

Stage 1 Desired Results															
<p>ESTABLISHED GOALS <span style="float: right;">6</span></p> <p><b>MA ST/E Standards</b></p> <p>HS-ESS3-3: Illustrate relationships among management of natural resources, the sustainability of human populations, and biodiversity.</p> <p>HS-LS2-1: Analyze data sets to support explanations that biotic and abiotic factors affect ecosystem carrying capacity</p> <p>HS-LS2-7: Analyze direct and indirect effects of human activities on biodiversity and ecosystem health, specifically habitat fragmentation, introduction of non-native or invasive species, overharvesting, pollution, and climate change. Evaluate and refine a solution for reducing the impacts of human activities on biodiversity and ecosystem health.</p> <p><b>NGSS HS-LS4-6.</b> Create or revise a simulation to test a solution to mitigate activity on biodiversity(not included in MA ST/E standards 2016)</p> <p><b>Climate Literacy Framework:</b> GP: Humans can take actions to reduce climate change and its impacts</p> <p><b>MA Environmental Education Plan</b> (from Benchmarks on the Way to Environmental Literacy, SAGEE, 1995): An environmentally literate person knows and understands ...</p> <p style="padding-left: 20px;">The patterns and networks of economic interdependence on the Earth's surface</p> <p style="padding-left: 20px;">How human actions modify the physical and biological environments</p> <p style="padding-left: 20px;">How physical and biological systems affect human systems</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="background-color: #e0e0e0; text-align: center;">Transfer</th> </tr> </thead> <tbody> <tr> <td colspan="2"><i>Students will be able to independently use their learning to...</i></td> </tr> <tr> <td colspan="2">Work collaboratively to propose a new plan/layout for the garden that lends towards lessons for a specific elementary grade level, time of year, and interdisciplinary unit.</td> </tr> <tr> <th colspan="2" style="background-color: #e0e0e0; text-align: center;">Meaning</th> </tr> <tr> <td style="vertical-align: top;"> <p>UNDERSTANDINGS <span style="float: right;">U</span></p> <p><i>Students will understand that...</i></p> <p>growing food takes significant planning and effort</p> <p>Humans must change/disturb their surroundings in order to produce food</p> <p>Current food pricing schemes do not account for (dismiss as externalities) the disturbance/damage to ecosystems, including pollution that either washes or floats away</p> </td> <td style="vertical-align: top;"> <p>ESSENTIAL QUESTIONS</p> <p>What does it take to grow food?</p> <p>What specific climate and weather conditions will most directly impact the yield of the garden?</p> <p>How can growing food locally reduce our ecological footprint?</p> <p>How can we best communicate the joy of growing food to small children?</p> </td> </tr> <tr> <th colspan="2" style="background-color: #e0e0e0; text-align: center;">Acquisition</th> </tr> <tr> <td style="vertical-align: top;"> <p><i>Students will know...</i> <span style="float: right;">K</span></p> <p>Small scale gardening can produce a lot of food for a family, with a very low carbon footprint</p> <p>Gardening activities are good whole body exercise</p> </td> <td style="vertical-align: top;"> <p><i>Students will be skilled at...</i></p> <p>&lt;type here&gt;</p> </td> </tr> </tbody> </table>	Transfer		<i>Students will be able to independently use their learning to...</i>		Work collaboratively to propose a new plan/layout for the garden that lends towards lessons for a specific elementary grade level, time of year, and interdisciplinary unit.		Meaning		<p>UNDERSTANDINGS <span style="float: right;">U</span></p> <p><i>Students will understand that...</i></p> <p>growing food takes significant planning and effort</p> <p>Humans must change/disturb their surroundings in order to produce food</p> <p>Current food pricing schemes do not account for (dismiss as externalities) the disturbance/damage to ecosystems, including pollution that either washes or floats away</p>	<p>ESSENTIAL QUESTIONS</p> <p>What does it take to grow food?</p> <p>What specific climate and weather conditions will most directly impact the yield of the garden?</p> <p>How can growing food locally reduce our ecological footprint?</p> <p>How can we best communicate the joy of growing food to small children?</p>	Acquisition		<p><i>Students will know...</i> <span style="float: right;">K</span></p> <p>Small scale gardening can produce a lot of food for a family, with a very low carbon footprint</p> <p>Gardening activities are good whole body exercise</p>	<p><i>Students will be skilled at...</i></p> <p>&lt;type here&gt;</p>
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Stage 2 - Evidence															
Evaluative Criteria	Assessment Evidence														
<p>Effort and quality applied to the Chicken Salad with Kale recipe assignment</p> <p>Thorough and well-justified plan for next</p>	<p>TRANSFER TASK(S): <span style="float: right;">T</span></p> <p>Write a "recipe" for <i>growing</i> one of the ingredients of a Mediterranean chicken salad with kale including cost of items, where in western MA the ingredient is grown, at what times of year, or where it is mainly imported from by local chain groceries. Chicken, celery, scallions, carrots, dill, kale, mayonnaise (oil, egg yolk,</p>														

years garden	vinegar), salt, pepper  As a class, rewrite the Chicken salad recipe so that it uses only ingredients produced in western MA in September
Positive affect An “I got this” attitude towards planting and growing food in the garden	OTHER EVIDENCE: Lead the Kale Happy Dance and Healthy Meal Clapping Game

QE

### Stage 3 – Learning Plan

#### *Summary of Key Learning Events and Instruction*

After being introduced to the SRE garden, Life S's will prepare to assist the first grade classes in their garden lesson, Let Them Eat Kale.

Students will:

1. Distinguish weeds from crops/flower plantings
2. Identify, with research and the assistance of experts, the dominant weed species
3. Produce a laminated guide to the major weeds of the SRE garden
4. Learn the basics of tilling and tending a garden/farm
5. Weed the kale row
6. Identify the muscle groups that are exercised while gardening; crouching, reaching, lunging
7. Calculate crop production of the kale row or other kale bed
8. contrast the above to human edible food produced by typical ecosystems
9. Investigate the nutritional content and limitations of kale
10. Discover the major crops and livestock produced in western MA
11. Visit a farmer's market (optional)
12. Investigate the carbon footprint of kale grown in CA and eaten in MA
13. Produce a Kale farmers journal: list diff types of kale growing in the SRE garden, detailed drawings of plant at different stages, quick sketches of weeds growing in competition with the kale plants, as well as color, texture, taste, chew time, and observations of kale chips
14. Brainstorm, then write the script for use during the Kale lesson
15. Guide a small group of first graders as they explore in the Let Them Eat Kale lesson, facilitate the entries into their kale farmers journal, teach them to identify the kale plants and distinguish them from the weeds, teach them to weed around the kale plants, discuss growing food in a garden, tout the virtues of kale as a healthy food, water the kale, help them wash their hands, and join in a Kale snack and an Our-Garden-Grows-Food Happy Dance

Clapping game: “I am standing in the garden, I want my kale with some ... (other healthy or fun food)”