SUMMER INSTITUTE FOR GARDEN-BASED TEACHING

GARDEN CURRICULUM: THINKING CREATIVELY ABOUT THE STANDARDS

OSSE

WASHINGTON YOUTH GARDEN

HOUSEKEEPING

This webinar is being recorded - please mute your audio!

Use the chat box to ask questions!

We will upload this webinar to Schoology and include automatic captioning.

We will occasionally ask questions on *slido.com*.
The code is # **E037**

Summer Institute Schedule

Each session will be held 3:00 p.m. - 4:30 p.m. EST

THURSDAY, JULY 9
Webinar 1:
What Is Your Why? School Gardens with Purpose

TUESDAY, JULY 14
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Discussion 4:
Adapting Outdoor Teaching for Coronavirus

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THURSDAY, AUGUST 6
Webinar 5:
Teaching in the Garden

TUESDAY, AUGUST 11
Discussion 5:
Curriculum Brainstorming

PRESENTERS

U.S. Botanic Garden

Lee Coykendall
Senior Education Specialist

Emily Hestness
Education Specialist, Urban Agriculture

Washington Youth Garden

Brianne Studer
Director of Programs

FreshFarm FoodPrints

Susan Bandler
Curriculum Consultant

Serenity Rain, LGSW
Lead Teacher at Anne Beers Elementary & Farm Share Manager

Agenda

Garden -based NGSS Lessons

FoodPrints Curriculum and Sample Lessons

Curriculum Over the Year/s

The School Garden: A Cool Tool for Teaching Science Standards

Lee Coykendall
Senior Education Specialist

Emily Hestness
Education Specialist, Urban Agriculture

United States Botanic Garden

THE SCHOOL GARDEN

A living laboratory

Not more, simply a tool

United States Botanic Garden


supported
Heredity
Models
sketch
LS
Designing
illustrate
argument
Construct
Plan
Use
relationship
between
Energy
including
drawing
movement
exists
Evolution
and/or
common
Engineering
group
K-ESS
Interpretting
Ecosystems
Human
explanation
repair
reproduction
solution
life
PS
Variation
conduct
needs
dispersing
mimics
Solutions
Planning
describe
needed
of what
change
influenced
Analyzing
plants
Topic
Carrying
parents
once
materials
simple
survive
death
problem
external
Dynamics
need
Molecules
Humans
grow
physical
Design
object
sunlight
Using
meet
Inheritance
seeds
diverse
body
places
Diversity
mimicking
different
Investigations
support
Data
Develop
model
maintain
decomposers
function
Structures
Interactions
Performance
Habitats
Processes
environment
observations
WordItOut

Performance expectations in the NGSS

Use observations to describe patterns of what plants and animals (including humans) need to survive. (K -LS1-1).

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Science and Engineering Practice

Performance expectations in the NGSS

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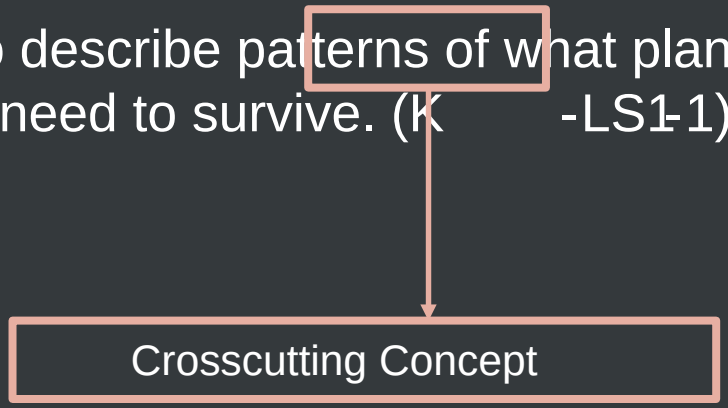

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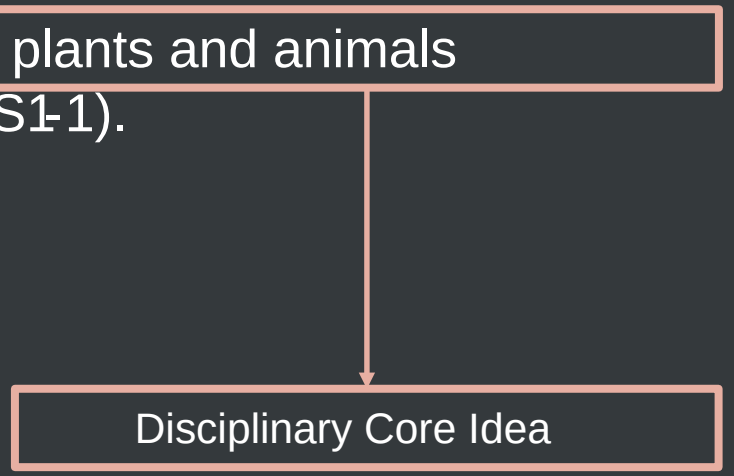

How does the shape of this object help it function as needed to solve a given problem? (K-2-ETS1-2)

How does the shape of this object help it function as needed to solve a given problem? (K-2-ETS1-2)

Draw a simple sketch of a tomato.

Take a moment to think about where that tomato you just drew came from and how it grew. What parts might you want to add to your drawing?

How does the tomato use its external parts to help it survive, grow, and meet its needs? (1 -LS1-1)

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#E037

What are your science questions for this plant?

United States Botanic Garden

Now, design a solution to a human problem by mimicking how a plant uses its parts to help it survive, grow, and meet its needs. (1-LS1-1)

United States Botanic Garden

Image source: https://iucn.org/news/bangladesh/20811/blog *-floating -agriculture -drip -bangladesh -viet -nam*

Construct an argument that plants have internal and external structures that function to support survival, growth, and reproduction (4 -LS1-1)

What are your science questions for this tomato?

United States Botanic Garden

Use models to describe that energy in animals' food was once energy from the sun (5-PS3-1)

Product to plant

Growing Scientists Through the School Garden

United States Botanic Garden

Thank you

Questions?

www.USBG.gov

United States Botanic Garden

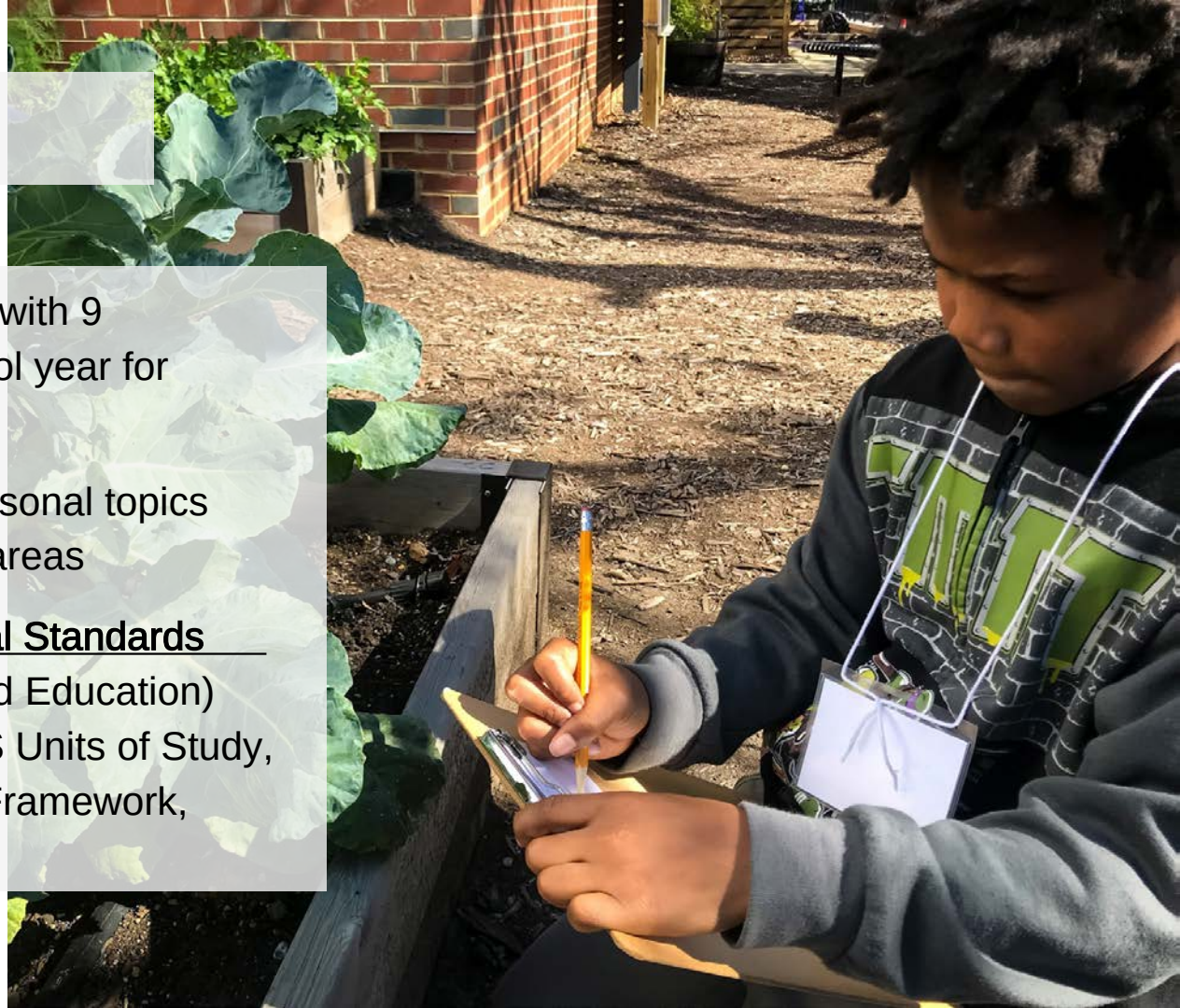
Susan Bandler
Curriculum Consultant

Serenity Rain
Lead Teacher at Anne Beers Elementary & Farm Share Manager

Our standards -based, hands-on FoodPrints curriculum integrates gardening, harvesting, cooking, and nutritious eating at partner schools with the goal of improving health and education outcomes.

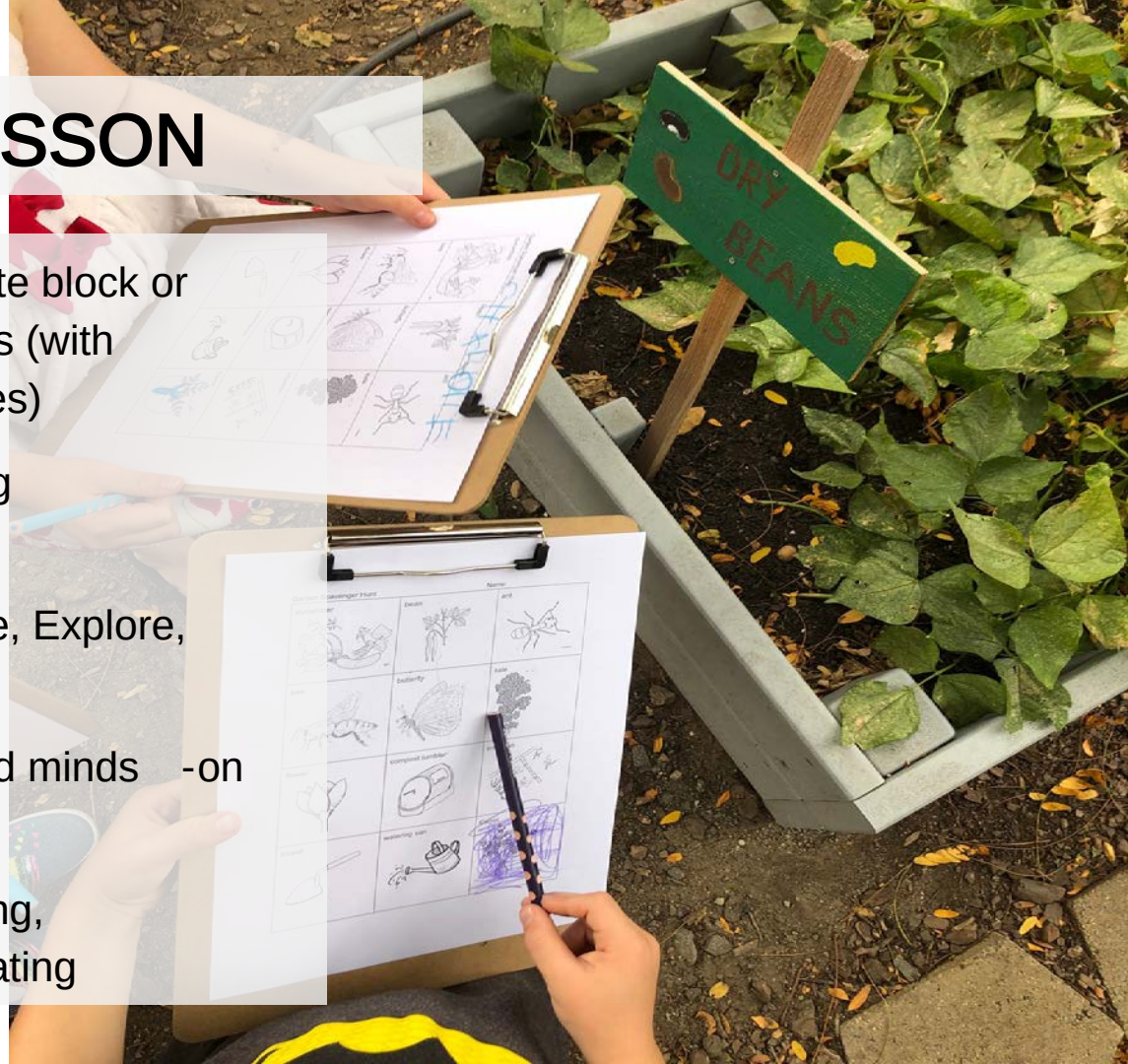
CURRICULUM

- Organized around 9 themes with 9 lessons throughout the school year for Pre-K - 5th
- Sequenced according to seasonal topics aligned with core academic areas
- Aligned with both National Standards (NGSS, Common Core, Food Education) and DC Standards (DCPS Units of Study, DC Environmental Literacy Framework, OSSE Health Education)



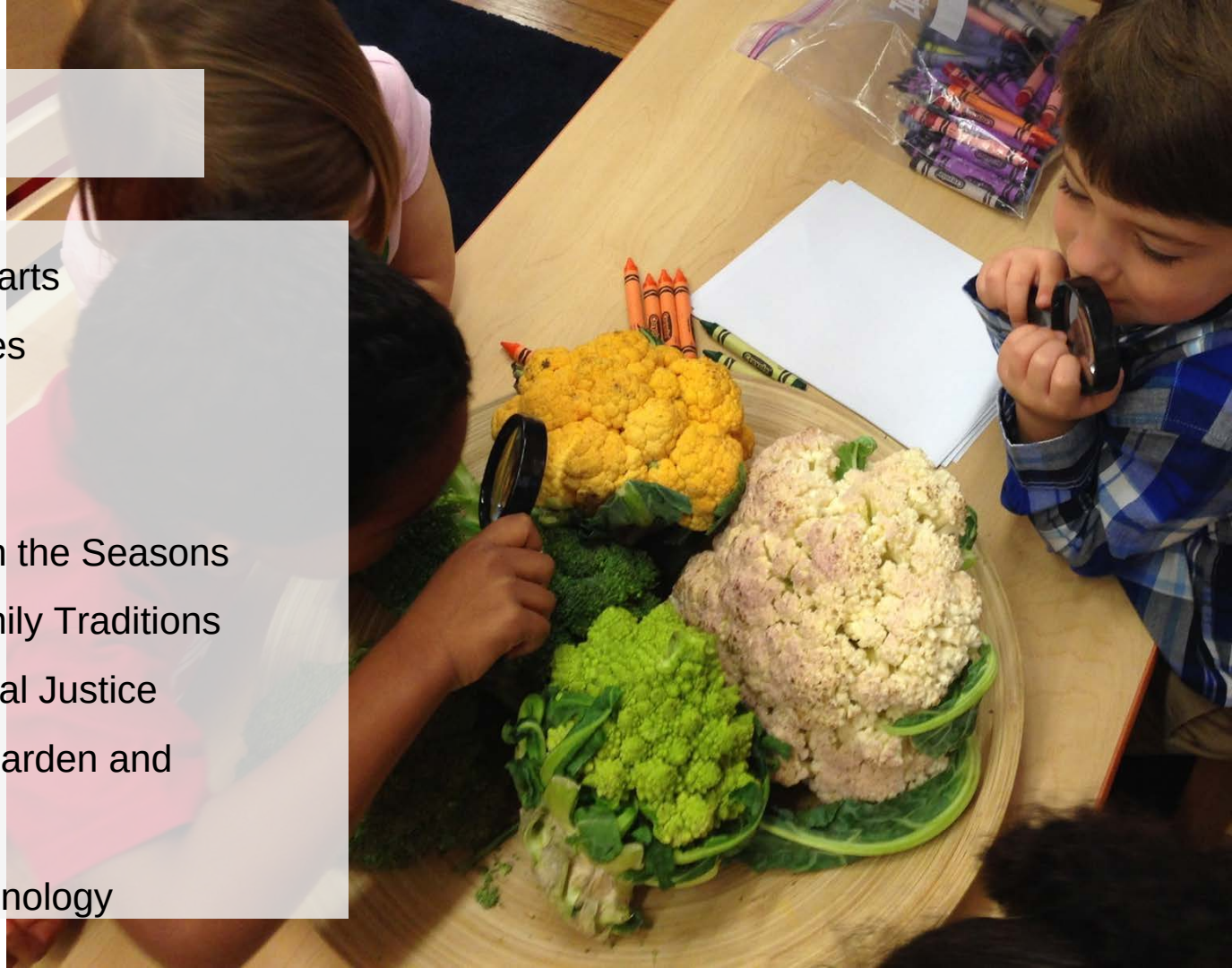
A FOODPRINTS LESSON

- Can be taught in a 90 -120 minute block or divided into multiple shorter lessons (with whole group or small group activities)
- Built around a Big Idea and Guiding Questions
- Divided into three sections: Engage, Explore, Evaluate and Close
- Activities focus on hands -on and minds -on investigations
- Four parts of each lesson: gardening, academic learning, cooking, and eating



THEMES

1. Understanding Plant Parts
2. Habitats and Life Cycles
3. Soil Health
4. Health and Nutrition
5. Growing Food Through the Seasons
6. Food, Culture and Family Traditions
7. Conservation and Social Justice
8. Applying Math in the Garden and Kitchen
9. Food History and Technology



COMMON CORE STANDARDS: ELA

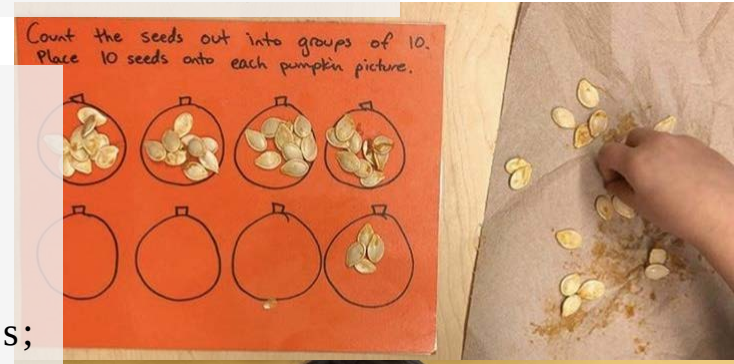
A focus on literacy runs throughout FoodPrints lessons.

- Classrooms are text-rich
  - Connected texts with every lesson
  - Anchor charts
- Reading informational text
  - Recipes
  - Seed packets
- Writing component in every lesson
- Discussions to strengthen speaking and listening skills

COMMON CORE STANDARDS: MATH

Opportunities to practice math skills and meet Common Core standards are embedded throughout the curriculum.

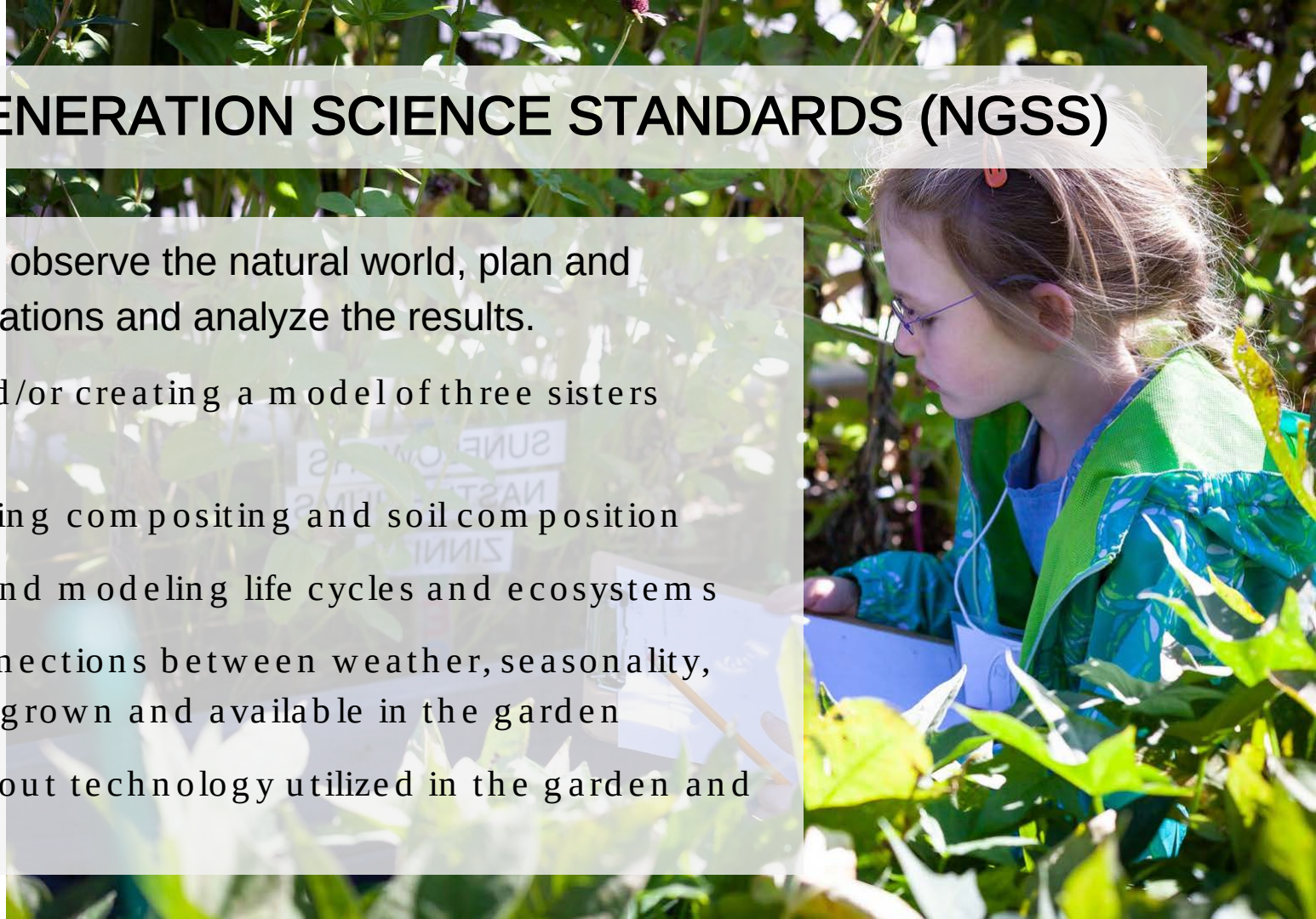
- **Kindergarten** - sort, count, and classify seeds
- **1st grade** - study equality and equity through fractions; practice dividing vegetables equally and dividing garden beds
- **2nd, 3rd and 4th grades** - measure for area, perimeter and volume as part of garden planning; measuring in the kitchen
- **5th grade** - scale recipes



NEXT GENERATION SCIENCE STANDARDS (NGSS)

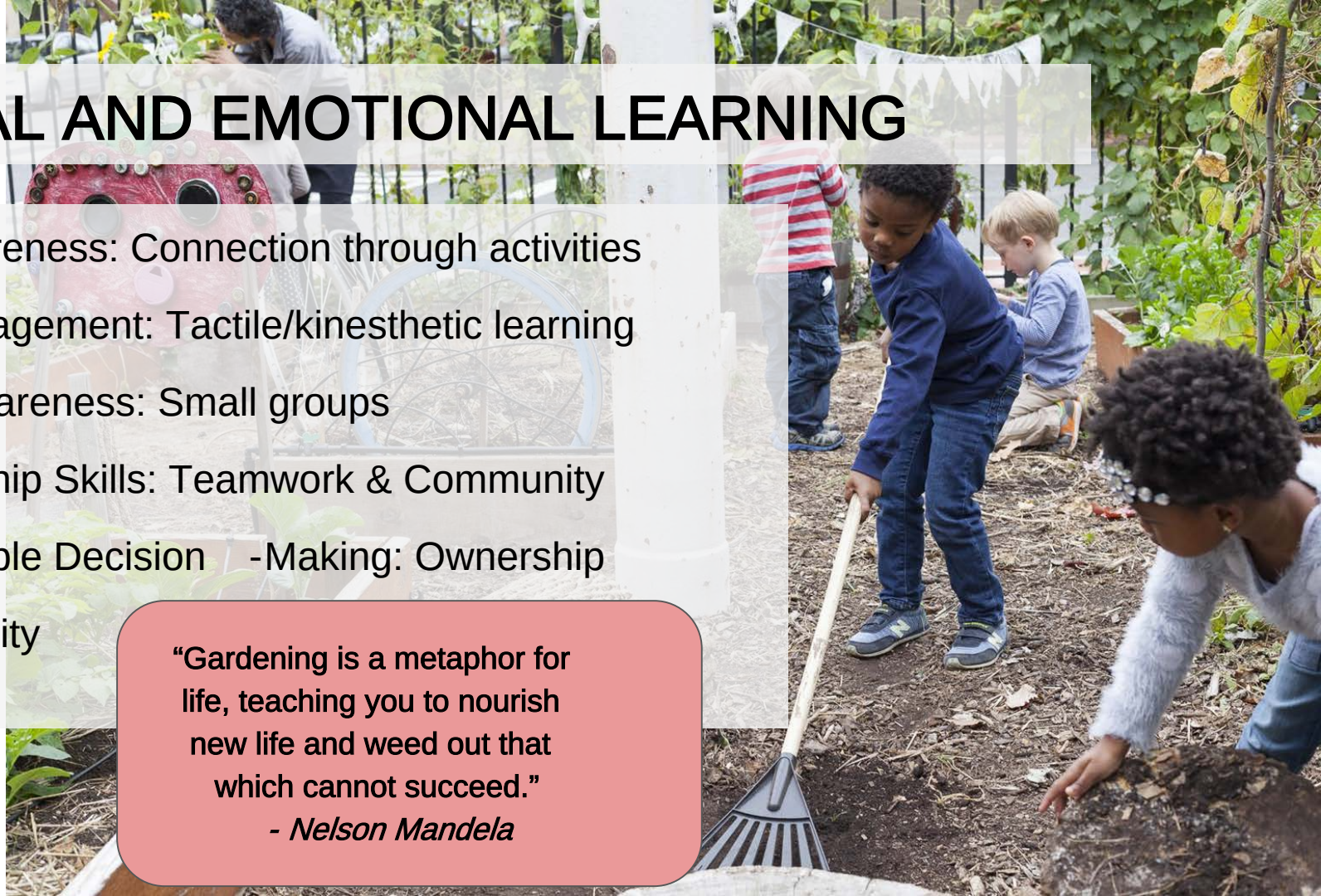
Students actively observe the natural world, plan and carry out investigations and analyze the results.

- Planting and/or creating a model of three sisters garden
- Understanding compositing and soil composition
- Observing and modeling life cycles and ecosystems
- Making connections between weather, seasonality, and what is grown and available in the garden
- Learning about technology utilized in the garden and kitchen



SOCIAL AND EMOTIONAL LEARNING

- Self-Awareness: Connection through activities
- Self-Management: Tactile/kinesthetic learning
- Social awareness: Small groups
- Relationship Skills: Teamwork & Community
- Responsible Decision -Making: Ownership
- Accessibility



"Gardening is a metaphor for life, teaching you to nourish new life and weed out that which cannot succeed."

- Nelson Mandela

Pre -K: Goodbye Winter, Hello Spring *(March)*

Big Idea

We eat different vegetables from the garden in winter and spring.

Theme

Growing Food through the Seasons

Students will...

- Explore winter vegetables, sort and organize in different ways
- Reenact story of *Sophie's Squash* with a butternut squash
- Planning a garden
- Making seed tape
- In cooking, say goodbye to winter vegetables -- with squash or sweet potatoes

Kindergarten: Life Cycles *(May)*

Big Idea	Theme
All living things have a life cycle.	*Habitats and Life Cycles*

Students will...

- Act out butterfly life cycle
- Make a model of a butterfly life cycle
- Take care of a bean sprout and/or butterfly habitat
- Observe plants at different stages in their life cycle in the garden
- Read and discuss a connected text

First Grade: Edible Plant Parts *(September)*

Big Idea

We eat different parts of different plants.

Theme

Understanding Plant Parts

Students will...

- Sort plant parts by the part we eat
- Labelling plant parts on a diagram
- Observational drawings of plants - label the plant part and circle the part we eat
- Cooking using a variety of seasonal plant parts (tomatoes, corn, chard, beets, etc.)

Second Grade: Activism and Food Justice *(March)*

Big Idea

We can become Food Justice activists by learning from Food Justice leaders.

Theme

Conservation and Social Justice

Students will...

- Read about different food activists
- Design a student food justice campaign
- Make garden flags as a beautification project

Third Grade: Garden Planning *(February)*

Big Idea

Gardeners and farmers plan for their gardens during the winter months.

Theme

Applying Math in the Garden and Kitchen

Students will...

- Measure garden beds and calculate area
- Make seed paper on square foot garden mats
- Make a planting plan after reading a seed packet

Fourth Grade: A Recipe of Me (*December)*

Big Idea

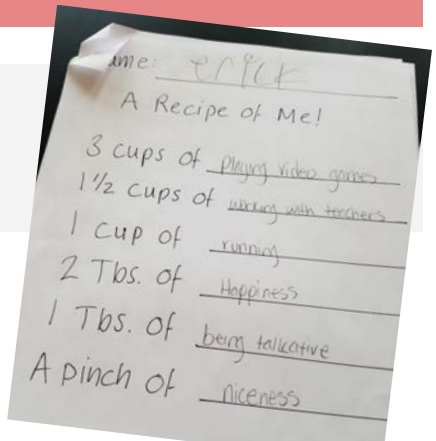
We are all made of many ingredients.

Theme

Food, Culture and Family Traditions

Students will...

- Write a Recipe of Me
- Illustrate a Recipe



Fifth Grade: Garden and Kitchen Inventions

Big Idea

We can create inventions to help us in the kitchen and garden.

Theme

Food History and Technology

Students will...

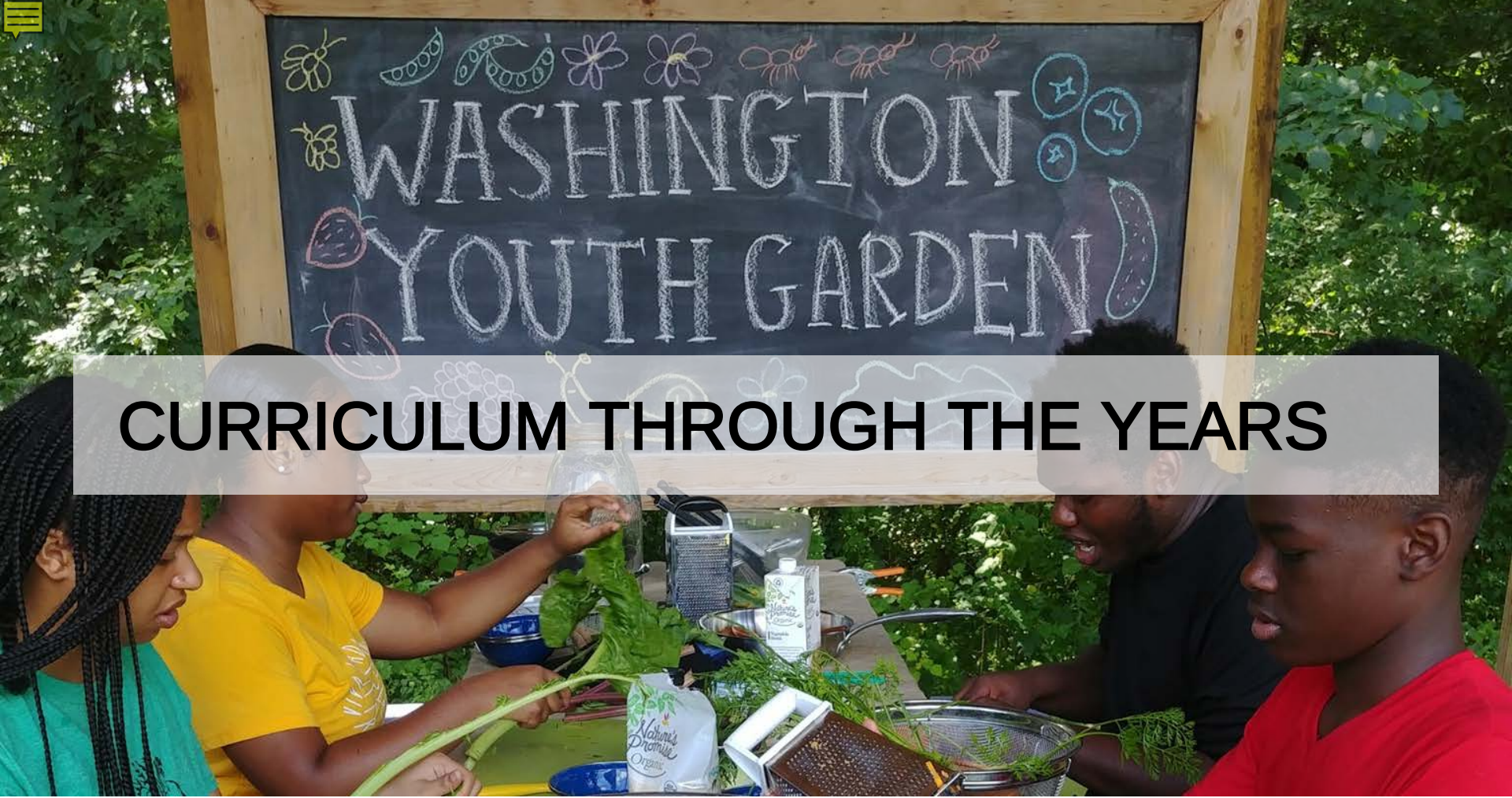
- Do observational drawings of kitchen and garden tools, label them and explain how they are helpful.
- Shark Tank: Design an Invention
- Make seed tape

For further resources, visit…

FRESHFARM FoodPrints

- Sample Lesson:
  PK Goodbye Winter, Hello Spring
- FoodPrints Lessons by Theme
- Exemplar Lessons for each grade

All of these are are on Schoology under the Topic 5 folder!



CURRICULUM THROUGH THE YEARS

1st Grade

Main Content Areas

Science, Social Studies, Health	Plants and animals have different parts that serve different functions	Young plants and animals are like, but not exactly like, their parents	Categorize foods by food source and food group	Characteristics of Mayan/ Aztec/ Incan civilization in comparison to now	Draw local maps with basic keys	Describe basic function of 5 senses	Understand benefits of varied diet and identify a healthy snack
NGSS, OSSE Standards	NGSS 1-LS1-1	1-LS3-1	K-2.5.1.2	OSSE SS 1.4.1-5	OSSE SS K-2 GS-3	OSSE Health K-2.3.1.5	K-2.5.7.13-4

1st Grade Process Areas (elements included in lessons, but not the primary focus of the lessons)

Math, Literacy	sketch, drawing, model that helps to illustrate how a physical object solves a problem	Make observations to relate sunlight/ day to time of year	Shades of meaning in verbs, adjectives of intensity (bigger, biggest)	ID words and phrases about feelings and senses	Prose and Poetry		
Common Core Standards	K-2-ETS1-2	1-ESS1-2	CC L.1.5	RL.1.4	RL.1.10		

Yearly Flow

<table>
<tr><th>Grade</th><th>Fall</th><th>Fall/ Winter</th><th>Winter</th><th>Winter/ Spring</th><th>Spring</th></tr>
<tr><td>K</td><td rowspan="2">Scientists and our senses</td><td>Soil and Compost</td><td rowspan="2">Rainbow Foods</td><td rowspan="2">Starting Seeds/ Seedling Science</td><td>Taking Care of the Earth</td></tr>
<tr><td>1</td><td rowspan="3">Parts of a Plant</td><td rowspan="4">3 Sisters Gardening</td></tr>
<tr><td>2</td><td rowspan="3">Seed Dispersal/ Pollination</td></tr>
<tr><td>3</td><td rowspan="2">Food Cultures</td><td rowspan="2">Life Cycles and Adaptations</td></tr>
<tr><td>4</td><td rowspan="2">Cooking Workshop</td></tr>
<tr><td>5</td><td>Food Webs in the Garden</td><td>Garden Science 2 curriculum (6 lesson arc on Energy)</td><td>Seedling Science</td></tr>
</table>

THEME:	Timeframe:
Primary Thematic Objective(s): *2-4 primary goals/objectives you wish students to learn over the course of the entire theme.*	

Include a title for the week, date, and link to the associated daily curriculum planner.	**Week:**			**Week:**				**Week:**			
Include 2-3 objectives for this session. These should be more specific than the thematic objectives, but related.	**Objective(s):**			**Objective(s):**				**Objective(s):**			
Whole group, movement activity, think-pair-share, etc.	**Intro/Engagement:**			**Intro/Engagement:**				**Intro/Engagement:**			
A brief list of the activities for this session (you can have more or less than 4 activities). **Modalities:** Visual/ Spatial; Verbal/ Linquistic; Kinesthetic/ Tactile; Interpersonal; Intrapersonal; Musical/ Creative; Logical/ Mathematical	**Activity:**	**Activity:**	**Modalities used:**	**Activity:**	**Activity:**	**Modalities used:**		**Activity:**	**Activity:**	**Modalities used:**	
	Activity:	**Activity:**		**Activity:**	**Activity:**			**Activity:**	**Activity:**		

Join the Growing Garden Teachers Google Group
https://groups.google.com/d/forum/growing-garden-teachers

Q & A

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