Integrating Science and Literacy with the FoodPrints Curriculum
NSTA National Harbor 2021
Literacy Integration Lesson Highlights

- Edible Plant Parts - 1st grade
- Seed Dispersal - 1st grade
- Garden Ecosystem - 3rd grade
The FoodPrints Program

Citywide partnerships with 20 DCPS elementary schools
Wards 1, 2, 4, 5, 6, 7, 8

Estimated 7300 students will participate in FoodPrints program this school year

Founded in 2009 at Watkins Elementary School

In 2021, FoodPrints released a comprehensive food, garden, and environmental education curriculum for national implementation
The FoodPrints Curriculum

Interdisciplinary food, garden, and environmental education curriculum for Pre-Kindergarten - 5th grade.

Aligned nationally to Common Core, The Next Generation Science Standards, and the Pilot Light Food Education Standards.

Aligned locally to the DCPS Units of Study, DC Early Learning Standards, and OSSE’s Environmental Literacy Framework.

Developed and tested over 10 years with thousands of students at 15 DC public schools.
The FoodPrints Curriculum

- 63 lessons for Pre-K through 5th grade
- FoodPrints Scope and Sequence
- FoodPrints Themes Guide
- FoodPrints Anywhere
- FoodPrints Virtual Lessons
- FoodPrints Curriculum Guide
- Curriculum Videos
FoodPrints Science & Literacy Connection

- Common Core ELA alignment: speaking, listening, reading and writing
- Alignment to DC Public School Units of Study
- Promoting Early Literacy
- Developing science vocabulary and student discourse
- Supporting Visual Literacy
- Engaging with reading informational text
- Opportunities for narrative, descriptive, informational and creative writing
- Connected Texts with every lesson
- Print rich classrooms [books, anchor charts, etc.]
Approach to Learning:  
*Engage, Explore, and Evaluate & Close*

FoodPrints lessons are adapted using the Biological Science Curriculum Study (BSCS) 5-E Instructional Model

**Engage:** Students are introduced to the lesson’s Big Idea and Guiding Questions by activating their prior knowledge and participating in a shared experience.

**Explore:** Students work as a class or in small groups to experience hands-on and minds-on learning through a series of investigations.
Approach to Learning, continued

Evaluate and Close: Students reflect on the lesson’s Big Idea and Guiding Questions and share what they have learned in the lesson through a class discussion.

1. Reflect and share
   Revisit Big Idea and Guiding Questions. Additional questions provided to further probe student understanding.

2. Eat and Appreciate
   Eating the food you have prepared together and taking time to appreciate the food is an important part of the FoodPrints Experience.
   - Encourage but do not force students to try new food
   - Appreciate and recognize the different people and natural resources involved in growing, harvesting, transporting and preparing the food
   - Encourage students who are enjoying the food to express what they liked and why
Edible Plant Parts
First Grade, Lesson 1

Theme:
Understanding Plant Parts

Big Idea:
We eat different parts of different plants

Guiding Questions
Why do plants have different parts?
Why do we eat different parts of different plants?
## Lesson Timeline: Edible Plant Parts

<table>
<thead>
<tr>
<th>Engage</th>
<th>Interactive movement activity to introduce students to the structures and functions of plant parts.</th>
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<tbody>
<tr>
<td>Explore</td>
<td>A series of hands-on, minds-on investigations, including classifying edible plant parts, observing edible plants in the garden, using plant diagrams</td>
</tr>
<tr>
<td>Evaluate &amp; Close</td>
<td>Students engage in discourse to reflect and share on learning from the lesson</td>
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</table>
### Engage: Start with a Movement Activity

<table>
<thead>
<tr>
<th>ROO <strong>UTS</strong>: Bend over and wiggle your fingers near the ground. Make a slurping noise and move your arms up and down near the ground. This shows the roots slurping up water and nutrients from the soil.</th>
<th>LEAVES: Hold your arms and turn your palms up and down towards the sky, like leaves turning in the wind. Leaves are the &quot;kitchen&quot; of the plant. They catch the sun’s light and turn it into food for the plant.</th>
<th><strong>STEMS</strong>: For the stem, stand nice and tall to show that the stem is the backbone of the plant and helps it stand tall. The stem is also the elevator of the plant and helps bring water and nutrients to all its different parts.</th>
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<tr>
<td><strong>FRUITS</strong>: Pretend to eat a fruit. The fruit protects the seeds of the plant.</td>
<td><strong>FLOWERS</strong>: Make a circle with your arms above their head. Flowers are bright colors to attract pollinators to the plant so it can make seeds.</td>
<td><strong>SEEDS</strong>: Pretend to hold and plant a tiny seed. The seeds allow for new plants to grow.</td>
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</tbody>
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Explore

- Classifying edible plant parts
- Making observational drawings of plants in the garden
- Labeling plant parts on a diagram
- *Connected Text* Book discussion - *Tops and Bottoms* by Janet Stevens
Explore: Classifying Edible Plant Parts

Choose a piece of produce from the table and place it in the correct place on the chart.

Discussion:
- Why did you classify your plant part the way you did?
- Are there other ways to classify your plant?
Evaluate and Close

Reflect and Share:

- Students can review the movements for each of the plant parts.
- Ask students to name the part we eat of different plants.
PLANT PART LABELING WORKSHEET: CARROT

Instructions: Label each plant part. Circle the plant part that you eat.
Seed Dispersal
First Grade, Lesson 3

Theme:
Understanding Plant Parts

Big Idea:
Seeds have structures that help them travel.

Guiding Questions:
How do seed structures help them travel? How do seeds that can travel help plants?
## Lesson Timeline: Seed Dispersal

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<tr>
<th>Engage</th>
<th>Use a read aloud to activate prior knowledge and engage students in a shared experience about how seeds travel</th>
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<tbody>
<tr>
<td>Explore</td>
<td>A series of investigations, where students observe and dissect seeds, design seed envelopes, and build seed models.</td>
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<td>Evaluate &amp; Close</td>
<td>Students engage in discourse to reflect and share on learning from the lesson</td>
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Engage

To introduce students to new background information we sometimes use a Connected Text to start the lesson.

Read the book, *A Seed is a Suitcase for Seeds* by Jean Richards or *Flip, Float, Fly* by JoAnn Early Macken.

As we read, ask students to do a thinking job:
- Why seeds are important?
- Share something new that you learned about seeds.
Explore: Seed Dispersal

- Carefully dissect and observe the seeds at your table.

- What do you notice about the seed structures and how do you think your seed travels?
Seed Dispersal, continued

- Design your own seed packet including:
  - a seed description
  - information on how it disperses
  - a picture/diagram of your seed
  - the location where you found your seed
Explore: Building a Seed Model

- Use playdough to create a model of a fruit with its seeds inside.
- Carefully create a model by observing the examples of fruits and seeds and looking for specific attributes and details to create a realistic model.
Evaluate and Close

Reflect and Share:

- How can observing seed structures help us understand how seeds travel?

- What other ways could you use seeds in your classroom?
The Garden Ecosystem
Third Grade, Lesson 1
Theme: Habitats and Life Cycles

Big Idea:
Living and nonliving things depend on each other in an ecosystem

Guiding Questions:
What is an ecosystem? How do they differ?
Why are both living and nonliving things important to an ecosystem?
# Lesson Timeline: Garden Ecosystem

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<td><strong>Engage</strong></td>
<td>Introduce vocabulary through root words and authentic examples: ecosystem, abiotic, biotic, interdependent</td>
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<tr>
<td><strong>Explore</strong></td>
<td>A series of investigations, where students search in the garden for examples of biotic and abiotic and observe worms</td>
</tr>
<tr>
<td><strong>Evaluate &amp; Close</strong></td>
<td>Students engage in discourse to reflect and share on learning from the lesson</td>
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Engage

- Provide students with a variety of examples of living and non-living things

- Introduce students to vocabulary through root words and authentic examples
  - ecosystem
  - abiotic
  - biotic
  - interdependent
Explore

- Reinforce vocabulary by searching and recording examples of biotic and abiotic elements in the garden

- Use worm observations to highlight speaking and listening standards including use of descriptive language and questioning.

- Connected Texts Book Discussion:
  - *The Curious Garden* by Peter Brown
  - *Diary of a Worm* by Doreen Cronin
Evaluate and Close

Reflect and Share:

- Ask students to share examples of biotic and abiotic elements they observed in the garden
- Ask students to share what they learned about the impact of one biotic or abiotic factor in an ecosystem
FoodPrints in Your School: Make it your Own

• Full Curriculum Integration of PK-5th grade lessons
• Monthly lessons aligned with the seasons
• Flexible and adaptable investigations
• Use investigations to develop extended units and project based learning
• Adapt curriculum for monthly food and garden education classes
• Use lessons to extend classroom learning in science, literacy, math and social studies
• Integrate math and literacy into garden learning
• Use lessons for afterschool clubs -- environment, garden

“FoodPrints is a great way to engage students in their current units of study with hands-on learning experiences that create beautiful connections to previous learning and real world situations.”

- DCPS Principal
Today's Lesson: Pollinators at Work
www.freshfarm.org/foodprints/

CONTACT US
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Share one takeaway from our session today.

Do you want to stay connected? Share your name and email to learn more about FoodPrints lessons and Professional Development opportunities.