, Agricultural Engineering, and Leadership. Through laboratory-based experiences and field observations, students explore the vast professional landscape of the industry, ranging from the artistry of Floriculture and Landscape Design to the technical rigors of Equine Studies, Aquaculture, and Conservation. This course emphasizes the role of Ag-Science in global sustainability and prepares students to select specialized pathways for advanced study.	
Approved Curricular Materials/Textbook(s)	
This course utilizes a multi-dimensional approach to learning, sourcing content from a blend of foundational academic texts and real-world industry tools. By integrating diverse resources, students are exposed to the most current data, technologies, and professional standards in the field of Agriscience. Pathway-Specific Online Resources: Students leverage digital platforms such as iCEV, MyCAERT, and the National FFA AgExplorer. These resources provide interactive modules, current industry data, and virtual tours of global agricultural systems, ensuring students engage with 21st-century technological standards.	

Unit Title	Unit Description (Include Unit Objectives)	Unit Pacing
<u>Unit 1: Horticulture</u> This introductory unit explores the diversity of the horticulture industry and the biological systems that define it. Students will begin by evaluating their own talents and interests	Students will: Explore Careers: Analyze personal interests and talents to identify five potential careers in the horticulture industry. Master Plant Taxonomy: Compare and contrast hierarchical classifications and recognize the importance of plant biodiversity.	4 ½ week rotation

against potential career pathways in the green industry. The unit covers the scientific classification of plants, emphasizing morphological characteristics such as life cycles, growth habits, and the differences between monocots and dicots. A significant portion of the unit is dedicated to environmental health, where students identify invasive species, understand their impact on biodiversity, and practice management techniques. Students will also master the identification of key invasive species by both common and scientific names.	Identify Morphological Traits: Differentiate between monocots/dicots, woody/herbaceous plants, and various growth habits (annual, biennial, perennial). Study Leaf Morphology: Research and summarize the functions and structures of leaves. Practice Nomenclature: Identify and correctly name key agricultural and ornamental plants using common and scientific (Latin) names. Manage Invasive Species: Articulate the impact of invasive species on local ecosystems and utilize specific management techniques. Analyze Environment: Summarize how environmental conditions (light, water, temperature) impact plant health and growth.	
<u>Unit 2: Natural Resources</u> In this introductory unit, students will explore the natural world we live in through 4 mini units: Introduction, Soil & Land, Wildlife, and Natural Destinations.	Students will: • Create a field journal. • Evaluate natural resources and classify them based on preservation, conservation, and exploitation. • Investigate natural resources careers. • Test soil and classify soil through a soil ribbon test. • Explore wildlife tracking methods and classifications. • Explore National Parks and Forests.	4 ½ week rotation
<u>Unit 3: Large Animal Science</u> In this introductory unit, students will be learning about the production animal science industry. Students will learn about proper terminology, handling, safety, and careers. Students will have hands-on experiences in the large animal facility, safely handling a variety of large animals, including horses, dairy cattle, and goats. Breeds, basic production techniques, and products produced from each species will also be covered. Students will be working in the large	Students will: • Determine and analyze their usage of various animal products over the course of one day. • Develop a list of animal products commonly used based on former knowledge. • Identify careers in animal science. • Identify common breeds of production animals (beef, dairy, sheep, goats, horses, poultry, swine). • Explain how production animals are utilized in our everyday society. • Properly and safely handle production animal species.	4 ½ week rotation

animal facility to work hands-on with species including dairy cattle, beef cattle, sheep, goats, horses, and poultry.		
<u>Unit 4: Woodworking</u> This unit provides students with hands-on opportunities to work with different power and hand tools for basic woodworking. Students also demonstrate how to plan, measure, and assemble a project out of wood. Students learn about the different tools that are in a mechanics shop, as well as demonstrate how to use them efficiently and safely.	Students will: • Identify different hand tools used in the mechanics shop. ◦ (screwdriver, hammer, nails, clamps, etc.) • Identify different power tools used in the mechanics shop. ◦ (radial arm saw, table saw, mitre saw, drill press, power drill, etc.) • Demonstrate how to operate tools safely in the mechanics shop. • Demonstrate how to read and use measuring tools for a project. • Demonstrate how to select good-quality lumber for a project. • Demonstrate how to plan and assemble a woodworking project.	4 ½ week rotation
<u>Unit 5: Companion Animals</u> This unit provides students the opportunity to care for and manage the small animal lab while learning handling techniques, basic care, and classification of species and breeds.	Students will: • Identify different companion animal species. • Handle and care for companion species in the small animal lab and reptile room. • Handle dogs and learn dog grooming practices. • Classify breeds, species, and groups of animals. • Explore components of the companion animal industry.	4 ½ week rotation
<u>Unit 6: Aquaculture</u> This unit provides students with the opportunity to learn more about different fish species (freshwater and saltwater), as well as learn about the care and maintenance that is needed for tanks and aquariums. Also, students learn about the components of water quality and how to maintain a healthy fish tank and monitor filter efficiency.	Students will: • Identify different aquatic species. ◦ Freshwater and saltwater • Identify the anatomy and physiology of a fish. • Identify the different components of water quality. • Demonstrate how to perform a water quality test on a fish tank. • Identify the different components of a tank filter. • Compare and contrast the differences between tank filters.	4 ½ week rotation

	Design a tank filter and test its efficiency.	
<u>Unit 7: Food Science</u> This unit provides students with the opportunity to learn about the food industry in agriscience. Students will learn how to safely work in the food lab and where the materials are. They will learn the basics of where our raw ingredients start and how they are safely processed.	Students will: - Demonstrate food-safe handling skills. - Identify key equipment used in the food lab. - Develop a new food product as a team. - Demonstrate knife skills used in the food lab to make fresh salsa.	4 ½ week rotation
<u>Unit 8: Plant Propagation</u> This unit provides an in-depth study of how plants are started and sustained. Students will explore the physical and chemical properties of growing media and soil, differentiating between indoor floral mixes and outdoor landscapes. The course covers plant anatomy specifically related to reproduction, including root functions and complex flower structures. Students will master both sexual propagation (seeds) and asexual propagation (cuttings, division, and grafting), applying scientific methods to germinate seeds and clone plants in a laboratory setting	Students will: Analyze Growing Media: Identify components of growing media and explain how they support plant health. Master Soil Mechanics: Use the "Soil Texture Triangle" to determine soil types and perform labs to improve drainage and water-holding capacity. Differentiate Flower Structures: Classify flowers by structure (complete/incomplete) and inflorescence to understand reproductive potential. Apply Hardiness Data: Use USDA Hardiness Zones to determine plant selection and survival. Demonstrate Sexual Propagation: Perform seed sowing and dissections; conduct experiments to meet optimal germination factors. Execute Asexual Propagation: Demonstrate technical proficiency in propagation by cuttings, division, layering, and grafting.	4 ½ week rotation