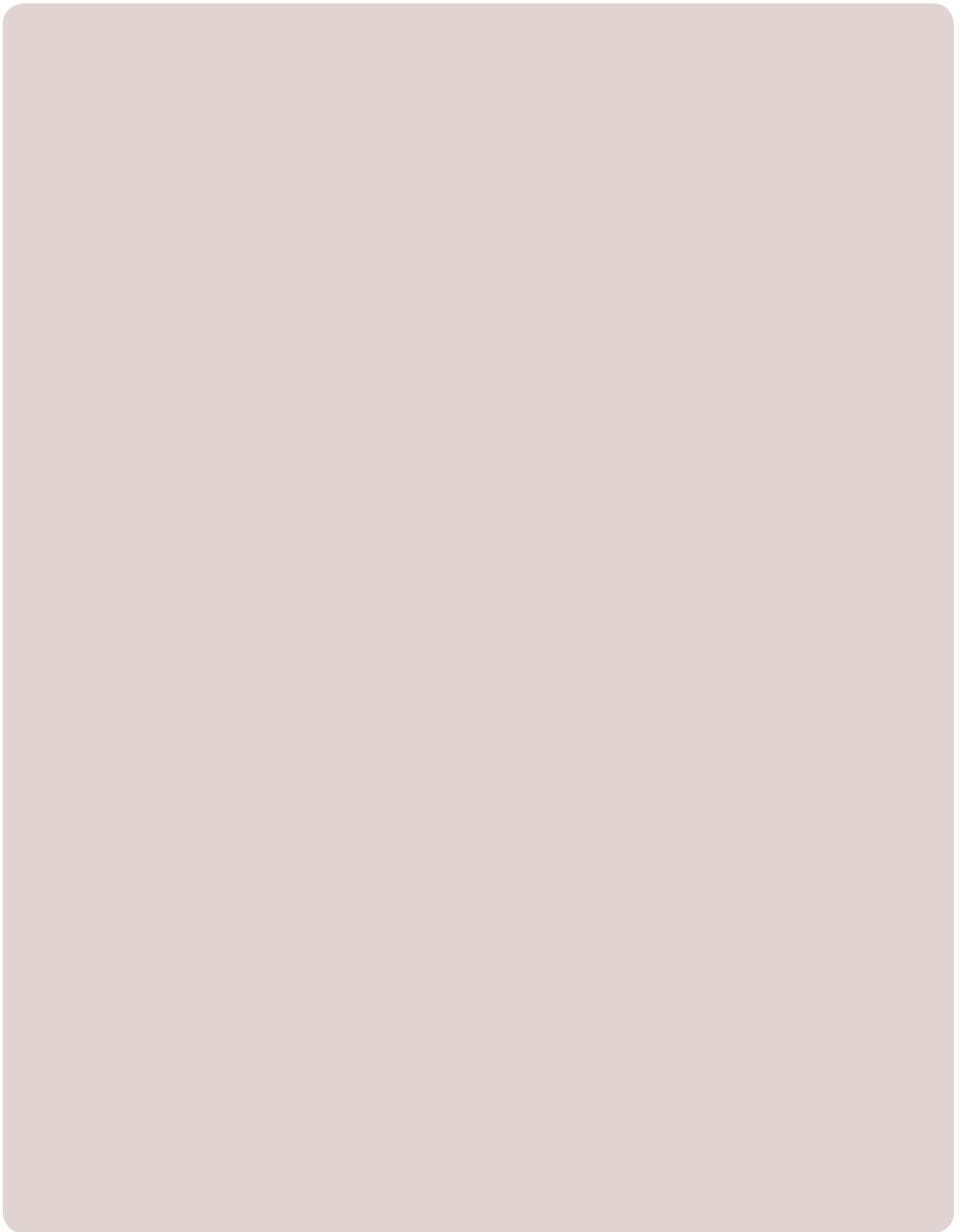


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Introduction

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(DUOXH~~DUQLO6WDQGDU~~6)* validates all learning standards for four-year-old

Guiding Principles for the NYSPLS Resource

The learning standards provided in this document serve as a resource for planning interdisciplinary curriculum and are guided by the following principles:

All children are capable of learning, achieving and making developmental progress. The Standards

Students with Disabilities

Preschool children with disabilities and their typically developing peers are all capable of learning, achieving, and making developmental progress. Prekindergarten children with disabilities may need specially designed instruction and/or related services designed to address their disability and support their participation in appropriate activities with typically-developing peers. Each prekindergarten child with a disability has an IEP which documents their individual goals, supports, and services as determined by needs and strengths. For all domain areas and standards preschool students with disabilities may have alternate goals outlined in their IEP. For more information about special education support services for young children, see NYSED's [A Resource to Special Education Support Services](#).

Emergent Multilingual Learners

A command of the English language is not a precondition to meeting every standard. Children can demonstrate mastery of many of the skills outlined in the standards bilingually or using their home languages. Children can demonstrate they are building background knowledge (PK.AC.2), in their home language. Rather than hinder progress towards the standards, the home language is an invaluable resource to advance learning. Intentional, strategic use of children's home languages in the prekindergarten classroom can, for example, enhance student engagement, scaffold comprehension, support authentic assessment, and promote family involvement². "Research highlights many lifelong advantages associated with bilingualism. The ultimate purpose of the learning standards would be to develop children's potential, so they garner and sustain every possible advantage into adulthood. Promoting bilingualism and multilingualism as children develop proficiency in the English language is in keeping with that purpose." For more information, see [NYSED's Emergent Multilingual Learners in Prekindergarten Programs](#).

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Organizational Structure of the NYSPLS Resource

The Resource Guides for School Success: The Prekindergarten Early Learning Standards is organized by the following key domains of learning:

DOMAIN 1: **Approaches to Learning**

How children become involved in learning and acquiring knowledge.

DOMAIN 2: **Physical Development and Health**

Children's physical health and ability to engage in daily activities, both outdoors and inside.

DOMAIN 3: **Social and Emotional Learning**

The emotional competence and ability to form positive relationships that give meaning to children's experiences in the home, school, and larger community.

DOMAIN 4: **Communication, Language, and Literacy Part A and Part B**

How children understand, create, and communicate meaning.

DOMAIN 5: **Cognition and Knowledge of the World (Mathematics, Science, Social Studies, Arts)**

What children need to know and understand about their world and how they apply what they know.

In this document, each of the above key domains of learning is introduced with a brief context statement or set of considerations to help with planning curriculum, instruction and assessment. Following the brief context, links and notes to the original standards documents are provided. These domains are further categorized into topics. Following each topic are learning standards, and in some cases, a set of indicators for the learning standard. Each prekindergarten learning standard in this document uses a numbering system that includes PK, an abbreviation of the prekindergarten domain name and an assigned number. For example, PK.MATH.1. In some cases, an additional reference code is provided in brackets. This reference code is the number code used in the full articulation of the standards. For example, PK.MATH.1 [PKCC.1]. This allows users to quickly refer to fully articulated standards documents and see how they exist within a continuum across age-ranges and grades.

The illustration on the following page provides an explanation of the structure.

CURIOSITY AND INITIATIVE

PK.AL.4. Exhibits curiosity, interest, and willingness to learn new things and have new experiences

PK.AL.4. Indicators:

- a. Asks questions using who, what, how, why, when, where, what if
- b. Expresses an interest in learning about and discussing a growing range of ideas
- c. Actively explores how things in the world work
- d. Investigates areas of interest
- e. Takes objects and materials apart and attempts to reassemble them (e.g., puzzles, models, nuts and bolts)
- f. Willingly engages in new experiences and activities

PERSISTENCE

PK.AL.5. Demonstrates persistence.

PK.AL.5. Indicators:

- a. Maintains focus on a task
- b. Seeks assistance when the next step seems unclear or appears too difficult
- c. Modifies strategies used to complete a task

Domain 2: Physical Development and Health

DOMAIN: PHYSICAL DEVELOPMENT AND HEALTH (PDH)

Many teachers are concerned about ensuring adequate physical development and health opportunities without sacrificing cognitive and academic learning time. The good news is that research has shown strong links between healthy eating, physical activity, and improved academic achievement. Multiple opportunities are to be built into the daily curriculum and routines to foster physical development and health. In addition to a daily schedule that provides ample time for planned physical activities and outings, teachers can integrate physical development and health with other domains of learning. For example, they can incorporate opportunities for

PK.PDH.8. Demonstrates awareness and understanding of healthy habits.

PK.PDH.8. Indicators:

- a. Recognizes the importance of good nutrition, water, rest and sleep to be healthy
- b. Demonstrates ways to self-soothe during times of stress
- c. Talks about food choices in relationship to personal allergies and overall health
- d. Relates healthy behaviors to good personal health (e.g., eating a balanced diet, exercising)

PHYSICAL SAFETY**PK.PDH.9. Demonstrates awareness and understanding of safety rules**

PK.PDH.9. Indicators:

- a. Verbalizes and demonstrates safety rules (e.g., bus safety, holding an adult's hand when walking on sidewalks or near a street)
- b. Understands and communicates that some practices could be unsafe (e.g., playing with matches, playing near a busy street, not wearing a bike helmet)
- c. Participates in fire evacuation drills, understands what the alarm bell is and the need to go to a safe location, etc.
- d. Explains how to get help in emergency situations (e.g., communicates their guardian's name and phone number)

Domain 3: Social and Emotional Learning

DOMAIN: SOCIAL AND EMOTIONAL LEARNING (SEL)

All children learn within social contexts and relationships. Learning through social context and relationships is especially important for young children, making the social and emotional domain a key lever to support children's learning across all domains. Extensive research indicates that effective mastery of social emotional competencies is associated with greater well-being and better school performance. It also supports the brain's ability to hold onto and work with information, concentrate, filter distractions, and adapt. This domain area has become increasingly important across all age and grade spans, not only to support academic achievement, but also for overall wellbeing through adulthood. Children require ample opportunities to develop and practice social and emotional skills, observe and experience positive behavior models, and establish and reinforce positive relationships with caring adults and peers.

NYSED developed the NYS Social Emotional Learning Benchmarks to support social and emotional development for K-12. The K-12 Benchmarks are organized by grade bands. The Prekindergarten Social Emotional Learning Standards are aligned to the K-12 Benchmarks to make it easier to see the progression of skills from the prekindergarten level to early elementary. To explore the K-12 Benchmarks, visit

SELF-AWARENESS AND SELF-MANAGEMENT SKILLS

DECISION-MAKING SKILLS



REPRESENTING

PK.AC.6. Demonstrates their ability to represent ideas using a variety of methods

PK.AC.6. Indicators:

- a. Uses facial expressions, body language, gestures, or sign language to express ideas
- b. Uses existing objects to represent desired or imagined objects in play or other purposeful way
- c. Uses visual media to represent an actual experience
- d. Reviews and reflects on their own representations
- e.

Integration of Knowledge and Ideas

PK.ELAL.11 [PKR.7] Describes the relationship between illustrations and the text (e.g., what person, place, thing or idea in the text an illustration depicts)

PK.ELAL.12. [PKR.9] Makes connections between self, text, and the world (e.g., what is familiar, what does an event/picture/character make them think of, what do they remember)

WRITING

Text Types and Purposes

PK.ELAL.13 [PKW.1] Uses a combination of drawing, dictating, oral expression, and/or emergent writing to state an opinion about a familiar topic in child-centered, authentic, play-based learning

PK.ELAL.14. [PKW.2] Uses a combination of drawing, dictating, oral expression, and/or emergent writing to name a familiar topic and supply information in child-centered, authentic, play-based learning

PK.ELAL.15. [PKW.3] Uses a combination of drawing, dictating, oral expression, and/or emergent writing to narrate an event or events in a sequence

PK.ELAL.16. [PKW.4] Creates a response to a text, author, or personal experience (e.g., dramatization, art work or poem)

Research to Build and Present Knowledge

PK.ELAL.17. [PKW.6] Develops questions and participates in shared research and exploration to answer questions and to build and share knowledge (e.g., record and discuss an experiment of items that float and sink)

PK.ELAL. 18. [PKW.7] Engages in a discussion using gathered information from experiences or provided resources (e.g., collect materials and use them to answer questions)

P-2, the student is expected to know and be able to use these skills by the end of 2nd grade.

PK.ELAL.26. [PKL.2] Demonstrates command of the conventions of academic English capitalization, punctuation, and spelling when writing.



GEOMETRY

Identifies and describes shapes (squares, circles, triangles and rectangles)

PK.MATH.12. [NY-PK.G.1.] Describes objects in the environment using names of shapes and describes the relative positions of these objects using terms such as top, bottom, up, down, above, below, in front of, behind,

PK.SCI.3. [P-PS4-1.] Plans and conducts investigations to provide evidence that sound is produced by vibrating materials

PK.SCI.3 Indicators:

- a. Investigates vibrating materials such as percussion instruments (e.g., drum, triangle), string instruments (e.g., guitar, piano), wind instruments (e.g., recorder, whistle), and audio speakers



ENGINEERING DESIGN

The Engineering Design standards are organized in grade bands. The student is expected to know and be able to use these skills by the end of 2nd grade. While the Engineering Design standards do not begin until kindergarten, prekindergarten teachers may wish to introduce students to the principles of Engineering Design.

PK.SCI.10. [K-2-ETS1-1.] Asks questions, makes observations, and gathers information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool

PK.SCI.11. [K-2-ETS1-2.] Develops a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem

PK.SCI.12. [K-2-ETS1-3.] Analyzes data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs

Domain 5C: Cognition and Knowledge of the World: Social Studies

DOMAIN: COGNITION AND KNOWLEDGE OF THE WORLD (1.11.) JTWO 0 m-2 -477.96M[ob]15 1rirlsEe

Domain 5D: Cognition and Knowledge of the World: The Arts

DOMAIN: COGNITION AND KNOWLEDGE OF THE WORLD

THE ARTS (ARTS)

The Arts develop a variety of children's skills, thought processes, and socio-emotional understandings through dance, music, theater, visual and media arts. The NYS P-12 Arts Standards explore four artistic processes: Create, Present/ Perform/ Produce, Respond, and Connect. These processes provide an instructional frame to develop children's skills through dance, music, theater, visual and media arts. At the prekindergarten level, educators can integrate the Arts by anchoring the artistic processes to interdisciplinary themes or units of study.

The NYS P-12 Art Standards provide additional instructional notes embedded throughout the indicators. To see the full articulation of the Arts Standards and access glossaries and additional resources, visit <http://www.nysed.gov/curriculum-instruction/arts/>

DANCE

PK.ARTS.1. [DA:Cr1-3.PK] Creates Dance

PK.ARTS.1. Indicators:

- Expresses and engages using movement elements and skills (locomotor and non-locomotor) to a series of sensory stimuli (e.g., music, visual cues)
- Moves in spontaneous and imaginative ways to music, songs, rhythm, and silence

PK.ARTS.2. [DA:Pr4-6.PK] Performs Dance

PK.ARTS.2. Indicators:

- Demonstrates basic full-body locomotor movements (crawl, walk, run), non-locomotor movements (bend, twist, reach) and spatial relationships (over, under, around) while moving in general space
- Identifies the speed of a dance (for example fast vs. slow) and move to varied rhythmic sounds at different tempo
- Moves with opposing qualities (loose/tight, light/heavy, shakymovements)

PK.ARTS.2. Indicators:



MEDIA ARTS

THEATER

PK.ARTS.12. [TH:Cr1-3.PK] Creates Theatrical Arts

PK.ARTS.12. Indicators:

- a. Transitions between imagination and reality in dramatic play
- b. Uses non-representational materials to create props, puppets, and costume pieces for dramatic play
- c. Uses gestures, words, sounds, and movements in dramatic play

PK.ARTS.13. [TH:Pr4-6.PK] Performs Theatrical Arts

PK.ARTS.13. Indicators:

- a. Identifies characters and setting in dramatic play or guided drama
- b. Engages in dramatic play to tell known stories and newly imagined stories (i.e., re-enacts a story or creates their own story to act out)
- c. Uses body and voice to communicate emotions in dramatic play

PK.ARTS.14. [TH:Re7-9.PK] Responds to Theatrical Arts

PK.ARTS.14. Indicators:

- a. Identifies preferences in dramatic play (i.e., express their own feelings, roles, and use of materials)
- b. Discusses dramatic play or guided drama

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b. Identifies stories that are familiar to them or a story or creates

C ITJT(s a s)5 h(or)-9.9 td sory in dramatic play

PK.ARTS.-6. [Ve.PK] Creates Visual Arts

PK.ARTS.6. Indicators:

- a. Engages in dramatic play to tell known stories and newly imagined stories (i.e., re-enacts a story or creates their own story to act out)
- b. Uses body and voice to communicate emotions in dramatic play
- c. Expresses their own feelings, roles, and use of materials in dramatic play

PK.ARTS.4 (s. Indic)5 (at)30 (or)20 (s)10 (:)TJO.947 -1.368 Td[(a.)-305 Srs or23tsftonpo24 Tmaa(v)ing(ondis pla)93 Tma

b. Discusses dramatic play or guided drama

PK.ARTS.-9. Indicators:

- a. Identifies preferences in dramatic play (i.e., express their own feelings, roles, and use of materials)
- b. Discusses dramatic play or guided drama

Domain 5E: Cognition and Knowledge of the World: Technology, Computer Science, and Digital Literacy

DOMAIN: COGNITION AND KNOWLEDGE OF THE WORLD TECHNOLOGY, COMPUTER SCIENCE, AND DIGITAL LITERACY

Technology in a prekindergarten classroom is used to accomplish specific learning goals. It is not used in place of high-quality adult-child interactions and activities. Technology tools are useful when used in intentional and

Instructional unit framework example

This instructional unit framework illustrates one way to design an integrated thematic unit that aligns with the prekindergarten standards, leaves room to build on student interest, and can be tailored to meet individual needs. While this unit centers on a traditionally “scientific” theme, it is interdisciplinary as content from all domains of learning is embedded throughout.

Unit Eight: Plants

Interdisciplinary Unit of Study

The enclosed curriculum unit may be used for educational, non-profit purposes only. If you are not a Pre-K for All provider, send an email to deceinstruction@schools.nyc.gov to request permission to use this curriculum or any portion thereof. Please indicate the name and location of your school or program and describe which units you would like to use and how you intend to use them. Additional units can be found at <http://bit.ly/PreKUnits>.

I. Unit Snapshot

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

Enduring understandings that the student should have by the end of the unit:

- 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 fit the needs of individual programs and classrooms.

botanist
botany
bouquet
branch

environment
evergreen
fabric
farm

fruit
garden
gardener
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leaves
medicine
nature

seaweed
seed
seedling

tree
trunk
vegetables

Focus Standards

From

Domain 1: Approaches to Learning

PK.AL.5. Demonstrates persistence

Domain 2: Physical Development and Health

PK.PDH.5. Demonstrates eye-hand coordination and fine motor skills

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 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.

As you prepare to teach this unit, consider how different kinds of plants are a part of your children's daily lives.

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. As children discuss the role of water in plant growth and health, help them make connections to Unit 7: Water. 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. This is also a great way to encourage families to engage in conversation with their child about what they eat and the plants with which they are the

most familiar. 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

These are key components of each Pre-K for All Unit of Study.

	Week One	Week Two	Week Three	Week Four
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?
Family and Community Engagement EFQ 4: High quality programs promote families' role as primary caregivers,	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 and	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	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	Use dirt from the sensory table and recycled containers to plant a seed with each child. If families are available, invite them to the classroom to help plant the seeds. If desired, children can take the planted



Dramatic Play

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 ____?
 What does that remind you of?

Suggested Text:

Lola Plants a Garden by Anna McQuinn.
 Children can reference how Lola builds a garden as they build their own gardens.

PK.AC.2. Demonstrates they are building background knowledge

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. to the center. Children can pretend to make, buy, and sell floral arrangements, and explore the idea of buying and selling goods or services. As you play with the children, use and highlight vocabulary words such as bouquet, floral arrangement, florist, and flower.

PK.SOC.7. Develops a basic understanding of economic concepts within a community

Opportunity for Assessment

What does the child understand about 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., to the center. Invite children to create labels for the garden in the Writing Center. Children can care for the garden, and pretend to plant and harvest crops.

PK.AC.2. Demonstrates they are 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., to the center. 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, create a sign to welcome visitors to the park, and state the park rules.

PK.SOC.5. 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 and growing of pretend plants. Consider adding, or working with the children to create a farm stand for them to pretend to buy and sell what they grow.

PK.SOC.7. Develops a basic understanding of economic concepts within a community

Art

Critical thinking questions/statements:

Tell me about your art.

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? Why?

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.ARTS.18. [VA:Re7-9.PK] Responds to Visual Arts

Note:

Children have varying levels of sensitivity to sensory experiences. Do not force children to touch materials. Invite children to participate, and observe their behavior carefully. Respond to the cues they give you about their readiness to participate.

Plant Stamps:

Provide parts of plants such as flowers or leaves and invite children to dip them into a small amount of paint and press them (as they would a stamp) onto a piece of paper.

PK.AL.3. Approaches tasks and problems with creativity, imagination and/or willingness to try new experiences

Paint Flowers:

Hang pictures of paintings of flowers near the easel (such as Sunflowers by Claude Monet, Man Loaded with Lilies by Diego Rivera, Poppy by Georgia O'Keefe, Flowers by Andy Warhol, a Kehinde Wiley floral backdrop, Garland of Flowers by Auguste Renoir, or consider other artists that are interesting or relevant to the children). 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.ARTS.18. [VA:Re7-9.PK] Responds to Visual Arts

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.AL.3. Approaches tasks and problems with creativity, imagination and/or willingness to try new experiences

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 fine motor skills needed to manipulate objects

Floral Still Life:

Provide or create a floral arrangement for children to carefully observe and then paint or draw what they see with various mediums (e.g., charcoal or oil pastels).

PK.PDH.5. Demonstrates eye-hand coordination and fine motor skills needed to manipulate objects

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.AL.5. Demonstrates persistence

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?

Suggested Text:

Seed to Plant by Kristin Baird Rattini.

Have this book on hand for children to use as a reference throughout the unit.

Have a reference for this book on hand for children to use as a reference throughout the unit.

with these fruits and vegetables throughout the activity. As the plants grow, children can draw and write about the life cycle of the plants.

PK.SCI.6. [P-LS3-1.]: Develops a model to describe that some young plants and animals are similar to, but not exactly like, their parents

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 part.

PK.AC.3. Demonstrates understanding of what is observed

Opportunity for Assessment

Is the child able to use vocabulary relevant to their observations? Do they ask questions, make inferences and draw conclusions based on the diagram and the seed?



Flower Arrangements:

Provide a colander and 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 fine motor skills needed to manipulate objects

Opportunity for Assessment

What do you notice about the child's attempts to place the stems in the holes in the colander?

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 they are taller or shorter than the tree. Children can write their names on, or near, the tree to indicate their own height.

PK.MATH.10. [NY-PK.MD.1.] Identifies measurable attributes of objects such as length, or weight, and describes them using appropriate vocabulary (e.g., taller, shorter, same length, same weight)

Sand and Water / Sensory

Critical thinking questions/statements:

What happens when ___? Why?
 How do you think that works? Why?
 How could you change that?
 What does that remind you of? Why?
 What would happen if ___? Tell me more.

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).

PK.AC.2. Demonstrates they are building background knowledge

Note:

Children have varying levels of sensitivity to sensory experiences. Do not force children to touch materials. Invite children to participate and observe their behavior carefully. Respond to the cues they give you about their readiness to participate.

There should always be materials available in a sensory table that allow children to dig, scoop, pour, fill containers, and experiment with sand/water.

Soil and Seeds:

Add potting soil and seeds to the sensory table 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.SCI.4. [P-LS1-1.] Observes familiar plants and animals (including humans) and describes what they need to survive

Seaweed:

Add water beads, plants or seaweed (plastic or real, if available) to the water in the sensory table along with shells, pieces of coral, pretend fish, toy boats etc. Invite children to explore the ocean scene and discuss the dif-

ferent places where plants live, and how plants might live underwater

PK.SCI.4. [P-LS1-1]. Observes familiar plants and animals (including humans) and describes what they need to survive

Opportunity for Assessment

What ideas does the child have about where plants grow as well as how plants grow underwater?

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.AL.1. Actively 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.SCI.6. [P-LS3-1.] Develops a model to describe that some young plants and animals are similar to, but not exactly like, their parents

Build a Greenhouse:

Add empty, clean, clear plastic recycled containers such as berry containers, 2-liter bottles cut in half, take-out containers 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. Include paper and writing utensils if children would like to name and create a sign for their greenhouses.

PK.AL.3. Approaches tasks and problems with creativity, imagination and/or willingness to try new experiences

Library

Critical thinking questions/statements:

Computer/Technology

Critical thinking questions/statements:

I notice that you ____.
 How did you figure that out?
 What will you do next?
 What if you try ____?
 How could you ____?

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. Prescreen images and videos to make sure they are appropriate for children and not frightening or explicit. Do not use personal devices and ensure that you have signed permission before taking photographs of children.

Plants Around the World:

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 (be mindful of the experiences and cultures of the children in your class as you consider novelty). 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 or see in the names of plants. 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.ELAL.14. [PKW.2.] Uses a combination of drawing, dictating, oral expression, and/or emergent writing to name a familiar topic and supply information in child-centered, authentic, play-based learning

Recipe Search:

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 daily lives and cultures of the children in your class.

PK.ELAL.12. [PKR.9.] Makes connections between self, text, and the world (e.g., what is familiar, what does an event/picture/character make them think of, what do they remember)

Waltz of the Flowers:

Use a search engine to show children Tchaikovsky's Waltz of the Flowers from the Nutcracker Ballet. Invite them to share their impressions of the dancing, and if space permits, try to imitate some of the moves they observed in the ballet. Encourage the children to connect the ballet with their knowledge of plants. Also, consider implementing this activity with another dance, which connects to plants, and may be more relevant to the children in the class.

PK.ARTS.3. [DA:Re7-9.PK] Responds to Dance

Opportunity for Assessment

What does the child notice about the movements in the dance? What thoughts and/or feelings do they share?

Outdoors / Playground

Critical thinking questions/statements:

I saw you ____.

What will you do next?

If you try ____, what do you notice?

How did you do ____?

How does it feel outside today?

What do you see?

Suggested Text:

~~Worms at Work~~ Worms at Work by Wendy Pfeffer.

~~After reading about worms, invite children to dig in the dirt~~

~~outside (if possible, in a local environment). Ensure children~~

~~wash their hands when finished. I saw y7L(ea4MC.4:TEhiben .37t)3curi~~

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.

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 Diana Hutts Aston

PK.ELAL.10. [PKR.6.] Describes 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.AC.4. Demonstrates a growing receptive vocabulary

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 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?

VII. Sample Weekly Plan

On the following pages you will find a sample weekly lesson plan. Use the additional information included in the unit to create detailed weekly plans for each focus question in the unit. Plans will reflect individual schedules, students' and families' needs, school context, etc.

Quick Tips for Small Group:

1. Use exciting language and a *ect* to describe the small group activity.
2. Use hands-on materials that children are encouraged to explore.
3. Preview small group activities in whole group.
4. Link the activity to children's previous experiences

If children decline to participate...

Have a private conversation with the child as they play to understand why they 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 their choice.

Facilitate a conversation between the child and a friend who enjoyed the small group activity to generate excitement about the activity.

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

Week 1

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 (e ane0 (f o.474 T/[ra bas pictuame)40

WEEK ONE continued...

Week 1	Monday	Tuesday	Wednesday	Thursday	Friday
Large Group Meeting In order to 095 Tdcm0 0 m87 0 ISQq1 0 0 1 219 Q (o 095 Tdcm0 0 m87 0 ISQq1 0 0 w)-1453.-it F3 ISQw.001, ATdcmY Song: Shait	What do you know about plants? Ask children to share	Plant Song: Share the song below with the class. Sing or chant it	Parts of a Plant Diagram: Show children a real plant. Tell them	Foundational Text Read Aloud: Read Up in the Garden Down	Sing: And the Green Grass Grew All Around, All Around.





VIII. Student Work Samples

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

Example 1: Class Plants

Activity Type: Center Time

NYSPLS Standard: PK.SCI.4 [P-LS1-1] Observes familiar plants and animals (including humans) and describes what they need to survive.

"I'm observing our plants. It only needs a little water.
I'm going to draw it so I'm looking at it carefully."

Example 2: 3-D Plants

Activity Type: Center Time

NYSPLS Standard: PK.AL.3. Approaches tasks and problems with creativity, imagination and/or willingness to try new experiences.

“I’m making a cactus. The spines are sharp. They are the parts sticking out. I am painting it green because my cactus at home is green.”

IX. 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/>

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.prospect-park.org/visit-the-park/places-to-go/audubon-center/>

Queens Botanical Garden:
<http://www.queensbotanical.org/>

Urban Park Rangers:
<http://www.nycgovparks.org/prog6034T254Hachewe.-1.854TDf0-1.8.6DC0.220wGarden:sa/flturalCenter:https://www.w20>

Zucker Natural Exploration Area: <https://www.prospect-park.org/visit-the-park/places-to-go/playgrounds/zucker-natural-exploration-area/>

Music: Songs with Lyricachewe. -1.85Span 4MCID 40 BDC /T1Q 1 Tf9.5 0 0 9.5 45 111.898 T
d lyrics are included. If you don't know the tune,

X. Foundational Learning Experiences: Lesson Plans

Documentation: Based on the Focus Question, Objective, and Focus Standard as well as the Authentic Assessment items, teachers will determine what they hope to see children do in an activity. They should take notes as children are working to record the skills and growth children demonstrate. For the lesson plans included in this unit, a note-taking form is included. Please note the NYSPLS standards and assessment items listed in each lesson plan. Keep in mind that you may be addressing additional assessment items and standards.

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

Unit of Study: Plants

Focus Question: What are plants?

Objective: Children will listen attentively to the book and respond to questions the teacher asks about the book.

NYSPLS Focus Standard:

PK.AC.1. Demonstrates motivation to communicate.

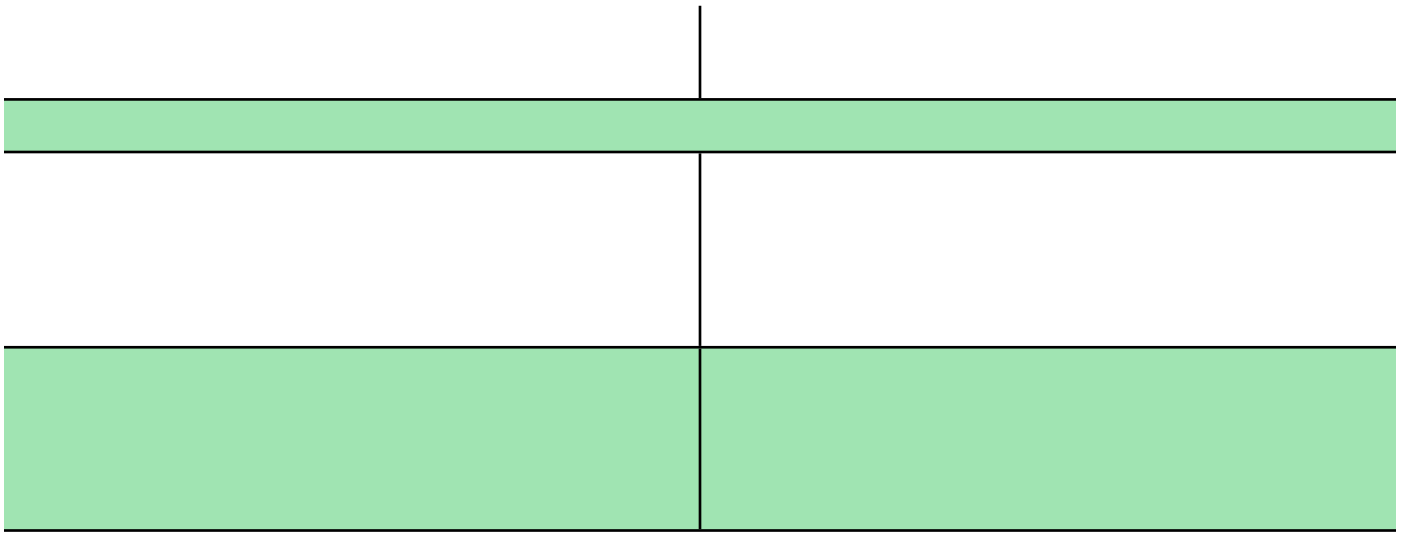
Additional NYSPLS Standards:

PK.ELAL.5. [PKR.1.] Participates in discussions about a text (e.g., during whole or small group interactive read-aloud discussions, during peer sharing, within play scenarios)

Link to Authentic Assessment Systems

WSS:II.A.I: Gains meaning by listening

TSG:8: Listens to and understands increasingly complex language



Lesson: List Poem

Type: Large Group Activity

Unit of Study: Plants

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.

NYSPLS Focus Standard:

PK.ELAL.9 [PKR.5.] Interacts with a variety of genres (e.g., storybooks, poems, songs).

Additional NYSPLS Standards:

PK.AC.5. Demonstrates a growing expressive vocabulary.

Link to Authentic Assessment Systems

WSS:II.D.1: Represents ideas and stories through pictures, dictation and play

TSG:18: Comprehends and responds to books and other texts

COR: N/A

Materials:

Sample list poem
Chart paper
Marker
Index cards

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

Children with IEPs: How will I incorporate individual children's IEP goals into this lesson? What specific accommodations or modifications will I make? How will I collaborate with SEIT and/or related service providers?

Emergent Multilingual Learners: 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?

Assessment Opportunity

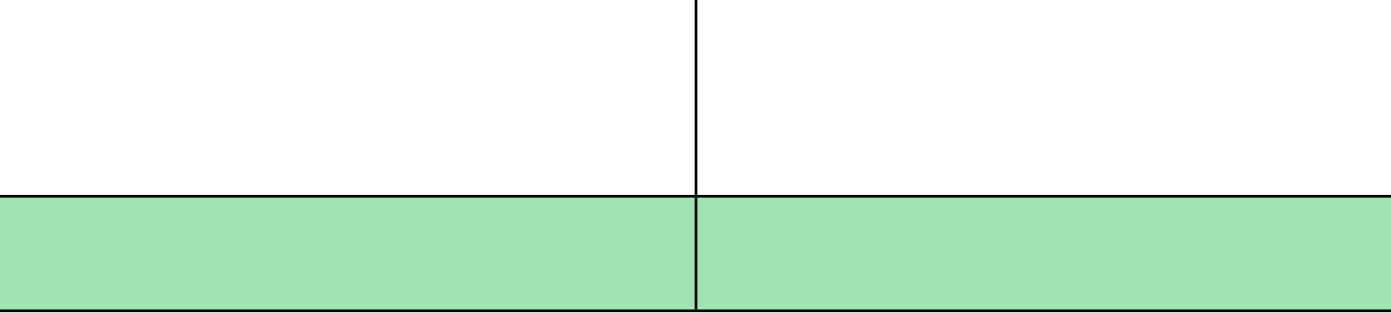
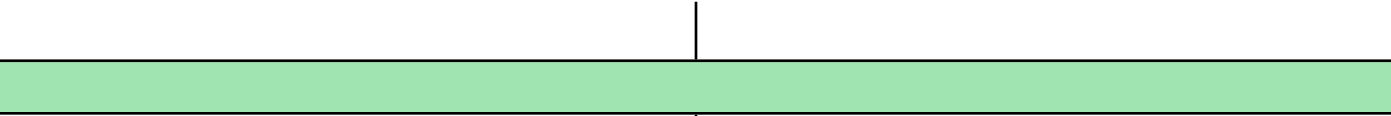
Large Group Experience: List Poem

NYSPLS Focus Standard:

|

|





Children with IEPs: How will I incorporate individual children's IEP goals into this lesson? What specific accommodations or modifications will I make? How will I collaborate with SEIT and/or related service providers?

Emergent Multilingual Learners: What language is needed to understand the lesson and activity instructions, and to participate in the activity and discussion?

Prior to the activity, try to 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?

Assessment Opportunity

Small Group Experience: Plant Taste Test

NYSPLS Focus Standard:

PK.SCI.4. [P-LS1-1.] Observes familiar plants and animals (including humans) and describes what they need to survive

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	Evidence of knowledge that plants can be food	Notes

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.

Appendix C: Seed Parts

Appendix E: Plant Diagram

References and Resources

Lesaux, N. K., Galloway, E. P. (2017). A Series of Topic Briefs focused on Advanced Literacies designed to aid New York State educators in implementing the NYS Next Generation Learning Standards. Albany, NY. New York State Education Department. <http://www.nysed.gov/bilingual-ed/linguistically-diverse-learners-and-nys-next->



RESOURCE GUIDES FOR SCHOOL SUCCESS:

THE PREKINDERGARTEN EARLY LEARNING
STANDARDS

New York State Education Department 2019