SUBJECT AREA: Introduction to Agriculture
GRADE LEVEL: 10

UNIT TITLE/ESSENTIAL QUESTION(S)	Unit Timeline	UNIT SKILLS AND CONTENT	CORE TEXTS AND MATERIALS	FORMATIVE & SUMMATIVE ASSESSMENTS	CSRE ALIGNMENT	COMMON CORE/CONTENT STANDARDS
Unit: Intro to Food Systems EQ: How do different agricultural systems affect food production and the people who work within those systems?	6-8 weeks	▪ Industrial vs. Organic Agriculture ▪ Pillars of Sustainability ▪ Basics of Hydroponics (comparing energy/water/space input) ▪ Feeding a growing population ▪ Annotation Strategy ■ Paraphrasing ▪ Using internet resources for basic researchEvaluate the resource requirements and limitations of different farming methods. ■ Analyze graphs about population growth and arable land use before proposing solutions to sustainability challenges. ■ Explain links and trends in global population growth and the urbanization movement, ■ Evaluate the efficiency of hydroponics and compare/contrast the benefits of conventional and hydroponic farming. ■ Explore the different hydroponic systems and teach peers about how the systems work and	- NY Sunworks Lesson Plans 1-3 (Outside In, Hydroponics and the Urban Landscape, Take a Tour) - "Rooftop views are growing more green as crops sprout up high" - Rockwool and various seed packets Seeds - Plant Village	- Seed Exploration and Planting - Powerpoint Note catcher and think-pair-share - Rooftop Farms Article (Leveled Texts) - Hydroponic Equipment Research Poster - Summative: Careers in Agriculture Project	Principle 2 – Fostering High Expectations and Rigorous Instruction - Draw upon your past learning, prior experiences, and the richness of your cultural background to make meaning of new concepts and apply learning on an ongoing basis. Principle 3 – Identifying Inclusive Curriculum and Assessment -Experience multiple perspectives on a topic and be afforded the opportunity to draw your own conclusions on that topic.	CCSS.ELA-Literacy.RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. RST.11-12.1: Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. WHST.9-10.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.

		how they efficiently use resources. ▪				
Unit: Intro to Plant Biology/Botany EQ: How can we help young people build an understanding of, and get excited about, growing plants?		● Parts of a flower ● Plant reproduction ● Seeds and germination ● Plant growth requirements ● Plant biology vocabulary ● Types of plants ● Basic experimentation (following a procedure, gathering data. graphing) ● Discuss the variables students can manipulate and control using plants as a model organism. ● Design a passive hydroponic system using recycled materials. Analyze the differences between active and passive hydroponic systems.	Hydroponics Lesson Framework Lesson 5: Seeds Make Seedlings Lesson 6: Plant Reproduction, Seed Anatomy, and Germination	- Powerpoint Note catcher and think-pair-share - Plant Growth Experiment Lab Report - Summative: Botany For Kids Picture Book	**Creating a Welcoming and Affirming Environment** Take risks and view mistakes as opportunities to grow academically and emotionally. **Fostering High Expectations and Rigorous Instruction** Work cooperatively toward goals and hold each other accountable in supportive ways. **Identifying Inclusive Curriculum and Assessment** Collaborate with peers to engage in meaningful long-term projects that allow all students to demonstrate their knowledge and growth over time and align to the varied learning styles and interests of those in the class community.	CCSS.ELA-LITERACY.RST.9-10.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. CCSS.ELA-LITERACY.RST.9-10.7 Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.
Unit: Climate Change and Our		**Key Terms:** resilience, vulnerable, resilient design,			**Identifying Inclusive Curriculum and**	

Food Supply EQ: How are our current agricultural practices affected by climate change and our evolving understanding of the pillars of sustainability?		design process, urbanization, stormwater management, urban heat island effect, cool roof, green infrastructure, gray infrastructure - Climate change review - Pillars/barrel of sustainability - Water and Land Conservation - Effects of plants on soil health for future crops - Agricultural technologies - United Nations Sustainable Development Goals		The "Blight" of the Black Farmer Project	**Assessment** Experience multiple perspectives on a topic and be afforded the opportunity to draw your own conclusions on that topic. Connect in-school learning with the world outside the classroom.	HS-LS2-7 Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity. HS-LS4-6 Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity. From NGSS ▪ **Asking questions (for science) and defining problems (for engineering)** ▪ **Developing and using models** ▪ **Planning and carrying out investigations** ▪ **Analyzing and interpreting data** ▪ **Using mathematics and computational thinking** ▪ **Constructing explanations (for science) and designing solutions (for engineering)** ▪ **Engaging in argument from evidence** ▪ **Obtaining, evaluating, and communicating information**
Unit: Our Future Flies with Pollinators EQ: How can I use research techniques to				Summative: Pollinator Hotel Research Project		

investigate the interdependent relationship between pollinators and our environment?						

HS-LS2-6 Evaluate the claims, evidence, and reasoning behind currently accepted explanations or solutions to determine the merits of arguments.
HS-LS2-7 Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.
HS-LS4-6 Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity.
Engineering Design:
HS-ETS1-1 Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
HS-ETS1-2 Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.
HS-ETS1-3 Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.