The Edible Schoolyard Berkeley 7th Grade Garden Scope and Sequence

ROTATION 1 – FALL						
Lesson #	***Lesson Name/ Opening Activity***	***Main Focus***	***Closing Activity***	***Produce***	***ESY Standard***	***Academic Standards***
G7-1	Garden Work	Respect in the Garden Review	Tasting	Apples	<u>Edible Schoolyard 3.0 In the Garden, grade 7:</u> **Techniques 2.3:** Decomposition **Techniques 2.4:** Harvest **Techniques 2.5:** Cultivation **Techniques 2.6:** Propagation	
G7-2	Cuttings Lab	Cutting Overview, one group will do a cuttings/ propagation job	Tasting	Kiwis	<u>Edible Schoolyard 3.0 In the Garden, grade 7:</u> **Techniques 2.6:** Students sow seeds and transplant seedlings with increased independence; graft plants and propagate cuttings with guidance; identify necessary ingredients for soil mixes; understand why the greenhouse provides an optimal environment for plant propagation.	<u>California State Standards Science, grade 7:</u> **Genetics 7.2.a:** Students know the differences between the life cycles and reproduction methods of sexual and asexual organisms. <u>Next Generation Science Standards:</u> **MS-LS3-2:** Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.
G7- 3	Microscope Lab	Use microscopes to observe bees and flower pollination	Tasting	TBD	<u>Edible Schoolyard 3.0 In the Garden, grade 7:</u> **Concepts 3.7:** Use observation and awareness to explore, investigate and be inquisitive learners in the garden. The garden classroom provides the opportunity for students to tap into their inherent curiosity about the natural world, observe patterns and connections and understand cause and effect.	<u>California State, Science grade 7:</u> **Physical Sciences 7.6.a:** Students know how simple lenses are used in a magnifying glass, the eye, a camera, a telescope, and a microscope. <u>Next Generation Science Standards:</u> **MS-LS1-5:** Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms
G7-	Civilizations of	Foods and	Question Share	Amaranth for		<u>California History Social</u>

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History Walk	the Americas	agricultural technologies of the Maya, Aztec and Inca civilizations		Alegria, Cacao and vanilla for chocolate		<u>Science Standards, Grade 7</u> **7.7** Students compare and contrast the geographic, political, economic, religious, and social structures of the Meso-American and Andean civilizations **7.7.1** Study the locations, landforms, and climates of Mexico, Central America and South America and their effects on Mayan, Aztec and Incan economies, trade and development of urban societies

WEEK LONG IMMERSIONS 1 - FALL				
Track Name	***Main Focus***	***Edible Education Categories***	***ESY Standard***	***Academic Standards***
Cooking & Gardening	Students will focus on gardening and cooking activities, like transplanting the beet patch, the sowing of cover crop and preparation of kale pesto. Students will work together and participate in team building and trust games.	NOURISHMENT The concept of soil fertility is discussed. Healthy soil translates to healthy plants, thus the plants we eat from the garden, helps to give us nourishment	<u>Edible Schoolyard 3.0 Garden 7th grade:</u> **Techniques 2.4:** Harvest and prepare crops with increased independence; understand the seed to table concept, begin to recognize ripeness and understand seasonality. **Techniques 2.5:** Understand the purpose of soil cultivation, edge and turn beds with increased independence; recognize good soil structure; and assess when amendments are needed for soil. **Techniques 2.6:** Students sow seeds and transplant seedlings with increased independence;	<u>Crosscutting Concepts</u> **Cause and Effect** Relationships can be classified as causal or correlational, and correlation does not necessarily imply causation. Cause and effect relationships may be used to predict phenomena in natural or designed systems.
Climate Change	Students will explore the garden through the lens of California's climate and discuss how we can adapt to climate change and the effects of global warming in our region.	SUSTAINABILITY Two planetary systems interact: 1. water cycle and 2. greenhouse effect How do these systems interact to effect California's drought? Explore areas of the garden that demonstrate strategies to conserve water and increase drought resilience Understand drought resilience	<u>Edible Schoolyard 3.0 Garden 7th grade:</u> **Concept 13:** Are mindful of bio-diversity as it pertains to the ecology of the garden, the development of food throughout history, and within our own faculty and student body. We explore the garden as an ecosystem and understand that embracing and preserving diversity builds a strong, healthy, and resilient planet.	**ESS3.C:** Human activities have altered the biosphere, sometimes damaging it. **ESS3.D:** Human activities affect global warming. Decisions to reduce the impact of global warming depend on understanding climate science, engineering capabilities, and social dynamics.

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				Crosscutting Concepts: Energy and Matter; Systems and System Models
Mini-Habitats	Students will work with nature to improve the garden by creating several unique mini-habitats, using permaculture principles. The focus will be on digging swales, which capture and hold rain water in their basins, thereby increasing ecosystem resilience in times of drought.	LIFE SKILLS Focusing on listening, speaking and following directions. Students are encouraged to explore the many mini-habitats in the garden and make connections. RIG poster is reintroduced and behavioral expectations are highlighted.	**Edible Schoolyard 3.0 Garden 7th grade:** **Concepts 9:** Recognize the garden as a habitat for pollinators, understand the impact of pollination on our food supply, develop appropriate responses to them, and consider the multitude of habitats throughout the garden. **Concepts 10:** Acknowledge water as a precious resource that is intrinsic to all living organisms, explore methods of water conservation, and are encouraged to do the same in their own lives as well.	**Disciplinary Core Ideas** LS2.C: Ecosystem Dynamics, Functioning, and Resilience. Biodiversity describes the variety of species found in Earth's ecosystems. The completeness or integrity of an ecosystem's biodiversity is often used as a measure of its health. LS4.D: Biodiversity and Humans Changes in biodiversity can influence humans' resources as well as ecosystem services that humans rely on—for example, water purification and recycling. ETS1.B: Developing Possible Solutions
All About Chickens	Students will observe chickens; discuss their evolution, characteristics and biological systems. Students will learn how important their role is in the garden ecosystem.	COMMUNICATION Students learn information about chickens through experiments, visual aids, drawing, observations, and discussion.	**Edible Schoolyard 3.0 Garden 7th grade:** **Concepts 7:** Use observation and awareness to explore, investigate and be inquisitive learners in the garden. The garden classroom provides the opportunity for students to tap into their inherent curiosity about the natural world, observe patterns and connections and understand cause and effect.	**Disciplinary Core Ideas** **NGSS LS2:** Interactions, Energy, and Dynamics Relationships in Ecosystems. Divided into three sub-ideas: Interdependent Relationships in Ecosystems; Cycles of Matter and Energy Transfer in a Ecosystem; and Ecosystems Dynamics, Functioning, and Resilience…

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ROTATION 2 – SPRING						
Lesson #	***Lesson Name/ Opening Activity***	***Main Focus***	***Closing Circle Activity***	***Produce***	***ESY Standard***	***Academic Connection***
G7-4	Food System Introduction Biology of a flower	Where does our food come from?	Wind Blows Food Systems		**Edible Schoolyard 1.0 In the Program:** **Concepts 3.11: Food System:** Students consider how locally sourced foods provide optimum freshness, support the local economy, and help offset global warming.	**Next Generation Science Standards:** MS-LS1-4 Biology of a Flower: Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively. Clarification Statement: Examples of plant structures could include bright flowers attracting bees or butterflies that transfer pollen, flower nectar and odors that attract insects that transfer pollen.
G7-5	Levers Lab Biology of a flower	Students learn about levers by rotating through a levers lab	Seasonal Tasting			**California State Standards Science, grade 7:** **Physical Sciences 7.6.i:** Students know how levers confer mechanical advantage and how the application of this principle applies to the musculoskeletal system.
G7-6	Wood Fired Beets	Harvest, roast, and eat beets from the wood-fired oven	Roses and Thorns	105 mixed bunches of beets. Chioggia, golden and red.	**Edible Schoolyard 3.0 In the Garden, grade 7:** Techniques 2.4: Harvest and prepare crops with increased independence; understand the seed to table concept, begin to recognize ripeness and understand seasonality.	

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WEEK LONG IMMERSIONS 2 - SPRING				
Track Name	***Main Focus***	***Edible Education Categories***	***ESY Standard***	***Academic Standards***
Build A Nest	In honor of the Edible Schoolyard's 20th anniversary, students will work together collecting natural building materials and weave sticks together to build a giant bird's nest!	ACADEMICS Engagement in Science and Engineering Practices, Ask questions and define problems and develop and use models	Edible Schoolyard 3.0 ESY program: **Concepts 8:** Create an atmosphere of cooperation and unity. We elevate the class experience for all by offering and receiving encouragement, and welcoming the ideas and contributions of others.	**NGSS Engineering Design &Practices: MS-ETS1-3:** Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each… Asking Questions and Defining Problems
Table Construction	Students will be responsible for building new tables and work-benches for the greenhouse plant propagation area. This will include measuring, cutting and hammering together the tables.	LIFE SKILLS Focusing on listening, speaking and following directions. Handling of tools like saws and hammers. RIG poster is reintroduced and behavioral expectations are highlighted.	Edible Schoolyard 3.0 Garden 7th grade: **Techniques 2.1:** Identify, use, care for, and begin to choose specific garden tools and equipment.	Crosscutting Concepts **Influence of Science, Engineering, and Technology on Society and the Natural World** All human activity draws on natural resources and has both short and long-term consequences, positive as well as negative, for the health of people and the natural environment.
Flower Power	Students will beautify the entrance to the Edible Schoolyard, known as our Herb Garden. Students will select from culinary, tea, medicinal and flowers for this project.	SUSTAINABILITY Focusing on biodiversity of plants and how that connects to all living organisms. The concept of ecosystems is emphasized and the caring for the natural world.	Edible Schoolyard 3.0 Garden 7th grade: **Concepts 9:** Recognize the garden as a habitat for pollinators, understand the impact of pollination on our food supply, develop appropriate responses to them, and consider the multitude of habitats throughout the garden.	Disciplinary Core Ideas **NGSS LS1.A** Structure and Function. Within cells, special structures are responsible for particular functions.
Pole Bean Madness	Students will cultivate for the dried pole bean patch, using forks, shovels and pick axes. Students will use saws to cut bamboo in lengths for the beans to climb up on and sow the bean seeds in ground. Students will also spend a day harvesting and preparing the tasting for closing circle on the last day.	NOURISHMENT Tasting will be a prepared in the outdoor kitchen that will involve following a recipe to make a delicious salad wrap with ingredients harvested from the garden. Discussion about keeping a pantry with items like dried beans.	Edible Schoolyard 3.0 Garden program: **Techniques 2.4:** Harvest and prepare crops with increased independence; understand the seed to table concept, begin to recognize ripeness and understand seasonality. **Techniques 2.5:** Understand the purpose of soil cultivation, edge and turn beds with increased independence; recognize good soil structure; and assess when amendments are needed for soil. **Techniques 2.6:** Students sow seeds and transplant	Disciplinary Core Ideas **LS2.B: Cycle of Matter and Energy Transfer in Ecosystems** Food webs are models that demonstrate how matter and energy is transferred between producers, consumers, and decomposers as the three groups interact within an

			seedlings with increased independence; **Edible Schoolyard 2.0 ESY program, grade 7: Technique 2.0:** Follow a set of rituals and routines that help work go smoothly and develop into lifelong habits.	ecosystem. Transfers of matter into and out of the physical environment occur at every level. Decomposers recycle nutrients from dead plant or animal matter back to the soil in terrestrial environments or to the water in aquatic environments. The atoms that make up the organisms in an ecosystem are cycled repeatedly between the living and nonliving parts of the ecosystem.