Department of Education
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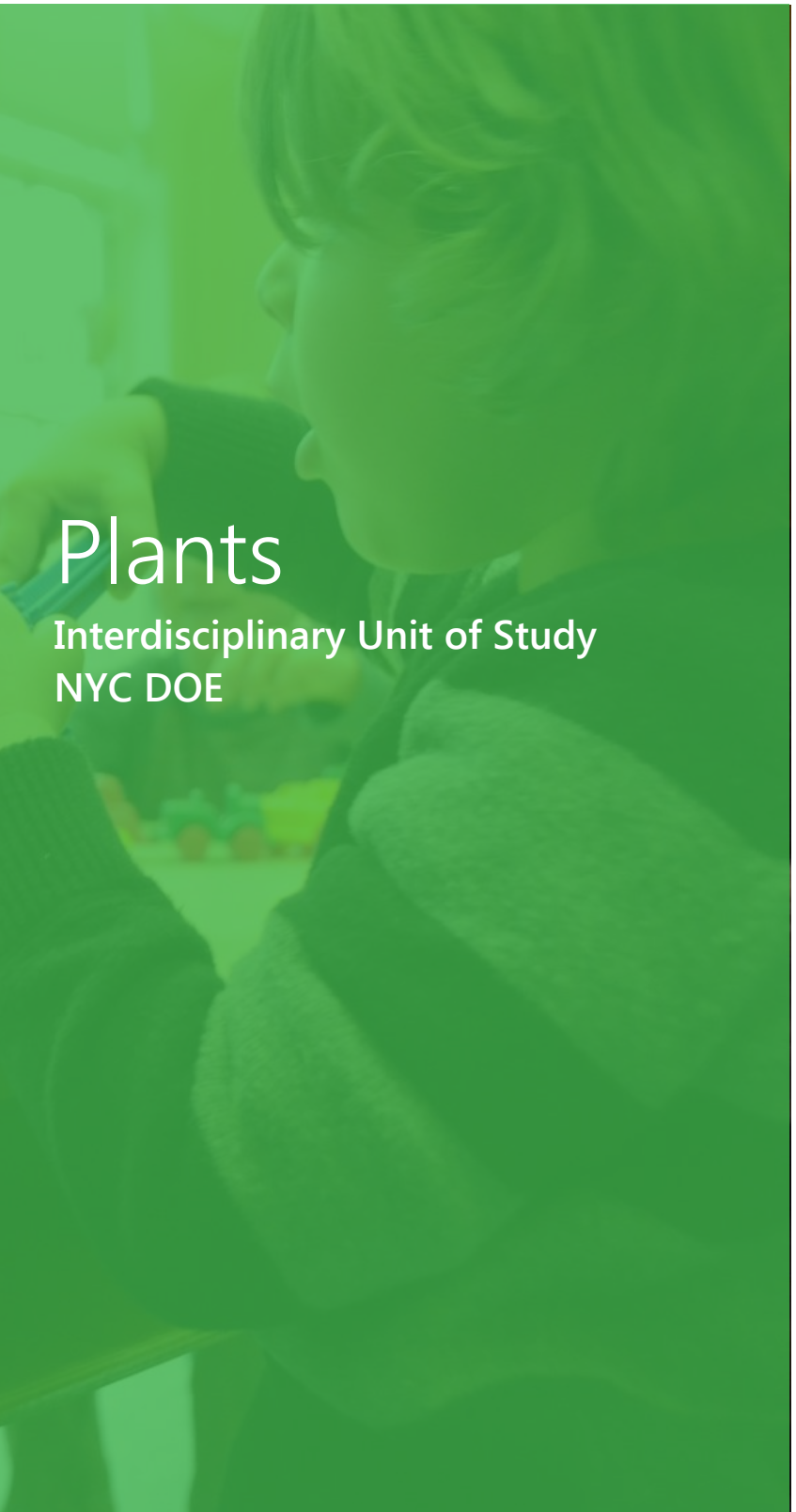
PRE-K FOR ALL

Plants

Interdisciplinary Unit of Study

NYC DOE



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I. Unit Snapshot: Goals and Standards

Unit Topic: Plants

Essential Question:

How do plants grow and why are they important?

Focus Questions:

What are plants?

What do plants need and where do we find them?

What are some different kinds of plants?

Why are plants important?

Student Outcomes:

What the student should understand by the end of the unit.

Enduring Understandings:

- Plants are living things; every part of a plant has an important function.
- Plants grow from seeds and need water, nutrients and light to live.
- Plants are all around us.
- There are many different types of plants.
- Plants are important for many reasons.

Connected Academic Vocabulary:

This list should be adapted to best fit the needs of individual programs and classrooms.

•botanist •botany •bouquet •branch •bud •bulb •bush •cactus •compost •courtyard •dirt •edible •environment •evergreen •fabric •farm •farmer •field •floral arrangement •florist •flower •food •forester •fruit •garden •gardener •grass •greenhouse •ground •grow •habitat •harvest •herbs •landscape •lawn •leaves •medicine •nature •nursery •nutrients •park •patio •petals •plant •pollen •rain •roots •seaweed •seed •seedling •shade •shelter •soil •sprinkler •sprout •stem •succulent •sunlight •terrarium •tree •trunk •vegetables •vegetarian •vegetation •vine •water •water lily •watering can •weeds •wood •yard

Focus Standards from the Prekindergarten Foundation for the Common Core (PKFCC):

Domain 1: Approaches to Learning:

ATL.5 Demonstrates persistence

Domain 2: Physical Development and Health:

PDH.5 Demonstrates eye-hand coordination and dexterity needed to manipulate objects.

Domain 3: Social and Emotional Development:

SED.1 Recognizes himself/herself as a unique individual having his/her own abilities, characteristics, feelings and interests.

Domain 4: Communication, Language and Literacy:

Approaches to Communication

CLL.2 Demonstrates he/she is building background knowledge.
CLL.3 Demonstrates that he/she understands what they observe.
CLL.6 Demonstrates a growing expressive vocabulary.

Reading Standards for Informational Text

CLL.3 With prompting and support, describe the connection between two events or pieces of information in a text.
CLL.6 With prompting and support, can describe the role of an author and illustrator.

Writing Standards

CLL.2 With prompting and support, use a combination of drawing, dictating, or writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.
CLL.11 Create and present a poem, dramatization, art work, or personal response to a particular author or theme studied in class, with prompting and support as needed.

Speaking and Listening Standards

CLL.5 Add drawings or other visual displays to descriptions as desired to provide additional detail.

Domain 5: Cognition and Knowledge of the World

Mathematics

CKW.1 (Measurement and Data): Identify measurable attributes of objects such as length and weight. Describe them using correct vocabulary (e.g., small, big, short, tall, empty, full and light).

Science
CKW.5 Observes and describes characteristics of living things.

Social Studies
CKW.7 Develops a basic understanding of economic concepts within a community.

The Arts
CKW.2 Responds and reacts to visual arts created by themselves and others.

Technology
PK.CKW.5 Uses the knowledge of technology to increase learning.

II. Introduction

Welcome to **Unit 8: Plants**, Pre-K for All's eighth Interdisciplinary Unit of Study. In **Unit 8: Plants**, children move from exploring the properties and uses of water to observing and learning about different kinds of plants. This unit, like all Pre-K for All units, provides opportunities for children to observe objects and phenomena in their environment with increasing complexity, and apply knowledge and skills learned in previous units. Activities throughout the unit prompt children to learn about plants through hands-on explorations and provide opportunities to observe plants in their immediate environment. As you prepare to teach this unit, consider how different kinds of plants are a part of your children's daily lives. Additionally, use the opportunity of changing seasons to discuss and observe how plants grow and change over time. For example, you may have a tree in your neighborhood that you can observe throughout the unit and into later units as it changes with the seasons.

All Interdisciplinary Units of Study are structured around four focus questions. Each focus question is designed to take about one week to explore. In the first week, children consider the question, "What are plants?" and observe and identify the different parts of plants. In the second and third week, children have increased opportunities to observe plants in their environment and learn about different kinds of plants. In these weeks, we encourage you to go outside of the classroom to observe different kinds of plants in your immediate community. Throughout New York City, there are opportunities to explore parks, neighborhood gardens, botanical gardens, florist shops or gardening stores. These resources help children to tangibly observe and apply what they are learning and builds appreciation for our natural environment. Please see the resources in Section VIII to help get you started in accessing and partnering with community organizations, and tips for how you can be creative in reaching out for additional resources in your neighborhood.

In the final week of the unit, children will carefully consider and explore the different uses of plants and why different kinds of plants are important. Throughout the unit, but especially in this final week, we encourage the children to explore the different kinds of plants that they eat, including fruit, vegetables, herbs, seeds etc. These investigations will build their understanding of the parts of plants and increase their awareness of healthy eating, where food comes from and how plants help us stay healthy and grow. As children discuss the role of water in plant growth and health, help them make connections to **Unit 7: Water**. This is also a great way to encourage families to engage in conversation with their child about what they eat and what plants they are most familiar with. You can even invite families and staff who visit or are from different geographical areas, either in New York or throughout the world, to share stories about different kinds of plants, and the impact that climate and/or location has on plants. This is a great way to build your pre-K program community and build a common understanding of different experiences.

Opportunities for growing plants are woven throughout this unit, further developing children's scientific skills of observation, prediction and drawing conclusions that they have started developing in previous units such as **My Five Senses**, **Light** and **Water**. There are a variety of ways

that you can explore growing plants with your pre-K children - for example, you can plant bean seeds in small pots and observe them as they grow, or access a community garden or outside space where you can plant flowers and/or vegetables. You may already have classroom plants or a garden that the children observe on a regular basis. In growing and observing plants, there are many opportunities for children to learn about taking care of themselves and the environment with discussions about eating healthy food and helping to protect, nurture and grow plants. Make sure that children understand that not all plants are safe to touch. You should always be certain that plants are not poisonous, pose no harm to children and are maintained safely. In addition, you should be sure that children are not allergic to any of the plants in the classroom.

Throughout this unit, there are opportunities to develop children's literacy and language skills. Children will enjoy literature, engage in discussions around stories, and retell and act out stories they have read. Children will build on what they know about plants through informational texts. They will explore new vocabulary words such as "habitat" and "nutrients" to continue to develop their language skills as they engage in scientific explorations and thinking. In **Unit 7: Water**, there were opportunities to help children learn about the sounds that different letters make. In addition to continuing to build these skills, in this unit there are increased opportunities for children to express themselves through authentic writing experiences and various modes of storytelling. Remember that children will be in different stages of understanding and developing their own narratives. Continue to use your authentic assessment data as you determine how best to support each student in your class.

III. Unit Framework

Unit Topic	Plants
Essential Question This is a child-friendly question that connects the knowledge and skills that children should develop throughout the unit.	• How do plants grow and why are they important?
Enduring Understandings These are the big ideas that children should remember throughout their educational careers and extend beyond the unit topic.	• Plants are living things; every part of a plant has an important function. • Plants grow from seeds and need water, nutrients and light to live. • Plants are all around us. • There are many different types of plants. • Plants are important for many reasons.

	Week One	Week Two	Week Three	Week Four
Focus Questions These questions represent the major inquiries of the unit. They build over time and require children to make connections across all content areas. Each focus question is designed to take about one week to explore.	What are plants?	What do plants need and where do we find them?	What are some different kinds of plants?	Why are plants important?
Foundational Learning Experiences These are experiences (e.g., whole group, small group lessons, field trips, observations, center activities) for each subtopic that provide ample opportunities to deepen children's understanding of the Focus Questions.	Foundational Text Read Aloud. See page 35 for lesson plan and Section IX for Inquiry and Critical Thinking Questions. See page 35 for lesson plan.	Walking Field Trip: Invite children to join on a walking field trip to look for plants in the program neighborhood. *PK.CLL.5 (Speaking and Listening Standards): Add drawings or other visual displays to descriptions as desired to provide additional detail.* See page 38 for lesson plan.	Class List Poem: Introduce children to poetry, specifically List Poems, and generate a List Poem about plants together as a class. *PK.CLL.11 Create and present a poem, dramatization, art work, or personal response to a particular author or theme studied in class, with prompting and support as needed.* See page 41 for lesson plan.	Plant Taste Test: Talk with children about where food comes from. Supply a variety of plants for children to sample. *PK.CKW.4 (Science): Observes and describes characteristics of earth and space.* See page 44 for lesson plan.
Foundational Texts These are a combination of literary and informational texts that can be read throughout the unit. See Section IX for text-based critical thinking questions to support the read aloud experience.	Up in the Garden and Down in the Dirt by Kate Messner	The Curious Garden by Peter Brown	An Orange in January by Dianna Hutts Aston	The Vegetables We Eat by Gail Gibbons
	Engaging informative and literary texts provide opportunities for exploring content, expressing ideas using one's imagination and critical thinking that are enhanced through multiple readings of the same book. Reading books multiple times helps all children build a deeper understanding of content, make meaningful connections between content and other concepts or experiences and builds their confidence as learners and as future readers. When you have a text that draws the interest of the children in your class, consider one or more of the following techniques for reading the book multiple times to extend children's thinking:			

<table>
<tr><td>PK.CLL.5 (Reading Standards for Literature): Students interact with a variety of common types of texts.

*Books with an asterisk are also available in languages other than English.</td><td colspan="4">Take a "picture walk" through the book the first time you read it by just showing the pictures and asking the children what they see and what they think the book is about.
Model skills readers use to gain greater understanding of content by thinking out loud about the meaning of a word in context or drawing a conclusion based on prior knowledge.
Write down and post children’s responses to questions with more than one possible answer.
Ask children to make predictions based on what they know so far and ask them to explain their thinking.
Pause throughout the book and ask children to share a new word or idea they heard and explain it using familiar words or contexts.
Invite children to make connections between the book and their own life experiences.
Brainstorm potential solutions to a problem a character might be facing.
Ask children what the character could do differently or ask them what they might do if they were in the place of the main character.
As the book becomes familiar to the children, ask for volunteers to "read" it to you or small groups of children, letting them describe the pictures and the story in their own words.
Compare and contrast books with similar content, themes or structures.
Preview or review texts or parts of texts (particularly vocabulary) for children who need additional language or learning support.
As children become more familiar with the story or information, use this as the beginning of extension activities like acting out a story, painting or drawing something inspired by the text, or creating puppet shows.</td></tr>
<tr><td>Key Vocabulary
These are academic vocabulary words that help children understand the unit focus questions and access complex texts. These words can be supplemented by additional vocabulary in read alouds.</td><td>botany, branch, bud, bulb, dirt, flower, food, fruit, grow, leaves, nutrients, petals, plant, pollen, rain, roots, seed, seedling, soil, sprinkler, sprout, stem, sunlight, trunk, vine, water, watering can</td><td>botanist, bouquet, courtyard, environment, farm, farmer, field, forester, floral arrangement, florist, garden, gardener, greenhouse, ground, landscape, lawn, nature, nursery, park, patio, terrarium, vegetation, yard</td><td>bush, cactus, evergreen, grass, herbs, seaweed, succulent, tree, weeds, vegetables, water lily</td><td>compost, edible, fabric, habitat, harvest, medicine, shade, shelter, vegetarian, wood</td></tr>
</table>

Family and Community Engagement These are ideas for inviting families to share their experience and knowledge with the class, or for extending learning outside of the classroom. Each activity is aligned to the PQS.	Did you eat any roots/leaves/stems today (for example, potatoes, lettuce or celery)? Encourage children and families to talk about the parts of a plant, ask each other these questions and discuss. *Primary Teacher*	Ask families to find and observe a plant together. They can talk about what the plant looks like, how it smells, the way it feels etc. After observing the plant they can write or draw about it and bring their reflections back to the class for a class book or display. *Two-way Communication*	Invite families to go on a plant scavenger hunt together. Provide a list of things for them to look for such as a patch of grass, a tree taller than they are, something with petals, or other plant parts or types that can be found in the program's neighborhood. *Primary Teacher*	Use dirt from the sensory table and recycled containers to plant a seed with each child to take home. Invite families to help plant the seeds if they are available. *Primary Teacher*
Culminating Experience This is an opportunity to reflect on the unit with the children, as well as to note and celebrate the growth and learning that has occurred.	Terrarium- Create a terrarium together as a class or invite children to create their own terrariums. See Section XI: Appendices for directions and examples. OR Class Botanical Garden. Create a botanical garden using the three-dimensional plants children created in the Art Center as well as the plants the class grew throughout the study. Invite families, building staff and/or other classes to tour the garden. Children can create labels for the plants and signs throughout the building advertising for their garden and directing visitors to the room. Children can take on jobs such as ticket sales, garden guides etc.			

IV. Ideas for Learning Centers

Learning Centers should be used to advance the unit's essential and focus questions, as well as the enduring understandings, and reflect the unit of study as well as the needs of your children. This time of year can be especially important for teaching teams to help children go deeper in their inquiry, problem solving and concept development during centers. Children's play will have increased in complexity between the beginning of the year and now and they will be ready to make connections between previous learning and the current unit of study. The interactions between adults and children offer an opportunity to model, encourage and facilitate the use of language to ask higher order thinking questions as well as create meaningful entry points into new content. Effective concept development strategies and questions help children obtain a deeper understanding of concepts and develop analytical thinking skills. Children better understand concepts when teachers provide opportunities to analyze and problem solve, rather than just memorize and recite facts. One way to build higher order thinking skills is to create connections to the real word and to the prior experiences of children.

In this unit there are many opportunities to build on students' prior knowledge and make connections to the world around them as you discuss the needs of plants. **Unit 7: Water** wrapped up by studying how water is helpful. In **Unit 8: Plants,** you have the opportunity to build on this knowledge as you help children understand that plants need water to live. As you play with children and they play with each other in the Learning Centers, consider how you can deepen this understanding and share new content as well.

The following suggestions supplement the standard materials you have in each center, such as blocks in the Blocks/Construction Area, assorted dress-up materials in Dramatic Play, paper and a variety of writing utensils in the Writing Center etc. As you plan your learning centers, also consider how you will provide multiple entry points into the materials for all the children in your classroom. The suggested materials and activities are intended to be relatable and fun! This is not an exhaustive list of materials and can be supplemented by other materials relevant to the unit and your classroom.

While the materials you select for centers are extremely important, learning is made richer through the interactions adults and children have during Center Time. **Program Quality Standard (PQS) Eight, Engaging Children in Meaningful Activity,** highlights the necessary balance between adult and child-initiated learning experiences as well as some ways teaching staff can enhance children's learning in center play. When teaching staff interact with children in centers they can model language through initiating, joining and extending conversations, using self and parallel talk, and asking open-ended questions that deepen engagement and **inquiry** while developing problem solving and **critical thinking skills.**

Play is an important vehicle for developing a variety of skills outlined in the PKFCC and is woven into many of the PQSs. Rather than detracting from academic learning, purposeful play supports the abilities that underlie such learning. When children have a sufficient amount of time to play and can access learning centers and the materials in them, they have some of the essential supports necessary for their play to continue developing in complexity. The play-based learning that happens in centers addresses **PKFCC Standard PK.AL.1 (Actively and confidently engages in play as a means of exploration and learning)**. This same play helps children develop the background knowledge of **PKFCC Standard PK.CLL.4 (Demonstrates s/he is building background knowledge)** which is essential for making connections and deepening understandings. For these reasons, teachers should ensure that children have access to and can choose from a variety of learning center materials for one-third of the pre-K day, and support children's engagement in play during Center Time, making adjustments to the daily schedule to weave in small and whole group activities without infringing on that time. PKFCC standards are included for all of the activity suggestions here and opportunities for assessment are embedded. Text suggestions that complement these materials and activities are also included.

Blocks/Construction	Dramatic Play
• Critical thinking questions/statements: Tell me about your work. You just ___; what would happen if you ___? Why? How do you know? How could you build ___? What is your conclusion? • Build Plants: Wrap blocks in green and brown paper (and other colors as desired) and invite children to use them to create stems, tree trunks, soil etc. Supply paper, scissors and tape for children to use to create leaves, flowers etc. to add to their plants. Also consider hanging pictures of a wide variety of plants for children to reference as they build. As children create their plants talk with them about the parts of the plants and types of plants they are creating, highlighting vocabulary words such as *branch, flower, leaves* and *stem.* *PK.ATL.1 Actively and confidently engages in play as a means of exploration and learning.* • Gardens: Provide shoeboxes or other boxes for children to use as a container for a garden. They can use the plants they create in the Build Plants activity to create a container garden. Children can choose the focus of the garden (herbs or succulents, for example) according to their interests. If desired, children can add a name label for their gardens. *PK.CKW 3 (Social Studies): Demonstrates knowledge of the relationship between people, places, and regions.* • Landscape: Provide toy trees, bushes, flowers etc. for children to add as landscaping to their structures. Invite them to use these vocabulary words as they play with the materials. *PK.CLL.2 (Approaches to Communication): Demonstrates he/she is building background knowledge.* **√ Opportunity for Assessment** How is the child using the new plant-based vocabulary words? Is s/he able to use them in relation to words and concepts s/he already knows? • Rooftop Gardens: Invite children to use toy trees, bushes, flowers etc. to create gardens or green roofs for their structures. *PK.CKW 3 (Social Studies): Demonstrates knowledge of the relationship between people, places, and regions.*	• Critical thinking questions/statements: Who are you going to be today? I wonder what would happen if ___. What will you do next? What do you think about ___? • Flower Shop: Turn Dramatic Play into a flower shop by adding pretend flowers, containers and pictures of flower arrangements as well as a cash register, notepad, writing utensils etc. Children can pretend to make, buy and sell floral arrangements. As you play with the children, use and highlight vocabulary words such as *bouquet, floral arrangement, florist* and *flower.* *PK.CKW.7 (Social Studies): Develops a basic understanding of economic concepts within a community.* **√ Opportunity for Assessment** Does the child understand the relationship between buying and selling goods? • Garden: Turn Dramatic Play into a garden. Add seeds, pretend fruit, vegetables, flowers, trees etc. as well as tools such as gardening gloves, planting pots, trowels, hand hoes, watering cans etc. Invite children to create labels for the garden in the Writing Center. Children can pretend to plant and harvest in the garden. *PK.CLL.2 (Approaches to Communication): Demonstrates he/she is building background knowledge.* • Park: Turn Dramatic Play into a park. Recreate a local park or build a new one. Consider adding plants, benches (or using chairs to create benches), a pretend lawn, garden, flowers, a fountain etc. Children can play in the park or have a picnic. Children can take on roles of the people who maintain parks in New York City such as maintenance workers, recreational staff, gardeners, foresters, scientists or builders. The children can name the park and create a sign to welcome visitors to the park and state the rules of the park. *PK.CKW 3 (Social Studies): Demonstrates knowledge of the relationship between people, places, and regions.* • Farm: Turn Dramatic Play into a farm. Create fields of vegetables or plants for children to harvest or invite children to help with the planting

• Add pictures of plants, gardens, green roofs, farms etc. to the walls of the Blocks/Construction Center for children to reference as they work. *PK.CLL.2 (Approaches to Communication): Demonstrates he/she is building background knowledge.* • Build a Park: Invite children to build a park using the blocks and materials in the center. They can build a park for toy people or build on a larger scale and create a park for themselves. *PK.ATL.3 Approaches tasks, activities and problems with creativity, imagination and/or willingness to try new experiences or activities.* • Signs and Labels: Supply small cards or pieces of paper as well as writing utensils for children to use to create labels for their gardens, plants etc. *PK.CLL.1 (Reading Standards: Foundational Skills): Demonstrate understanding of the organization and basic features of print.* • Suggested Text: Underground by Denise Fleming. Invite children to use blocks to create their own underground environments.	and growing of pretend plants. Consider adding a farm stand as well for children to pretend to buy and sell what they grow. *PK.CKW.7 (Social Studies): Develops a basic understanding of economic concepts within a community.* • Suggested Text: Lola Plants a Garden by Anna McQuinn. Children can reference how Lola builds a garden as they build their own gardens.
Art • Critical thinking questions/statements: What did you notice about ___? I notice that you ___; how did you do that? What will you try next? Why? How does this picture, painting, drawing etc. make you feel? • Paint Flowers: Hang pictures of famous paintings of flowers such as *Sunflowers* by Claude Monet, *Twelve Sunflowers in a Vase* by Vincent Van Gogh, *Poppy* by Georgia O'Keefe, *Flowers* by Andy Warhol or *Garland of Flowers* by Auguste Renoir near the easel. Invite children to reflect on these paintings. Consider providing prompts such as, "What do you notice in this picture?" and "How does this picture make you feel?" After children reflect, they can paint their own pictures of flowers. *PK.CKW.2 (The Arts): Responds and reacts to visual arts created by themselves and others.* • Floral Still Life: Provide or create a floral arrangement for children to carefully observe and then paint or draw with various mediums (e.g., charcoal or oil pastels) what they see.	**Science/Discovery** • Critical thinking questions/statements: What did you observe here/when ___? What did your sense of ___ tell you about ___? What will you try next? I wonder what would happen if ___. How do you know? How could we find out? • Class Plants: Add plants to the science area or throughout the classroom for children to observe and assist in caretaking. *PK.CKW.5 (Science): Observes and describes characteristics of living things.* • Plant Life Cycle: Provide individual pictures of the plant life cycle. Ask children to sequence the pictures. Provide pictures or diagrams for children to refer to as they play and talk with them about each stage in the life cycle. *PK.CKW.5 (Science): Observes and describes characteristics of living things.* • Herb Garden: Plant an herb garden with the class. Use the word *herb* frequently throughout the activity. Invite children to create labels for the garden. Encourage children to use their senses to observe the herbs

PK.PDH.5 Demonstrates eye-hand coordination and dexterity needed to manipulate objects.

- Paper Flowers: Supply pipe cleaners as well as tissue paper circles (several inches in diameter). Children can pierce the middle of the tissue paper circles with the pipe cleaner, adding as many as they would like, then fold the circles up to create a flower. After creating these flowers children can use them in the Dramatic Play garden or flower shop or use them in the Math/Manipulatives area to create flower arrangements.
  PK.PDH.5 Demonstrates eye-hand coordination and dexterity needed to manipulate objects.
- Flower or Leaf Pounding: Gather flowers or leaves, trim them so they can lay flat and place them on a piece of muslin fabric, watercolor or other thick, acid free paper. Place a piece of paper towel over the leaves or flowers and invite children to use a mallet to gently tap over the leaves or flowers. Periodically remove the paper towel and gently lift the edge of a leaf or flower petal until a print of the leaf or flower is visible. Encourage children to work carefully and persistently until the entire flower, leaf or plant print is visible. If the leaf or flower is too wet to remove, allow some time for it to dry before pulling it up from the paper.
  PK.ATL.5 Demonstrates persistence.
  √ Opportunity for Assessment
  Does the child continue to work on the project until a print of the entire flower or leaf is visible? If s/he encounters a problem while working how does s/he attempt to resolve it?
- Plant Painting: Provide parts of plants such as flowers, stems or twigs for children to use to paint with in place of a paint brush. Encourage children to consider what type of mark each plant piece will make when used as a painting tool. As they explore painting with the different plant parts, be sure to highlight the name of each part such as *flower, leaves, stem* and *roots.*
  PK.CLL.2 (Approaches to Communication): Demonstrates he/she is building background knowledge.

and draw or write about what they see, smell, feel, hear and taste. Guide the children through the tasting portion of the observation making sure to follow proper procedures around eating in the classroom. After children have sampled the herbs they can write about the experience. They can write about how the herbs look, feel, smell, sound and taste.
PK.PDH.1 Uses senses to assist and guide learning.

- Where Does This Plant Grow? Supply pictures of a variety of types of plants as well as pictures of the landscapes in which each type of plant grows. Invite children to match the plant to its habitat. For example, include a cactus and a desert scene, seaweed and an ocean scene, a palm tree and a beach scene. This can also be used as a memory game.
  PK.CLL.2 (Approaches to Communication): Demonstrates he/she is building background knowledge.
- Class Plant: Pick seeds that grow quickly, such as lima beans, to plant in the classroom. Create a class chart of predictions on how long it will take for the seeds to grow. Invite the children to measure the plant growth periodically and record the results.
  PK.CKW.1 (Mathematics: Measurement and Data): Identify measurable attributes of objects such as length and weight. Describe them using correct vocabulary (e.g., small, big, short, tall, empty, full and light).
- Observe Seeds: Provide an assortment of seeds from fruits and vegetables the children are familiar with. Place them in specimen jars or small, sealable plastic bags. Invite children to observe and write or draw their observations. Talk with the children about the types of seeds and children's experiences with the fruits and vegetables throughout the experience. As the plants grow, children can draw and write about the life cycle of the plants.
  PK.CKW.5 (Science): Observes and describes characteristics of living things.
- Dissect a Seed: Soak a bean or seed (e.g., lima bean, corona bean) in water until it is soft enough to open. Provide a diagram of the parts of a seed (see Section XI: Appendices) and toothpicks for children to use to dissect the bean. Encourage children to refer to the diagram and find each of the parts pictured in the seed they are dissecting.

• Plant Stamps: Provide parts of plants such as flowers or leaves, invite children to dip them into a small amount of paint and press them onto a piece of paper similar, to a stamp. *PK.CKW.1 (The Arts): Expresses oneself and represents what s/he knows, thinks, believes and feels through visual arts.* • Leaf Rubbing: Supply leaves and crayons for children to use in creating leaf rubbings. Remove the paper casing from the crayons, place the leaves under a piece of paper and invite children to rub the side of the crayon over the paper and watch for the shape of the leaf to emerge. Encourage children to persist until the entire leaf is visible. *PK.ATL.5 Demonstrates persistence.* • 3-D Plants: Invite children to use recycled materials such as cardboard boxes or tubes and empty, clean food containers, to create three-dimensional plants. Supply live plants, plastic or silk plants or pictures of plants for children to reference as they build their own plants. Encourage children to name the plants and make their own labels for them. *PK.CKW.1 (The Arts): Expresses oneself and represents what s/he knows, thinks, believes and feels through visual arts.* • Suncatchers: Supply clear contact paper and tissue paper for children to use to create suncatchers, or, on a larger scale, a stained glass window. Place the contact paper, sticky side up, on a table or attach to a window and invite children to use tissue paper to create flowers or plants on the paper. Hang in a window. *PK.CKW.1 (The Arts): Expresses oneself and represents what s/he knows, thinks, believes and feels through visual arts.* • Suggested Text: A Seed Is Sleepy by Dianna Hutts Aston. Invite children to reflect on the art in this book and share their thoughts and opinions.	*PK.CLL.3 (Approaches to Communication): Demonstrates that he/she understands what they observe.* **√ Opportunity for Assessment** Is the child able to use vocabulary relevant to his/her observations? Does s/he ask questions, make inferences and draw conclusions based on the diagram and the seed? • Compare and Contrast: Provide several types of seeds and invite children to compare and contrast them. This can also be done with leaves, flowers or other plant parts. *PK.CLL.2 (Approaches to Communication): Demonstrates he/she is building background knowledge.* • Plants and Light: Allow children to use the light table to examine plant parts such as flowers and leaves. *PK.PDH.1 Uses senses to assist and guide learning.* • Regrow Vegetables: Some vegetable scraps such as carrot tops, scallions and celery (base) can be regrown by placing them in water. Put each vegetable in a small bowl or container, add a small amount of water and put in a location where the vegetable will get plenty of natural light. Invite children to predict, observe and record what happens through drawing and writing. *PK.CLL.3 (Approaches to Communication): Demonstrates that he/she understands what they observe.* • Growing Races: Plant multiple seeds in separate containers. Ask children to predict which one will grow fastest. Use a chart to record their predictions. Invite children to monitor and compare the growth daily. *PK.CKW.1 (Mathematics: Measurement and Data): Identify measurable attributes of objects such as length and weight. Describe them using correct vocabulary (e.g., small, big, short, tall, empty, full and light).* • Suggested Text: Seed to Plant by Kristin Baird Rattini. Have this book on hand for children to use a reference throughout the unit.

Toys and Games/Math Manipulatives	Sand and Water/Sensory
• Critical thinking questions/statements: I notice that you ___; what do you notice? What happened when you ___? Why do you think that happened? Tell me about ___. How do you know? If I want to ___, what should I do? Tell me why. • Puzzles: If available, provide puzzles that include different types of plants, such puzzles of farms, rain forests, gardens, flowers or trees. Invite children to assemble the puzzles and encourage them to work to completion. As children assemble the puzzles, highlight relevant vocabulary words such as *farm, flower, garden, fruit, grow, habitat* or *plant* by using them frequently and pointing out corresponding pictures in the puzzles. *PK.ATL.5 Demonstrates persistence.* • Seed Sort: Provide an assortment of seeds and beans as well as trays or containers for sorting. Children can sort by seed color, size, design or by categories of their choosing. If children need assistance in determining categories for sorting, model sorting for them, sharing your thoughts and sorting criteria aloud as you work. *PK.ATL.5 Demonstrates persistence.* • Seeds in a Strawberry: Cut out several paper strawberries. Add a number to each one and ask children to put the appropriate number of seeds on each strawberry. This can also be implemented with another type of fruit or by putting petals on a flower, leaves on a plant etc. Encourage children to write their own numbers as they are ready. *PK.CKW.3 (Counting and Cardinality): Understand the relationship between numbers and quantities to 10; connect counting to cardinality.* • Food and Plant Memory: Create a memory game that includes pictures of food as well as where the food grows. For example, a picture of an apple and an apple tree would be a match, grapes and a grape vine would be a match and a coconut and a palm tree would be a match. Consider adding the name of each plant to the picture and highlighting the first letter. *PK.ATL.5 Demonstrates persistence.* • Seed Patterns: Provide an assortment of seeds as well as a large flat surface and invite children to create patterns with the seeds. Explain	*There should always be materials available in a sensory table that allow children to dig, scoop, pour, fill containers, and experiment with the sand/water.* • Critical thinking questions/statements: What happens when ___? How do you think that works? How could you change that? What does that remind you of? What would happen if ___? Tell me more. • Soil and Seeds: Add potting soil and seeds as well as gardening tools such as gloves, small spades, trowels, rakes, watering cans etc. Invite children to play with the materials and observe the seeds over the course of a few days (make sure that the soil is dry, so that it remains pourable). *PK.CKW.5 (Science): Observes and describes characteristics of living things.* • Seaweed: Add plants or seaweed (plastic or real, if available) to the water in the sensory table along with pretend fish, toy boats etc. Invite children to talk about the different places they can find plants and discuss why plants grow in the bottom of oceans, rivers, lakes etc. *PK.CKW.3 (Science) Generates explanations and communicates conclusions regarding experiments and explorations.* **√ Opportunity for Assessment** What ideas does the child have about where plants grow as well as why plants grow in the bottoms of oceans, rivers, lakes etc.? • Frog Pond: Use green foam pieces to create water lilies, add them to the water in the sensory table along with toy frogs and invite children to play in the pond. *PK.ATL.1 Actively and confidently engages in play as a means of exploration and learning.* • Plant Parts: Place an assortment of plant parts in a sensory table or supplemental tray or bin. Invite children to explore. Consider adding flowers, stems from various plants, a variety of leaves, bark from trees, small twigs as well as roots. Supply paper and writing utensils as well so children can draw or write about their observations. *PK.PDH.1 Uses senses to assist and guide learning.* • Build a Greenhouse: Add empty, clean, clear plastic recycled containers such as berry containers, 2-liter bottles cut in half, take-out containers

that a pattern is made up of a core unit that repeats (for example: red, blue… red, blue… red, blue). Consider starting patterns and asking children who need extra support with this activity to extend them. *PK.CKW.2 (Operations and Algebraic Thinking): Duplicate and extend (e.g., what comes next?) simple patterns using concrete objects.* • Flower Arrangements: Provide a colander as well as fake flowers. Turn the colander upside down and invite children to stick the stems of the flowers through the holes in the colander to create a flower arrangement. Provide paper or gift tags and writing utensils and invite children to create cards to go with the arrangements. *PK.PDH.5 Demonstrates eye-hand coordination and dexterity needed to manipulate objects.* **√ Opportunity for Assessment** Is the child able to fit the flower stems into the colander holes? • Compare Heights: Cut out a tree that is approximately the same size as many of the children in the class. Hang it on the wall and invite children to see if the tree is taller or shorter than they are. Children can write their names on the tree to indicate their own height. *PK.CKW.1 (Measurement and Data): Identify measurable attributes of objects such as length and weight. Describe them using correct vocabulary (e.g., small, big, short, tall, empty, full and light).* • Suggested Text: Ten Red Apples by Pat Hutchins. Cut out small apples from paper about the size of the apples in the book. Invite children to use them as they read or retell this story.	etc. as well as small cups or planting containers, dirt or soil and seeds to the sensory table for children to use to create their own greenhouses. Use the word *greenhouse* frequently as children play and create. Consider hanging pictures of greenhouses on the wall near the sensory table and be sure to offer a description of greenhouses and their purpose for children who may be unfamiliar with them. Also include paper and writing utensils if children would like to name and create a sign for their greenhouses. *PK.ATL.3 Approaches tasks, activities and problems with creativity, imagination and/or willingness to try new experiences or activities.* • Suggested Text: Ocean Sunlight: How Tiny Plants Feed the Seas by Molly Bang. Invite children to reference this book as they create or play with underwater environments (i.e. Seaweed or Frog Pond activity suggestion).
Library • Critical thinking questions/statements: Tell me about that book. What do you like about it? What is your favorite part of this book? Why? Would you recommend it to a friend? Why or why not? • Add a selection of both fiction and nonfiction books from the Supporting Text List in Section V for children to access and independently explore related to the study. *PK.CLL.4 (Reading Standards: Foundational Skills): Displays emergent reading behaviors with purpose and understanding.* • Felt Board Story: Create felt board pictures for a favorite class book on plants. Invite children to use the pictures to retell the story.	**Cooking and Mixing (as needed)** • Critical thinking questions/statements: Why do you think we are adding ___? What would happen if ___? What do you notice as we do this? How do you think it will taste? How does it smell? How does it feel? What does it look like? What does this remind you of? • Vegetable or Fruit Salad: Invite children to create a list of vegetables or fruits that people eat (this list can be made up of words, drawings or both). Use this list to provide vegetables or fruit for a salad. Provide and read through a child-friendly recipe with step-by-step directions (see **Unit 2: My Five Senses** for a sample child-friendly recipe format) for children to follow as they make the salad.

PK.CLL.2 (Reading Standards for Literature): With prompting and support, retell familiar stories.

√ Opportunity for Assessment

Is the child able to retell a familiar story? What details does s/he include?

- Plant Growth: Create felt board pieces that represent the growth of a plant. Invite children to sequence the pieces. Be sure to use the appropriate vocabulary words with children such as *seed, bud, bulb, seedling* and *sprout* as you scaffold children's learning. Children can assist you in writing the word to match the different stages.
  PK.CLL.6 (Speaking and Listening Standards): With prompting and support, use words and phrases acquired through conversations, reading and being read to, and responding to texts.
- Author Study: Place several of Lois Ehlert's plant-related books (e.g., Growing Vegetable Soup, Planting a Rainbow, Red Leaf, Yellow Leaf) in a basket in the library. Share that the same person wrote the words for all of these books so they all have the same author. Encourage children to explore the books and provide reactions to them. Which did they like best and why? What did they think about the book? What do they think about the illustrations? Etc.
  PK.CLL.6 (Speaking and Listening Standards): Demonstrates an emergent ability to express thoughts, feelings and ideas.
- Gardening Magazines: Add an assortment of gardening magazines or other print materials that have pictures of plants and invite children to read the materials. Talk with the children about the magazines.
  PK.CLL.3 (Reading Standards for Informational Text): With prompting and support, describe the connection between two events or pieces of information in a text.

PK.CKW.5 (Science): Observes and describes characteristics of living things.

- Eating Seeds: Invite children to cut open a squash, remove the seeds and roast. After the seeds are roasted children can try them.
  PK.CKW.5 (Science): Observes and describes characteristics of living things.
- Taste Test: Invite children to sample a variety of fruits and vegetables. Create a chart for them to record their favorites. Use the word *edible* frequently throughout this activity to help children learn this vocabulary word.
  PK.SED.1 Recognizes himself/herself as a unique individual having his/her own abilities, characteristics, feelings and interests.
- Playdough Prints: Invite the children to help create a batch of playdough. As you prepare the playdough talk with the children about how the ingredients came from plants such as how the flour was grown, harvested and ground. After the dough is complete, allow children to use parts of plants such as leaves, stems, flowers etc. to create prints in the dough.
  PK.CKW.1 (Science): Asks questions and makes predictions based on observations and manipulation of things and events in the environment.
- Suggested Text: Eating the Alphabet: Fruits and Vegetables from A to Z by Lois Ehlert. As children use this Center, invite them to consider the first letter of the foods they are using and/or eating.

Notes:

- Be mindful of children's food intolerances and allergies by connecting with families before you do cooking activities and explicitly teaching children how being aware of allergies keeps us safe.
- Children must always wash hands before and after cooking experiences.
- Snacks and meals must be of adequate nutritional value. When providing snacks and meals, supplement with other components of a healthy meal/snack according to USDA meal guidelines in order to make sure children's nutritional needs are met.

Computer/Technology

Content should be free of product placement/advertising. Children are not to use computers or other devices with screens more than 15 minutes per day, with a maximum of 30 minutes per week. Exceptions to this limit may be made for children with disabilities who require assistive computer technology as outlined in their Individualized Education Program.

- Pull up pictures of plants that grow in different parts of the world or may be novel to the children. For example, succulents, palm trees and cattails may be plants that children in New York City do not see on a regular basis. Invite children to take notes while they look at different types of plants. For example, they can draw pictures of what they see or write letters they hear in the names of plants they hear or see on the screen. Provide various types of paper commonly used for notetaking such as lined paper, post-it notes etc. Children can draw or write what they find and use these pictures and notes to influence their work in other centers such as when they build gardens in Dramatic Play or make 3-D plants in the Art Center.
  PK.CLL.2 (Writing Standards): With prompting and support, use a combination of drawing, dictating, or writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.
- Work with children to use the internet to find recipes they can use to cook various fruits or vegetables. Help them compare and contrast the recipes and determine which to prepare. After selecting a recipe, try making it as a class. Consider recipes that reflect the cultures of the children in your class.
  PK.CLL.3 (Reading Standards for Informational Text): With prompting and support, describe the connection between two events or pieces of information in a text.
- Invite children to help you find pictures of cotton plants. Use this to begin a discussion on cotton, how it becomes fabric and some common uses for cotton. Children can also join in the process of using the computer to gain further information about this topic. See Section VII: Supporting Resources for more information on cotton.

Outdoors/Playground

- Critical thinking questions/statements: I saw you do ___; what will you do next? If you try ___, what do you notice? How did you do ___?
- Community Walk: Go on a community walk. Encourage children to note what plants they see on the walk. Highlight any plants you see that are also on the vocabulary list such as *evergreen, bush, flower, grass* as you walk and talk with the children. Consider inviting children to bring a clipboard, paper and writing utensil on the walk to record their observations independently. When you return to the classroom, encourage children to refer to their notes and write or draw about the walk and the plants they saw on the walk.
  PK.CLL.2 (Writing Standards): With prompting and support, use a combination of drawing, dictating, or writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.
- Plant Study: Choose a nearby tree or plant for the class to observe. Provide paper and writing utensils for children to record their observations through drawing and/or writing. Encourage children to observe the plant/tree carefully and notice differences from observation to observation. In spring, focus on when trees begin to form buds and when the buds open to produce leaves. In fall, watch the leaves change color and fall from the tree.
  PK.CLL.3 (Approaches to Communication): Demonstrates that he/she understands what they observe.
- Class Garden: If possible, create a class garden outdoors. If necessary, begin the garden inside and move the plants outside when the weather permits. Invite the children to help plan the garden by considering what to plant and what you will need to do in order to begin planting. Help them consider what to grow, how to prepare and how to maintain the garden over time.
  PK.ATL.5 Demonstrates persistence.
- Plant Count: Invite children to tally the number of plants they can find in the playground or outdoor space. If children would like, they can also draw pictures or write the names of the plants.
  PK.ATL.5 Demonstrates persistence.

PK.CKW.5 (Technology): Uses the knowledge of technology to increase learning. **√ Opportunity for Assessment** How does the child use the computer to explore this concept?	• Landscape Painting: Bring painting materials outside and invite children to paint what they see. If desired, pick a specific area of the space that includes the highest concentration of plants or ask them to pay special attention to the plants around them. Use the word *landscape*—and encourage children to use this word as well—as they paint and reflect on their paintings. *PK.CKW.5 (Science): Observes and describes characteristics of living things.* • Suggested Text: Wiggling Worms at Work by Wendy Pfeffer. After reading about worms, invite children to dig in the dirt outside, if possible, and look for worms. Be sure children wash their hands when finished.
Writing • Critical thinking questions/statements: I notice that you ___; that reminds me of ___. What if you try ___? • Plant Encyclopedia: Create a plant encyclopedia with pictures and names of an assortment of plants that may be familiar as well as those that may be novel to the students. Children can draw and label pictures of plants that are near the places they live or on their way to school, or they can focus on other plants they find interesting. *PK.CLL.6 (Approaches to Communication): Demonstrates a growing expressive vocabulary.* • Stop and Smell the Flowers: Provide several types of flowers and invite children to smell them and then write or draw about what they notice about the smells or which smell they like best and why. Be mindful of allergies when selecting which flowers to use. *PK.SED.1 Recognizes himself/herself as a unique individual having his/her own abilities, characteristics, feelings and interests.* • Gardening Magazine: After exploring existing gardening magazines in the library, invite children to create their own gardening magazines. As they create, they can write articles, draw or add pictures and talk about the roles of author and illustrator. *PK.CLL.6 (Reading Standards for Informational Text): With prompting and support, can describe the role of an author and illustrator.*	**Music and Movement** • Critical thinking questions/statements: I see you moving like this. I heard you ___ / saw you ___; tell me about that. Let's try playing the music loud (or soft, fast, slow). Can you try this? How does this music make you feel? Have you heard music like this before? Where? • Felt Songs: Cut out felt pieces that coordinate with a few of the children's favorite plant songs (see Section VIII: Supporting Resources) and provide them for independent or small group play. *PK.ATL.1 Actively and confidently engages in play as a means of exploration and learning.* • Dance Sentence: Pick three words that connect to plant growth such as *open*, *grow* and *bend*. Create pictures of each of these words. Introduce the words, pictures and ways children can move their bodies to represent these words in relation to plants and then hang the pictures in the Music and Movement area to inspire children's independent dance. *PK.PDH.2 Uses sensory information to plan and carry out movements.* • Movement Dice: Use a large die or a box or cube large enough to include pictures of various plant types or stages of the plant life cycle and put the pictures on the sides of the die. Invite children to toss the die then use their bodies to represent what they see in the pictures on the die.

• Garden Labels: Invite children to create labels for the plants the class grows in the Dramatic Play garden or other plants the class decides to grow throughout the unit. *PK.CLL.2 (Language Standards): Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.* **√ Opportunity for Assessment** What letters is the child able to print? • Seed Letters: Write letters on index cards. Provide seeds for children to place on the letters. Talk with the children about the letters they chose to create and some of the words that start with those letters. Children can glue the seeds on to the letters or do this activity without glue, empty and reuse the cards after each use. • List Poems: After creating a class list poem, invite children to create their own poems in the Writing Center. Children can refer to the various books on plants or the class Plant Encyclopedia when creating their poems. *CLL.11 (Writing Standards): Create and present a poem, dramatization, art work, or personal response to a particular author or theme studied in class, with prompting and support as needed.* • Suggested Text: Chicka Chicka Boom Boom by Bill Martin, Jr. Add an assortment of small plastic letters and a drawing of a tree. Invite children to use the letters to retell the story.	*PK.CKW.7 (The Arts): Expresses what s/he knows, thinks, feels and believes through dance and creative movement.* • Suggested Text: Flip, Float, Fly: Seeds on the Move by JoAnn Early Macken. Invite children to act out and explore some of the movement words from this text.

V. Supporting Texts

Books are essential to a well-planned unit and ground the learning experiences for children. Engage children with books throughout the day. Read alouds can occur in large group and small group as well as in centers. Books can be incorporated throughout the room and enhance children's learning through play. Some books are read repeatedly throughout the unit; these are foundational texts. Some books will be read only once or twice throughout the unit; these are supporting texts. Supporting texts complement focus questions and areas of interest or may be related to the essential question or enduring understandings of the unit. Select the books that seem most relevant to your classroom community. Choose a balance between informational texts and literature to help children understand the scientific content of this unit and help them connect to this increasingly abstract concept. The following list is not exhaustive and can be supplemented by similar books. Not only can these books be read aloud both formally and informally, but children should also be able to access and read these books on their own. Allowing children access to classroom books encourages children to display emergent reading behaviors and address *PK.CLL.4 (Reading Standards: Foundational Skills): Displays emergent reading behaviors with purpose and understanding (e.g., pretend reading).*

**Books with an asterisk are also available in languages other than English.*

Bee-bim Bop! by Linda Sue Park: A hungry Korean-American child tells about helping her mother make a traditional Korean dish.
*The Carrot Seed by Ruth Krauss: Everyone thinks the seed won't grow except for the young boy who planted it.
Chicka Chicka Boom Boom by Bill Martin, Jr: Can the whole alphabet fit in the coconut tree?
Cooking With Sunshine: How Plants Make Food by Ellen Lawrence: Explains the process of photosynthesis and how it powers the lives of plants.
Composting: Nature's Recyclers by Robin Koontz: Explore composting!
Eating the Alphabet: Fruits and Vegetables from A to Z by Lois Ehlert: An alphabetic introduction to fruits and vegetables from around the world.
Flip, Float, Fly: Seeds on the Move by JoAnn Early Macken: A gust of wind gives lifts a maple seed, sending it spinning like a shiny green helicopter through the sky. Where will it land?
Flowers are Calling by Rita Gray: Flowers are calling to the animals of the forest.
*Food from Farms by Nancy Dickmann: There are many different farms which produce many different types of food.
From Flower to Honey by Robin Nelson: Follow each step in the production of honey.
From Seed to Plant by Gail Gibbons: Explore the intricate relationship between seeds and the plants they produce.
From Wheat to Bread by Stacy Taus-Bolstad: An introduction to the process of making bread from wheat.
Go, Go, Grapes! A Fruit Chant by April Pulley Sayre: This chant helps celebrate the joy of healthy eating.
Green Kid's Guide to Composting by Richard Lay: How to make a compost bin and use compost to fertilize a garden without the use of chemicals.
Green Kid's Guide to Watering by Richard Lay: How to plant seeds in a raised bed and keep it properly watered.
*Growing Vegetable Soup by Lois Ehlert: A father and child plant a family garden.
*How a Seed Grows by Helene J. Jordan: How does a tiny acorn grow into an enormous oak tree?
How Does a Seed Sprout? And Other Questions About Plants by Melissa Stewart: A virtual garden of information on seeds and plants.

If You Plant a Seed by Kadir Nelson: Small acts can have great power.
Let's Go Nuts! Seeds We Eat by April Pulley Sayre: What do nuts, beans, grains and even some spices have in common?
The Little Red Hen by Paul Galdone: No one wants to help the Little Red Hen make the cake but everyone wants to eat it!
Lola Plants a Garden by Anna McQuinn: After Lola reads a book about garden poems she wants to plant some flowers.
Ocean Sunlight: How Tiny Plants Feed the Seas by Molly Bang: A picture of the life cycles and food chains deep within our oceans.
Plants Feed Me by Lizzy Rockwell: Explore the edible parts of plants such as leaves, flowers, stems, roots and seeds.
*Planting a Rainbow by Lois Ehlert: A guide to understanding how to plant bulbs, seeds and seedlings as well as nurture their growth.
Poetrees by Douglas Florian: A poetic exploration of trees.
Rah, Rah, Radishes! A Vegetable Chant by April Pulley Sayre: Veggies take the stage in a rollicking ode to healthy eating.
Red Leaf, Yellow Leaf by Lois Ehlert: An introduction to the life of a tree.
Seeds by Ken Robbins: Learn how seeds grow as well as how they vary in shape, size and dispersal patterns.
A Seed Is Sleepy by Dianna Hutts Aston: An informative look at the intricate, complex and often surprising world of seeds.
Seed to Plant by Kristin Baird Rattini: See how plants grow.
Seed to Plant by Lisa M. Herrington: The bright, giant sunflower begins as a tiny black seed.
So Happy! by Kevin Henkes: There once was a boy, a rabbit, a magic seed and a book…
Stone Soup by Heather Forest: If each person makes a small contribution the result can be huge.
Tap the Magic Tree by Christie Matheson: Help a tree change through the seasons.
Ten Red Apples by Pat Hutchins: There are ten red apples hanging on the tree. Yippee, fiddle-dee-fee!
The Tiny Seed by Eric Carle: The life cycle of a flower told through the adventures of a tiny seed.
Titch by Pat Hutchins: Titch is little and so is everything he has until one day his little seed grows much bigger than everything he has.
Underground by Denise Fleming: The down and dirty secrets of underground creatures.
The Watermelon Seed by Greg Pizzoli: What will happen if a crocodile swallows a watermelon seed?
Wiggling Worms at Work by Wendy Pfeffer: Explore how worms enrich the cycle of life.

VI. Sample Weekly Plan

UNIT TITLE: Plants
WEEK ONE

Essential Question: How do plants grow and why are they important?
Focus Question: What are plants?
Focus Vocabulary: botany, bud, bulb, branch, dirt, flower, food, fruit, grow, leaves, nutrients, petals, plant, pollen, rain, roots, seed, seedling, soil, sprinkler, sprout, stem, sunlight, trunk, vine, water, watering can

	Monday	Tuesday	Wednesday	Thursday	Friday
Greeting Routine	Continue to supply a table with child-sized pencils, crayons or other writing tools, half sheets of paper or large chart paper, and a basket of name/picture cards for each child (laminated cards with each child's picture and first name, with the first letter in red). Remind children to sign in if necessary and continue to **encourage any mark** children make according to each child's needs, but be prepared to help children who are ready for additional challenges. For children who are ready for additional challenges, consider adding the first letter of their last name, their entire last name, encouraging them to look closely at the model letters on their name card to improve accuracy, or allowing them to sign in without using their name/picture card. Observe children's writing and refer to the stages of prewriting (in unit three, "All About Us") to determine what to expect next and how to best support the continued development of the child. This activity can be done as children arrive or later in the day. If children seem uninterested in signing in this way, consider encouraging them to write their names throughout their Center Time play. For example, children can add their own names to their artwork or create their own name cards to save their structures in the Block/Construction Area. *PK.CLL.1 (Language Standards): Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.*				
Large Group Meeting (In order to reduce the amount of time children spend in large group and ensure that children have enough time to engage in meaningful play, teachers should think strategically about other whole group activities and whether they are essential to the day.)	What do you know about plants? Ask children to share what they know about plants. Chart their responses. Help children make the connection to the study of water in the last unit and how plants need water.	Plant Song: Share the song below with the class. Sing or chant it multiple times inviting children to join in as they feel comfortable. Consider adding gestures to the song as well. Plants need soil, Plants need light.	Parts of a Plant Diagram: Show children a real plant. Tell them you are going to draw the plant. Ask the children what they notice about the plant, and on a large piece of paper, using only one color, draw a basic diagram of the parts of the plant the children	Foundational Text Read Aloud: Read Up in the Garden Down in the Dirt by Kate Messner aloud to the class. See page 35 for lesson plan and Section IX for Inquiry and Critical Thinking Questions.	Sing: *And the Green Grass Grew All Around, All Around.* See section VII Supporting Resources for lyrics. Write the lyrics out for the children on large chart paper. Sing the song for the children, repeating as necessary and invite them to join

	Note any words that may be new to some children in the class as you build on the vocabulary they already know. You can note these words by highlighting them or by jotting them down separately. *PK.CLL.3 (Language Standards): Use knowledge of language and how language functions in different contexts.*	Water plants so they grow right. If you want your plants to grow, This is what you need to know. Plants need soil, Plants need light. Water plants so they grow right. *PK.CKW.5 (Science): Observes and describes characteristics of living things.*	notice. Use the appropriate vocabulary words as children share them and/or as you add them to the diagram. There may be parts of the plant children do not mention. Highlight these parts for them and add them to the diagram. Tell children they will have an opportunity to look at the plant closer during small group. If you do not have a plant available, use a picture of a plant instead. See Section XI: Appendices for diagram of basic plant parts. *PK.CKW.5 (Science): Observes and describes characteristics of living things.*		in as they feel comfortable. *PK.CKW.4 (The Arts): Responds and reacts during musical activities.*
Foundational Text	Up in the Garden and Down in the Dirt by Kate Messner				
Supporting Text	The Watermelon Seed by Greg Pizzoli	A Tree is a Plant by Clyde Robert Bulla	Planting a Rainbow by Lois Ehlert	Titch by Pat Hutchins	If You Plant a Seed by Kadir Nelson

Small Groups Implement at least two of the three small group activities per week. *Small groups can be implemented during Center Time or at another time during the day. Invite 2-4 children to participate at a time. Although children are typically excited about the opportunity to work closely with a teacher, children may decline the opportunity to participate. Each small group should not exceed 10 minutes in length. Work with a couple of groups per day and spend the remainder of the time engaging with children in the interest areas.	LITERACY SMALL GROUP: Parts of Plants Salad: Write out a recipe for a salad that includes many different plant parts such as leaves (lettuce or spinach), roots (carrots), stems (celery) and fruit (apple). See **Unit 2: My Five Senses** for a sample child-friendly recipe. Invite children to read through the recipe with you and follow the recipe directions to create their own salad. Group 1: Group 2: Group 3: Group 4: Group 5:	MATH SMALL GROUP: Measuring Plants. Supply several small plants or pictures of small plants as well as a container of small cubes (All of the cubes should be the same size). Invite children to use the cubes to measure the plants and share how many cubes tall each plant is. Group 1: Group 2: Group 3: Group 4: Group 5:	SMALL GROUP #3: Explore a Plant. Invite children to further explore the plant you diagrammed in Whole Group. Engage children in discussions about the parts of the plant and why each piece is important. Additionally, children can draw or write about their experiences. *PK.CLL.6 Demonstrates a growing expressive vocabulary.* Group 1: Group 2: Group 3: Group 4: Group 5:	Between Monday and Thursday, implement at least two of the three suggested small group activities. Group 1: Group 2: Group 3: Group 4: Group 5:	Catch-up Day: Use this as an opportunity to complete small groups with children you may have missed throughout the week. Children to work with today (initials):

Small Group Tips	*4 Quick Tips for Small Group:* • *Use exciting language and affect to describe the small group activity.* • *Use hands-on materials that children are encouraged to explore.* • *Preview small group activities in whole group.* • *Link the activity to children's previous experiences.* *If children still decline…* • *Have a private conversation with the child as s/he plays to understand why s/he did not want to join. Take that into consideration and adjust the small group materials to reflect the needs of the child.* • *Modify the small group activity so that you can do it with the materials that the child is using in the center of his or her choice.* • *Facilitate a conversation between the child and a friend who enjoyed the small group activity so that the hesitant child will be more likely to join.*				
Outdoors	See Section IV, Ideas for Learning Centers.				
Lunch	Are you eating any plants? Discuss the plants the children are eating. If children are eating multiple plants, compare them. If children are eating food that was made from plants, discuss the plants and the process of preparing the food.				
Centers	See Section IV, Ideas for Learning Centers.				
Opportunities for differentiation and integration of goals for children with IEPs	(To be completed as needed by teachers.)				
Differentiation for children whose home language is a language other than English	(To be completed as needed by teachers.)				

VII. Sample Student Work

Below are examples of student work from activities in this unit. Note the alignment to standards and the relationship to the focus question and PKFCC standard. Some examples may fit under more than one standard and/or focus question.

Example 1: 3-D Plants
Activity Type: Center Time
Focus question: What are some different kinds of plants?
PKFCC Standard: *PK.CKW.1 (The Arts): Expresses oneself and represents what s/he knows, thinks, believes and feels through visual arts.*

"I'm making a cactus. The spines are sharp. They are the parts sticking out. I am painting it green because the cactus in the picture is green."

Example 2: Class Plants
Activity Type: Center Time
Focus question: What are some different kinds of plants?
PKFCC Standard: *PK.CKW.5 (Science): Observes and describes characteristics of living things.*

"I'm observing our plants. This one is the cactus. It only needs a little water. I'm going to draw it so I'm looking carefully."

VIII. Supporting Resources

Teacher Texts

Hollyhocks and Honeybees: Garden Projects for Young Children by Sara Starbuck, Marla Olthof and Karen Midden
Involving Families and Community Through Gardening by Sara Starbuck and Marla R. Olthof
Science Education Through Gardening and Nature Based Play by Alyse C. Hachey and Deanna L. Butler

Teacher Websites

Brooklyn Botanic Garden: http://www.bbg.org/
Central Park Conservancy: http://www.centralparknyc.org/
Cotton - A Natural Fiber: http://www.english-online.at/biology/cotton/cotton-a-natural-fiber.htm
GreenThumb Community Gardening: http://www.greenthumbnyc.org/
Kidsgardening.org - A resource of the national gardening association: http://www.kidsgardening.org/
New York Botanical Garden: http://www.nybg.org/
New York Restoration Project: https://www.nyrp.org/
Prospect Park Alliance: https://www.prospectpark.org/
Prospect Park Audubon Center: https://www.prospectpark.org/visit-the-park/places-to-go/audubon-center/
Queens Botanical Garden: http://www.queensbotanical.org/
Urban Park Rangers: http://www.nycgovparks.org/programs/rangers
Wave Hill Public Garden and Cultural Center: https://www.wavehill.org/
Zucker Natural Exploration Area: https://www.prospectpark.org/visit-the-park/places-to-go/playgrounds/zucker-natural-exploration-area/

Music

These are common preschool songs sung by teachers throughout New York City and the world. Where possible, tunes and lyrics are included. If you don't know the tune, you can make one up that works for you or chant the words to a beat. Disclaimer: the lyrics provided are only for use by classroom teachers and are provided for the specific, non-profit educational purpose of supporting interdisciplinary learning in your classroom.

Song Titles
The Farmer in the Dell
Mary, Mary Quite Contrary
John the Rabbit
Tree Song by Lorraine Hammond

Songs with Lyrics

And the Green Grass Grows All Around

There was a tree,
In the middle of the ground,
The prettiest tree,
That you ever did see.
A tree in a hole,
A hole in the ground,
And the green grass grows all around, all around,
And the green grass grows all around.

And on that tree,
There was a branch,
The prettiest branch,
That you ever did see.
A branch on the tree,
The tree in the hole,
A hole in the ground,
And the green grass grows all around, all around,
And the green grass grows all around.

And on the branch,
There was a nest,
The prettiest nest,
That you ever did see.
A nest of the branch,
The branch on the tree,
The tree in the hole,
The hole in the ground,
And the green grass grows all around, all around,
And the green grass grows all around.

And in that nest there was an egg…

IX: Inquiry and Critical Thinking Questions for Foundational Texts

Critical thinking skills are foundational to learning and educational success. These questions are based around Webb's Depth of Knowledge Wheel (http://schools.nyc.gov/NR/rdonlyres/522E69CC-02E3-4871-BC48-BB575AA49E27/0/WebbsDOK.pdf) which provides a vocabulary and critical thinking frame of reference when thinking about our children and how they engage with unit content. A **PKFCC** standard is also listed for each text. This standard addresses several of the questions provided for each book. Reread foundational texts throughout the unit, starting with Level 1 questions and adding more complex questions each time you read them.

Up in the Garden and Down in the Dirt by Kate Messner

PK.CLL.1 (Approaches to Communication): Demonstrates that they are motivated to communicate.

Level 1: Recall

What are some things that happen up in the garden?
What are some things that happen down in the dirt?
What happens in the garden at night?

Level 2: Skill/Concept

What does it mean for some things to be up in the garden and other things to be down in the dirt?
Why do the little girl and Nana water the garden?

Level 3: Strategic Thinking

What happens in the garden in the fall?
What does the garden do in the winter?

Level 4: Extended Thinking

Why do different things happen in the garden at different times?
The words in this book make a pattern. We hear about things that are up in the garden, down in the dirt, then up and back down again. The pattern is up, down and up, down and up, down. Can you find another pattern somewhere in our classroom?

The Curious Garden by Peter Brown

PK.CLL.11 (Reading Standards for Literature): With prompting and support, make connections between self, text and the world around them (text, media, social interaction).

Level 1: Recall

Where did the garden start growing?
Where did the garden spread?
What did Liam do in the winter?

Level 2: Skill/Concept
How does the city look at the beginning of the book? How does the city look at the end of the book? Do you prefer the way it looks at the beginning or the end? Why?
The book says that Liam didn't feel like a gardener at first but after a while he did. Why do you think that happened?
Other people in the city decided to be gardeners too. Why do you think they wanted to be gardeners?

Level 3: Strategic Thinking
Do you think the people in the city felt different after there were many gardens and plants growing in the city? Why or why not?
How do plants and gardens make you feel?

Level 4: Extended Thinking
Can you be a gardener? Why or why not?
If you were going to grow a garden, what would you need? What would you do?

An Orange in January by Dianna Hutts Aston
PK.CLL.6 (Reading Standards for Literature): With prompting and support, can describe the role of an author and illustrator.

Level 1: Recall
Where was the orange at the beginning of the book?
Where was the orange at the end of the book?
How did the orange get from the tree to the grocery store?

Level 2: Skill/Concept
The book says, "The petals fell away and the orange began to grow into what it was meant to be." What was the orange meant to be?
How did the boy get the orange?

Level 3: Strategic Thinking
The boy shared the orange. Why do you think he did that?
How do you think the other children felt when he shared the orange with them?

Level 4: Extended thinking
The illustrator of this book, Julie Maren, used curly lines to show the wind. Why do you think she did that? How would you show wind in a picture?
How did Julie Maren illustrate the sun? Why do you think she did that? How would you show the sun in a picture?
How did Julie Maren illustrate the rain? Why do you think she did that? How would you show the rain in a picture?
This book talks about how an orange grows and travels. How do you think other fruits grow and travel?

The Vegetables We Eat by Gail Gibbons
PK.CKW.4 (Science): Observes and describes characteristics of earth and science.

Level 1: Recall
What parts of plants can be vegetables?

What are some different types of vegetables?
Where do vegetables grow?
How do vegetables get to grocery stores?

Level 2: Skill/Concept

What are some different ways that you eat vegetables?
What are some things people have to do if they want to grow a vegetable garden?

Level 3: Strategic Thinking

Some people grow their own vegetable garden. If you were going to grow a vegetable garden, what vegetables would you grow? Why?
Why do you think farmers on big farms sometimes use machines to harvest the vegetables?

Level 4: Extended Thinking

Vegetables are good for your body. How do you think they help your body?
Why is it important to take good care of your body?
Vegetables can be different colors. Why do you think vegetables are different colors?

X: Lesson Plans: Foundational Learning Experiences

Please note the PKFCC standards and assessment items listed in each lesson plan. Keep in mind that you may be addressing additional assessment items and standards.

Lesson Title: Up in the Garden and Down in the Dirt by Kate Messner

Lesson Type: Read Aloud

<table>
<tr><td colspan="2">Unit of Study: Plants Unit Focus Question: What are plants?</td></tr>
<tr><td colspan="2">Objective: Children will listen attentively to the book as well as the questions the teacher asks about the book.</td></tr>
<tr><td>PKFCC Focus Standard: PK.CLL.1 (Approaches to Communication): Demonstrates that they are motivated to communicate.

Additional PKFCC Standards: PK.CLL.3 (Reading Standards for Literature): With prompting and support, ask and answer questions about characters and major events in a story.</td><td>Link to Authentic Assessment Systems
WSS: II.A.I: Gaines meaning by listening
TSG: 8: Listens to and understands increasingly complex language
COR: M: Listening and comprehension</td></tr>
<tr><td>Materials:
• Up in the Garden and Down in the Dirt by Kate Messner</td><td>Connected Academic Vocabulary:
dirt, grow, plant, rain, toots, soil, sunlight, water, watering can</td></tr>
<tr><td colspan="2">Procedure:
Hook: Show children the cover of the book.
Beginning:
Share the title of the book.
Share the author's name as well as the illustrator's name.
Ask the children what they think this book is about.
Middle:
Read the book to the children.
Pause throughout the book to ask the questions suggested in Section IX.
End:
Briefly summarize the story for the children.
Ask any additional questions from Section IX as applicable.</td></tr>
<tr><td colspan="2">Assessment: Is the child able to listen attentively to the book as well as the questions about the book?</td></tr>
</table>

Differentiation: Consider multiple entry points for all children to be successful. How do I/we plan to meet individual student needs? For example, repeat directions, extend time, adapt materials, preview questions, and provide 1:1 support. *For children who need additional support:* Read a few pages in the story rather than reading the entire book. Also consider inviting these children to sit next to a teacher. *For children who are ready for a challenge*: Invite these children to think of other things that can happen up in the garden or down in the dirt.
Children with IEPs: How will I incorporate IEP goals into this lesson? What specific accommodations or modifications will I make? How will I collaborate with SEIT and/or related service providers?
Children whose home language is a language other than English: What language is needed to understand the lesson and activity instructions, and to participate in the activity and discussion? Preview new vocabulary words with pictures. Use both English and children's home language(s) if possible. Point to the pictures as you read this book with the children.
Teacher Tip: • As the children become familiar with the book, invite them to join you as you read the repetitive lines, "Up in the garden" and, "Down in the dirt."
Teacher Reflection: What went well? Why? What will I do differently given what I have learned from observing children during this activity? Which children needed differentiation during this activity and how will I meet their needs moving forward?

Foundational Learning Experience Assessment Opportunity

Read Aloud Experience: Up in the Garden and Down in the Dirt by Kate Messner

PKFCC Focus Standard: *PK.CKW.4 (Science): Observes and describes characteristics of earth and space.*
Authentic Assessment Alignment:
WSS: II.A.I: Gaines meaning by listening
TSG: 8: Listens to and understands increasingly complex language
COR: M: Listening and comprehension

Child's name			Notes

Lesson Title: Local Plants
Lesson Type: Walking Field Trip

Unit of Study: Plants	**Unit Focus Question:** What do plants need and where do we find them?
Objective: Children will create drawings to add detail to their descriptions of a walking field trip.	
PKFCC Focus Standard: *CLL.5 (Speaking and Listening Standards): Add drawings or other visual displays to descriptions as desired to provide additional detail.* **Additional PKFCC Standards:** *PK.CLL.2 (Approaches to Communication): Demonstrates he/she is building background knowledge.*	**Link to Authentic Assessment Systems** WSS: II.D.1: Represents ideas and stories through pictures, dictation and play TSG: Uses language to express thoughts and needs COR: X. Art
Materials: • Park, garden, gardening store or greenspace within walking distance of your site to observe	**Connected Academic Vocabulary:** courtyard, field, garden, greenhouse, ground, landscape, lawn, nature, nursery, park, patio, yard

Procedure:

Hook: Share pictures of plants that are common in the neighborhood or the city of New York. This may include pictures of trees on the streets, flowers at a store, a plant growing on a classroom ledge etc. Ask children where they think they might find these plants or where they have seen similar plants.

Beginning:

Introduce that today you will go on a walk to look for plants. Share with the children where you are going.
Invite children to look for plants on this trip. List some of the different types of plants th ey may see.
Remind children of the rules for staying safe on a classroom walk.

Middle:

Transition to outside, making sure that you have enough adults and reminding children of safety rules, as needed.
Point out some of the plants you see on the walk and ask children to point out some of the plants they see as well.
When you arrive at your destination, ask children to look carefully at the plants around them. If possible, invite children to touch and smell the plants.
Model looking, touching and smelling the plants for the children. Highlight interesting details about the plants as well as where they are growing.

End:

When you return to the classroom, invite children to describe the plants they saw as well as where they saw them. Record the children's thoughts on chart paper.
Provide children with paper and writing utensils and ask them to draw pictures of the trip and the responses you charted.

Assessment: What was the child able to recall about the trip? Is the child able to use drawing to enhance descriptions?

Differentiation: Consider multiple entry points for all children to be successful. How do I/we plan to meet individual student needs? For example, repeat directions, extend time, adapt materials, preview questions, and provide 1:1 support. *For children who need additional support:* Take pictures on the walk to provide visual cues for children who may not be able to recall what they saw. *For children who are ready for a challenge*: Invite these children to add their own text to their drawings.
Children with IEPs: How will I incorporate IEP goals into this lesson? What specific accommodations or modifications will I make? How will I collaborate with SEIT and/or related service providers?
Children whose home language is a language other than English: What language is needed to understand the lesson and activity instructions and to participate in the activity and discussion? On the walk, take pictures of some of the plants the children find especially interesting. Have the pictures available for these children to reference as they talk and draw about the trip. Invite a family or staff member who speaks children's home language(s) to join the walking trip.
Teacher Tip: • If a walking field trip is not possible for this activity, consider inviting someone who works with plants to visit the classroom. See Section VII: Supporting Resources for community resource suggestions.
Teacher Reflection: What went well? Why? What will I do differently given what I have learned from observing children during this activity? Which children needed differentiation during this activity and how will I meet their needs moving forward?

Foundational Learning Experience Assessment Opportunity

Walking Field Trip Experience: Local Plants

PKFCC Focus Standard: *CLL.5 (Speaking and Listening Standards): Add drawings or other visual displays to descriptions as desired to provide additional detail.*
Authentic Assessment Alignment:
WSS: II.D.1: Represents ideas and stories through pictures, dictation and play
TSG: Uses language to express thoughts and needs
COR: X: Art

Child's name	Details recalled	Enhances details through drawing	Notes

Lesson Title: List Poem
Lesson Type: Whole Group

Unit of Study: Plants	**Unit Focus Question:** What are some different kinds of plants?
Objective: Children will be introduced to the concept of poetry and work together to create a list poem.	
PKFCC Focus Standard: *PK.CLL.11 (Respond to Literature): Create and present a poem, dramatization, art work, or personal response to a particular author or theme studied in class, with prompting and support as needed.* **Additional PKFCC Standards:** *PK.SED.3 Recognizes himself/herself as a unique individual having his/her own abilities, characteristics, feelings and interests.* .	**Link to Authentic Assessment Systems** WSS: II.D.1 Represents ideas and stories through pictures, dictation and play TSG: 33. Explores the visual arts COR: N/A
Materials: • Chart paper, marker, index cards	**Connected Academic Vocabulary:** bush, cactus, evergreen, flower, fruit, grass, herbs, seaweed, succulent, tree, vegetables, water lily, weeds
Procedure: **Hook:** Read a list poem to the children. See Section XI: Appendices for a sample list poem. **Beginning:** Ask children if they know what a poem is. Allow them to share their responses. If necessary, share that a poem is a group of words that expresses a person's feelings or ideas. Poems sometimes include words that rhyme or they may have a special rhythm. Share with children that you are going to create a poem together as a class. The type of poem you are going to create is called a list poem. A list poem has a beginning, a list (middle) and an end. **Middle:** Refer back to the list poem you read with the children in the *hook* portion of this activity. Point out the beginning, the list (middle) and the end. Ask children to help you create a list poem about plants. To do this you will need to create a list of plants. Invite children to create a list of plants. Ask them to share different types of plants with you. Write the children's responses on an index card (one per card). After the list is complete, ask children to help you write a beginning and an end for the poem. Add the beginning and the end to the poem. **End:** Read the poem aloud to the class. Share with children that they will have the opportunity to create their own list poems in the Writing Center during Center Time.	
Assessment: How does the child participate in the writing process? E.g., suggests plant(s), creates a beginning, listens carefully etc.	

Differentiation: Consider multiple entry points for all children to be successful. How do I/we plan to meet individual student needs? For example, repeat directions, extend time, adapt materials, preview questions, and provide 1:1 support. *For children who need additional support:* In advance, read a couple of list poems with these children to familiarize them with the type of poetry. *For children who are ready for a challenge*: Invite these children to draw pictures of the types of plants the class includes in the poem.
Children with IEPs: How will I incorporate IEP goals into this lesson? What specific accommodations or modifications will I make? How will I collaborate with SEIT and/or related service providers?
Children whose home language is a language other than English: What language is needed to understand the lesson and activity instructions, and to participate in the activity and discussion? Add a visual for each type of plant the children suggest.
Teacher Tip: • This activity is designed to introduce children to the concept of poetry—list poetry in particular—and provides background knowledge for them to create and present their own poems as suggested in the PKFCC focus standard. Depending on the needs of your class you may begin the list poem during this lesson and add to it throughout the day or in a subsequent lesson/day. • As an extension, children can create illustrations for the poem during small group or Center Time.
Teacher Reflection: What went well? Why? What will I do differently given what I have learned from observing children during this activity? Which children needed differentiation during this activity and how will I meet their needs moving forward?

Foundational Learning Experience Assessment Opportunity

Whole Group Experience: List Poem

PKFCC Focus Standard: *PK.CLL.11 Create and present a poem, dramatization, art work, or personal response to a particular author or theme studied in class, with prompting and support as needed.*
Authentic Assessment Alignment:
WSS: II.D.1: Represents ideas and stories through pictures, dictation and play
TSG: 33: Explores the visual arts
COR: N/A

Child's name	Contribution to the poem	Notes

Lesson Title: Plant Taste Test
Lesson Type: Small Group

Unit of Study: Plants	**Unit Focus Question:** Why are plants important?
Objective: Children will understand that some plants can be a source of food.	
PKFCC Focus Standard: *PK.CKW.4 (Science): Observes and describes characteristics of earth and space.* **Additional PKFCC Standards:** *PK.SED.1 Recognizes himself/herself as a unique individual having his/her own abilities, characteristics, feelings and interests.*	**Link to Authentic Assessment Systems** WSS: IV.B.1: Explores the properties of objects and materials and how they change TSG: 27: Demonstrates knowledge of the Earth's environment COR: DD: Natural and physical world
Materials: • Variety of plant-based foods for children to sample • Paper and writing utensils for children to record taste test preferences	**Connected Academic Vocabulary:** edible, fruit, harvest, herbs, leaves, nutrients, plant, roots, seed, stem, vegetable, vegetarian

Procedure:
Hook: Show children a variety of real fruits or vegetables or labeled pictures.
Beginning:
Ask children if they know where these fruits and vegetables come from. If necessary, share where each item grows and reinforce that these fruits and vegetables are plants or parts of plants.
Ask children if they have tried these fruits and vegetables before.
Share that they will be able to try them today.
Middle:
Place pieces of each fruit or vegetable on a plate.
Place a piece of paper next to each plate.
Invite children to taste each piece of fruit or vegetable.
After children try a fruit or vegetable, ask them to record their thoughts on the corresponding paper. Consider the best system for recording thoughts based on the class' strengths and needs. Children may make tallies under "like" and "dislike" headings, add tallies under smiling or frowning faces, write an *L* for "like" or a *D* for "dislike," or use a green marker to indicate that they enjoy the food and a red to indicate that they do not enjoy the food.
End:
Talk with children about their preferences and what they recorded when they have finished trying the items.
Ask children which item they liked best and see if they can recall where this item grows.

Assessment: What evidence is there that this child understands that some plants can be a source of food?

Differentiation: Consider multiple entry points for all children to be successful. How do I/we plan to meet individual student needs? For example, repeat directions, extend time, adapt materials, preview questions, and provide 1:1 support. *For children who need additional support:* Some children may be uncomfortable trying different types of food. Allow children to opt out of trying foods if desired. *For children who are ready for a challenge*: Provide pictures of where each item grows. Invite children to match these pictures to the food items.
Children with IEPs: How will I incorporate IEP goals into this lesson? What specific accommodations or modifications will I make? How will I collaborate with SEIT and/or related service providers?
Children whose home language is a language other than English: What language is needed to understand the lesson and activity instructions, and to participate in the activity and discussion? Prior to the activity, learn the names of the fruits and vegetables that you will use in the children's home language(s). Use these names throughout the activity.
Teacher Tip: • Be intentional about the fruits and vegetables you select for this activity. Consider items that are interesting and novel for the class. • Be mindful of student allergies when selecting the fruits and vegetables for this activity.
Teacher Reflection: What went well? Why? What will I do differently given what I have learned from observing children during this activity? Which children needed differentiation during this activity and how will I meet their needs moving forward?

Foundational Learning Experience Assessment Opportunity

Small Group Experience: Plant Taste Test

PKFCC Focus Standard: *PK.CKW.4 (Science): Observes and describes characteristics of earth and space.*
Authentic Assessment Alignment:
WSS: IV.B.1 Explores the properties of objects and materials and how they change
TSG: 27: Demonstrates knowledge of the Earth's environment
COR: DD. Natural and physical world

Child's name			Notes

X1. Appendices

Appendix A: Vocabulary

Botanist: A scientist who specializes in the field of botany.
Botany: The science of plant life.
Forester: A person who practices forestry, the science, art and profession of managing forests.
Terrarium: Clear containers, either sealable or open to the atmosphere, in which plants can be grown. They are typically decorative. Closed terrariums create a unique environment for plant growth as a water cycle develops within.
www.wikipedia.org

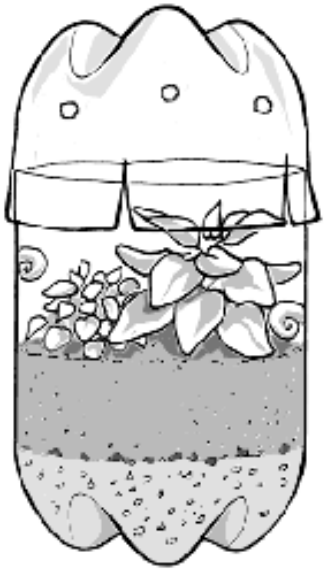
Appendix B: Terrarium

A terrarium is a small garden grown in an enclosed or partially enclosed container. They are typically made of clear plastic or glass. Succulents are often grown in terrariums but ferns and ground covers also work well. Plants that thrive in high humidity should be grown in closed terrariums. Terrariums can also house decorative rocks, sticks or small figurines.

To build a terrarium start with a layer of gravel (1-2 inches deep) in the bottom of the container. Add a layer of soil on top of the gravel and then add the plants. After the plants are planted, add decorative items as desired.

Containers that work well for terrariums:

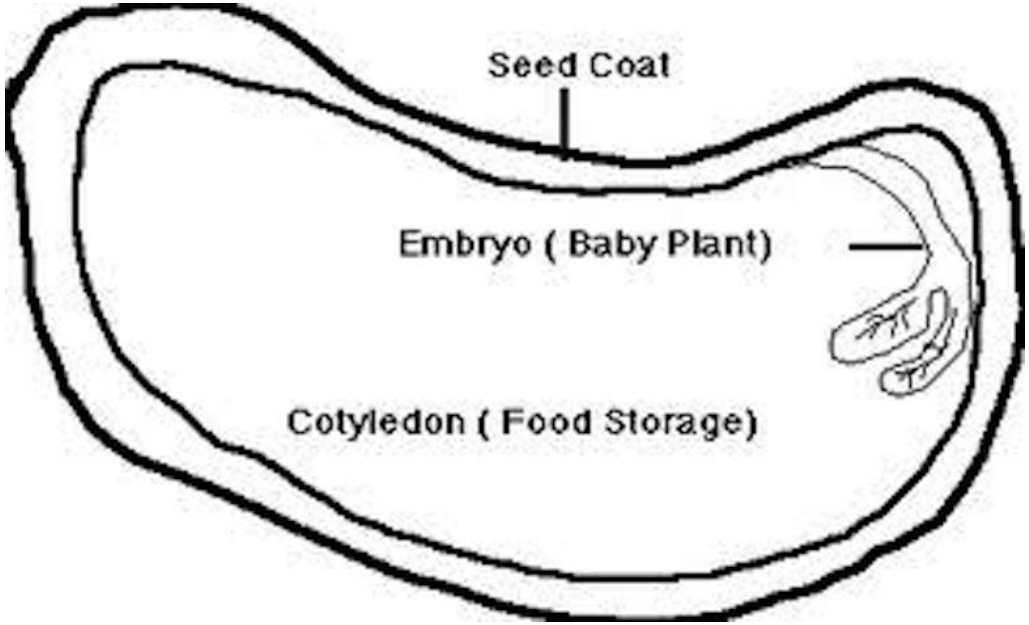
- Glass bowls
- Jars
- Fish tanks
- Empty two-liter or other plastic bottles
- Recycled clear plastic food containers.



www.kidsgardening.org

www.climatekids.nasa.gov

Appendix C: Seed Parts



http://www.ciscomethodist.org/parts-of-a-seed-diagram-for-kids/labeled-parts-of-a-seed-diagram-3c9c98f9e7dd9441.html

Appendix D: List Poetry

Vegetables

Mom says

Carrots

Celery

Peas

Broccoli

Spinach

And peppers

Eat your vegetables.

Outside

I like

Running

Jumping

Stomping

Shouting

Sliding

Riding

Bikes

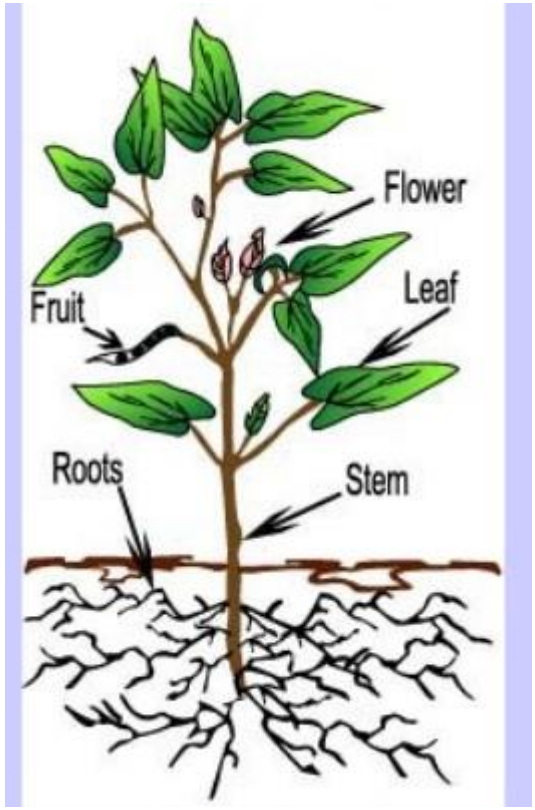
Trikes

It is fun!

A list poem is a type of poem that consists of a beginning, a list and an end. The items in the list are typically carefully arranged but do not have to rhyme and the closing line of the poem is generally declarative, humorous or explanative.

Other list poems include:
Examination by Shel Silverstein
Sick by Shel Silverstein
Bleezer's Ice Cream by Jack Prelutsky

Appendix E: Plant Diagram



http://www.webinstituteforteachers.org/